SIEMENS

# SINUMERIK

# SINUMERIK 840D sl, SINAMICS S120 Alarms

**Diagnostics Manual**


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Valid for
Control system
SINUMERIK 840D sl / 840DE sl
Software
CNC software, Version 4.95 SP1
SINAMICS S120, Version 5.2 SP3 HF9


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Промэлектроника, sales@prom-elec.com

## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

| ⚠ **DANGER** |
| --- |
| indicates that death or severe personal injury **will** result if proper precautions are not taken. |

| ⚠ **WARNING** |
| --- |
| indicates that death or severe personal injury **may** result if proper precautions are not taken. |

| ⚠ **CAUTION** |
| --- |
| indicates that minor personal injury can result if proper precautions are not taken. |

| **NOTICE** |
| --- |
| indicates that property damage can result if proper precautions are not taken. |

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

| ⚠ **WARNING** |
| --- |
| Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed. |

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### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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# Introduction

# 1

## 1.1 About SINUMERIK

From simple, standardized CNC machines to premium modular machine designs – the SINUMERIK CNCs offer the right solution for all machine concepts. Whether for individual parts or mass production, simple or complex workpieces – SINUMERIK is the highly dynamic automation solution, integrated for all areas of production. From prototype construction and tool design to mold making, all the way to large-scale series production.

Visit our website for more information SINUMERIK (https://www.siemens.com/sinumerik).

## 1.2 About this documentation

### Target group

This publication is intended for:

- Project engineers
- Commissioning engineers
- Machine operator
- Service and maintenance personnel

### Purpose

The Diagnostics Manual refers to the alarms / messages from the NC area, HMI, PLC and SINAMICS. It should be used as a reference manual and allows operators at the machine tool:

- To correctly assess special situations when operating the machine.
- To understand the response of the system to the special situation.
- To utilize the options for continued operation following the special situation.
- To follow references to other documentation containing further details.

### Benefits

The Diagnostics Manual enables the intended target group to evaluate error and fault indications and to respond accordingly.

With the help of the Diagnostics Manual, the target group has an overview of the various diagnostic options and diagnostic tools.

### Standard scope

This documentation only describes the functionality of the standard version. This may differ from the scope of the functionality of the system that is actually supplied. Please refer to the ordering documentation only for the functionality of the supplied drive system.

It may be possible to execute other functions in the system which are not described in this documentation. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

For reasons of clarity, this documentation cannot include all of the detailed information on all product types. Further, this documentation cannot take into consideration every conceivable type of installation, operation and service/maintenance.

The machine manufacturer must document any additions or modifications they make to the product themselves.

### Websites of third-party companies

This document may contain hyperlinks to third-party websites. Siemens is not responsible for and shall not be liable for these websites and their content. Siemens has no control over the information which appears on these websites and is not responsible for the content and information provided there. The user bears the risk for their use.

# 1.3 Documentation on the internet

## 1.3.1 Documentation overview SINUMERIK 840D sl

You will find extensive documentation on the functions of SINUMERIK 840D sl from version 4.8 SP4 at 840D sl documentation overview (https://support.industry.siemens.com/cs/ww/en/view/109766213).

You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- User: Operating
- User: Programming
- Manufacturer/Service: Functions
- Manufacturer/Service: Hardware
- Manufacturer/Service: Configuration/Setup
- Manufacturer/Service: Safety Integrated
- Manufacturer/Service: SINUMERIK Integrate/MindApp
- Information and training
- Manufacturer/Service: SINAMICS

## 1.3.2 Documentation overview SINUMERIK operator components

Comprehensive documentation about the SINUMERIK operator components is provided in the Documentation overview SINUMERIK operator components (https://support.industry.siemens.com/cs/document/109783841/technische-dokumentation-zu-sinumerik-bedienkomponenten?dti=0&lc=en-WW).

You can display documents or download them in PDF and HTML5 format.

The documentation is divided into the following categories:

- Operator Panels
- Machine control panels
- Machine Pushbutton Panel
- Handheld Unit/Mini handheld devices
- Further operator components

An overview of the most important documents, entries and links to SINUMERIK is provided at SINUMERIK Overview - Topic Page (https://support.industry.siemens.com/cs/document/109766201/sinumerik-an-overview-of-the-most-important-documents-and-links?dti=0&lc=en-WW).

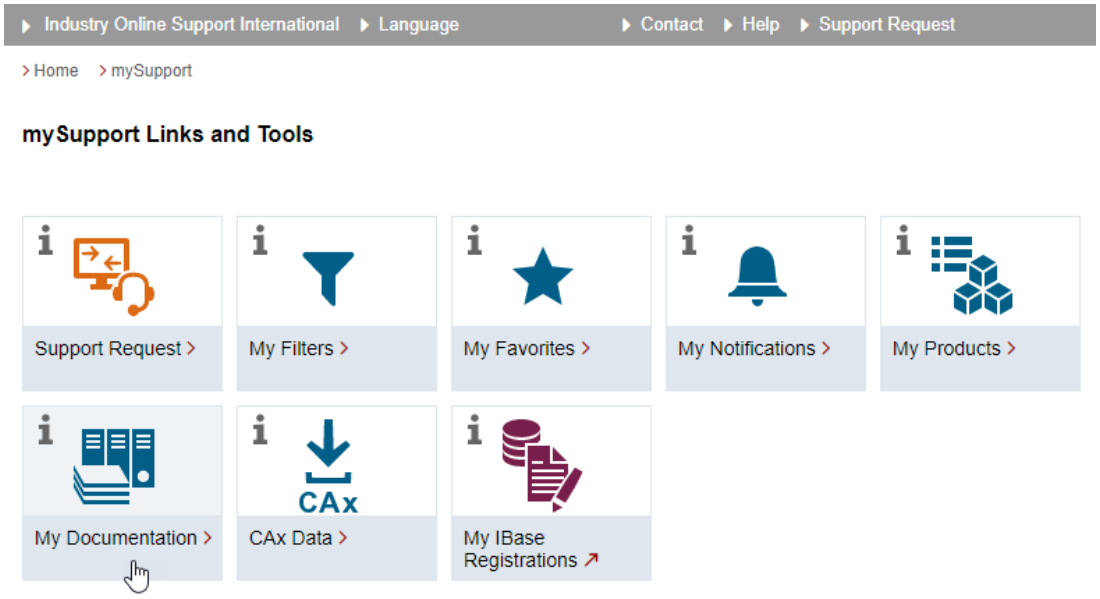
## 1.4 Feedback on the technical documentation

If you have any questions, suggestions or corrections regarding the technical documentation which is published in the Siemens Industry Online Support, use the link "Send feedback" link which appears at the end of the entry.

## 1.5 mySupport documentation

With the "mySupport documentation" web-based system you can compile your own individual documentation based on Siemens content, and adapt it for your own machine documentation.

To start the application, click on the "My Documentation" tile on the mySupport homepage (https://support.industry.siemens.com/cs/ww/en/my):




The configured manual can be exported in RTF, PDF or XML format.

**Note**

Siemens content that supports the mySupport documentation application can be identified by the presence of the "Configure" link.

# 1.6 Service and Support

## Product support

You can find more information about products on the internet:

Product support (https://support.industry.siemens.com/cs/ww/en/)

The following is provided at this address:

- Up-to-date product information (product announcements)
- FAQs (frequently asked questions)
- Manuals
- Downloads
- Newsletters with the latest information about your products
- Global forum for information and best practice sharing between users and specialists
- Local contact persons via our Contacts at Siemens database (→ "Contact")
- Information about field services, repairs, spare parts, and much more (→ "Field Service")

## Technical support

Country-specific telephone numbers for technical support are provided on the internet at address (https://support.industry.siemens.com/cs/ww/en/sc/4868) in the "Contact" area.

If you have any technical questions, please use the online form in the "Support Request" area.

## Training

You can find information on SITRAIN at the following address (https://www.siemens.com/sitrain).
SITRAIN offers training courses for automation and drives products, systems and solutions from Siemens.

## Siemens support on the go

With the award-winning "Siemens Industry Online Support" app, you can access more than 300,000 documents for Siemens Industry products – any time and from anywhere. The app can support you in areas including:

- Resolving problems when implementing a project
- Troubleshooting when faults develop
- Expanding a system or planning a new system

Furthermore, you have access to the Technical Forum and other articles from our experts:

- FAQs
- Application examples
- Manuals
- Certificates
- Product announcements and much more

The "Siemens Industry Online Support" app is available for Apple iOS and Android.

### Data matrix code on the nameplate

The data matrix code on the nameplate contains the specific device data. This code can be read with a smartphone and technical information about the device displayed via the "Industry Online Support" mobile app.

# 1.7 Important product information

## Using OpenSSL

This product can contain the following software:

- Software developed by the OpenSSL project for use in the OpenSSL toolkit
- Cryptographic software created by Eric Young.
- Software developed by Eric Young

You can find more information on the internet:

- OpenSSL (https://www.openssl.org)
- Cryptsoft (https://www.cryptsoft.com)

## Compliance with the General Data Protection Regulation

Siemens observes standard data protection principles, in particular the data minimization rules (privacy by design).

For this product, this means:

The product does not process or store any personal data, only technical function data (e.g. time stamps). If the user links this data with other data (e.g. shift plans) or if he/she stores person-related data on the same data medium (e.g. hard disk), thus personalizing this data, he/she must ensure compliance with the applicable data protection stipulations.

# Fundamental safety instructions 2

## 2.1 General safety instructions

**⚠ WARNING**

**Danger to life if the safety instructions and residual risks are not observed**

If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur.

- Observe the safety instructions given in the hardware documentation.
- Consider the residual risks for the risk evaluation.

**⚠ WARNING**

**Malfunctions of the machine as a result of incorrect or changed parameter settings**

As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death.

- Protect the parameterization against unauthorized access.
- Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.

## 2.2 Warranty and liability for application examples

Application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks.

As the user you yourself are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

## 2.3 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit
https://www.siemens.com/industrialsecurity (https://www.siemens.com/industrialsecurity).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under
https://www.siemens.com/industrialsecurity (https://new.siemens.com/global/en/products/services/cert.html#Subscriptions).

Further information is provided on the Internet:

Industrial Security Configuration Manual (https://support.industry.siemens.com/cs/ww/en/view/108862708)

**⚠ WARNING**

**Unsafe operating states resulting from software manipulation**

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.
- On completion of commissioning, check all security-related settings.

# Explanation of the alarms 3

## 3.1 Structure of alarm descriptions

### Overview of alarms

You can find descriptions of the alarms in chapters:

- NC alarms (Page 27)
- Cycle alarms (Page 575)
- HMI alarms (Page 755)
- SINAMICS alarms (Page 765)
- I/O alarms (Page 1407)
- PLC alarms (Page 1419)

In each chapter, the alarm descriptions are sorted according to ascending alarm number. There are gaps in the sequence.

### Structure of the SINUMERIK alarm descriptions

The descriptions of the alarms have the following layout:

---

**<Alarm No.> <Alarm text>**

**Explanation:**

**Reaction:**

**Help:**

**Continue program:**

Each alarm is uniquely identified using the <Alarm number> and the <Alarm text>.

The description of the alarms is classified according to the following categories:

- Explanation
- Response
  See Chapter: System reactions to SINUMERIK alarms (Page 1447)
- Remedy
  See Chapter:Cancel criteria for alarms (Page 1449)
- Program continuation
  See Chapter: Cancel criteria for alarms (Page 1449)

## SINAMICS alarms

The faults and states detected by the individual components of the drive system are flagged using alarms. These SINAMICS alarms are categorized into faults and alarms.

The differences between faults and alarms are as follows:

| | |
|---|---|
| **Fault** | What happens when a fault occurs?<br>• The appropriate fault response is initiated.<br>• Status signal ZSW1.3 is set.<br>• The fault is entered in the fault buffer.<br>How are faults resolved?<br>• Remove the cause of the fault<br>• Acknowledge the fault |
| **Alarm** | What happens when an alarm occurs?<br>• Status signal ZSW1.7 is set.<br>• The alarm is entered into the alarm buffer.<br>How are alarms resolved?<br>• Alarms acknowledge themselves. When the cause has been removed, the alarms reset themselves automatically. |

## Structure of SINAMICS alarm descriptions

The descriptions of the SINAMICS alarms have the following layout:

**<Alarm No.> <Location data> <Alarm text>**

**Message value:**

**Drive object:**

**Reaction:**

**Acknowledgment:**

**Cause:**

**Help:**

Each alarm is uniquely identified using the <Alarm number> and the <Alarm text>.

The <Location data> is optional display information. Location data can include:

- Axis name and drive number
  OR
- Bus and slave number of the PROFINET or PROFIBUS DP component affected

The place holder <Location data> is kept in the alarm description for this optional information.

The description of the SINAMICS alarms is classified according to the following categories:

- Message value
  The information provided under the message value tells you about the composition of the fault/alarm value.
  Example:
  Message value: Component number: %1, cause: %2
  This fault value or alarm value contains information about the component number and cause. The entries %1 and %2 are place holders, which are filled appropriately in online operation with the commissioning software.
- Drive object
  For each alarm (fault/alarm) it is specified in which drive object this message can be found. A message can belong to either one, several or all drive objects.
- Response
  Specifies the default response in the event of a fault.
- Acknowledgment
  Specifies the default method of acknowledging the fault/alarm after the cause has been removed.
- Cause
  Describes the possible causes. For the cause of the alarm, the fault/alarm value is essentially prepared in text form.
- Remedy
  Describes the possible remedies.

A detailed description of the fault responses and acknowledgment can be found in Chapter: System reactions for SINAMICS alarms (Page 1450).

## References

You can find additional information about SINAMICS messages in the following manual:

SINAMICS S120/S150 List Manual.

**Syntax:**

The syntax of the parameter messages can be derived as follows:

In the diagnostic manual, the messages initiated by SINAMICS always start with a "2" followed by a 5-digit number.

In the SINAMICS S120/S150 List Manual, the messages begin with a letter, followed by a 5-digit number:

- "F" (Fault)
- "A" (Alarm)
- "N" (No Report)
- "C" (Safety message)

If you require further information on the alarms, you can find a description in the SINAMICS List Manual by replacing the first number "2" of the message number with the letter "F", "A", "N", or "C".

**Example:**

You can find a description of alarm **207016** in the SINAMICS S120/S150 List Manual under fault **F07016**.

You can find a description of alarm **201330** in the SINAMICS S120/S150 List Manual under fault **A01330**.

## Synchronization of time and date

**Note**

**Synchronization of time**

The SINAMICS drives have no real-time clock. The time of day and date of the SINAMICS clock are synchronized in a 10-second cycle with the SINUMERIK real-time clock.

The result is that after a change of the date and/or the clock of the SINUMERIK real-time clock up to 10 seconds collapses until these changes have been synchronized with the SINAMICS drives.

If in this up period of up to 10 seconds SINAMICS messages occur (number range 200000 - 299999), this SINAMICS messages still receive the outdated date/time stamp. The SINUMERIK alarms (alarm numbers < 200000 and > 300000) triggered as a result of the SINAMICS messages, on the other hand, already receive the new date/ time stamp.

## 3.2 Alarm number ranges

The following tables give an overview of all the reserved number ranges for alarms/messages.

**Note**

In the alarm lists of this Diagnostics Manual, only those number ranges are represented which are valid for the specified product.

Table 3-1 System error

| | | |
|---|---|---|
| 001.000 - 001.199 | System error | The following alarms are system errors:<br>If a system error occurs, contact the Technical Support. |

Table 3-2 NC alarms/messages

| | | |
|---|---|---|
| 000.000 - 009.999 | General alarms | |
| 010.000 - 019. 999 | Channel alarms | |
| 020.000 - 029.999 | Axis/spindle alarms | |
| | 027.000 - 027.999 | Alarms for Safety Integrated |
| 030.000 - 099.999 | Functional alarms | |
| | 040.000 - 059.999 | Reserved |
| | 060.000 - 064.999 | Siemens cycle alarms |
| | 065.000 - 069.999 | User cycle alarms |
| | 070.000 - 079.999 | Compile cycle alarms - Manufacturer and OEM |
| | 080.000 - 084.999 | Message texts for SIEMENS cycles |
| | 082.000 - 082.999 | Message texts for ShopMill and CMT cycles |
| | 083.000 - 084.999 | Message texts for measuring cycles |
| | 085.000 - 089.999 | Message texts for user cycles |
| | 090.000 - 099.999 | Reserved |

Table 3-3 HMI alarms/messages

| | | |
|---|---|---|
| 100.000 - 139.999 | System | |
| | 100.000 - 100.999 | Basic system |
| | 101.000 - 101.999 | Diagnostics |
| | 102.000 - 100.999 | Services |
| | 103.000 - 103.999 | Machine |
| | 104.000 - 104.999 | Parameter |
| | 105.000 - 105.999 | Programming |
| | 106.000 - 106.999 | Reserved |
| | 107.000 - 107.999 | NCU |
| | 108.000 -108.999 | HiGraph |
| | 109.000 - 109.999 | Distributed systems (M : N) |
| | 110.000 - 110.999 | Cycles |
| | 113.000 - 113.999 | Wizard (HMI Embedded) |
| | 114 000 - 114.999 | HT 6 |
| | 119.000 - 119.999 | OEM |
| | 120.000 - 129.999 | HMI Advanced |
| | 130.000 - 139-999 | HMI Advanced OEM |
| 140.000 - 199.999 | Reserved | |
| | 142.000 - 142.099 | Remote diagnostics, RCS host/viewer<br>Descriptions for the alarms can be found in the SINUMERIK Integrate for production product documentation. |
| | 148.500 - 148.999 | SINUMERIK Integrate for production<br>Descriptions for the alarms can be found in the SINUMERIK Integrate for production product documentation. |
| | 149.000 - 149.999 | |
| | 150.000 - 159.999 | SINUMERIK Operate |
| | 160.000 - 169.999 | SINUMERIK Operate OEM |

Table 3-4 SINAMICS alarms (faults/alarms)

| | | |
|---|---|---|
| 201.000 - 203.999 | Control Unit, closed-loop control | |
| | 201.600 - 201.799 | Messages from the "Safety Integrated" function integrated in the drive |
| 204.000 - 204.999 | Reserved | |
| 205.000 -205.999 | Power unit | |
| 206.000 - 206.899 | Infeed | |
| 206.900 - 206.999 | Brake control module | |
| 207.000 - 207.999 | Drive | |
| 208.000 - 208.999 | Option Board | |
| 209.000 - 212.999 | Reserved | |

| | |
|---|---|
| 213.000 - 213.010 | Licensing |
| 213.011 - 219.999 | Reserved |
| 213.000 - 213.020 | Licensing |
| 213.021 - 213.099 | Reserved |
| 213.100 - 213.102 | Know-how protection |
| 213.103 - 219.999 | Reserved |
| 220.000 - 229.999 | OEM |
| 230.000 - 230.999 | DRIVE-CLiQ component power unit |
| 231.000 - 231.999 | DRIVE-CLiQ component encoder 1 |
| 232.000 - 232.999 | DRIVE-CLiQ component encoder 2<br>**Note:**<br>Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control. |
| 233.000 - 233.999 | DRIVE-CLiQ component encoder 3<br>**Note:**<br>Faults that occur are automatically output as an alarm if the encoder is parameterized as a direct measuring system and does not intervene in the motor control. |
| 234.000 - 234.999 | Voltage Sensing Module (VSM) |
| 235.000 - 235.199 | Terminal Module 54F (TM54F) |
| 235.200 - 235.999 | Terminal Module 31 (TM31) |
| 236.000 - 236.999 | DRIVE-CLiQ Hub Module |
| | |
| 240.000 - 240.999 | Controller Extension |
| 241.000 - 248.999 | Reserved |
| 249.000 - 249.999 | SINAMICS GM/SM/GL |
| 250.000 - 250.499 | Communication Board (COMM BOARD) |
| 250.500 - 259.999 | OEM Siemens |
| 260.000 - 265.535 | SINAMICS DC MASTER (DC closed-loop control) |

Table 3-5 I/O alarms

| | |
|---|---|
| 300.000 - 399.999 | I/O alarms |

Table 3-6 PLC alarms/messages

| | | |
|---|---|---|
| 400.000 - 499.999 | General PLC alarms | |
| 500.000 - 599.999 | Channel alarms | The PLC alarms in the range 500.000 - 799.999 are configured and described by the machine manufacturer |
| 600.000 - 699.999 | Axis/spindle alarms | |
| 700.000 - 799.999 | User area | |
| 800.000 - 899.999 | Reserved | |
| 900.000 - 999.999 | Reserved | |

# NC alarms

# 4

## 0 No (more) alarm(s) present

**Explanation:** If the communication (variable service) requests more alarms than currently available in the alarm list, this alarm is communicated as an end-of-file indication.

**Reaction:** No alarm reaction.

**Remedy:** --

**Programm continuation:** Internal

## 1000 System error %1 %2 %3 %4

**Parameters:** %1 = System error number
%2 = generic parameter
%3 = generic parameter
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1001 System error %1 %2 %3 %4

**Parameters:** %1 = System error number
%2 = generic parameter
%3 = generic parameter
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Mode group not ready.
Channel not ready.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1002 System error %1 %2 %3 %4

**Parameters:** %1 = System error number
%2 = Reference to error location
%3 = generic parameter
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 1004 Alarm reaction to NCK alarm incorrectly configured

**Parameters:** %1 = Incorrect alarm number

**Explanation:** The alarm reaction configured by the operating system or the compile cycles manufacturer is incorrect.

**Reaction:** NC not ready.
Channel not ready.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Log files, which you generate with the key combination <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1005 Operating system error %1 parameter %2 %3 %4

**Parameters:** %1 = Operating system error number
%2 = Operating system error parameter 1
%3 = Operating system error parameter 2
%4 = Operating system error parameter 3

**Explanation:** This alarm indicates that the operating system has detected a serious error.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1010 [Channel %1: ] System error %2 action '%3<ALNX>'

**Parameters:** %1 = Channel number
%2 = System error number
%3 = Action number/action name

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** NC not ready.
Interpreter stop
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1011 [Channel %1: ] %3 %4 system error %2

**Parameters:** %1 = Channel number
%2 = System error number
%3 = Optional parameter: Block number, label
%4 = Optional parameter: Action number, ....

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 1012 [Channel %1: ] System error %2 %3 %4

**Parameters:** %1 = Channel number
%2 = System error number
%3 = Parameter1
%4 = Parameter2

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 1013 [Channel %1: ] System error %2 %3 %4

**Parameters:** %1 = Channel number
%2 = System error number
%3 = generic parameter
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 1014 [Channel %1: ] System error %2 %3 %4

**Parameters:** %1 = Channel number
%2 = System error number
%3 = generic parameter
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Mode group not ready.
Local alarm reaction.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1015 [Channel %1: ] Axis %2 system error %3 %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = System error number
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error. Especially with parameter %3 (system error number) = 840001 = Problem with tool management, the identification for the axis is not contained in parameter %2, but instead, further information for the diagnostics (= Status of the data management/magazine no./location no./T no.)

**Reaction:** Local alarm reaction.
Channel not ready.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 1016 [Channel %1: ] Axis %2 system error %3 %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = System error number
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Mode group not ready.
Local alarm reaction.
Channel not ready.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1017 [Channel %1: ] Axis %2 system error %3 %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = System error number
%4 = generic parameter

**Explanation:** With this alarm, internal alarm states are displayed that, in conjunction with the transferred error number, provide information on the cause and location of the error.

**Reaction:** Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 1018 [Channel %1: ] : floating point arithmetic error in task %2 station %3 FPU state %4

**Parameters:** %1 = Channel number
%2 = Task ID
%3 = Station priority
%4 = FPU status

**Explanation:** The floating point unit of the processor has found a computational error.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1019 [Channel %1: ] Floating point arithmetic error at address %3 task %2 FPU state %4

**Parameters:** %1 = Channel number
%2 = Task ID
%3 = Code address of operation that triggered the error
%4 = FPU status

**Explanation:** The floating point unit of the processor has triggered an exception on account of a computational error.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1020 [Channel %1: ] Floating-point arithmetic error in CC %2 addresses %3 task, FPU status %4

**Parameters:** %1 = Channel number
%2 = CC filename
%3 = Code address (absolute + incremental) of the operation causing the error
%4 = FPU status and task ID

**Explanation:** The floating-point unit of the processor has triggered an exception due to an arithmetic error.
The arithmetic error was made in a compile cycle.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 1030 System error in link module error code %1 error type %2

**Parameters:** %1 = Hexadecimal format Link-Error
%2 = Hexadecimal format Link-Error-Type

**Explanation:** This alarm is not a user error. An internal error has occurred in the software of the link module. Two parameters are output with this error for debugging purposes. They provide information about the cause and location of the error.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Log files, which you generate with the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1031 Link module generated an unspecified error %1 NCU %2 %3 %4

**Parameters:** %1 = Hexadecimal format unspecified status in stateOfLinkModules
%2 = NCU number
%3 = Command from link module to NCK
%4 = Status of own link

**Explanation:** This alarm is not a user error.
- 1. If NCU== 0 -> A parameter not equal to zero was not found
- 2. If NCU not equal to zero -> An error which the NC was not able to interpret in the connection to this NCU. The error is output as a number. It is possible that the NCU link module is running a newer software version than the NC.
The other parameters are used for error localization in the NC/LINK-MODUL software.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Log files, which you generate with the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 1160 Assertion failed in %1: %2

**Parameters:** %1 = String (path with program name)
%2 = String (line number)

**Explanation:** This alarm is purely a development alarm and will not appear in a delivered software version. For an OEM customer, this alarm could indicate that an alarm has occurred in the system software. Handling of the 'assertion' allows error conditions leading to this alarm to be defined in the system software during the development phase. After the development phase, this alarm output is no longer active.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** Check the cause of the error in the specified software component at the specified line number.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 2000 PLC sign-of-life monitoring

**Explanation:** The PLC must give a sign of life within a defined period of time (MD10100 $MN_PLC_CYCLIC_TIMEOUT). If this does not occur, the alarm is triggered.
The sign of life is a counter reading on the internal NC/PLC interface which the PLC causes to count up with the 10 ms time alarm. The NCK also tests cyclically whether the counter reading has changed.
The PLC must give a sign of life within a defined period of time. If this does not occur, this alarm is triggered.

**Reaction:** NC not ready.
Local alarm reaction.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Check monitoring time frame in MD10100 $MN_PLC_CYCLIC_TIMEOUT (reference value: 100 ms).
Establish the cause of the error in the PLC, and eliminate it (analysis of the ISTACK. If monitoring has responded with a loop in the user program rather than with a PLC Stop, there is no ISTACK entry).
This alarm is also caused by PLC stop.
(PLC stop with programming tool,
PLC stop by commissioning switch,
PLC stop by alarm)
If none of these cases applies, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 2001 PLC has not started up

**Explanation:** The PLC must give at least 1 sign of life within a period of time defined in MD10120 $MN_PLC_RUNNINGUP_TIMEOUT.
The PLC must give at least 1 sign of life within the defined period of time after Power ON.

**Reaction:** NC not ready.
Local alarm reaction.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Please inform the authorized personnel/service department. The monitoring time in MD10120 $MN_PLC_RUNNINGUP_TIMEOUT must be checked and adapted to the 1st OB1 cycle.
- Determine the cause of error in the PLC (loop or stop in the user program) and eliminate it.
If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 2100 NCK battery warning threshold reached

**Explanation:** The undervoltage monitor of the NCK battery has reached the prewarning threshold.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. The battery must be replaced within the next 6 weeks (see the Equipment Manual) in order to prevent data being lost from the buffered memory

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 2101 NCK battery alarm

**Explanation:** The undervoltage monitoring of the NCK battery has responded during cyclic operation.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Replace the battery in the NC module, without interrupting the power supply (see the Equipment Manual) in order to prevent data from being lost from the buffered memory

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 2102 NCK battery alarm

**Explanation:** The undervoltage monitoring of the NCK battery was detected during system power-up.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Replace the battery in the NC module (see the Equipment Manual).
The system must then be reinitialized, because it must be assumed that data in the buffer memory was lost during the last power-off phase as a result of the excessively low supply voltage (see the Commissioning Manual).

**Programm continuation:** Switch control OFF - ON.

## 2110 NCK temperature alarm

**Explanation:** The temperature sensor has reached the response threshold.

**Reaction:** Alarm display.

**Remedy:** In order to reset the sensor, the temperature must be reduced by 7 degrees C.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 2120 NCK fan alarm type %1

**Explanation:** The fan speed monitoring at the NC module has responded.
If "Type 1" is output, then it involves a module that can be specifically shut down in order to prevent mechanical destruction (see the Equipment Manual).

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. The module with the fan and the NCK battery must be replaced in order to prevent the NC module from being mechanically destroyed.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 2130 Note: The standard password is still active for at least one of the access levels: manufacturer, service or user. %1

**Parameters:** %1 = Access level(s)

**Explanation:** For reasons of IT security do not use any standard passwords on the machine.
Please assign individual passwords to protect the machines from unauthorized modifications.

**Reaction:** Alarm display.

**Remedy:** Change the password for the corresponding access level (-> "Setup area" -> "Password" -> "Change password").

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 2140 The actual service switch position forces the SRAM to be cleared at the next Power On (general reset active)

**Explanation:** The initialization switch is currently set to overall reset. This means that the module's SRAM is deleted with the next module reset. The NC data memory is cleared during this operation.

**Reaction:** NC not ready.
Interface signals are set.
Alarm display.

**Remedy:** Reset the initialization switch to zero.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 2192 No NCU link module exists, MD %1 reset

**Parameters:** %1 = String: MD identifier

**Explanation:** An attempt was made to activate the NCU link functionality but the hardware is not available. The MD was reset. Only occurs with the NCU link system

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Install the hardware module and activate the function again in the MD.

**Programm continuation:** Switch control OFF - ON.

## 2195 [Channel %1: ] Axis %2 high-speed punching/nibbling not possible via link

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** An attempt was made to activate high-speed nibbling or punching for an axis programmed on a different NCU than the drive.
High-speed nibbling and punching is supported on one NCU only.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Activate high-speed nibbling and punching on one NCU only.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 2196 Link axis active andMD18720 $MN_MM_SERVO_FIFO_SIZE != %1

**Parameters:** %1 = required value in MD18720 $MN_MM_SERVO_FIFO_SIZE

**Explanation:** Occurs only with an NCU link system.
- Possible causes of the fault:
- At least one axis is to be distributed via NCU link, then the MD18720 $MN_MM_SERVO_FIFO_SIZE must be 3 or 4.
- The IPO cycle of this NCU is faster than the link communication cycle, then the MD18720 $MN_MM_SERVO_FIFO_SIZE must be set to the value proposed in the alarm.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** MD18720 $MN_MM_SERVO_FIFO_SIZE must be set to the value proposed in the alarm.

**Programm continuation:** Switch control OFF - ON.

## 2200 [Channel %1: ] Fast punching/nibbling not possible in several channels

**Parameters:** %1 = Channel number

**Explanation:** An attempt was made to activate fast nibbling or punching in a channel while it has already been active in another channel. Fast punching and nibbling is only possible simultaneously in the same channel.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Fast nibbling and punching simultaneously in 1 channel only.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 2900 Reboot is delayed

**Explanation:** This alarm indicates a delayed reboot.
This alarm only occurs when reboot was carried out by the HMI and MD10088 $MN_REBOOT_DELAY_TIME was set greater than zero.
The alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK Bit 20.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** See MD10088 $MN_REBOOT_DELAY_TIME and MD11410 $MN_SUPPRESS_ALARM_MASK

**Programm continuation:** Switch control OFF - ON.

## 3000 Emergency stop

**Explanation:** The EMERGENCY STOP request is applied to the NCK/PLC interface DB10 DBX56.1 (Emergency stop).

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** Please inform the authorized personnel/service department. Remove the cause of the emergency stop and acknowledge the emergency stop via the PLC/NCK interface DB10 DBX56.2 (emergency stop acknowledgment).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 3001 Internal emergency stop

**Explanation:** This alarm is not displayed.

**Reaction:** NC not ready.
Local alarm reaction.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
NC Stop on alarm.

**Remedy:** No remedy required

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 4000 [Channel %1: ] Machine data %2[%3] has gap in axis assignment

**Parameters:** %1 = Channel number
%2 = String: MD identifier

**Explanation:** The assignment of a machine axis to a channel by the MD20070 $MC_AXCONF_MACHAX_USED must be contiguous. At system power-up (Power On) gaps are detected and displayed as an alarm.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. The entries for the indices for the machine axes used in the channels must be contiguous in table MD20070 $MC_AXCONF_MACHAX_USED. Channel axis gaps must be enabled via MD11640$MN_ENABLE_CHAN_AX_GAP.

**Programm continuation:** Switch control OFF - ON.

## 4001 [Channel %1: ] Axis %2 defined for more than one channel via machine data %3

**Parameters:** %1 = Channel number

%2 = Index: Machine axis number

%3 = String: MD identifier

**Explanation:** In the channel-specific MD20070 $MC_AXCONF_MACHAX_USED [CHn, AXm]=x (n ... channel number, m ... channel axis number, x ... machine axis number), several channels were assigned to a machine axis without having a master channel defined for this axis.

There is usually not much point in assigning a machine axis to several channels. In exceptional cases, multiple assignment can be performed if a master channel is defined for this axis. The channel assignment can be performed in accordance with the machining requirements in the NC part program.

See also MD

**Reaction:** NC not ready.

Mode group not ready, also effective for single axes.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. In the axis-specific MD30550 $MA_AXCONF_ASSIGN_MASTER_CHAN [AXm]=n (m ... machine axis number, n ... channel number), a master axis was set for the axes that are supposed to be alternately assigned by the NC program to one or the other channel.

**Programm continuation:** Switch control OFF - ON.

## 4002 [Channel %1: ] Machine data %2[%3] assigns an axis not defined in channel

**Parameters:** %1 = Channel number

%2 = String: MD identifier

%3 = Index: MD array index

**Explanation:** Only axes that have been activated in the channel by MD20070 $MC_AXCONF_MACHAX_USED [kx]=m may be declared as geometry axes, transformation axes or orientation axes in MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB [gx]=k. This also applies to MD22420 $MC_FGROUP_DEFAULT_AXES (gx: Geometry axis index, kx: Channel axis index, k: Channel axis no., m: Machine axis no.).

Assignment of geometry axes to channel axes

MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB (includes channel axis no. k):

- Geometry axis index: 0, 1st channel: 1, 2nd channel: 1
- Geometry axis index: 1, 1st channel: 2, 2nd channel: 0
- Geometry axis index: 2, 1st channel: 3, 2nd channel: 3

MD20070 $MC_AXCONF_MACHAX_USED (includes machine axis no. m):

- Channel axis index: 0, 1st channel: 1, 2nd channel: 4
- Channel axis index: 1, 1st channel: 2, 2nd channel: 5
- Channel axis index: 2, 1st channel: 3, 2nd channel: 6
- Channel axis index: 3, 1st channel: 7, 2nd channel: 0
- Channel axis index: 4, 1st channel: 8, 2nd channel: 0
- Channel axis index: 5, 1st channel: 0, 2nd channel: 0
- Channel axis index: 6, 1st channel: 0, 2nd channel: 0
- Channel axis index: 7, 1st channel: 0, 2nd channel: 0

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Correct
- MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB
- MD24... $MC_TRAFO_AXES_IN_...
- MD24... $MC_TRAFO_GEOAX_ASSIGN_TAB_...
- MD22420 $MC_FGROUP_DEFAULT_AXES
- and/or MD20070 $MC_AXCONF_MACHAX_USED.

**Programm continuation:** Switch control OFF - ON.

## 4003 Axis %1 incorrect assignment of master channel in machine data %2

**Parameters:** %1 = Axis
%2 = String: MD identifier

**Explanation:** For some applications, it is useful to operate an axis in several channels (C axis or spindle on single spindle or double carriage machines).
The machine axes which are defined through the channel-specific MD20070 $MC_AXCONF_MACHAX_USED in several channels, must be assigned to a master channel with the axis-specific MD30550 $MA_AXCONF_ASSIGN_MASTER_CHAN.
For axes that are activated in one channel only, the number of this channel or zero must be entered as a master channel.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Modify MD 20070: $MC_AXCONF_MACHAX_USED and/or MD30550: $MA_AXCONF_ASSIGN_MASTER_CHAN.

**Programm continuation:** Switch control OFF - ON.

## 4004 [Channel %1: ] Machine data %2 axis %3 defined repeatedly as geometry axis

**Parameters:** %1 = Channel number
%2 = String: MD identifier
%3 = Axis index

**Explanation:** An axis may only be defined once as a geometry axis.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB.

**Programm continuation:** Switch control OFF - ON.

## 4005 [Channel %1: ] Maximum number of axes is exceeded. Limit %2

**Parameters:** %1 = Channel number

%2 = Upper limit for the number of axes in the channel

**Explanation:** MD20070 $MC_AXCONF_MACHAX_USED defines which machine axes can be used in this channel. This also defines the number of active axes in the channel. This upper limit was exceeded. Note: The channel axis gaps may cause certain indices of MD20070 $MC_AXCONF_MACHAX_USED to remain unused, and therefore do not count as active channel axes.

Example:

- CHANDATA(2)
- $MC_AXCONF_MACHAX_USED[0] = 7
- $MC_AXCONF_MACHAX_USED[1] = 8
- $MC_AXCONF_MACHAX_USED[2] = 0
- $MC_AXCONF_MACHAX_USED[3] = 3
- $MC_AXCONF_MACHAX_USED[4] = 2
- $MC_AXCONF_MACHAX_USED[5] = 0
- $MC_AXCONF_MACHAX_USED[6] = 1
- $MC_AXCONF_MACHAX_USED[7] = 0

This channel uses the five machine axes 1, 2, 3, 8, 7, i.e. it has 5 active channel axes.

**Reaction:** NC not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Modify MD20070 $MC_AXCONF_MACHAX_USED.

**Programm continuation:** Switch control OFF - ON.

## 4006 The maximum number of activatable axes has been exceeded (limit %1)

**Parameters:** %1 = Number of axes

**Explanation:** The sum of the two option data $ON_NUM_AXES_IN_SYSTEM and $ON_NUM_ADD_AXES_IN_SYSTEM must not exceed the maximum number of axes in the system.

**Reaction:** NC not ready.

Mode group not ready, also effective for single axes.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personel/service department. The sum of the two option data $ON_NUM_AXES_IN_SYSTEM and $ON_NUM_ADD_AXES_IN_SYSTEM must not exceed the maximum number of axes (dependent on configuration).

**Programm continuation:** Switch control OFF - ON.

## 4007 Axis %1 incorrect assignment of master NCU in machine data %2

**Parameters:** %1 = Axis

%2 = String: MD identifier

**Explanation:** Machine axes which can be activated on several NCKs through MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB must be assigned to a master NCU in MD30554 $MA_AXCONF_ASSIGN_MASTER_NCU. For axes that are activated on only one NCU, the number of this NCU or 0 must be entered as master NCU. An assignment can only be made with MD30554 $MA_AXCONF_ASSIGN_MASTER_NCU if the machine axis is also addressed via a channel MD20070 ($MC_AXCONF_MACHAX_USED+ MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB).

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct MD30554 $MA_AXCONF_ASSIGN_MASTER_NCU and/or MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB.

**Programm continuation:** Switch control OFF - ON.

## 4009 Machine data %1%2 contains an illegal value.

**Parameters:** %1 = String: MD identifier
%2 = String: possibly further specification

**Explanation:** A value has been entered which lies above or below the value range or a limit value of a variable, a machine data, or a function.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Enter correct values.

**Programm continuation:** Switch control OFF - ON.

## 4010 Invalid identifier used in machine data %1[%2]

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array index

**Explanation:** When determining a name in the NCK tables (arrays) for: machine axes, Euler angles, direction vectors, normal vectors, interpolation parameters and intermediate point coordinates, one of the following syntax rules for the identifier to be entered has been violated:
- The identifier must be an NC address letter (A, B, C, I, J, K, Q, U, V, W, X, Y, Z), possibly with a numerical extension (1-99)
- The identifier must begin with any 2 capital letters but not with $ (reserved for system variables).
- The identifier must not be a keyword of the NC language (e.g. POSA).

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Enter the identifier for user-defined names with correct syntax in the displayed MD.
- Machine axes: MD10000 $MN_AXCONF_MACHAX_NAME_TAB
- Euler angles: MD10620 $MN_EULER_ANGLE_NAME_TAB
- Normal vectors: MD10630 $MN_NORMAL_VECTOR_NAME_TAB
- Direction vectors: MD10640 $MN_DIR_VECTOR_NAME_TAB
- Interpolation parameters: MD10650 $MN_IPO_PARAM_NAME_TAB
- Intermediate point coordinates: MD10660 $MN_INTERMEDIATE_POINT_NAME_TAB

**Programm continuation:** Switch control OFF - ON.

## 4011 [Channel %1: ] Invalid identifier used in machine data %2[%3]

**Parameters:** %1 = Channel number
%2 = String: MD identifier
%3 = Index: MD array index

**Explanation:** When defining names in the channel-specific tables for geometry axes and channel axes, one of the following syntax rules for the identifier to be entered has been violated:
- The identifier must be an NC address letter (A, B, C, I, J, K, U, V, W, X, Y, Z), possibly with a numerical extension.
- The identifier must begin with any 2 capital letters but not with $ (reserved for system variables).
- The identifier must not be a keyword of the NC language (e.g. SPOS).

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Enter the identifier for user-defined names with correct syntax in the displayed MD
- Geometry axes: MD20060 $MC_AXCONF_GEOAX_NAME_TAB
- Channel axes: MD20080 $MC_AXCONF_CHANAX_NAME_TAB

**Programm continuation:** Switch control OFF - ON.

## 4012 Invalid identifier used in machine data %1[%2]

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array

**Explanation:** The selected identifier is invalid. Valid identifiers are:
- AX1 - AXn: Machine axis identifiers
- N1AX1 - NnAXm: Link axis identifiers (NCU + machine axis), only for 'NCU-Link' expansion level!
- C1S1 - CnSm: Container axis identifiers (container + container location), only for 'Axis container' expansion level!

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Use a correct identifier.

**Programm continuation:** Switch control OFF - ON.

## 4013 Invalid NCU link configuration by machine data %1 = %2 , on NCU_1 = %3

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array
%3 = MD value of master NCU

**Explanation:** The link module configuration detected on the local NCU is different from the master NCU of the NCU cluster. The link module configuration defines the system clock time, the communication baudrate and the maximum number of message transfer retries.
The following machine data are used for this purpose:
- SYSCLOCK_SAMPL_TIME_RATIO,
- IPO_SYSCLOCK_TIME_RATIO,
- LINK_RETRY_CTR,
- LINK_BAUDRATE_SWITCH,
- SYSCLOCK_CYCLE_TIME

The values of these machine data must be the same on all NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Set the machine data required for the link module configuration to the same values on all NCUs of the cluster.

**Programm continuation:** Switch control OFF - ON.

## 4014 Axis %1 defined several times in %2

**Parameters:** %1 = String: MD identifier
%2 = String: Check and, if necessary, correct the following machine data with reference to the data sheet:

**Explanation:** An axis was assigned several times.
The axis can be:
- A machine axis
- A link axis
- An axis in a container location

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Define a correct, unique axis assignment.

**Programm continuation:** Switch control OFF - ON.

## 4015 Axis container %1, location %2, location %3 mixed spindle and axis

**Parameters:** %1 = Axis container number
%2 = Axis container location
%3 = Axis container location

**Explanation:** An axis container can contain either spindles only (35000 $MA_SPIND_ASSIGN_TO_MACHAX != 0) or axes only (35000 $MA_SPIND_ASSIGN_TO_MACHAX == 0). Mixed operation is not possible. However, spindles can run in axis mode.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Machine data 35000 $MA_SPIND_ASSIGN_TO_MACHAX must be either != 0 or == 0 for all axes/spindles in an axis container.

**Programm continuation:** Switch control OFF - ON.

## 4016 Axis %1 already used by NCU %2

**Parameters:** %1 = Machine axis index
%2 = NCU number

**Explanation:** An attempt was made to apply setpoints to one axis from several NCUs. Only occurs with the NCU link system.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Define a correct, unique axis assignment.

**Programm continuation:** Switch control OFF - ON.

## 4017 Axis container %1, location %2 already used by NCU %3

**Parameters:** %1 = Axis container number
%2 = Axis container location
%3 = NCU number

**Explanation:** A multiple reference to the axis container location has been made via the logical axis layer (MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB). With the NCU link, the multiple reference may also have been made by another NCU in the NCU group.
Example: Container1 location1 was incorrectly referenced twice
- $MN_AXCONF_LOGIC_MACHAX_TAB[0] = CT1_SL1
- $MN_AXCONF_LOGIC_MACHAX_TAB[6] = CT1_SL1

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Assign the container locations correctly and completely. Check the machine data MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB for the logical axis layer assignment.

**Programm continuation:** Switch control OFF - ON.

## 4018 Axis container %1, location %2 not used by any channel

**Parameters:** %1 = Axis container number
%2 = Axis container location

**Explanation:** The container location is not referenced by any channel.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Assign the container locations correctly and completely. Check machine data MD20070 $MC_AXCONF_MACHAX_USED and MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB.

**Programm continuation:** Switch control OFF - ON.

## 4019 [Channel %2: ] Switching axis container %1 in current status %3 of the axis/spindle %4 not permitted.

**Parameters:** %1 = Axis container number
%2 = Channel number
%3 = Current state
%4 = Axis/spindle

**Explanation:** This error only occurs with direct advancing of the container. With direct container advancing, only one channel is allowed to activate the NC language command for advancing the container. In order to ensure this, the other channels must have the reset status and the axes must be stationary.
With NCU link, the above condition applies to all channels of the NCU group.
Current status:
- 1 : Interpolator active for axis-container-axis
- 2: Turning spindle in NCUs various IPO cycle
- 3: New config active
- 4: AXCT axis is active leading axis/spindle
- 5: Measurement active for AXCT axis
- 6: Overlaid motion active for AXCT axis
- 7: AXCT axis is active following axis/spindle
- 8: PLC request active for AXCT axis
- 9: External work offset is active for AXCT axis

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Cancel the program with Reset, and/or bring all other channels in the same way into the Reset state.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4020 Identifier %1 used several times in machine data %2

**Parameters:** %1 = String: Name of identifier
%2 = String: MD identifier

**Explanation:** When determining a name in the NCK tables (arrays) for: machine axes, Euler angles, direction vectors, normal vectors, interpolation parameters and intermediate point coordinates, an identifier has been used that already exists in the control.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Select for the identifier to be entered a character string that is not yet used in the system (max. 15 characters).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 4021 [Channel %1: ] Identifier %2 used several times in machine data %3

**Parameters:** %1 = Channel number
%2 = String: Name of identifier
%3 = String: MD identifier

**Explanation:** To determine the name in the channel-specific tables for geometry axes and channel axes an identifier already existing in the control has been used.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Select for the identifier to be entered a character string that is not yet used in the system (max. 15 characters).

**Programm continuation:** Switch control OFF - ON.

## 4022 [Channel %1: ] Axis %2: axis container %3 switch not allowed: ext. work offset active

**Parameters:** %1 = Channel
%2 = Axis/spindle
%3 = Axis container number

**Explanation:** The axis container switch enable cannot be given because an external work offset is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Cancel the program with Reset. Deselect the external work offset before the axis container is advanced.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4023 Axis container %1 switch not allowed, axis container %2 switch active

**Parameters:** %1 = Axis container
%2 = Axis container

**Explanation:** Only one axis container can be rotated at a time.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Cancel the program with Reset, Synchronize the program sequences (NCUs, channels) so that only one axis container switch is active at any one time.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4024 Invalid axis configuration due to missing axis container machine data

**Parameters:** %1 = NCU number
%2 = Axis container number

**Explanation:** The axis configuration could not be generated due to missing axis container machine data. This error can only occur as a result of a communication error. The communication failure will be indicated separately by further alarms.

**Reaction:** NC not ready.
Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Rectify the existing link communication problems (see other queued alarm messages).

**Programm continuation:** Switch control OFF - ON.

## 4025 [Channel %1: ] Axis %2: axis container %3 switch not allowed: master/slave active.

**Parameters:** %1 = Channel
%2 = Axis/spindle
%3 = Axis container number

**Explanation:** It is not possible to enable axis container switch as a master/slave link is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Cancel program with the RESET key. If required, disconnect the master - slave coupling.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4026 Machine data %1[%2], link axis NC%3_AX%4 not used by any channel

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array
%3 = NCU number
%4 = Machine axis number

**Explanation:** The link axis is not referenced by any channel.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Assign the logical axis layer correctly and completely. Check machine data MD20070 $MC_AXCONF_MACHAX_USED and MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB.

**Programm continuation:** Switch control OFF - ON.

## 4027 NOTICE! MD %1 was also changed for the other axes of axis container %2

**Parameters:** %1 = String: MD identifier
%2 = Axis container number

**Explanation:** Note for the user: The change of the machine data of the axis was also performed for all other axes in the container containing this axis.

**Reaction:** Alarm display.

**Remedy:** None

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4028 Attention! The axial MDs of the axes of the axis containers were matched.

**Explanation:** Note for the user: The machine data of the axes in the container have been aligned.

**Reaction:** Alarm display.

**Remedy:** None

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4029 NOTICE! The axial MDs in axis container %1 will be matched on the next power-up

**Parameters:** %1 = Axis container number

**Explanation:** Note for the user: The machine data of the axes in the axis container will be aligned when the system runs up again. An axis container allows any axes to be exchanged between channels and between NCUs. To prevent conflicts, the axes within the same axis container must have a similar behavior. The first axis in the axis container determines which machine data have to be the same for the other axis in the axis container.

**Reaction:** Alarm display.

**Remedy:** None

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4030 [Channel %1: ] Identifier missing in machine date %2[%3]

**Parameters:** %1 = Channel number
%2 = String: MD identifier
%3 = Index: MD array index

**Explanation:** An axis identifier is expected for the displayed MD in accordance with the axis configuration in the MD20070 $MC_AXCONF_MACHAX_USED and MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Check axis configuration and enter the missing identifier into the MD or, should the axis not exist, specify for this channel axis the machine axis 0 in the channel-specific MD20070 $MC_AXCONF_MACHAX_USED. If this concerns a geometry axis that is not to be used (this applies only for 2-axis machining, e.g. on turning machines), then channel axis 0 must be entered additionally in the channel-specific MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB.

**Programm continuation:** Switch control OFF - ON.

## 4031 [Channel %1: ] Link axis %2 defined for more than one channel in machine data %3

**Parameters:** %1 = Channel number
%2 = Index: Axis number for logical axis assignment
%3 = String: MD identifier

**Explanation:** Occurs only with an NCU link system. The specified axis was defined several times or in several channels in MD20070 $MC_AXCONF_MACHAX_USED. If an axis is to be defined in several channels, a master channel must be assigned to the axis with the axial MD30550 $MA_AXCONF_ASSIGN_MASTER_CHAN. This error can only occur with an NCU link axis. The cause of an incorrect definition may also be an NCU link communication failure. The link communication failure must also be indicated by further alarms.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct MD20070 $MC_AXCONF_MACHAX_USED or assign a master channel to the axis.
In the event of a link communication failure, you must first eliminate the causes of these errors.

**Programm continuation:** Switch control OFF - ON.

## 4032 [Channel %1: ] Wrong identifier for facing axis in %2

**Parameters:** %1 = Channel number
%2 = String: MD identifier

**Explanation:** According to the axis configuration in MD20150 $MC_GCODE_RESET_VALUES or MD20100 $MC_DIAMETER_AX_DEF, a facing axis identifier is expected at the specified location.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Add the correct identifier.

**Programm continuation:** Switch control OFF - ON.

## 4033 NOTICE! NCU link communication still not connected

**Explanation:** The NCU link communication could not be established due to other active alarms. This is the case, for example, if during boot-up the system detects and modifies incorrect cycle times (see alarm 4110).

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Analyze and fix the other alarms and start the control again.

**Programm continuation:** Switch control OFF - ON.

## 4034 Local link axis %1 is not allowed for different interpolation cycle time = %2/%3

**Parameters:** %1 = Axis name
%2 = Local interpolation cycle
%3 = Max. interpolation cycle

**Explanation:** Local link axes are only permissible on an NCU if the interpolation cycle set corresponds to the slowest interpolation cycle of the interconnected NCU systems.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Remove local link axis (see MD10000 $MN_AXCONF_MACHAX_NAME_TAB and MD12701$MN_AXCT_AXCONF_ASSIGN_TAB1) or adapt the interpolation cycle (MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO ).

**Programm continuation:** Switch control OFF - ON.

## 4035 Interpolation cycle from NCU%1 = %2 does not match NCU%3 = %4

**Parameters:** %1 = NCU number 1
%2 = MD value of NCU number 1
%3 = NCU number 2 (with slowest IPO cycle)
%4 = MD value of NCU number 2

**Explanation:** Occurs only with an NCU link system. The interpolation cycles of the NCUs specified in the alarm do not match one another. The slowest IPO cycle in interconnected NCU systems must be an integral multiple of all configured IPO cycles.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Set a suitable value in MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO for all interconnected NCUs.

**Programm continuation:** Switch control OFF - ON.

## 4036 Wrong NCU link configuration by MD %1

**Parameters:** %1 = String: MD identifier

**Explanation:** Occurs only with an NCU link system. Different interpolation and position control cycles have been set in the NCUs of the LINK group. This is only allowed if the function FAST-IPO-LINK in MD18780 $MN_MM_NCU_LINK_MASK has been activated.
Caution: For diagnostic purposes, two additional alarm parameters are output together with this alarm.
- 1. Parameter: Position control or IPO cycle time of this NCU
- 2. Parameter: Position control or IPO cycle time of another NCU.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Activate FAST-IPO-LINK function inMD18780 $MN_MM_NCU_LINK_MASK
- Or do not set different position control or IPO cycles on the NCUs (see MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO and MD10060 $MN_POSCTRL_SYSCLOCK_TIME_RATIO).

**Programm continuation:** Switch control OFF - ON.

## 4037 Switching axis container %1 in current state of channel %2 not permitted.

**Parameters:** %1 = Axis container number
%2 = Channel number

**Explanation:** This error occurs only in direct container switching. With direct container switching, only one channel has to activate the NC language command to switch the container. To ensure this, all other channels must be in reset state.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** The program must be canceled with Reset and the work offset deselected before activating the axis container switch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4038 Axis container %1 advance not allowed with current status of NCU %2

**Parameters:** %1 = Axis container number
%2 = NCU number

**Explanation:** This error occurs only in direct container switching. With direct container switching, only one channel has to activate the NC language command to switch the container. To ensure this, all other channels must be in reset state.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** The program must be canceled with Reset and the work offset deselected before activating the axis container switch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4039 [channel %1: ] : Switching axis container %2 not permitted: Channel has no container axes

**Parameters:** %1 = Channel
%2 = Axis container number

**Explanation:** This error occurs only whith direct container switching. The request for direct axis container rotation can be executed only in one channel with container axes.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Program must be stopped with reset. Activate direct container rotation in a channel with container axes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4040 [Channel %1: ] Axis identifier %2 not consistent with machine data %3

**Parameters:** %1 = Channel number
%2 = String: Axis identifier
%3 = String: MD identifier
%4 = There are not enough channel axes entered in the MD displayed.

**Explanation:** The use of the specified axis identifier in the displayed MD is not consistent the channel's axis configuration stated in the MD20070 $MC_AXCONF_MACHAX_USED and MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB.
Only with active "OEM transformation" compile cycle: There are not enough channel axes entered in the MD displayed.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Check and correct the identifier used in the MD10000 $MN_AXCONF_MACHAX_NAME_TAB, MD20080 $MC_AXCONF_CHANAX_NAME_TAB and/or MD20060 $MC_AXCONF_GEOAX_NAME_TAB.
Only with active "OEM transformation" compile cycle: In addition to the specified MD, check and correct MD24110 $MC_TRAFO_AXES_IN_1[n] of the activated OEM transformation according to the function description.

**Programm continuation:** Switch control OFF - ON.

## 4041 The machine data %1 was configured differently on the NCUs

**Parameters:** %1 = Name of machine data

**Explanation:** The specified machine data must be configured on all NCUs, with the same values configured.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Configure the specified machine data uniformly on all NCUs.

**Programm continuation:** Switch control OFF - ON.

## 4042 The NCU-link SDBs could not be loaded

**Explanation:** One possible reason why the NCU-link SDBs did not load is that they are not available. This can occur if the set position control cycle does not match the configuration of the NCU-link (that is the number of set NCUs).

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If the position control cycle does not match the number of set NCUs, adjust the configuration appropriately. See the NCU-link parameter assignment in the "Expansion functions" Function Manual.

**Programm continuation:** Switch control OFF - ON.

## 4045 [Channel %1: ] Conflict between machine data %2 and machine data %3

**Parameters:** %1 = Channel number
%2 = String: MD identifier
%3 = String: MD identifier

**Explanation:** Using the specified machine data %1 leads to a conflict with machine data %2.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the use of the specified machine data.

**Programm continuation:** Switch control OFF - ON.

## 4050 NC code identifier %1 cannot be reconfigured to %2

**Parameters:** %1 = String: Old identifier
%2 = String: New identifier

**Explanation:** Renaming of an NC code was not possible for one of the following reasons:
- The old identifier does not exist
- The new identifier lies in another type range.

NC codes/keywords can be reconfigured via machine data as long as the type range is not abandoned.
Type 1: "real" G codes: G02, G17, G33, G64, ...
Type 2: named G codes: ASPLINE, BRISK, TRANS, ...
Type 3: settable addresses: X, Y, A1, A2, I, J, K, ALF, MEAS, ...

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Correct MD10712 $MN_NC_USER_CODE_CONF_NAME_TAB.
The list must be built up as follows:
Even address: Identifier to be modified.
Following odd address: New identifier
e.g.:
$MN_NC_USER_CODE_CONF_NAME_TAB [10] = "ROT"
$MN_NC_USER_CODE_CONF_NAME_TAB [11] = " "
clears the ROT function from the control

**Programm continuation:** Switch control OFF - ON.

## 4058 System configuration error (%1, %2)

**Parameters:** %1 = File name
%2 = Error code

**Explanation:** An error occurred while reading in and scaling machine data. The meaning of the error code can be interpreted from the following list:
60 = File not found
70 = Error on opening the file
80 = Invalid signature
81 = File corrupt
82 = Incorrect format

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Please notify the authorized service personnel.

**Programm continuation:** Switch control OFF - ON.

## 4059 Error during reading of system configuration (%1, %2)

**Parameters:** %1 = MD number
%2 = Error code

**Explanation:** An error occurred while reading in and scaling machine data.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Please notify the authorized service personnel.

**Programm continuation:** Switch control OFF - ON.

## 4060 Standard machine data loaded (%1, %2, %3, %4)

**Parameters:** %1 = Identifier 1
%2 = Identifier 2
%3 = Identifier 3
%4 = Identifier 4

**Explanation:** The standard MD were loaded because
- a cold start was requested or
- the MD buffer voltage failed or
- an initialization was requested for loading the standard machine data (MD11200 $MN_INIT_MD).

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. After automatically loading the standard MDs, the individual MDs must be entered or loaded in the relevant system.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4062 Backup data loaded

**Explanation:** The user data saved on the compact flash card have been loaded into the SRAM.

**Reaction:** Alarm display.

**Remedy:** Reload the specific machine data again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4065 Buffered memory was restored from backup medium (potential loss of data!)

**Explanation:** The user data of the NC and the retentive data of the PLC are stored in a buffered memory area (SRAM). A possible inconsistency was detected in this buffered memory during ramp-up of the control.
The buffered memory was initialized with the last backup copy. Consequently, changes that have been made since the last update of the backup copy in the buffered memory have been lost.
A possible reason for a data inconsistency could be that the backup time was exceeded. Please note the required ON time of the control specified in your commissioning guide.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Restart the control.

**Programm continuation:** Switch control OFF - ON.

## 4070 Normalizing machine data has been changed

**Explanation:** The control uses internal physical units (mm, degrees, s, for paths, velocities, acceleration, etc.). During programming or data storage, some of these values are input and output using different units (rev./min, m/s², etc.).

The conversion is carried out with the scaling factors that can be entered (system-spefic MD array MD10230 $MN_SCALING_FACTORS_USER_DEF USER_DEF[n] (n ... index number 0 - 10), when the corresponding masking bit is set to "1".

If the masking bit is set to "0", scaling takes place with the internal standard factors.

The following machine data influence the scaling of other MDs:

MD10220: $MN_SCALING_USER_DEF_MASK

MD10230: $MN_SCALING_FACTORS_USER_DEF

MD10240: $MN_SCALING_SYSTEM_IS_METRIC

MD10250: $MN_SCALING_VALUE_INCH

MD30300: $MA_IS_ROT_AX

If these data are modified, the NCK must be powered up again. Only then will the input of dependent data be performed correctly.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

If the alarm has been displayed after downloading an MD file which is consistent within itself, then the download operation must be repeated with a new NC power-up. (The file contains scaling-dependent machine data in front of the scaling factors).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4071 Check the position of the encoder

**Explanation:** A machine data has been changed that affects the value of an absolute encoder position. Please check the postion values.

For absolute encoders:

Encoder adjustment has been changed, the machine reference of the axis position may have changed, check the encoder adjustment.

Other encoders:

The reference point of the axis position has been changed, check the referencing procedure.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4073 Compile cycle functions define machine data number %1 several times

**Parameters:** %1 = Machine data number

**Explanation:** Can only occur when installing compile cycle functions. Two different compile cycle applications use the same machine data number. The machine data which was defined twice is shifted into the free number range above 64000.

**Reaction:** Alarm display.

**Remedy:** The error has no effect on the usability of the machine data and the function of the compile cycle application. To ensure that the compile cycle machine data documentation is correct, you must contact the supplier of the compile cycle. Only the supplier can remedy the error by changing the software.

**Programm continuation:** Switch control OFF - ON.

## 4075 Machine data %1 (and maybe others) not changed due to missing permission level %2

**Parameters:** %1 = String: MD identifier

%2 = Write protection level of the MD

**Explanation:** On executing an MD file or when writing machine data from the part program, an attempt has been made to write an item of data with a higher protection level than the access authorization currently set in the control. The item of data in question has not been written and program execution is continued. This alarm is set only when a write access violation is detected for the first time.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Set the required access level by means of keyswitch or password entry or delete the machine data concerned from the MD file/part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4076 %1 Machine data could not be changed with permission level %2

**Parameters:** %1 = Number of MDs

%2 = Preset access authorization

**Explanation:** On executing a TOA file or when writing data from the part program an attempt has been made to write data with a higher protection level than the access authorization currently set in the control. The data in question have not been written and program execution is continued without hindrance. This alarm is issued on acknowledging alarm 4075. It can be cleared only with Power ON.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Set the required access level by means of keyswitch or password entry or delete the machine data concerned from the MD file/part program.

**Programm continuation:** Switch control OFF - ON.

## 4077 New value %1 of MD %2 not set. Requires %3 KB too much %4 memory.

**Parameters:** %1 = New value of machine data

%2 = Machine data number

%3 = Number of bytes requested that exceeded availability

%4 = Type of memory

**Explanation:** An attempt was made to enter a new value in the specified memory configuration machine data. It was not possible to modify the value, as this would have required more user memory than was available.

The third parameter specifies the number of kilobytes by which the maximum user memory would be exceeded. Note: 1 kB = 1024 bytes. 1 MB = 1024 kB.

The fourth parameter specifies the type of memory whose limit was exceeded.

- "D" stands for dynamic or non-buffered user memory. This is where, for example, the LUD variables are stored and the interpolation buffer size is entered. The capacity of this memory type can be taken from MD18210 $MN_MM_USER_MEM_DYNAMIC, and is defined by OD19240 $ON_USER_MEM_DYNAMIC.
- "S" stands for static or buffered user memory. Part programs, offset data, R parameters, tool data, etc. are typically stored there. The capacity of this memory type can be taken from MD18230 $MN_MM_USER_MEM_BUFFERED, and is defined by OD19250 $ON_USER_MEM_BUFFERED.
- "iS" stands for internal static or buffered user memory. This memory type is defined by the current memory configuration and is not settable. A few NCK functions use this memory.

**Reaction:** Alarm display.

**Remedy:** You can continue without making a change. The alarm has no negative effects.

To make the change, you have the following possibilities of eliminating the error. Note that removing the access right depends on the current memory configuration of the NCK:

- Try again with a lower value. Observe the change in the value of parameter 3.
- If the control model used allows it, enlarge the memory. Note that this is not possible if parameter 4 equals "iS".
- If permissible, enlarge the NCK user memory. With the appropriate access authorization, you can change the machine data (see above). An increase in buffered memory is generally subject to charge.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4080 Incorrect configuration of indexing axis in MD %1

**Parameters:** %1 = String: MD identifier

**Explanation:** The assignment of a position table to an indexing axis or the contents of a position table contains an error, or the length of a position table has been parameterized with 0.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. 3 MD identifiers are output, depending on the type of error.
1. MD30500 $MA_INDEX_AX_ASSIGN_POS_TAB: the error is due to multiple assignment of a position table MD10910 $MN_INDEX_AX_POS_TAB_1 or MD10930 $MN_INDEX_AX_POS_TAB_2) to axes with different types (linear/rotary axis).
2. MD10910 $MN_INDEX_AX_POS_TAB_1 or MD10930 $MN_INDEX_AX_POS_TAB_2: the contents of the displayed tables are incorrect.
- The entered positions must be arranged in increasing size.
- A particular position must not be set more than once.
- If the table is assigned to one or several modulo axes, then the contents must be within the 0 to < 360 degree range.
3. MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1 or MD10920 $MN_INDEX_AX_LENGTH_POS_TAB_2: the length of the displayed position table n was specified with 0.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4082 [channel %1: ] invalid value in machine date %2%3

**Parameters:** %1 = Channel number
%2 = String: MD identifier
%3 = String: MD field index

**Explanation:** A value has been entered which exceeds the value range or a limit value for a variable, a machine data or a function.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Enter correct values.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4087 [Channel %1: ] Option '%2<OPTNX>' active, spindle not permitted

**Parameters:** %1 = Channel number
%2 = Brief description of option

**Explanation:** If the 'Fast IPO' option is enabled in a system, the active channels must not contain a spindle.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Deactivate option
- Set MD35000 $MA_SPIND_ASSIGN_TO_MACHAX = 0

**Programm continuation:** Switch control OFF - ON.

## 4088 Option '%1<OPTNX>' active, IPO cycle of %2 ms not permissible

**Parameters:** %1 = Brief description of option
%2 = IPO cycle

**Explanation:**

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Please notify the authorized personnel/service.
- Deactivate option
- Increase IPO cycle
**Programm continuation:** Switch control OFF - ON.

## 4090 Too many errors during power-up

**Explanation:** More than <n> errors occurred during control power-up.
**Reaction:** NC Start disable in this channel.
Alarm display.
**Remedy:** Set the machine data correctly.
**Programm continuation:** Switch control OFF - ON.

## 4099 %1 error(s) during processing of MD initialization

**Parameters:** %1 = Number of errors
**Explanation:** Errors occurred during processing of the machine data initializations. See the power-up log files for a more detailed description of the errors.
**Reaction:** NC not ready.
Alarm display.
**Remedy:** Please inform the authorized personnel/service department.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4110 IPO cycle changed to %1 ms

**Parameters:** %1 = String (new IPO cycle time)
**Explanation:** The IPO cycle divisor was set to a value which was not an integral multiple of the position control cycle divisor. The divisor (MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO) was increased.
For PROFIBUS/PROFINET: MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO has been modified because of the modified DP cycle in the PROFIBUS/PROFINET configuration (MD10050 $MN_SYSCLOCK_CYCLE_TIME).
**Reaction:** Alarm display.
**Remedy:** MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO has been modified.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4111 PLC cycle increased to %1 ms

**Parameters:** %1 = String (new PLC cycle time)
**Explanation:** The PLC cycle divisor was set to a value which was not an integral multiple of the IPO cycle divisor. The divisor (MD10074 $PLC_IPO_TIME_RATIO) has been increased.
For PROFIBUS/PROFINET: MD10074 $PLC_IPO_TIME_RATIO has been modified because of the modified DP cycle in the PROFIBUS/PROFINET configuration (MD10050 $SYSCLOCK_CYCLE_TIME).
**Reaction:** Alarm display.
**Remedy:** MD10074 $MN_PLC_IPO_TIME_RATIO has been modified.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4112 Servo cycle changed to %1 ms

**Parameters:** %1 = String (new servo cycle time)

**Explanation:** For PROFIBUS/PROFINET only:
MD10060 $POSCTRL_SYSCLOCK_TIME_RATIO has been modified because of the modified DP cycle in the PROFIBUS/PROFINET configuration (MD10050 $SYSCLOCK_CYCLE_TIME).

**Reaction:** Alarm display.

**Remedy:** MD10060 $MN_POSCTRL_SYSCLOCK_TIME_RATIO has been modified.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4113 Sysclock cycle changed to %1 ms

**Parameters:** %1 = String (new PLC cycle time)

**Explanation:** For PROFIBUS/PROFINET only:
MD10050 $SYSCLOCK_CYCLE_TIME has been modified because of the modified DP cycle in the PROFIBUS/PROFINET configuration.

**Reaction:** Alarm display.

**Remedy:** MD10050 $MN_SYSCLOCK_CYCLE_TIME has been modified.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4114 Error in the DP cycle (PROFIBUS/PROFINET cycle time)

**Parameters:** %1 = String (new PLC cycle time)

**Explanation:** For PROFIBUS/PROFINET only:
The DP cycle in the PROFIBUS/PROFINET configuration cannot be set. The default value of MD10050 $MN_SYSCLOCK_CYCLE_TIME is set.
Using isochronous NCK I/O on PROFIBUS and PROFINET interfaces requires the same cycle settings for all configured buses.

**Reaction:** Alarm display.

**Remedy:** Correct PROFIBUS/PROFINET configuration

**Programm continuation:** Switch control OFF - ON.

## 4115 Time ratio communication to Ipo changed to %1

**Parameters:** %1 = String (new ratio)

**Explanation:** The value of MD10072 $MN_COM_IPO_TIME_RATIO has been adapted. This can only occur if the value of the machine data is < 1 and the time thus calculated is not a multiple of the position control cycle.

**Reaction:** Alarm display.

**Remedy:** The MD10072 $MN_COM_IPO_TIME_RATIO has been adapted. Please check to ensure that the calculated value is correct.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4150 [Channel %1: ] Invalid M function subprogram call configured

**Parameters:** %1 = Channel number

**Explanation:** MD10715 $MN_M_NO_FCT_CYCLE[n] or MD10718 $MN_M_NO_FCT_CYCLE_PAR contains invalid configuration data: An M function, which is occupied by the system and cannot be replaced by a subprogram call has been specified in MD10715 $MN_M_NO_FCT_CYCLE[n] for the configuration of the subprogram call via M function:

- M0 to M5,
- M17, M30,
- M19, M40 to M45,
- M function for selecting spindle/axis mode according to MD20094 $MC_SPIND_RIGID_TAPPING_M_NR (default: M70),
- M functions for nibbling/punching as configured in MD26008 $MC_NIBBLE_PUNCH_CODE if activated by MD26012 $MC_PUNCHNIB_ACTIVATION.
- Also M96 to M99 for applied external language (MD18800 $MN_MM_EXTERN_LANGUAGE).

MD10718 $MN_M_NO_FCT_CYCLE_PAR contains an invalid array index of MD10715 $MN_M_NO_FCT_CYCLE[n]. Currently, the values 0 to 9 are permissible. The affected machine data is reset to the default value -1. This deactivates the function.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** You have the following possibilities of eliminating the error:
Configure an M function in MD10715 $MN_M_NO_FCT_CYCLE[n] that is not occupied by the system.
Configure a valid array index in MD10718 $MN_M_NO_FCT_CYCLE_PAR.

**Programm continuation:** Switch control OFF - ON.

## 4152 Illegal configuration of the 'Block display with absolute values' function

**Explanation:** The "Block display with absolute values" function has been illegally parameterized:

- An illegal block length has been set with MD28400 $MC_MM_ABSBLOCK:

While ramping up, the machine data will be checked for the following value range:

0, 1, 128 to 512

- An invalid display range has been set with MD28402 $MC_MM_ABSBLOCK_BUFFER_CONF[]. While ramping up, the machine data will be checked for the following upper and lower limits:

0 <= MD28402 $MC_MM_ABSBLOCK_BUFFER_CONF[0] <= 8

0 <= MD28402 $MC_MM_ABSBLOCK_BUFFER_CONF[1] <= (MD28060 $MC_MM_IPO_BUFFER_SIZE + MD28070$MC_MM_NUM_BLOCKS_IN_PREP).

Alarm 4152 is issued if the limits are violated.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Configure block length/display range within the permissible limits.

**Programm continuation:** Switch control OFF - ON.

## 4170 Invalid M function number for channel synchronisation assigned

**Explanation:** An M number between 0 and 99 has been specified In machine data MD10800 $MN_EXTERN_CHAN_SYNC_M_NO_MIN or MD10802 $MN_EXTERN_CHAN_SYNC_M_NO_MAX for the configuration of the M number range for channel synchronization in ISO2/3 mode or the machine data MD10802 $MN_EXTERN_CHAN_SYNC_M_NO_MAX is smaller than MD10800 $MN_EXTERN_CHAN_SYNC_M_NO_MIN.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check MD10800 $MN_EXTERN_CHAN_SYNC_M_NO_MIN and MD10802 $MN_EXTERN_CHAN_SYNC_M_NO_MAX.

**Programm continuation:** Switch control OFF - ON.

## 4182 [Channel %1: ] Invalid M auxiliary function number in %2%3, MD reset

**Parameters:** %1 = Channel number
%2 = MD identifier
%3 = If required, MD index

**Explanation:** In the specified machine data, a number has been specified for the configuration of an M function which is occupied by the system, and cannot be used for an assignment. (M0 to M5, M17, M30, M40 to M45 and also M98, M99 with applied ISO dialect). The value set by the user has been reset to the default value by the system.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Configure an M function in the specified machine data which is not occupied by the system (M0 to M5, M17, M30, M40 to M45 and also M98, M99 with applied ISO dialect).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4183 [Channel %1: ] M auxiliary function number %2 used several times (%3 and %4)

**Parameters:** %1 = Channel number
%2 = M auxiliary function number
%3 = MD identifier
%4 = MD identifier

**Explanation:** In the specified machine data, a number has been used several times for the configuration of an M function.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the specified machine data and create a unique assignment of M auxiliary function numbers.

**Programm continuation:** Switch control OFF - ON.

## 4184 [Channel %1: ] Illegally predefined auxiliary function in %2[%3], MD reset

**Parameters:** %1 = Channel number
%2 = MD identifier
%3 = If required, MD index

**Explanation:** In the specified machine data, a predefined auxiliary function has been illegally configured.
The value set by the user has been reset to the default value by the system.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Configure a valid value in the specified machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4185 [Channel %1: ] Illegal auxiliary function configured %2 %3 %4

**Parameters:** %1 = Channel number
%2 = Type of auxiliary function
%3 = Extension
%4 = Auxiliary function value

**Explanation:** An auxiliary function has been illegally configured.
Predefined auxiliary functions cannot be reconfigured by user-defined auxiliary functions.
See:
MD22010 $MC_AUXFU_ASSIGN_TYPE[n]
MD22020 $MC_AUXFU_ASSIGN_EXTENSION[n]
MD22030 $MC_AUXFU_ASSIGN_VALUE[n]
MD22035 $MC_AUXFU_ASSIGN_SPEC[n]

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reconfigure the auxiliary function.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4200 [Channel %1: ] Geometry axis %2 must not be declared a rotary axis

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** The geometry axes represent a Cartesian coordinate system and therefore the declaration of a geometry axis as rotary axis leads to a definition conflict.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Remove rotary axis declaration for this machine axis.
For this purpose, the geometry axis index for the displayed geometry axis must be determined by means of MD20060 $MC_AXCONF_GEOAX_NAME_TAB. The channel axis number is stored with the same index in MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB. The channel axis number minus 1 provides the channel axis index under which the machine axis number is found in MD20070 $MC_AXCONF_MACHAX_USED.

**Programm continuation:** Switch control OFF - ON.

## 4210 [Channel %1: ] Spindle %2 declaration as rotary axis missing

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** If a machine axis is to be operated as a spindle, this machine axis must be declared as a rotary axis.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Set rotary axis declaration for this machine axis in the axis-specific MD30300 $MA_IS_ROT_AX.

**Programm continuation:** Switch control OFF - ON.

## 4215 [Channel %1: ] Spindle %2 declaration as modulo axis missing

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The spindle functionality requires a modulo axis (positions in [deg]).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Set MD30310 $MA_ROT_IS_MODULO.

**Programm continuation:** Switch control OFF - ON.

## 4220 [Channel %1: ] Spindle %2 declared repeatedly

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The spindle number exists more than once in the channel.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
The spindle number is stored in the axis-specific MD35000 $MA_SPIND_ASSIGN_TO_MACHAX. The channel to which this machine axis/spindle is assigned is listed in the machine axis index. (The machine axis number is given in the channel-specific MD20070 $MC_AXCONF_MACHAX_USED).

**Programm continuation:** Switch control OFF - ON.

## 4225 [Channel %1: ] Axis %2 declaration as rotary axis missing

**Parameters:** %1 = Channel number
%2 = Axis name, axis number

**Explanation:** The modulo functionality requires a rotary axis (positions in [deg]).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Set MD30300 $MA_IS_ROT_AX.

**Programm continuation:** Switch control OFF - ON.

## 4230 [Channel %1: ] Data alteration from external not possible in current channel state

**Parameters:** %1 = Channel number

**Explanation:** It is not allowed to enter this data while the part program is being executed (e.g. setting data for working area limitation or for dry run feedrate).

**Reaction:** Alarm display.

**Remedy:** The data to be entered must be altered before starting the part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4240 Runtime overflow on the IPO or position controller level %1 Parameter %2 %3 %4

**Parameters:** %1 = Operating system error number
%2 = Operating system error parameter 1
%3 = Operating system error parameter 2
%4 = Operating system error parameter 3

**Explanation:** The settings for the interpolation and position control cycle were modified before the last power-up such that too little computing time is now available for the requisite cyclic task.
The alarm occurs immediately after power-up if too little runtime is available even when the axes are stationary and the NC program has not started. However, task overflow can occur only when computation-intensive NC functions are called during program execution.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** Please inform the authorized personnel/service department.
Take greater care when optimizing the clock times MD10050 $MN_SYSCLOCK_CYCLE_TIME, MD10060 $MN_POSCTRL_SYSCLOCK_TIME_RATIO and/or MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO.
The test should be performed with an NC program that represents the highest possible control load. To be on the safe side, a margin of 15 to 25% should be added to the times determined in this way.

**Programm continuation:** Switch control OFF - ON.

## 4250 FastPlcCom functionality not available

**Explanation:** This alarm indicates that the PLC provides the None FastPlcCom functionality during start-up although this functionality is requested by the NCK.

**Reaction:** Alarm display.

**Remedy:** Retrofit the PLC with the FastPlcCom functionality or deactivate the FastPlcCom functionality by means of NCK machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4252 PLCIO read error: %1

**Parameters:** %1 = PLCIO error code

**Explanation:** This alarm indicates that errors occured when reading the PLCIO with the FastPlcCom functionality.
- PLC hardware does not exist
- Incorrect data transmission
- Functionality is already used by 'technological function'.

**Reaction:** Alarm display.

**Remedy:** Check machine data MD10394 $MN_PLCIO_NUM_BYTES_IN / MD10395 $MN_PLCIO_LOGIC_ADDRESS_IN.
Check PLC hardware configuration.
Check whether 'technological function' already uses the functionality.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4254 PLCIO write error: %1

**Parameters:** %1 = PLCIO error code

**Explanation:** This alarm indicates that errors occured when writing on the PLCIO with the FastPlcCom functionality.
- PLC hardware does not exist
- Incorrect data transmission
- Functionality is already used by 'technological function'

**Reaction:** Alarm display.

**Remedy:** Check machine data MD10396 $MN_PLCIO_NUM_BYTES_OUT / MD10397 $MN_PLCIO_LOGIC_ADDRESS_OUT.
Check PLC hardware configuration.
Check whether 'technological function' already uses the functionality.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4270 Machine data %1 assigns not activated NC input/output byte %2

**Parameters:** %1 = String: MD identifier
%2 = Index

**Explanation:** The specified machine data assigns a digital input/output byte or an analog input/output signal the processing of which has not been activated to an NC function.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Correct machine data. Activate required inputs/outputs via MDs:
MD10350 $MN_FASTIO_DIG_NUM_INPUTS
MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS
MD10300 $MN_FASTIO_ANA_NUM_INPUTS
MD10310 $MN_FASTIO_ANA_NUM_OUTPUTS
Activation of fast inputs/outputs does not require the corresponding hardware configuration to be available at the control. All functions using fast inputs/outputs can also be made use of by the PLC specification/modification defined in the VDI interface, if the response time requirements are reduced accordingly.
Activated inputs/outputs increase the computation time requirement of the interpolation cycle because the PLC manipulation signals are handled cyclically. Note: deactivate any inputs/outputs not in use.

**Programm continuation:** Switch control OFF - ON.

## 4275 Machine data %1 and %2 both assign the same NC output byte no. %3 several times

**Parameters:** %1 = String: MD identifier
%2 = String: MD identifier
%3 = No. of output

**Explanation:** The specified machine data assign two NC functions to the same digital/analog output.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Correct machine data.

**Programm continuation:** Switch control OFF - ON.

## 4280 Assignment of NC input/output byte via MD %1[%2] does not match hardware configuration

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array

**Explanation:** When booting, the required input/output module was not found at the slot specified in the MD.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Check hardware or correct the MD, if necessary. Note: monitoring of the hardware configuration is performed independently of the number of activated inputs/outputs (MD10300 $MN_FASTIO_ANA_NUM_INPUTS, MD10310 $MN_FASTIO_ANA_NUM_OUTPUTS, MD10350 $MN_FASTIO_DIG_NUM_INPUTS, MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS)

**Programm continuation:** Switch control OFF - ON.

## 4282 Hardware of external NCK outputs assigned repeatedly

**Explanation:** Several outputs have been configured on the same hardware byte.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Alter MD10368 $MN_HW_ASSIGN_DIG_FASTOUT or MD10364 $MN_HW_ASSIGN_ANA_FASTOUT.

**Programm continuation:** Switch control OFF - ON.

## 4300 Declaration in MD %1 is not allowed for axis %2.

**Parameters:** %1 = String: MD identifier
%2 = Axis name, spindle number

**Explanation:** The axis cannot be operated as competing positioning axes,
for example because the axis is the slave axis within a closed gantry group or a gantry group to be closed.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Reset MD30450 $MA_IS_CONCURRENT_POS_AX for the axis concerned.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4310 Declaration in MD %1 index %2 is not allowed.

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array index

**Explanation:** The machine data values must be written in the array in ascending order.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department. Correct the MD.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 4320 Axis %1 function %2 %3 and %4 not allowed

**Parameters:** %1 = String: Axis identifier
%2 = String: MD identifier
%3 = String: Bit
%4 = String: MD identifier

**Explanation:** The functions declared by the specified machine data cannot simultaneously be active for one axis.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Deactivate one of the two functions.

**Programm continuation:** Switch control OFF - ON.

## 4334 [Channel %1: ] The amount of fine correction in parameter %2 of the orientable toolholder %3 is too large

**Parameters:** %1 = Channel number
%2 = Invalid parameter of the orientable toolholder
%3 = Number of the orientable toolholder

**Explanation:** The maximum permissible value of the fine correction in an orientable toolholder is limited by the MD20188 $MC_TOCARR_FINE_LIM_LIN for linear variables, and by the MD20190 $MC_TOCARR_FINE_LIM_ROT for rotary variables. The alarm can only occur if the SD42974 $SC_TOCARR_FINE_CORRECTION is not equal to zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Enter a valid fine correction value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4336 [Channel %1: ] Orientable toolholder no. %2 for orientation transformation %3 does not exist

**Parameters:** %1 = Channel number
%2 = Number of the orientable toolholder
%3 = Number of the orientation transformation that is to be parameterized with the orientable toolholder

**Explanation:** The orientable toolholder, with whose data the orientation transformation is to be parameterized (see MD2.... $MC_TRAFO5_TCARR_NO_...), does not exist.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Enter a valid tool-carrier number.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4338 [Channel %1: ] Invalid transformation type '%2' in toolholder %3 for orientation transformer %4

**Parameters:** %1 = Channel number
%2 = Transformer type
%3 = Number of the orientable toolholder
%4 = Number of the orientation transformation that is to be parameterized with the orientable toolholder

**Explanation:** The parameters of the orientation transformation are taken over from the data of an orientable toolholder. This orientable toolholder contains an invalid transformation type. (Types T, P and M are permissible).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Enter a valid transformation type.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4340 [Channel %1: ] Block %2 invalid transformation type in transformation no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Transformation number

**Explanation:** An invalid, i.e. undefined number was entered in one of the machine data $MC_TRAFO_TYPE_.... This alarm also occurs if a certain type of transformation is only impossible on the type of control used (e.g. a 5-axis transformation).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Enter a valid transformation type.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4341 [Channel %1: ] Block %2 no data set available for transformation no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Transformation number

**Explanation:** This alarm is output if an attempt is made to set multiple transformations of a group.

Only a limited number of machine data sets, usually 2, is available for each related group of transformations (e.g. orientation transformations, Transmit, Tracyl, etc.).

Example:

Two orientation transformations are allowed. The machine data contains, for example:

TRAFO_TYPE_1 = 16 ; 1st orientation transformation

TRAFO_TYPE_2 = 33 ; 2nd orientation transformation

TRAFO_TYPE_3 = 256 ; 1st transmit transformation

TRAFO_TYPE_4 = 20 ; 3rd orientation transformation ==> This entry triggers the alarm

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Enter valid machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4342 [Channel %1: ] Invalid machine data for general 5-axis transformation error no. %2

**Parameters:** %1 = Channel number

%2 = Error type

**Explanation:** The machine data which describe the axis directions and the basic orientation and/or the input axes for the general 5-axis transformation are invalid.

The error parameter displayed specifies the cause of the alarm:

- 1: The first axis (MD2.... $MC_TRAFO5_AXIS1_...) is not defined (all three vector entries are 0)
- 2: The second axis (MD2.... $MC_TRAFO5_AXIS2_...) is not defined (all three vector entries are 0)
- 3: The basic orientation (MD2.... $MC_TRAFO5_BASE_ORIENT_...) is not defined (all three vector entries are 0)
- 4: The first and second axis are (virtually) parallel
- 5: On MD2.... $MC_TRAFO_TYPE_ = 56 (rotatable tool and workpiece) there is no 4-axis transformation, i.e. 2 rotary axes must always be available. (See MD2.... $MC_TRAFO_AXES_IN_...)
- 6: The third axis (MD2.... TRAFO5$MC_TRAFO5_AXIS3_...) is not defined (all three vector entries are 0) (6-axis transformation)
- 7: The normal tool vector (MD2.... TRAFO6$MC_TRAFO6_BASE_ORIENT_NORMAL_...) is not defined (all three vector entries are 0) (6-axis transformation)
- 8: The basic tool orientation (MD2.... $MC_TRAFO5_BASE_ORIENT_...) and the normal tool vector (MD2.... $MC_TRAFO6_BASE_ORIENT_NORMAL_...) are (virtually) parallel (6-axis transformation)
- 9: The first external axis (MD2.... $MC_TRAFO7_EXT_AXIS1_*) is not defined (all three vector entries are 0) (7-axis transformation)
- -10: Invalid transformation type (MD2.... $MC_TRAFO_TYPE_...). A transformation type unequal to 24 has been entered for the generic 7-axis transformation.
- -21: The direction of the first axis of the tool carrier ($TC_CARR7[], $TC_CARR8[], $TC_CARR9[]) is not defined (all three vector entries are 0)
- -22: The direction of the second axis of the tool carrier ($TC_CARR10[], $TC_CARR11[], $TC_CARR12[]) is not defined (all three vector entries are 0)
- -23: Reserved
- -24: Reserved
- -25: Reserved
- -26: The direction of the third axis of the tool carrier is not defined (all three vector entries are 0)

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Set valid machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4343 [Channel %1: ] Attempt made to change the machine data of an active transformation.

**Parameters:** %1 = Channel number

**Explanation:** An attempt was made to change the machine data of an active transformation and to activate the machine data with RESET or NEWCONFIG.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Set valid machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4344 [Channel %1: ] Block %2 Axis %3 defined in $NK_NAME[%4] is not available in the current channel

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Index of the chain element

**Explanation:** In the specified chain element a machine axis was indicated that is not available in the current channel on transformation selection. This means that this axis is currently assigned to another channel.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Specify the axis available in the channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4345 [Channel %1: ] Invalid configuration in chained transformation no. %2

**Parameters:** %1 = Channel number
%2 = Transformation number

**Explanation:** A chained transformation is incorrectly configured (MD24995 $MC_TRACON_CHAIN_1 or MD24996 $MC_TRACON_CHAIN_2). The following causes of the error are possible:
- The list of transformations to be chained starts with a 0. At least one entry not equal to zero is required.
- The list of transformations to be chained contains the number of a transformation which does not exist.
- The number of a transformation in the list is greater than or equal to the number of the chained transformation. Example: The cascaded transformation is the fourth transformation in the system, i.e. MD24400 $MC_TRAFO_TYPE_4 = 8192. In this case, only values 1, 2 or 3 may be entered in the associated list (e.g. MD24995 $MC_TRACON_CHAIN_1[...]).
- The chaining setting is invalid. The following restrictions currently apply. A maximum of two transformations can be chained. The first transformation must be an orientation transformation, transmit, peripheral curve transformation or inclined axis. The second transformation must be the inclined axis transformation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Set a valid transformation chain.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4346 [Channel %1: ] Invalid geoaxis assignment in machine data %2[%3]

**Parameters:** %1 = Channel number
%2 = Name of machine data
%3 = Index of the transformation geometry axis

**Explanation:** MD2.... $MC_TRAFO_GEOAX_ASSIGN_TAB_... contains an invalid entry.
The following causes for the error are possible:
- The entry references a channel axis which does not exist.
- The entry is zero (no axis) but the transformation needs the relevant axis as a geometry axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct the entry in MD2.... $MC_TRAFO_GEOAX_ASSIGN_TAB_ ... or MD2.... $MC_TRAFO_AXES_IN_ ... .

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4347 [Channel %1: ] Invalid channel axis assignment in machine data %2[%3]

**Parameters:** %1 = Channel number
%2 = Name of machine data
%3 = Index of the transformation axis

**Explanation:** The specified machine data (identifier and array index) contains an invalid entry.
The following causes for the error are possible:
- The entry refers to a channel axis which does not exist.
- The entry is zero (no axis), but the transformation needs the relevant axis as a channel axis.
- More than one external axis has been entered in MD2.... $MC_TRAFO_AXES_IN_... for the 7-axis transformation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct the entry in MD2.... $MC_TRAFO_AXES_IN_... .

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4348 [Channel %1: ] Block %2 Configuration error %6 in transformation $NT_NAME[%5] = '%3'.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the transformation data record
%4 = Index of the transformation data record | error number

**Explanation:** The transformation data set is incorrect. The cause of the error is given by the following error number:

- 1. The transformation type is not known, i.e. $NT_TRAFO_TYPE[n] contains an invalid name.
- 2. The machine kinematics have not been defined, in other words, neither in $NT_T_CHAIN_LAST_ELEM[n] nor in $NT_P_CHAIN_LAST_ELEM[n] is there a reference to a kinematic chain element in the kinematic description of the machine.
- 3. The kinematic chain element with the name contained in $NT_T_CHAIN_LAST_ELEM[n] has no connection to the root element.
- 4. The kinematic chain element with the name contained in $NT_P_CHAIN_LAST_ELEM[n] has no connection to the root element.
- 5. The kinematic chain element with the name contained in $NT_T_CHAIN_LAST_ELEM[n] was not found.
- 6. There is no kinematic chain element (MD18880 $MN_MM_MAXNUM_KIN_CHAIN_ELEM is zero).
- 8. The kinematic chain element with the name contained in $NT_P_CHAIN_LAST_ELEM[n] was not found.
- 9. The kinematic chain element with the name contained in $NT_T_REF_ELEM[n] was not found.
- 10. The rotary axis defined in $NT_ROT_AX_NAME[n,0] was not found in the kinematic chain.
- 11. The rotary axis defined in $NT_ROT_AX_NAME[n,1] was not found in the kinematic chain.
- 12. The rotary axis defined in $NT_ROT_AX_NAME[n,2] was not found in the kinematic chain.
- 16. The rotary axis defined in $NT_ROT_AX_NAME[n,1] has been defined more than once.
- 17. The rotary axis defined in $NT_ROT_AX_NAME[n,2] has been defined more than once.
- 20. The linear axis defined in $NT_GEO_AX_NAME[n,0] was not found in the kinematic chain.
- 21. The linear axis defined in $NT_GEO_AX_NAME[n,1] was not found in the kinematic chain.
- 22. The linear axis defined in $NT_GEO_AX_NAME[n,2] was not found in the kinematic chain.
- 26. The linear axis defined in $NT_GEO_AX_NAME[n,1] has been defined more than once.
- 27. The linear axis defined in $NT_GEO_AX_NAME[n,2] has been defined more than once.
- 28. In the kinematic description of the transformation, a linear axis was specified more than once (at least two chain elements of the type AXIS_LIN refer to the same machine axis in component $NK_AXIS[n]).
- 29. In the kinematic description of the transformation, a rotary axis was specified more than once (at least two chain elements of the type AXIS_ROT refer to the same machine axis in component $NK_AXIS[n]).
- 30. The base orientation has not been defined, in other words, all three components of $NT_BASE_ORIENT[n, 0..2] are zero.
- 31. The orientation normal vector has not been defined, in other words all three components of $NT_BASE_ORIENT_NORMAL[n, 0..2] are zero.
- 32. The vectors for definition of the base orientation ($NT_BASE_ORIENT[n, 0..2]) and the base normal vector ($NT_BASE_ORIENT_NORMAL[n, 0..2]) are parallel.
- 36. The number of relevant rotary axes found in the part chain is not the same as the content of $NT_ROT_AX_CNT[n,0].
- 37. The number of relevant rotary axes found in the tool chain is not the same as the content of $NT_ROT_AX_CNT[n,1].
- 40. The first and the second orientation axes of an orientation transformation are parallel.
- 41. The second and the third orientation axes of an orientation transformation are parallel.
- 42. No orientation axis has been defined (an orientation transformation requires at least one orientation axis).
- 43. Invalid 3-axis orientation transformation: The orientation axis is not perpendicular to the plane created by the two geometry axes.
- 47. System variable $NT_CLOSE_CHAIN_P is disabled in the current software version, and may only contain the zero string.
- 48. The chain element specified in $NT_CLOSE_CHAIN_T was not found.
- 50. Fewer than two geometry axes have been defined for an orientation transformation or an inclined axis transformation.
- 51. Not all three geometry axes have been defined for an orientation transformation with more than one orientation axis.
- 60. Geometry axes 1 and 2 are parallel.
- 61. Geometry axes 1 and 3 are parallel.
- 62. Geometry axes 2 and 3 are parallel.
- 65. The 3 geometry axes are on one plane.
- 68. The function "Close the part chain" is not defined for this transformation.
- 69. The function "Close the tool chain" is not defined for this transformation.
- 80. Invalid definition sequence of orientation axes. The orientation axes in $NT_ROT_AX_NAME[n, 0..2] must be defined without gaps starting at index 0. The axis sequence in $NT_ROT_AX_NAME[n, 0..2] must be equal to the axis sequence in the kinematic chains (when running through the chains from the end of the part chain to the end of the tool chain).
- 81. An orientation axis has been programmed more than once.
- 82. Parameterization of the first orientation axis as a spindle is not permissible.

- 83. Parameterization of the second orientation axis as a spindle is not permissible.
- 84. Parameterization of the third orientation axis as a spindle is not permissible.
- 87. Parameterization of the first orientation axis as a Hirth axis is incorrect, in other words at least one of the machine data MD30502 $MA_INDEX_AX_DENOMINATOR, MD30501 $MA_INDEX_AX_NUMERATOR, or MD30330 $MA_MODULO_RANGE (for modulo axes) is zero.
- 88. Parameterization of the second orientation axis as a Hirth axis is incorrect. The error conditions are the same as for error number 87.
- 89. Parameterization of the third orientation axis as a Hirth axis is incorrect. The error conditions are the same as for error number 87.
- 100. The maximum number of kinematic elements (sum of linear axes, rotary axes and constant elements) has been exceeded. In this case, a sequence of constant elements in a chain, which is not interrupted by an axis, is only considered as one element.

  A maximum of 15 kinematic elements is currently permissible for orientation transformations.
- 101. The maximum number of rotary axes in the kinematic chains for the definition of a transformation has been exceeded.
- 103. The maximum number of elements in the definition of the kinematic chain for the tool has been exceeded.
- 104. The maximum number of elements in the definition of the kinematic chain for the workpiece has been exceeded.
- 105. The maximum permissible number of constant transformation axes (redundant (rotary) axes), which must not move with an active transformation, has been exceeded.

  A maximum of 6 rotary axes is currently permissible for orientation transformations.
- 106. The maximum permissible number of chain elements for internal representation of the machine kinematics has been exceeded.
- 110. The kinematic chain element with the name contained in $NT_T_CHAIN_FIRST_ELEM[n] was not found.
- 111. The kinematic chain element with the name contained in $NT_P_CHAIN_FIRST_ELEM[n] was not found.
- 141. The three-bit number for identifying the permutation of the geometry axes (bit 11 to bit 13 in $NT_CNTRL[n] with Transmit or Tracyl) contains a value greater than 5.
- 142. Impermissible permutation of the geometry axes (bit 11 to bit 13 in $NT_CNTRL[n] with Transmit or Tracyl). In the assignment of the geometry axes to the input axes of the transformation, unassigned places must not be transposed.
- 143. The parameterization of the Transmit or Tracyl transformation requires a center offset axis.
- 144. An axis name must be entered in $NT_ROT_AX_NAME[n, 1], and only there.
- 145. After the polar axis ($NT_ROT_AX_NAME[n, 1]), an invalid offset has been entered in the kinematic chain in the direction toward the workpiece zero.
- 146. If bit 19 is set in $NT_CNTRL[n] for Transmit or Tracyl, the last element in the kinematic chain must be a rotary axis or a constant rotation.
- 149. After the polar axis($NT_ROT_AX_NAME[n, 1]), an impermissible rotation is active in the direction toward the workpiece zero (constant rotation or constant rotary axis).
- 150. Impermissible type of chain element (system error).
- 160. No axis name entered in $NT_GEO_AX_NAME[n, 0].
- 161. No axis name entered in $NT_GEO_AX_NAME[n, 1] although a center offset axis specified.
- 170. The only defined geometry axis must be in $NT_GEO_AX_NAME[n, 2].
- 171. The parameter $NT_GEO_AX_NAME[n, 2] is empty. The entry in $NT_GEO_AX_NAME[n, 2] must always be present.
- 180. No spindle was defined (the interpolated turning transformation requires a spindle).
- 181. More than one rotary axis was defined (the interpolated turning transformation requires exactly one rotary axis that is defined as a spindle).
- 182. For the interpolated turning transformation, the spindle must be defined in $NT_ROT_AX_NAME[n, 0].
- 183. For the interpolated turning transformation, a rotary axis was defined in $NT_ROT_AX_NAME[n, 0] that is not configured as a spindle.
- 184. For the interpolated turning transformation, the direction of the spindle in $NK_OFF_DIR was not entered as (0,0,-1).
- 200. At the end of the part chain, a correction element is defined although bit 7 is set in $NT_CNTRL[n] (close part chain).
- 201. At the start of the tool chain, a correction element is defined although bit 8 is set in $NT_CNTRL[n] (close tool chain)
- 300. The chain element to which $NT_CORR_ELEM_P[n, 0] refers was not found.
- 301. The chain element to which $NT_CORR_ELEM_P[n, 1] refers was not found.
- 302. The chain element to which $NT_CORR_ELEM_P[n, 2] refers was not found.
- 303. The chain element to which $NT_CORR_ELEM_P[n, 3] refers was not found.
- 310. The chain element to which $NT_CORR_ELEM_T[n, 0] refers was not found.

- 311. The chain element to which $NT_CORR_ELEM_T[n, 1] refers was not found.
- 312. The chain element to which $NT_CORR_ELEM_T[n, 2] refers was not found.
- 313. The chain element to which $NT_CORR_ELEM_T[n, 3] refers was not found.
- 320. The chain element to which $NT_CORR_ELEM_P[n, 0] refers is not in the associated section.
- 321. The chain element to which $NT_CORR_ELEM_P[n, 1] refers is not in the associated section.
- 322. The chain element to which $NT_CORR_ELEM_P[n, 2] refers is not in the associated section.
- 323. The chain element to which $NT_CORR_ELEM_P[n, 3] refers is not in the associated section.
- 330. The chain element to which $NT_CORR_ELEM_T[n, 0] refers is not in the associated section.
- 331. The chain element to which $NT_CORR_ELEM_T[n, 1] refers is not in the associated section.
- 332. The chain element to which $NT_CORR_ELEM_T[n, 2] refers is not in the associated section.
- 333. The chain element to which $NT_CORR_ELEM_T[n, 3] refers is not in the associated section.
- 500. No transformation chain is defined for a concatenated transformation, at least one transformation must be defined with $NT_TRACON_CHAIN[].
- 501. The transformation stated in $NT_TRACON_CHAIN[n, 0] is not defined.
- 502. The transformation stated in $NT_TRACON_CHAIN[n, 1] is not defined.
- 503. The transformation stated in $NT_TRACON_CHAIN[n, 2] is not defined.
- 504. The transformation stated in $NT_TRACON_CHAIN[n, 3] is not defined.
- 520. The stated transformation data block is defective on activation of a concatenated transformation.
- 521. The definition of the transformation chain leads to an endless recursion.
- 522. Too many concatenated transformations are defined for the definition of a transformation chain (8 is the maximum possible here).
- 523. An impermissible chain of partial transformations has been configured in a concatenated transformation.
- 1000. The OEM transformation cannot be activated because it was not logged on by the CC.
- 1001. The OEM transformation has been logged on as an orientation transformation, but it is not configured as an orientation transformation.
- 1002. The OEM transformation is configured as an orientation transformation, but it was not logged on as an orientation transformation.
- 1003. The activated OEM transformation does not behave like an orientation transformation, although the transformation was not configured or logged on for orientations.
- 1004. No geometry axes are defined for the activated OEM transformation (neither by the CC nor in the system variable $NT_GEO_AX_NAME[n, i]).
- 1005. No orientation axes are defined for the activated OEM transformation, although this was configured as an orientation transformation (neither by the CC nor in the system variable $NT_ROT_AX_NAME[n, i]).
- 1006. The OEM transformation does not support any rotation of the orientation, although the transformation was configured with 3 orientation axes.
- 1007. The OEM transformation was created for rotations of the orientation, but the transformation was not configured in this way (fewer than 3 orientation axes).
- 1050. The OEM transformation reports a general kinematic analysis error. (This occurs, for example, if the analyseChain() method has not been implemented in the CC.)
- 1051. An unknown element was discovered during the analysis of the kinematic chain by the OEM transformation.
- 1052. An offset element is incorrectly arranged in the kinematic chain for the OEM transformation.
- 1053. The stated arrangement of a linear axis is not allowed in the kinematic chain.
- 1054. The stated arrangement of a rotary axis is not allowed in the kinematic chain.
- 1055. The stated direction of a linear axis is not allowed in the kinematic chain.
- 1056. The stated direction of rotation of a rotary axis is not allowed in the kinematic chain.
- 1057. Reserved for error messages of the kinematic analysis of compile cycles.
- 1058. Reserved for error messages of the kinematic analysis of compile cycles.
- 1059. Reserved for error messages of the kinematic analysis of compile cycles.
- 1060. Reserved for error messages of the kinematic analysis of compile cycles.
- 1061. Reserved for error messages of the kinematic analysis of compile cycles.
- 1062. Reserved for error messages of the kinematic analysis of compile cycles.
- 1063. Reserved for error messages of the kinematic analysis of compile cycles.
- 1064. Reserved for error messages of the kinematic analysis of compile cycles.
- 1065. Reserved for error messages of the kinematic analysis of compile cycles.

- 1066. Reserved for error messages of the kinematic analysis of compile cycles.
- 1067. Reserved for error messages of the kinematic analysis of compile cycles.
- 1068. Reserved for error messages of the kinematic analysis of compile cycles.
- 1069. Reserved for error messages of the kinematic analysis of compile cycles.
- 1070. The orientation of the tool in the basic position must be parallel to one of the coordinate axes X, Y or Z (value of the variable $NT_BASE_ORIENT[i]).
- 1071. The orientation of the tool in the basic position must not be parallel to the X direction (value of the variable $NT_BASE_ORIENT[0]).
- 1072. The orientation of the tool in the basic position must not be parallel to the Y direction (value of the variable $NT_BASE_ORIENT[1]).
- 1073. The orientation of the tool in the basic position must not be parallel to the Z direction (value of the variable $NT_BASE_ORIENT[2]).
- 1074. The normal vector of the tool in the basic position must be parallel to one of the coordinate axes X, Y or Z (value of the variable $NT_BASE_ORIENT_NORMAL[i]).
- 1075. The normal vector of the tool in the basic position must not be parallel to the X direction (value of the variable $NT_BASE_ORIENT_NORMAL[0]).
- 1076. The normal vector of the tool in the basic position must not be parallel to the Y direction (value of the variable $NT_BASE_ORIENT_NORMAL[1]).
- 1077. The normal vector of the tool in the basic position must not be parallel to the Z direction (value of the variable $NT_BASE_ORIENT_NORMAL[2]).
- 1078. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1079. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1080. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1081. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1082. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1083. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1084. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1085. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1086. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1087. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1088. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1089. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 1090. Reserved for error messages from the analysis of the transformation parameters of compile cycles.
- 10000. Invalid redundant rotary axis. Only one redundant rotary axis is permissible for orientation transformation (for the time being). This rotary axis must be the first axis in the kinematic chain.

Note:

Parameter 4 contains the descriptions of parameters 5 and 6 separated by the "|" character.

- 5 = Index of the transformation data block
- 6 = Error code

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Define valid transformation data record.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 4349 [Channel %1: ] No free memory space available for transformations.

**Parameters:** %1 = Channel number
%2 = Number of the transformations already active

**Explanation:** Any kinematic transformation in the NCK requires a defined memory space. If MD18866 $MN_MM_NUM_KIN_TRAFOS does not equal zero, it indicates how many kinematic transformations are allowed to be active in the NCK at the same time.
If MD18866 $MN_MM_NUM_KIN_TRAFOS equals zero, the maximum number of kinematic transformations that are active at the same time, is determined automatically (currently twenty times the number of the existing channels).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Increase the value of MD18866 $MN_MM_NUM_KIN_TRAFOS.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 4400 MD alteration will cause reorganization of buffered memory (Art %1), (loss of data!) - %2

**Parameters:** %1 = Memory type
%2 = MD identifier, if required

**Explanation:** A machine data has been altered that configures the buffered memory. If the NCK powers up with the altered data, this will lead to reorganization of the buffered memory and thus to the loss of all buffered user data (part programs, tool data, GUD, leadscrew error compensation, ...)
Meaning of the 1st parameter
0x00 buffered memory (internal)
0x01 buffered memory

**Reaction:** Alarm display.

**Remedy:** If the control includes user data that have not yet been saved, then a data backup must be performed before the next NC power-up. By manually resetting the altered MD to the value it had before the last power-up, reorganization of the memory can be avoided.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 4402 %1 causes a machine data reset

**Parameters:** %1 = Machine data

**Explanation:** If this machine data is set, the current machine data values are overwritten by the default values at the next ramp-up. Under certain circumstances, this may cause data loss (even in the buffered memory).

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. If the control includes user data that has not yet been saved, then a data backup must be performed before the next NCK power-up. By manually resetting the altered MD to the value it had before the last power-up, reorganization of the memory can be avoided.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 4500 Error %2 occurred (data loss!) while writing AMR backup file %1.

**Parameters:** %1 = File name
%2 = Error code

**Explanation:** The backup file for the automatic memory configuration was not able to be written to

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

**Programm continuation:** Switch control OFF - ON.

## 4501 While reading the AMR backup file %1, error %2 occurred (data loss!)

**Parameters:** %1 = File name
%2 = Error code

**Explanation:** The backup file for automatic memory reconfiguration could not be read

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

**Programm continuation:** Switch control OFF - ON.

## 4503 [TO unit %1: ] H number %2 assigned more than once. Machine data is not set.

**Parameters:** %1 = TO unit
%2 = H number

**Explanation:** This error can only occur if MD10880 $MN_MM_EXTERN_CNC_SYSTEM= 1 or 2. MD10890, $MN_EXTERN_TOOLPROG_MODE bit 3 is reset (this MD becomes effective at power-on). On checking data management, it was found that various edges of the same TO unit had the same H number. MD10890 $MN_EXTERN_TOOLPROG_MODE bit 3 remains set and is not included in data management.

**Reaction:** Alarm display.

**Remedy:** H numbers must be assigned only once in a TO unit. Then, MD10890, $MN_EXTERN_TOOLPROG_MODE, bit 3 can be set = 0 and a restart can be performed.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 4600 Invalid handwheel type for handwheel %1

**Parameters:** %1 = Handwheel number

**Explanation:** The handwheel type (hardware segment) for handwheel %1 requested through MD11350 $MN_HANDWHEEL_SEGMENT is invalid.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Configure a valid type for the corresponding handwheel through MD11350 $MN_HANDWHEEL_SEGMENT.

**Programm continuation:** Switch control OFF - ON.

## 4610 Invalid handwheel module for handwheel %1

**Parameters:** %1 = Handwheel module

**Explanation:** The handwheel module for handwheel %1 requested through MD11351 $MN_HANDWHEEL_MODULE is not available. Therefore MD11351 $MN_HANDWHEEL_MODULE = 1 must always be set for directly connected handwheels.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Set machine date MD11351 $MN_HANDWHEEL_MODULE = 1 for the corresponding handwheel.

**Programm continuation:** Switch control OFF - ON.

## 4611 Invalid handwheel input for handwheel %1

**Parameters:** %1 = Handwheel input

**Explanation:** The handwheel input for handwheel %1 requested through MD11352 $MN_HANDWHEEL_INPUT is not available. A maximum of 2 or 3 handwheels can be connected directly to diverse systems.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Configure MD11352 $MN_HANDWHEEL_INPUT for a valid input for the corresponding handwheel

**Programm continuation:** Switch control OFF - ON.

## 4620 Invalid handwheel module for handwheel %1

**Parameters:** %1 = Handwheel module

**Explanation:** The handwheel module for handwheel %1 requested through MD11351 $MN_HANDWHEEL_MODULE is not available. Therefore MD11351 $MN_HANDWHEEL_MODULE = 1 must always be set for directly connected handwheels.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Set MD11351 $MN_HANDWHEEL_MODULE = 1 for the corresponding handwheel.
For other systems, MD11350 $MN_HANDWHEEL_SEGMENT should be checked.

**Programm continuation:** Switch control OFF - ON.

## 4621 Invalid handwheel input for handwheel %1

**Parameters:** %1 = Handwheel input

**Explanation:** The handwheel input for handwheel %1 requested through MD11352 $MN_HANDWHEEL_INPUT is not available. A maximum of 2 handwheels can be directly connected.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Configure MD11352 $MN_HANDWHEEL_INPUT for a valid input for the corresponding handwheel.
MD11350 $MN_HANDWHEEL_SEGMENT should also be checked.

**Programm continuation:** Switch control OFF - ON.

## 4630 Invalid handwheel module for handwheel %1

**Parameters:** %1 = Handwheel module

**Explanation:** For PROFIBUS/PROFINET only:
The reference in $MN_HANDWHEEL_MODULE to a corresponding entry in machine data array $MN_HANDWHEEL_LOGIC_ADDRESS[] which is required for configuring PROFIBUS/PROFINET handwheels is not available.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Configure the machine data MD11351 $MN_HANDWHEEL_MODULE for the corresponding PROFIBUS/PROFINET handwheel so that there is a valid reference to an entry in the machine data array MD11353 $MN_HANDWHEEL_LOGIC_ADDRESS[].

**Programm continuation:** Switch control OFF - ON.

## 4631 Invalid handwheel slot for handwheel %1

**Parameters:** %1 = Handwheel slot

**Explanation:** For PROFIBUS/PROFINET only:
The handwheel slot for handwheel %1 requested through machine data $MN_HANDWHEEL_INPUT is not available for PROFIBUS/PROFINET handwheels.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Configure machine date MD11352 $MN_HANDWHEEL_INPUT to a valid handwheel slot for the corresponding PROFIBUS/PROFINET handwheel.

**Programm continuation:** Switch control OFF - ON.

## 4632 Logical PROFIBUS/PROFINET handwheel slot base address for %1. handwheel not found

**Parameters:** %1 = Handwheel number

**Explanation:** For PROFIBUS/PROFINET only:
The logical basic address of the PROFIBUS/PROFINET handwheel slot in machine data array $MN_HANDWHEEL_LOGIC_ADDRESS[] indexed in machine data $MN_HANDWHEEL_MODULE was not found in the current PROFIBUS/PROFINET configuration.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check if MD11351 $MN_HANDWHEEL_MODULE of the corresponding handwheel is correct. Check if indexed logical base address of PROFIBUS/PROFINET handwheel slot in machine date array MD11353 $MN_HANDWHEEL_LOGIC_ADDRESS[] is correct.

**Programm continuation:** Switch control OFF - ON.

## 4640 Invalid handwheel module for handwheel %1

**Parameters:** %1 = Handwheel module

**Explanation:** For ETHERNET only:

The handwheel module for handwheel %1 requested through MD11351 $MN_HANDWHEEL_MODULE is not available for ETHERNET handwheels. MD11351 $MN_HANDWHEEL_MODULE = 1 must always be set when configuring ETHERNET handwheels.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Set machine date MD11351 $MN_HANDWHEEL_MODULE = 1 for the corresponding handwheel.

**Programm continuation:** Switch control OFF - ON.

## 4641 Invalid handwheel input for handwheel %1

**Parameters:** %1 = Handwheel input

**Explanation:** For ETHERNET only:

The handwheel input for handwheel %1 requested through MD11352 $MN_HANDWHEEL_INPUT is not available for ETHERNET handwheels. A maximum of 6 handwheels can be configured.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Configure MD11352 $MN_HANDWHEEL_INPUT for a valid input for the corresponding handwheel

**Programm continuation:** Switch control OFF - ON.

## 4700 PROFIBUS/PROFINET I/O: The logical slot / I/O area address %1 was not found.

**Parameters:** %1 = Area address

**Explanation:** For PROFIBUS/PROFINET only:

The logical slot / I/O area address was not found in MD10500 $MN_DPIO_LOGIC_ADDRESS_IN with the stated slot / I/O area in the current PROFIBUS/PROFINET configuration.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Check the slot / I/O area address in the PROFIBUS/PROFINET configuration.

**Programm continuation:** Switch control OFF - ON.

## 4702 PROFIBUS/PROFINET I/O: The logical slot / I/O area address %1 was not found.

**Parameters:** %1 = Area address

**Explanation:** For PROFIBUS/PROFINET only:

The logical slot / I/O area address was not found in MD10510 $MN_DPIO_LOGIC_ADDRESS_OUT with the stated slot / I/O area index in the current PROFIBUS/PROFINET configuration.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Check the slot / I/O area address in the PROFIBUS/PROFINET configuration.

**Programm continuation:** Switch control OFF - ON.

## 5000 Communication job not executable %1

**Parameters:** %1 = Reference to which resources are no longer available.

**Explanation:** The communication job cannot be executed because there is insufficient memory space. Cause: too many communication jobs in parallel.

**Reaction:** Alarm display.

**Remedy:** Please notify the authorized service personnel.
Reduce the number of communication jobs taking place at the same time or increase MD10134 $MN_MM_NUM_MMC_UNITS
The alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 15.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 5010 Communication job not executable %1

**Parameters:** %1 = Reference to which resources are no longer available.

**Explanation:** The communication job cannot be executed because there is insufficient memory space. Cause: too many communication jobs in parallel.

**Reaction:** Alarm display.

**Remedy:** Please notify the authorized service personnel.
Reduce the number of communication jobs taking place simultaneously. Resources cannot be increased any further.
The alarm can be supressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 15.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 5020 Communication job is too extensive %1

**Parameters:** %1 = Indication of what is illegal.

**Explanation:** The communication job is illegal. Cause: the job is too extensive for the size of the PDU used.

**Reaction:** Alarm display.

**Remedy:** Please notify the authorized service personnel.
Correct the configuration of the communication job on the client side (HMI, PLC or OPCUA).
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 27.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 5030 Communication job not executable %1

**Parameters:** %1 = Reference to which resources are no longer available.

**Explanation:** The communication job cannot be executed because the transmission path of the communication is generally overloaded.

**Reaction:** Alarm display.

**Remedy:** Please notify the authorized service personnel.
Check whether more devices are connected to the NCK than is permitted.
The alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 28.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6000 Memory reorganized using standard machine data

**Explanation:** The memory management was not able to allocate the NC user memory with the values in the machine data. It did not have enough memory available because the total memory available is provided as dynamic and static memory for the NC user (e.g. for macro definitions, user variables, number of tool offsets, number of directories and files etc.).

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Redefine the NC memory structure!
A specific MD for NC user memory allocation cannot be stated to be the cause of the alarm. The MD initiating the alarm therefore has to be determined on the basis of the default values in the machine data by changing the user-specific memory structure step by step.
Usually, it is not just one single MD that has been set too large. Therefore it is advisable to reduce the memory area by a certain proportion in several MDs.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 6010 [Channel %1: ] Data block %2 not or not completely created, error code %3

**Parameters:** %1 = Channel number
%2 = String (block name)
%3 = Internal error code

**Explanation:** Data management has detected an error during ramp-up. The specified data block may not have been created. The error number specifies the type of error. An error number >100000 indicates a fatal system error. Other error numbers indicate that the user memory area provided is too small. In this case the (user) error numbers have the following meaning:

- Error number 1: No memory space available
- Error number 2: Maximum possible number of symbols exceeded
- Error number 3: Index 1 lies outside the valid value range
- Error number 4: Name already exists in channel
- Error number 5: Name already exists in NCK

If the alarm occurs after cycle programs, macro definitions or definitions for global user data (GUD) have been introduced, the machine data for the user memory configuration has been configured incorrectly. In all other cases, changes to machine data that is already correct lead to errors in the user memory configuration.

The following block names (2nd parameter) are known in the NCK (all system and user data blocks; in general, only problems in the user data blocks can be remedied by user intervention):

- _N_NC_OPT - System internal: option data, NCK global
- _N_NC_SEA - System internal: setting data, NCK global
- _N_NC_TEA - System internal: machine data, NCK global
- _N_NC_CEC - System internal: 'cross error compensation'
- _N_NC_PRO - System internal: protection areas, NCK global
- _N_NC_GD1 - User: 1st GUD block defined by _N_SGUD_DEF, NCK global
- _N_NC_GD2 - User: 2nd GUD block defined by _N_MGUD_DEF, NCK global
- _N_NC_GD3 - User: 3rd GUD block defined by _N_UGUD_DEF, NCK global
- _N_NC_GD4 - User: 4th GUD block defined by _N_GUD4_DEF, NCK global
- _N_NC_GD5 - User: 5th GUD block defined by _N_GUD5_DEF, NCK global
- _N_NC_GD6 - User: 6th GUD block defined by _N_GUD6_DEF, NCK global
- _N_NC_GD7 - User: 7th GUD block defined by _N_GUD7_DEF, NCK global
- _N_NC_GD8 - User: 8th GUD block defined by _N_GUD8_DEF, NCK global
- _N_NC_GD9 - User: 9th GUD block defined by _N_GUD9_DEF, NCK global
- _N_NC_MAC - User: macro definitions
- _N_NC_FUN - System internal: predefined functions and procedures, NCK global
- _N_CHc_OPT - System internal: option data, channel-specific
- _N_CHc_SEA - System internal: setting data, channel-specific
- _N_CHc_TEA - System internal: machine data, channel-specific
- _N_CHc_PRO - System internal: protection areas, channel-specific
- _N_CHc_UFR - System internal: frames, channel-specific
- _N_CHc_RPA - System internal: R-variables, channel-specific
- _N_CHc_GD1 - User: 1st GUD block defined by _N_SGUD_DEF, channel-specific
- _N_CHc_GD2 - User: 2nd GUD block defined by _N_MGUD_DEF, channel-specific
- _N_CHc_GD3 - User: 3rd GUD block defined by _N_UGUD_DEF, channel-specific
- _N_CHc_GD4 - User: 4th GUD block defined by _N_GUD4_DEF, channel-specific
- _N_CHc_GD5 - User: 5th GUD block defined by _N_GUD5_DEF, channel-specific
- _N_CHc_GD6 - User: 6th GUD block defined by _N_GUD6_DEF, channel-specific
- _N_CHc_GD7 - User: 7th GUD block defined by _N_GUD7_DEF, channel-specific
- _N_CHc_GD8 - User: 8th GUD block defined by _N_GUD8_DEF, channel-specific
- _N_CHc_GD9 - User: 9th GUD block defined by _N_GUD9_DEF, channel-specific
- _N_AXa_OPT - System internal: option data, axial
- _N_AXa_SEA - System internal: setting data, axial
- _N_AXa_TEA - System internal: machine data, axial
- _N_AXa_EEC - System internal: leadscrew error compensation data, axial
- _N_AXa_QEC - System internal: quadrant error compensation data, axial
- _N_TOt_TOC - System internal: toolholder data, TOA-specific
- _N_TOt_TOA - System internal: tool data, TOA-specific
- _N_TOt_TMA - System internal: magazine data, TOA-specific
- _N_NC_KIN - System internal: data to describe kinematic chains, NCK-specific

- _N_NC_NPA - System internal: data to describe 3D protection areas, NCK-specific
- _N_NC_TRA - System internal: transformation data sets, NCK-specific
- _N_NC_WAL - System internal: data to describe coordinate-specific working area limitation
- _N_COMPLETE_CYD - System internal: cycle and display machine data, NCK-, channel-, axis-specific

c = Channel number

a = Machine axis number

t = TOA unit number

There are also other internal system data blocks with identifiers.

**Reaction:** NC not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Correct the machine data or undo the changes made.

Please inform the authorized personnel/service department. There are two determining machine data for cycle programs:

- MD18170 $MN_MM_NUM_MAX_FUNC_NAMES = max. number of all cycle programs, error number = 2 shows that this value is too small.
- MD18180 $MN_MM_NUM_MAX_FUNC_PARAM = max. number of all parameters defined in the cycle programs, error number = 2 shows that this value is too small

(If these MDs are modified, the memory backup is retained)

The following applies to macro definitions:

MD18160 $MN_MM_NUM_USER_MACROS = max. number of all macro definitions, error number = 2 shows that this value is too small.

(If these MDs are modified, the memory backup is retained)

The following applies to GUD variables:

- MD18118 $MN_MM_NUM_GUD_MODULES = max. number of GUD data blocks per area (NCK/channel) (if GD1, GD2, GD3, GD9 are to be defined, then the value must be = 9 and not e.g. = 4).
- MD18120 $MN_MM_NUM_GUD_NAMES_NCK = max. number of all NCK global GUD variables, error number = 2 shows that this value is too small.
- MD18130 $MN_MM_NUM_GUD_NAMES_CHAN = max. number of all channel-specific GUD variables in the channel, error number = 2 shows that this value is too small.
- MD18150 $MN_MM_GUD_VALUES_MEM = total value memory of all GUD variables together, error number = 1 shows that this value is too small.

**Programm continuation:** Switch control OFF - ON.

## 6020 Machine data have been changed - now memory %1 is reorganized

**Parameters:** %1 = Detailed information

**Explanation:** Machine data have been changed that define the NC user memory allocation. Data management has restructured the memory in accordance with the altered machine data.

Meaning of the parameter value:

- AFS = The active file system was reconfigured. The files of the passive file system were retained.
- PFS/AFS = The passive and active file systems were reconfigured.

Via the machine data $MN_IS_AUTOMATIC_MEM_RECONFIG it is configured whether NCK configures the AFS automatically (value=TRUE) or not (value=FALSE).

**Reaction:** Alarm display.

**Remedy:** No remedial measures are required. Any user data that are required must be input again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6030 Limit of user memory has been adapted

**Explanation:** Data management checks during power-up the actually available physical user memory (DRAM, DPRAM and SRAM) with the values in the system-specific machine data MD18210 $MN_MM_USER_MEM_DYNAMIC, MD18220 $MN_MM_USER_MEM_DPR und MD18230 $MN_MM_USERMEM_BUFFERED-USERMEM_BUFFERED.

**Reaction:** Alarm display.

**Remedy:** No remedial measures are required. The new maximum permissible value can be read from the reduced machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6035 Instead of %1 KB the system has only %2 KB of free user memory of type '%3'

**Parameters:** %1 = Free memory capacity in KB defined for the control model

%2 = Actual maximum capacity of free memory in KB

%3 = Type of memory, "D" =non-battery-backed, "S" =battery-backed

**Explanation:** The alarm can only occur after a 'cold start' (=NCK start-up with standard machine data). The alarm is only a notice. There is no interference with any NCK functions. It shows that the NCK has less free user memory available than specified by Siemens for this control variant. The value of the actually available free user memory can also be taken from the MD18050 $MN_INFO_FREE_MEM_DYNAMIC, MD18060 $MN_INFO_FREE_MEMS_STATIC.

Siemens supplies NCK with default settings that, depending on the model, have certain (free) memory space available for the specific settings of the actual applications. The original factory setting of NCK systems is thus that the alarm does not occur with a cold start.

**Reaction:** Alarm display.

**Remedy:** Reasons for the message:

- The NCK contains compile cycle software, that uses so much memory space that the hardware cannot provide the required memory.
- The NCK runs on hardware that is not intended for this NCK release (i.e. that has not enough memory capacity).
- If the application runs properly with the remaining free user memory (i.e. can be setup without any errors), the message can simply be ignored.
- If the actual application cannot be configured because there is not enough memory capacity available, either the existing compile cycle must be reduced or, if possible, the system must be upgraded with additional memory space.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6100 Error while creating %1, error number %2 %3

**Parameters:** %1 = Symbolname

%2 = Error code

%3 = If required, internal error identifier

**Explanation:** An error was detected while creating a compile cycle machine data. The error number specifies the type of error.

- Error number 1: Insufficient memory available
- Error number 2: Symbol in the NCK already exists
- Error number 3: Maximum possible number of symbols exceeded
- Error number 4: Invalid name prefix
- Error number 5: Illegal array size

Note: Other errors of this type could have occurred, but have not been displayed.

**Reaction:** NC not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** - Error number 1: The memory reserved by MD18238 $MN_MM_CC_MD_MEM_SIZE has to be increased. If the error occurs while loading an archive, then the machine data must be increased "manually". To do this, either Edit the archive with 'arcedit' or Overwrite the MD in the MD picture and prevent the deletion of the machine data when writing the archive (HMI: Set Ask_for_CFG_RESET.INI = 1 in 'slsp.ini'). Also refer to: Upgrade instructions P6.x.
- Error number 2: Error in the combination or while reloading compile cycles: Do not activate compile cycle.
- Error number 3: Error in the combination or while reloading compile cycles: Do not activate compile cycle.
- Error number 4: Error in the compile cycle: Do not activate compile cycle.
- Error number 5: Error in the compile cycle: Do not activate compile cycle.

**Programm continuation:** Switch control OFF - ON.

## 6200 Memory for CC MD full.

**Explanation:** The memory reserved for storage of compile cycle machine data is full.
Some of these machine data could not be created correctly.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
If the alarm is displayed on setup of compile cycles, this may be remedied by increasing MD18238 $MN_MM_CC_MD_MEM_SIZE.

**Programm continuation:** Switch control OFF - ON.

## 6401 [Channel %1: ] Tool change not possible: Empty location for tool %2 on magazine %4 not available.

**Parameters:** %1 = Channel ID
%2 = String (identifier)
%3 = -Not used-
%4 = Magazine number

**Explanation:** The tool cannot be moved into the selected tool magazine. There is no appropriate location for this tool. A suitable location is mainly determined by the status. The status must indicate that this location is free, not disabled, not reserved and not co-occupied by a tool that is too large. Furthermore, it is important that the type of tool matches the type of any magazine location that may be free. (If, for example, all magazine locations are of the 'B' type and these are all free and the tool is of type 'A', then this tool cannot be put into this magazine).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check whether the magazine data have been defined correctly.
- Check whether there is still room in the magazine to add another tool; there may not be due to operating procedures.
- Check whether a location type hierarchy is defined and whether it, for example, does not allow insertion of a type 'A' tool in a free location with type 'B'.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6402 [Channel %1: ] Tool change not possible. Magazine no. %2 not available

**Parameters:** %1 = Channel ID
%2 = Magazine number

**Explanation:** The desired tool change is not possible. The magazine with the specified number is not available.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check whether the magazine data have been defined correctly.
- Check whether the magazine is connected to the desired tool holder/spindle via a distance relation.
- The user PLC program may have sent wrong data to the NCK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6403 [Channel %1: ] Tool change not possible. Magazine location number %2 on magazine %3 not available.

**Parameters:** %1 = Channel ID
%2 = Magazine number
%3 = Magazine location number

**Explanation:** The desired tool change is not possible. The specified magazine location is not contained in the specified magazine.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check whether the magazine data have been defined correctly.
The user PLC program may have delivered incorrect data to the NCK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6404 [Channel %1: ] Tool change not possible. Tool %2 not available or not usable

**Parameters:** %1 = Channel ID
%2 = String (identifier)

**Explanation:** The desired tool change is not possible. The specified tool does not exist or cannot be loaded.
The tool cannot be loaded either if it is part of a multitool which is already active with another tool, or is part of a multitool whose state is 'Change active' in relation to another toolholder.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check whether the part program is written correctly.
- Check whether the tool data are correctly defined.
- Check whether there is a replacement tool which can be used for the specified tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6405 [Channel %1: ] Command %2 has invalid PLC acknowledge parameter %3 - identifier %4

**Parameters:** %1 = Channel ID
%2 = Command no.
%3 = PLC acknowledge parameter
%4 = Error code

**Explanation:** The specified command has been answered by the PLC with an invalid acknowledgment in the current context. The following assignments are defined for "command no.":

1 Move tool, load or unload magazine

2 Prepare tool change

3 Execute tool change

4 Prepare tool change and execute with T command

5 Prepare tool change and execute with M command

7 Terminate canceled tool command

8 Check tool movement with reservation

9 Check tool movement

0 Transport acknowledgment

Parameters 2 and 3 designate the PLC command and the status number of the acknowledgment.

The error identifier (%4) gives a more detailed description of the alarm:

- 0 = Not defined
- 1 = Status not allowed with this command no. or undefined status received from PLC.
- 2 = Source and/or target magazine no./location no. of the previous tool not known.
- 3 = Source location in ACK does not match command or current tool location.
- 4 = Target magazine no. and/or location no. in ACK not final target in CMD.
- 5 = Not defined
- 6 = Source and/or target magazine no./location no. of the new tool not known.
- 7 = PLC comm. with inconsistent data: NCK command no. not equal to PLC acknowledgement or there is no NCK command that can be acknowledged.
- 8 = With asynchronous tool movement or tool rejection there is no tool at the source location.
- 9 = The command acknowledgement data wants to move a tool to a location that is occupied by another tool.
- 10 = Asynchronous tool motion with reservation is only defined for the motion from a magazine to a buffer location.
- 11 = Invalid MT position specified.
- 12 = For tool change from multitool or MT positioning, the PLC must not acknowledge the multitool position specified by NCK with a different value.
- 13 = Tool rejection is not permitted.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Erroneous PLC communication: Correct the PLC program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6406 [Channel %1: ] PLC acknowledge for command %2 is missing

**Parameters:** %1 = Channel ID

%2 = Command no.

**Explanation:** There is still no acknowledgment from the PLC for the tool change. The NCK cannot continue processing until it receives this acknowledgment for the specified command number. Possible command number values are described for alarm 6405.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

- Erroneous PLC communication: Correct the PLC program.
- It is possible to release NCK with the PLC command 7 from the wait condition.

This cancels the waiting command.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

| 6407 | [Channel %1: ] Tool %2 cannot be placed in magazine %3 on location %4. Invalid definition of magazine! |
|---|---|
| **Parameters:** | %1 = Channel ID<br>%2 = String (identifier)<br>%3 = Magazine number<br>%4 = Magazine location number |
| **Explanation:** | A tool change request or a verification request was issued to put the tool in a location which does not satisfy the prerequisites for filling.<br>The following causes for the error are possible:<br>- Location is blocked or not free!<br>- Tool type does not match the location type!<br>- Tool possibly too large, adjacent locations are not free! |
| **Reaction:** | NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display.<br>NC Stop on alarm. |
| **Remedy:** | - Check whether the magazine data are correctly defined (especially the location type).<br>- Check whether the tool data are correctly defined (especially the location type). |
| **Programm continuation:** | Clear alarm with the RESET key. Restart part program |

| 6408 | [Channel %1: ] Block %2 empty location search and/or check in magazine has failed |
|---|---|
| **Parameters:** | %1 = Channel ID<br>%2 = Block number, label |
| **Explanation:** | The empty location search or the empty location check for a tool has failed.<br>The following could be causes of the error:<br>- Location is disabled or not empty!<br>- Tool type does not correspond to the location type!<br>- Tool may be too large, adjacent locations are occupied! |
| **Reaction:** | Correction block is reorganized.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | - Check whether the magazine data are correctly defined (especially the location type).<br>- Check whether the tool data are correctly defined (especially the location type). |
| **Programm continuation:** | Clear alarm with NC START or RESET key and continue the program. |

| 6409 | [Channel %1: ] Block %2 If MTH is programmed then T must also be programmed. |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label |
| **Explanation:** | Function: Multitools and T= location programming. There is no T programming in the block. Only MTL is programmed. |
| **Reaction:** | Correction block is reorganized.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Correct NC program:<br>- Program T in the block<br>- or delete MTL from the block |
| **Programm continuation:** | Clear alarm with NC START or RESET key and continue the program. |

## 6410 [TO unit %1: ] Tool %2 has reached its prewarning limit with D = %4

**Parameters:** %1 = TO unit
%2 = Tool identifier (name)
%3 = -Not used-
%4 = D number

**Explanation:** Tool monitoring: This message informs that the specified D offset has reached its prewarning limit for a time-, quantity- or wear-monitored tool. If possible, the D number is displayed; if not, value 0 is assigned to the 4th parameter.
If the function additive offset is being used, additive offset monitoring may be active instead of tool wear monitoring. The actual type of tool monitoring is a tool property (see $TC_TP9). If replacement tools are not being used, the duplo number specified has no meaning. The alarm is triggered through the HMI or PLC (=OPI interface). The channel context is not defined. The TO unit was specified for this reason (see MD28085 $MC_MM_LINK_TOA_UNIT).

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only. Check the possible ways of eliminating the error.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6411 [Channel %1: ] Tool %2 has reached its prewarning limit with D = %4

**Parameters:** %1 = Channel number
%2 = Tool identifier (name)
%3 = -Not used-
%4 = D number

**Explanation:** Tool monitoring: This message informs that the specified D offset has reached its prewarning limit for a time-, quantity- or wear-monitored tool. If possible, the D number is displayed; if not, value 0 is assigned to the 4th parameter.
If the function additive offset is being used, additive offset monitoring may be active instead of tool wear monitoring. The actual type of tool monitoring is a tool property (see $TC_TP9).
If replacement tools are not being used, the duplo number specified has no meaning.
The alarm originates during NC program execution.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only. Check the possible ways of eliminating the error.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6412 [TO unit %1: ] Tool %2 has reached its monitoring limit with D = %4

**Parameters:** %1 = TO unit
%2 = Tool identifier (name)
%3 = -Not used-
%4 = D number

**Explanation:** Tool monitoring: This message informs that the specified D offset has reached its prewarning limit for a time-, quantity- or wear-monitored tool. If possible, the D number is displayed; if not, value 0 is assigned to the 4th parameter.
If the function additive offset is being used, additive offset monitoring may be active instead of tool wear monitoring.
The actual type of tool monitoring is a tool property (see $TC_TP9).
If replacement tools are not being used, the duplo number specified has no meaning.
The alarm is triggered through the HMI or PLC (=OPI interface). The channel context is not defined. The TO unit was specified for this reason (see MD28085 $MC_MM_LINK_TOA_UNIT).

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only. Check the possible ways of eliminating the error.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6413 [Channel %1: ] Tool %2 has reached its monitoring limit with D = %4

**Parameters:** %1 = Channel number
%2 = Tool identifier (name)
%3 = -Not used-
%4 = D number

**Explanation:** Tool monitoring: This message informs that the specified D offset has reached its prewarning limit for a time-, quantity- or wear-monitored tool. If possible, the D number is displayed; if not, value 0 is assigned to the 4th parameter.
If the function additive offset is being used, additive offset monitoring may be active instead of tool wear monitoring.
The actual type of tool monitoring is a tool property (see $TC_TP9).
If replacement tools are not being used, the duplo number specified has no meaning.
The alarm originates during NC program execution.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only. Check the possible ways of eliminating the error.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6421 [Channel %1: ] Tool move not possible. Empty location for tool %2 on magazine %4 not available.

**Parameters:** %1 = Channel ID
%2 = String (identifier)
%3 = -Not used-
%4 = Magazine number

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. The tool cannot be moved into the specified tool magazine. There is no appropriate location for this tool.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the magazine data have been defined correctly (e.g. the magazine must not be disabled).
- Check whether the tool data are correctly defined (for example, the tool location type must match the location types allowed in the magazine).
- Check whether the magazine has simply no more room to accept another tool thanks to operating procedures.
- Check whether a location type hierarchy is defined and whether, for example, it does not allow insertion of a type 'A' tool in a free location with type 'B'.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6422 [Channel %1: ] Tool move not possible. Magazine no. %2 not available.

**Parameters:** %1 = Channel ID
%2 = Magazine number

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. The magazine with the specified number is not available.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the magazine data have been defined correctly.
- If the PLC issued the command for motion: check whether the PLC program is correct.
- If the HMI issued the command for motion: check whether the HMI command was assigned correct parameters.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6423 [Channel %1: ] Tool move not possible. Location %2 on magazine %3 not available.

**Parameters:** %1 = Channel ID
%2 = Magazine location number
%3 = Magazine number

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. The specified magazine location is not contained in the specified magazine.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check whether the magazine data have been defined correctly.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6424 [Channel %1: ] Tool move not possible. Tool %2 not available/not usable.

**Parameters:** %1 = Channel ID
%2 = String (identifier)

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. The status of the specified tool does not allow movement of the tool. The specified tool is not defined or is not permitted for the command.
The specified tool cannot be moved either if it is part of a multitool (only the multitool itself can be moved).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the tool status 'is being changed' ('H20') is set. If yes, then the appropriate tool change command must first be completed by the PLC. Then the tool should be able to be moved.
- Check whether the tool data are correctly defined. Has the correct T number been specified?
- Check whether the move command has been correctly parameterized. Is the desired tool at the source location? Is the target location suitable for taking the tool?
- Check whether the tool has already been loaded (if the alarm occurs while loading the tool).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6425 [Channel %1: ] Tool %2 cannot be placed in magazine %3 on location %4. Invalid definition of magazine!

**Parameters:** %1 = Channel ID
%2 = String (identifier)
%3 = Magazine number
%4 = Magazine location number

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. A movement request was issued to put the tool in a location which does not satisfy the prerequisites for filling.
The following causes for the error are possible:
- Location is blocked or not free!
- Tool type does not match the location type!
- Tool possibly too large, adjacent locations are not free!
- If a tool is to be loaded or unloaded, the load/unload position must be of 'load location' type.
- If a tool is to be loaded or unloaded, is the magazine in question linked to the load/unload location?
See $TC_MDP1, $TC_MDP2.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
- Check whether the magazine data have been defined correctly.
- Check whether there is still room in the magazine to add another tool; there may not be due to operating procedures.
- Check whether a location type hierarchy is defined and whether it, for example, does not allow insertion of a type 'A' tool in a free location with type 'B'.
- Check whether the magazine in question is linked to the load/unload location or whether a distance has been defined.
- Check whether the load/unload position is of 'load location' type.

See also $TC_MPP1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6430 Workpiece counter: overflow in table of monitored cutting edges.

**Explanation:** No more cutting edges can be entered in the piece counter table.

As many cutting edges can be noted for the workpiece counter as are possible in total in the NCK.

This means that if for each tool each cutting edge in each TO unit is used precisely once for a workpiece then the limit is reached.

If several workpieces are made on several toolholders/spindles simultaneously, it is possible to note

MD18100 $MN_MM_NUM_CUTTING_EDGES_IN_TOA cutting edges for the workpiece counter for all of the workpieces.

If this alarm occurs, it means that cutting edges used subsequently are no longer quantity monitored until the table has been emptied again, e.g. by means of the NC language command SETPIECE or by the relevant job from HMI, PLC (PI service).

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:**
- Was decrementing of the piece counter forgotten? Then program SETPIECE in the part program, or add the correct command in the PLC program.
- If the part program/PLC program is correct, then more memory should be set for tool cutting edges via the MD18100 $MN_MM_NUM_CUTTING_EDGES_IN_TOA (can only be performed with the necessary access rights!).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6431 [Channel %1: ] Block %2 Function not allowed. Tool management/monitoring is not active.

**Parameters:** %1 = Channel ID

%2 = Block number, label

**Explanation:** Occurs when a data management function is called which is not available because ToolMan is deactivated. For example, the language commands GETT, SETPIECE, GETSELT, NEWT, DELT, TCA.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:**
- Please inform the authorized personnel/service department.
- Make sure of how the NC is supposed to be configured! Is tool management or tool monitoring needed but not activated?
- Are you using a part program that is meant for a numerical control with tool management/tool monitoring? It is not possible to start this program on the numerical control without tool management/tool monitoring. Either run the part program on the appropriate NC control or edit the part program.
- Activate tool management/tool monitoring by setting the appropriate machine data. See MD18080$MN_MM_TOOL_MANAGEMENT_MASK, MD20310$MC_TOOL_MANAGEMENT_MASK
- Check whether the required option is set accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6432 Function not executable. No tool assigned to tool holder/spindle

**Parameters:** %1 = Channel ID

**Explanation:** When an attempt is made to perform an operation that requires a tool to be located on the spindle. This can be the quantity monitoring function, for example.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Select another function, another toolholder/spindle, position tool on toolholder/spindle.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6433 [Channel %1: ] Block %2 %3 not available with tool management

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The system variable specified in %3 is not available with active tool management. The function GELSELT should be used with $P_TOOLP.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify program. If $P_TOOLP has been programmed, the GETSELT function should be used instead.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6434 [Channel %1: ] Block %2 NC command SETMTH not allowed because tool holder function not active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No master toolholder has been defined for the initial state (MD20124 $MC_TOOL_MANAGEMENT_TOOLHOLDER = 0), therefore no toolholder is available. The NC command SETMTH has neither been defined. In this setting, the tool change is carried out referring to the master spindle. The master spindle is set with SETMS.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program (delete or replace SETMHT) or enable toolholder function via machine data.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6436 [Channel %1: ] Block %2 command '%3' cannot be programmed. Function '%4' has not been activated.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Programmed command
%4 = Function identifier

**Explanation:** The command cannot be programmed due to the lack of a function enable or activation.
Function code (4th parameter):
1 = Flat D numbers
2 = Tool monitoring
3 = Magazine management
4 = Multitools
5 = T=Magazine location number

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6437 [Channel %1: ] Block %2 Command '%3' cannot be programmed. Function '%4' is activated.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Programmed command
%4 = Function identifier

**Explanation:** The command cannot be programmed as the specified function is active.
Function code (4th parameter):
1 = Flat D numbers
2 = Tool monitoring
3 = Magazine management
4 = Multitools
5 = T=Magazine location number

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6438 [Channel %1: ] Block %2 inconsistent data modification is not permitted.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a defined multitool, for example, the distance coding $TC_MTP_KD cannot be changed once the multitool location has been generated.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6441 Writing of $P_USEKT not allowed.

**Explanation:** An attempt was made to write the value of $P_USEKT. This is not possible since programming T= 'location number' with automatic setting of $P_USEKT is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check how the NC is supposed to be configured. (See bit16 and bit22 in MD 20310 $MC_TOOL_MANAGEMENT_MASK).
- Is a part program being used that is intended for an NC control without T='location number' with automatic setting of $P_USEKT? This program cannot be started on an NC control with T='location number' with automatic setting of $P_USEKT.
- Either run the part program on an appropriate NC control or edit the part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6442 [Channel %1: ] Function not executable. No tool assigned to desired magazine/magazine location %2.

**Parameters:** %1 = Channel ID
%2 = Magazine/magazine location no.

**Explanation:** PLC logic is presumably incorrect. Tool change with reject tool is configured. Preparatory command is pending. Selected tool is (e.g. from PLC) unloaded from its location. PLC acknowledges preparatory command with 'Repeat tool selection' (e.g. status =7). NCK cannot find the tool at the magazine location specified in the PLC command.
Or: Illegal operator intervention in an active tool selection (unloading of the tool to be selected) has occurred. Therefore the PLC acknowledgment fails.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** PLC programmer must note the following:
- Ensure that the tool is not removed from the specified magazine location (e.g. incorrect PLC program).
- Do not remove the tool from the programmed tool change before the final acknowledgment of the command (= unload).
!! It is however permissible to change the location of the tool to be loaded. The NCK can deal with this situation.
This alarm supplements Alarm 6405, if it contains the identifier 8. Therefore, the diagnostics should be easier.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6450 [Channel %1: ] Block %2 tool change not possible. Invalid magazine location no. %3 in buffer magazine

**Parameters:** %1 = Channel ID
%2 = Block number, label
%3 = Magazine location number

**Explanation:** The desired tool change is not possible. The specified magazine location is either toolholder/spindle or empty.
Only the numbers of the buffer that are not toolholder/spindle may be programmed with the NC command TCI, i.e. the location number of a gripper is allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the magazine data ($TC_MPP1) have been defined correctly.
- Check whether the alarm-causing program command _ e.g. TCI _ has been programmed correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6451 [Channel %1: ] Block %2 tool change not possible. No buffer magazine defined.

**Parameters:** %1 = Channel ID
%2 = Block number, label

**Explanation:** The desired tool change is not possible. No buffer magazine defined.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check whether the magazine data have been defined correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6452 [Channel %1: ] Block %2 tool change not possible. Tool holder/spindle number = %3 not defined.

**Parameters:** %1 = Channel ID
%2 = Block number, label
%3 = Tool holder/spindle number

**Explanation:** The desired tool change is not possible. The toolholder/spindle number has not been defined.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** General: The following must apply: 'maximum programmed address extension s (=spindle number/toolholder number) of Ts=t, Ms=6 must be less than the value of MD18076 $MN_MM_NUM_LOCS_WITH_DISTANCE'.
With magazine management: Check whether the toolholder number/spindle number and the magazine data have been defined correctly.
(See also the system variables $TC_MPP1, $TC_MPP5 of the buffer magazine).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6453 [Channel %1: ] Block %2 tool change not possible. No assignment between toolholder/spindle no. = %3 and buffer magazine location %4

**Parameters:** %1 = Channel ID
%2 = Block number, label
%3 = Spindle no.
%4 = Location no.

**Explanation:** The desired tool change is not possible. No relation has been defined between the toolholder/spindle number and the buffer magazine location (Location No.)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the magazine data ($TC_MLSR) have been defined correctly.
- Check whether the alarm-causing program command _ e.g. TCI _ has been programmed correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6454 [Channel %1: ] Block %2 tool change not possible. No distance relation available.

**Parameters:** %1 = Channel ID
%2 = Block number, label

**Explanation:** The desired tool change is not possible. Neither the spindle nor the buffer magazine location have a distance relation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the magazine data ($TC_MDP2) have been defined correctly.
- Check whether the alarm-causing program command _ e.g. TCI _ has been programmed correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6455 [Channel %1: ] Block %2 tool change not possible. Magazine location no. %3 not available in magazine %4

**Parameters:** %1 = Channel ID
%2 = Block number, label
%3 = Magazine location number
%4 = Magazine number

**Explanation:** The desired tool change is not possible. The indicated magazine location is not available in the indicated magazine.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the causing program command - e.g. TCI - has been parameterized correctly.
- Check whether magazine data have been defined correctly. ($TC_MAP6 and $TC_MAP7 of the intermediate location magazine)

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6460 [Channel %1: ] Block %2 Command '%3' can only be programmed for tools. '%4' does not designate a tool.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Programmed command
%4 = Programmed parameter

**Explanation:** The specified command can only be programmed for tools. The command parameter is not a T number or a tool name. If a multitool has been programmed: The command cannot be programmed for multitools.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6462 [Channel %1: ] Block %2 Command '%3' can only be programmed for magazines. '%4' does not designate a magazine.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Programmed command
%4 = Programmed parameter

**Explanation:** The specified command can only be programmed for magazines. The command parameter is not a magazine number or a magazine name. If a multitool has been programmed: The command cannot be programmed for multitools.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 6500 NC memory full

**Explanation:** The NCK file system is full.
The available buffered memory does not suffice. Note: At first commissioning, files of the NC file system may be affected such as drive data, HMI files, FIFO files, NC programs...

**Reaction:** Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Adjust the size of the buffered memory with MD18230 $MN_MM_USER_MEM_BUFFERED.
Increase the space available in the buffered memory, e.g. by unloading part programs that are no longer being used.
Decrease the size of the ring buffer (see MD18230 $MC_RESU_RING_BUFFER_SIZE).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6510 Too many part programs in the NC memory

**Explanation:** The maximum number of possible files in the NC file system (part of the NC memory) has been reached. Note: During first commissioning, this can affect files from the NC file system, e.g. drive data, HMI files, FIFO files, NC programs, cycle programs, ...

**Reaction:** Alarm display.

**Remedy:** Inform the authorized personnel/service department.
You have the following possibilities of eliminating the error:
- Delete or unload files (e.g. part programs)
- Increase the number of files in the file system in MD18320 $MN_MM_NUM_FILES_IN_FILESYSTEM or MD18321 MD_MAXNUM_SYSTEM_FILES_IN_FILESYSTEM.
- With the Siemens cycle storage, increase the number of files in the resource file.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6520 The value of the machine data %1%2 is too low

**Parameters:** %1 = String: MD identifier
%2 = If required, index: MD array

**Explanation:** MD18370 $MN_MM_PROTOC_NUM_FILES specifies the number of protocol files for the protocol users. However, more protocol files are used than are configured.

**Reaction:** Alarm display.

**Remedy:** Increase the number of protocol files in MD18370 $MN_MM_PROTOC_NUM_FILES.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6540 Too many directories in the NC memory

**Explanation:** The number of directories in the NC file system (part of the NC memory) has reached the maximum limit.

**Reaction:** Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
- Delete or unload the directory (e.g. the workpiece)
- Increase the number of directories in MD18310 $MN_MM_NUM_DIR_IN_FILESYSTEM.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6560 Data format not allowed

**Explanation:** An attempt was made to write impermissible data in an NCK file. This error can occur in particular when the attempt was made to load binary data in the NCK as ASCII file.
The error can also occur during preprocessing of cycles (see MD10700 $MN_PREPROCESSING_LEVEL) if the NC block is very long.

**Reaction:** Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Mark the file as binary data, e.g. with the extension: .BIN).
If the part program block is very long, split it up.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6568 Limit of the extended CNC memory reached

**Explanation:** The memory space assigned to the function 'Extended CNC user memory' is exhausted.

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Delete files in the extended CNC memory

**Programm continuation:** Switch control OFF - ON.

## 6569 HMI user memory limit reached on the memory card.

**Explanation:** The memory space in the reserved user area on the memory card is exhausted.

**Reaction:** NC Start disable in this channel.
Alarm display.
**Remedy:** Delete files on the memory card
**Programm continuation:** Switch control OFF - ON.

## 6570 NC memory full

**Explanation:** The DRAM file system of the NCK is full. The task cannot be executed. Too many system files were created in the DRAM.
**Reaction:** Alarm display.
**Remedy:** Start fewer "execute from external" processes.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6581 NC user memory full

**Explanation:** The DRAM file system of the user area is full. The order cannot be executed.
**Reaction:** Alarm display.
**Remedy:** Delete or unload files (e.g. part programs)
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6582 NC machine OEM memory full

**Explanation:** The DRAM file system of the machine OEM area is full. The order cannot be executed.
**Reaction:** Alarm display.
**Remedy:** Delete or unload files (e.g. part programs)
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6583 NC system memory full

**Explanation:** The DRAM file system of the system area (Siemens) is full. The order cannot be executed.
**Reaction:** Alarm display.
**Remedy:** Increase MD18354 $MN_MM_S_FILE_MEM_SIZE or, with Siemens cycles, increase the partition size in the cycle ressource file.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6584 NC memory limit TMP reached

**Explanation:** The DRAM file system of the TMP (temporary) area is full. The job cannot be executed.
**Reaction:** Alarm display.
**Remedy:** Increase MD18351 $MN_MM_DRAM_FILE_MEM_SIZE or MD18355 $MN_MM_T_FILE_MEM_SIZE or switch off the precompilation of individual or all cycles or delete files in the TMP area.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6693 File %1 lost

**Parameters:** %1 = File name
**Explanation:** Due to a power failure, a file change could not be terminated properly. The file is lost.
**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Import the file again.
**Programm continuation:** Switch control OFF - ON.

## 6694 Drives could not be mounted

**Explanation:** The external drives could not be mounted within the configured time (see MD10128 $MN_EES_MAX_MOUNT_TIME).
**Reaction:** NC not ready.
Interface signals are set.
Alarm display.
**Remedy:** Check logdrives.ini and increase MD10128 $MN_EES_MAX_MOUNT_TIME if necessary.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 6700 [Channel %1: ] Value of the machine data %2%3 is too low

**Parameters:** %1 = Channel number
%2 = MD identifier
%3 = If required, field index
**Explanation:** The MD28302 $MC_MM_PROTOC_NUM_ETP_STD_TYP specifies the number of default event types for the protocol users. However, more types are used than configured.
**Reaction:** Alarm display.
**Remedy:** Increase MD28302 $MC_MM_PROTOC_NUM_ETP_STD_TYP.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6710 Data loss with trace in the diagnostics operating area. The IPO cycle is too heavily loaded by the trace.

**Explanation:** Data loss with trace in the diagnostics operating area. The IPO cycle is too heavily loaded by the trace, so data blocks have to be rejected. This should prevent the trace impairing production.
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.
**Reaction:** Alarm display.
**Remedy:** Select less data or lengthen the IPO cycle.
The alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6720 Data loss with trace in the diagnostics operating area. Communication with the HMI is too heavily loaded by the trace.

**Explanation:** Data loss with trace in the diagnostics operating area. Communication with the HMI is too heavily loaded by the trace, so data blocks have to be rejected. This should prevent the trace impairing production.
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.
**Reaction:** Alarm display.
**Remedy:** Select less data or reduce the sampling rate.
The alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6730 Data loss with trace in the diagnostics operating area. The preprocessing is too heavily loaded by the trace.

**Explanation:** The data recorded by the trace could not be accepted quickly enough on the time level of the preprocessing. The system is so heavily utilized that availability of the trace functionality is restricted. If there is a temporary overload of the preprocessing, as a remedy, the buffer between the main processing and the preprocessing can be increased.
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.

**Reaction:** Alarm display.

**Remedy:** Increase MD18374 $MN_MM_PROTOC_FILE_BUFFER_SIZE[5-8].
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 6740 Data loss with trace in the diagnostics operating area. Communication with the HMI is too heavily loaded.

**Explanation:** Data loss with trace in the diagnostics operating area. Communication with the HMI is too heavily loaded by the trace to be able to transfer all the selected data. The system is so heavily utilized that availability of the trace functionality is restricted.
The alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.

**Reaction:** Alarm display.

**Remedy:** Select less data or reduce the sampling rate.
The alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK2 bit 26.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 7020 Compile cycle alarm number has not been defined

**Explanation:** The alarm ID used by the compile cycle manufacturer is not known to the system. This was not allocated when the compile cycle alarms were generated.

**Reaction:** Alarm display.

**Remedy:** The alarm can have 2 possible causes:
- The alarm number has not been defined. A definition must still be made.
- The call parameter used is not the same as the one transferred by the NCK.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 7100 Compile cycles VDI area: %1 byte for inputs and %2 byte for outputs. Maximum %3 bytes available.

**Parameters:** %1 = String (machine data)
%2 = String (machine data)
%3 = Max. length for interface

**Explanation:** The sum of the input and output bytes at the VDI user interface for the compile cycles exceeds the maximum quantity of 400 bytes.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Set the machine data for dividing up the VDI user interface of the compile cycles (DB 9) into input and output bytes in accordance with the functions in the compile cycles. The maximum quantity of 400 bytes must not be exceeded. There are no restrictions concerning the division into input and output bytes.

**Programm continuation:** Switch control OFF - ON.

## 7200 Problem with externally linked compile cycle %1 %2

**Parameters:** %1 = Description character string
%2 = Additional information

**Explanation:** Problem with loadable compile cycles
Example:
"Version_conflict_with_CCNCKInterface_Version"
Meaning: The interface version of the compile cycle is incompatible with the NCK version.
"Loader_problem_from_dFixup"
Meaning: Unresolved references are left over after loading of all compile cycles, for example as an ELF file is missing.
There are other more complex possible reasons for this alarm. Please contact the Hotline!

**Reaction:** Alarm display.
NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.

**Remedy:** "Version_conflict_with_CCNCKInterface_Version"
Remedy: The binary file of the compile cycle (.elf file) must be generated against the interface that matches the NCK version. The binary file must therefore be replaced.
"Loader_problem_from_dFixup"
Remedy: The error in the compile cycle must be corrected.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 7201 Assertion error in %1 line %2

**Parameters:** %1 = String (path with program name)
%2 = (line number)

**Explanation:** This alarm is purely a development alarm. It only occurs with externally linked compile cycles.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** Consultation with CC developer

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 7202 Missing option bit for %1: %2 <hex>

**Parameters:** %1 = () name of the specific .elf file
%2 = (int) required option bit (hex)

**Explanation:** Alarm for SIEMENS compile cycles. This alarm appears when the option bit required for a SIEMENS compile cycle is not set.

**Reaction:** NC not ready.
Channel not ready.
Interface signals are set.
Alarm display.
Alarm reaction delay is canceled.

**Remedy:** Set the required option bit or delete the .elf file from the Flash File System.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 7203 Missing release for %1 index: %2

**Parameters:** %1 = Name of the CC specific .elf file

%2 = Index describing the problem that occured in more detail

**Explanation:** Alarm for SIEMENS compile cycles. This alarm appears when a SIEMENS compile cycle has been loaded that has not been released for the controller. The "Index" parameters describe the error cause further:

Index == 1: The interface version of the compile cycle is not identical with the interface version of the NCK.

Index == 2: The compile cycle cannot be applied in this controller since the hardware serial number is not one of the released serial numbers.

Index == 3: The compile cycle that is the cause of the error has been determined and written in the alarm description of the compile cycle.

**Reaction:** NC not ready.

Channel not ready.

Interface signals are set.

Alarm display.

Alarm reaction delay is canceled.

**Remedy:** Delete the .elf file from the flash file system.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 7204 Compile cycle %1 is a preliminary version.

**Parameters:** %1 = Name of the compile cycle

**Explanation:** A preliminary version of a compile cycle may only be used for a trial.

**Reaction:** Alarm display.

**Remedy:** Ensure that the compile cycle is not an preliminary version when it is finally going to be used.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 7300 Problem with externally linked COA application %1 Index: %2 Additional information: %3

**Parameters:** %1 = Name of the COA application

%2 = Index describing the problem that occured in more detail

%3 = Optional additional parameter

**Explanation:** A problem occurred while loading the COA application. This problem is described in more detail by the parameters "Index" and "Additional information":

Index == 1: The interface version of the COA application is incompatible with the NCK version. The additional information contains the interface version of the COA application.

Index == 2: The heap memory requested by the COA application is not available. The additional information contains the heap memory requested in KB.

Index == 3: The $P_INCOAP parameters requested by the COA application cannot be created due to insufficient memory. The additional information contains the heap memory requested in KB.

**Reaction:** Alarm display.

**Remedy:** Index == 1: The COA application is not executable in the current environment. Please inform the authorized personnel/ service department.

Index == 2 or 3: Check MD18235 $MN_MM_INCOA_MEM_SIZE. The memory requested by the COA application will not become available until after another warm restart. This means that the alarm should no longer occur with a warm restart (NCK reset). Otherwise, there is a real memory problem, and the COA application is not executable (see Index == 1).

**Programm continuation:** Switch control OFF - ON.

## 7301 Assertion error in %1 line %2

**Parameters:** %1 = File name

%2 = Line number

**Explanation:** This alarm is purely a development alarm. It only occurs with externally linked COA applications.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Alarm reaction delay is canceled.

**Remedy:** Query with COA developers

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 7500 Block %1 invalid protection level for command %2 (protection level act.: %3 prog.: %4)

**Parameters:** %1 = Block number
%2 = Programmed command
%3 = Current protection level of the command
%4 = Programmed protection level of the command

**Explanation:** On assigning a protection level for a part program command via REDEF command
- an impermissible part program command has been programmed
- a protection level has been programmed that is logically smaller (larger in value) than the protection level currently applicable for this command.
- the relevant definition file has not been protected sufficently against write access. The write protection of the file must be at least as high as the highest protection level that has been assigned to a part program command in this definition file.

**Reaction:** Alarm display.

**Remedy:** Modify definition files /_N_DEF_DIR/_N_MACCESS_DEF or /_N_DEF_DIR/_N_UACCESS_DEF-CESS_ DEF. Please see the Siemens Programming Guide or the OEM documentation for the language commands permissible for the relevant system configurations.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8010 Option 'activation of more than %1 axes' not set

**Parameters:** %1 = Number of axes

**Explanation:** More machine axes have been defined through the MD20070 $MC_AXCONF_MACHAX_USED than are allowed in the system.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorised personnel/service department.
The sum of all axes that have been configured using the channel-specific MD20070 $MC_AXCONF_MACHAX_USED must not exceed the maximum number of axes.
Reduce the number of active axes or enable additional axes via option.
Please also observe the information relating to the definition of 'auxiliary axes/spindles', 'simulation axes', and 'virtual axis for master value coupling with curve table'.

**Programm continuation:** Switch control OFF - ON.

## 8012 The 'Activation of more than %1 SI axes' option is not set

**Parameters:** %1 = Number of licensed axes
%2 = Number of axes with active dbSi

**Explanation:** The drive-based safety functions were activated for more axes than permitted in the system.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please notify the authorized personnel / service department. Reduce the number of axes activated with drive-based safety functions or release additional axes in the option date.

**Programm continuation:** Switch control OFF - ON.

## 8020 Option 'activation of more than %1 channels' not set

**Parameters:** %1 = Number of active channels

**Explanation:** More than the permissible number of channels have been activated.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
In the system-specific MD10010 $MN_ASSIGN_CHAN_TO_MODE_GROUP, reduce the number of active channels or enable additional channels via option.

**Programm continuation:** Switch control OFF - ON.

## 8021 Option 'activation of more than %1 mode groups' not set

**Parameters:** %1 = Number of mode groups

**Explanation:** The option for the number of mode groups is not compatible with the activated mode group.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Retrofit the option for more mode groups.
Activate fewer mode groups.

**Programm continuation:** Switch control OFF - ON.

## 8022 The 'Activation of more than %1 handling channels' option is not set

**Parameters:** %1 = Number of active handling channels

**Explanation:** More than the permissible number of handling channels have been activated by the channel-specific MD20010 $MC_IS_ADD_CHAN.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
In the system-specific MD10010 $MN_ASSIGN_CHAN_TO_MODE_GROUP or in the channel-specific MD20010 $MC_IS_ADD_CHAN, reduce the number of active handling channels or enable additional handling channels with option.

**Programm continuation:** Switch control OFF - ON.

## 8023 The PLC user memory exceeds (%1 kB)

**Parameters:** %1 = Additional memory size

**Explanation:** The PLC user memory (program and/or data memory) used exceeds the permissible size.
Additional PLC memory, which exceeds the basic configuration, can be enabled with the option data OD19270 $ON_PLC_USER_MEM_SIZE.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Purchase option
- Use less PLC user memory

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 8024 Option '%1<OPTNX>' is not set

**Parameters:** %1 = Brief description of option

**Explanation:** The option for activating multiple magazines is not set

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Buy option
- Reduce the number of magazines (MD18084 $MN_MM_NUM_MAGAZINE)

**Programm continuation:** Switch control OFF - ON.

## 8025 [Channel %1: ] Option '%2<OPTNX>' not set

**Parameters:** %1 = Channel number
%2 = Brief description of option

**Explanation:** The option for 'Advanced Surface' functionality is not set.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Purchase option
- Reset the activation of 'Advanced Surface' functionality (MD20606 $MC_PREPDYN_SMOOTHING_ON and/or MD20443 $MC_LOOKAH_FFORM)

**Programm continuation:** Switch control OFF - ON.

## 8026 Axis %1: '%2<OPTNX>' option not set

**Parameters:** %1 = Axis

**Explanation:** The option for the 'Friction compensation' functionality is not set

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Purchase option
- Reset the activation of the 'Friction compensation' functionality (MD32490 $MA_FRICT_COMP_MODE != 3/4 and/or MD32500 $MA_FRICT_COMP_ENABLE

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8027 '%1<OPTNX>' option not set

**Parameters:** %1 = Brief description of option

**Explanation:** The option for the 'Grinding Advanced' functionality is not set.

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Please contact the authorized personnel/Service.
- Buy option
- Deactivate the 'Grinding Advanced' functionality
- 'Grinding Advanced' functional scope:
  Cylinder error compensation

**Programm continuation:** Switch control OFF - ON.

## 8028 Axis %1: '%2<OPTNX>' option not set

**Parameters:** %1 = Axis

**Explanation:** The option for 'pitch compensation' functionality is not set

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Purchase option
- Reset the activation of the 'pitch compensation' functionality (MD37310 $MA_NOCO_INPUT_AX_1, MD37320 $MA_NOCO_INPUT_AX_2, MD37330 $MA_NOCO_INPUT_AX_3)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8029 [Channel %1: ] Block %2 Collision avoidance requires too many channels. %3 are required, %4 are configured.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of required channels
%4 = Number of configured channels

**Explanation:** The collision model uses more channels than covered by the option.
The maximum number of collision-relevant channels is configured in the option date OD19840 $ON_NUM_CHANNELS_CA_STL or OD19841 $ON_NUM_CHANNELS_CA_PRIMITIVES.

**Reaction:** Alarm display.

**Remedy:** Please notify authorized personnel/service.
- Purchase additional channel options for collision avoidance
- Reduce collision model to fewer channels

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8030 [Channel %1: ] Block %2 option 'interpolation of more than %3 axes' not set

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of permissible axes

**Explanation:** The number of axes programmed in the interpolating group exceeds the permissible number of interpolating axes.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** In the part program, program as many axes as are permitted by the configuration of the controller or enable additional axes via option.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8031 [Channel %1: ] Block %2 axis %3: Axis has no IPO functionality

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis, spindle number

**Explanation:** An axis/spindle that has been defined as a special axis/auxiliary spindle (see MD30460 $MA_BASE_FUNCTION_MASK bit8), should be operated as an interpolating axis.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Define axis as interpolating axis (see MD30460 $MA_BASE_FUNCTION_MASK bit8) or change part program

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8032 [Collision avoidance requires too many channels. %1 are required, %2 are configured.

**Parameters:** %1 = Number of required channels
%2 = Number of configured channels

**Explanation:** The preview uses more channels than configured in the option data OD19842 $ON_NUM_CHANNELS_CA_OPEN.

**Reaction:** Alarm display.

**Remedy:** Please notify the authorized personnel/service.
- Buy additional channel options for collision avoidance
- Reduce the preview to fewer channels

**Programm continuation:** Switch control OFF - ON.

## 8037 Axis %1: APC option '%2<OPTNX>' is not set

**Parameters:** %1 = Axis
%2 = Option ID

**Explanation:** More than six current setpoint filters were activated in the drive, although the corresponding option had not been set.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Buy option
- Deactivate the 'Advanced Positioning Control' (APC) function in the drive.
- Set a maximum of six current setpoint filters in the drive.

**Programm continuation:** Switch control OFF - ON.

## 8038 Option 'activation of more than %1 lead link axes' not set

**Parameters:** %1 = Number of axes

**Explanation:** The option for the number of lead link axes does not match the number of configured axes in the MD30554 $MA_AXCONF_ASSIGN_MASTER_NCU.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Buy option
- Configure fewer lead link axes
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8040 Machine data %1 reset, corresponding option is not set

**Parameters:** %1 = String: MD identifier
**Explanation:** A machine data has been set that is locked by an option.
**Reaction:** Alarm display.
**Remedy:** Please inform the authorized personnel/service department.
For retrofitting the option, please refer to your machine manufacturer or to a sales representative of SIEMENS AG, A&D MC.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8041 Axis %1: MD %2, corresponding option not sufficient

**Parameters:** %1 = Axis number
%2 = String: MD identifier
**Explanation:** The number of axes specified in the associated option data has been exceeded.
More axes have been selected in the corresponding machine data than are permitted by the function associated with the option.
The alarm can be reconfigured in MD11412 $MN_ALARM_REACTION_CHAN_NOREADY to "Channel not ready".
**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.
**Remedy:** Inform the authorized personnel/service department.
- Increase the option data
- Reduce the number of axes
**Programm continuation:** Switch control OFF - ON.

## 8042 Option '%1<OPTNX>' is not set

**Parameters:** %1 = Brief description of option
**Explanation:** Please inform the authorized personnel/service department.
A non-released option was used
The stated option or an equivalent one is required to execute the action.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Terminate action, upgrade option.
Please compare the available option data and/or (if available) the license image of your controller
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 8043 '%1<OPTNX>' option not set

**Parameters:** %1 = Brief description of option

**Explanation:** A non-released option was used
The stated option or an equivalent one is required for execution of the action.

**Reaction:** NC Start disable in this channel.
Channel not ready.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
Stop action. Retrofit option.
-Please compare the available option data and/or (if available) the license image of your control

**Programm continuation:** Switch control OFF - ON.

## 8044 Option for IPO cycle time %1 ms not set

**Parameters:** %1 = Impermissible IPO cycle time

**Explanation:** The option for activation of an IPO cycle time of %1 ms has not been set.
Option - Permiss. IPO cycle time:
- Option-free >= 8ms
- 1. 1st step >= 6ms
- 2. 2nd step >= 4ms
- 3. 3rd step >= 2ms
- 4. 4th step <2ms

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Buy option
- Increase IPO cycle time (e.g. via MD10070 $MN_IPO_SYSCLOCK_TIME_RATIO)

**Programm continuation:** Switch control OFF - ON.

## 8045 'Activation drive integrated ESR' option not set

**Explanation:** 'Extended stop and retract (ESR)' was activated in the drive, although the corresponding option was not set.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Purchase option
- Deactivate 'Extended stop and retract (ESR)' function in the drive.

**Programm continuation:** Switch control OFF - ON.

## 8046 '%1<OPTNX>' option not set

**Parameters:** %1 = Brief description of option

**Explanation:** A non-released option is being used
The stated or an equivalent option is necessary to execute the action.
Note on the "Jerk adjustment" option:
For axes in motion, the switchover from the position setpoint filter chains with $AA_DESVAL_FILTERS_SELECT is only allowed with the option set.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Stop action. Retrofit option.
Please compare the available option data and/or (if available) the license image of your control
Note on the 'jerk adjustment' option:
Position setpoint filter chains with $AA_DESVAL_FILTERS_SELECT either switchover at axis standstill or set the option for a switchover with axes in motion.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8049 The option 'SPL inputs/outputs' was set too low. Error in %1 assignment

**Parameters:** %1 = Identifier of the system variable with incorrect assignment

**Explanation:** The maximum total of external SPL inputs/outputs enabled by the option 'SPL inputs/outputs' has been exceeded.
Possible causes:
- The number of SPL inputs/outputs is incorrectly set in the option data.
- The number of SPL inputs/outputs is set too high in the machine data for the input assignment (%1 = $A_INSE).
-- Input assignment of the SPL signals $A_INSE to PROFIsafe module (MD10388 $MN_PROFISAFE_IN_ASSIGN)
-- Input assignment of the SPL signals $A_INSE to F_RECVDP user data (MD13346 $MN_SAFE_RDP_ASSIGN)
- The number of SPL outputs is set too high in the machine data for the output assignment (%1 = $A_OUTSE).
-- Output assignment of the SPL signals $A_OUTSE to PROFIsafe module (MD10389 $MN_PROFISAFE_OUT_ASSIGN)
-- Output assignment of the SPL signals $A_OUTSE to F_SENDDP user data (MD13336 $MN_SAFE_SDP_ASSIGN)

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select the correct range of values in the option data.
Correct the machine data for the input/output assignment.

**Programm continuation:** Switch control OFF - ON.

## 8050 Index limit 'SPL inputs/outputs' has been exceeded. MD %1[%2] is not correct

**Parameters:** %1 = MD identifier
%2 = MD array index

**Explanation:** The access index of the SPL inputs/outputs was exceeded. Possible causes:
- The value in the specified machine data was set incorrectly.
The machine data whose value exceeds the permissible maximum value is indicated in the alarm parameters.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the displayed machine data.

**Programm continuation:** Switch control OFF - ON.

## 8052 Drive: The number of %1<DRVLICPANX> options required is %2

**Parameters:** %1 = Drive, options ID/MLFB
%2 = Drive, option value

**Explanation:** The drive option has not been enabled, or the number of enabled drive options was exceeded

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please notify the authorized personnel/service.
- Reset drive option
- Purchase option

**Programm continuation:** Switch control OFF - ON.

## 8053 Drive: Option %1 is unknown

**Parameters:** %1 = Drive, option ID

**Explanation:** Drive option is unknown

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please notify the authorized personnel/service.
- Reset drive option

**Programm continuation:** Switch control OFF - ON.

## 8055 Error when initializing handling channels: Cause %1, Additional info 1 %2 (Additional info 2 %3)

**Parameters:** %1 = Cause
%2 = Additional information
%3 = Additional information

**Explanation:** An error occurred during configuration of handling channels. This may be due to one of the following causes:
1 - More axes than allowed have been assigned to both a machining and a handling channel by MD20070 $MC_AXCONF_MACHAX_USED. Additional info1 contains the number of axes affected, additional info2 the maximum number allowed.
2 - In connection with the activation of handling channels, the permissible number of active axes in the system was exceeded. Additional info1 contains the maximum number of axes that can be activated.
3 - A channel was declared as a handling channel and more than the permissible number of axes for it were activated. Additional info1 contains the channel number, additional info2 contains the maximum permissible number of axes.
4 - A channel was declared as a handling channel and more than the permissible number of spindles were activated for it. Additional info1 contains the channel number, additional info2 contains the maximum permissible number of spindles.
5 - The total number of permissible axes was exceeded in the machining channels. Additional info1 contains the maximum total number of axes that can be declared over all machining channels.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
1 - In the channel-specific MD20010 $MC_IS_ADD_CHAN, define the channel as a machining channel or remove the corresponding axis from one of the two channels.
2 - In the channel-specific MD20070 $MC_AXCONF_MACHAX_USED, deactivate axes or enable additional handling channels with option.
3 - In the channel-specific MD20010 $MC_IS_ADD_CHAN, define the channel as a machining channel or reduce the number of active axes in the channel.
4 - In the channel-specific MD20010 $MC_IS_ADD_CHAN, define the channel as a machining channel or reduce the number of active spindles in the channel.
5 - In the channel-specific MD20070 $MC_AXCONF_MACHAX_USED, deactivate axes in the respective channels.

**Programm continuation:** Switch control OFF - ON.

## 8080 %1 option(s) is/are activated without setting the license key

**Parameters:** %1 = Number of non-licensed options

**Explanation:** One or more options were activated but no license key was set to prove the purchase of the option(s).

**Reaction:** Alarm display.

**Remedy:** Generate a license key on the internet at http://www.siemens.com/automation/license and enter it in the operating area "Setup", function (HSK) "Licenses".

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8081 %1 option(s) is/are activated that are not licensed by the license key

**Parameters:** %1 = Number of non-licensed options

**Explanation:** One ore more options were activated, that are not licensed by the license key entered.

**Reaction:** Alarm display.

**Remedy:** Generate a new license key on the internet at http://www.siemens.com/automation/license and enter it in the operating area "Setup", function (HSK) "Licenses"..

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8082 A wrong license key was entered three times, Power On required before next try.

**Explanation:** The license key was entered wrongly at least three times. Before the next input, a new power ON is required.

**Reaction:** Alarm display.

**Remedy:** Execute NCK Power On and enter the license key (correctly).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8083 Export-restricted system software without valid licensing.

**Explanation:** A special memory card and a special license key are required to operate export-restricted system software.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Please ensure that a corresponding memory card is available in the control. Generate a license key for export-restricted system software via the internet under http://www.siemens.com/automation/license, and enter the license key under the "Start-up" operating area, function (HSK) "Licenses".

Note:

If this alarm occurs after the replacement of a defective memory card, please observe the following:

On account of export regulations applicable to the certain controls, only memory cards with the following MLBFs may be used to replace a defective memory card:

6FC58xx--1XG##-#YA0

6FC58xx-1XG##-#YA8

There are already license keys on these memory cards that enable export-restricted system software to be installed and operated.

Back up this license key before overwriting the memory card with a software image, and then restore the key.

If you forget to make the backup, you can restore the display of the original license key of your memory card via http://www.siemens.com/automation/license.

**Programm continuation:** Switch control OFF - ON.

## 8084 Period %1 of the test license active remaining time %2 h

**Explanation:** A test period has been started. During this period, one or several options can be set, which require a license key to prove that they have been purchased.

A maximum of 6 test periods are possible, one test period can be a maximum of 150 h (up to 3000 h for larger control models) operating time of the control system.

**Reaction:** Alarm display.

**Remedy:** Generate a new license key through the Internet at http://www.siemens.com/automation/license and enter in the operating area "Startup", function (HSK) "Licenses".

Enter a valid license key in the operating area "Startup", function (HSK) "Licenses".

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8085 %1. Test license period has expired

**Explanation:** A test period has expired.

**Reaction:** Alarm display.

**Remedy:** Generate a new license key via the Internet at http://www.siemens.com/automation/license and enter in the operating area "Startup", function (HSK) "Licenses".

Enter a valid license key in the operating area "Startup", function (HSK) "Licenses".

Activate an additional test period

Reset the options that require a license key

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8086 Test and demonstration machine

**Explanation:** This controller is operated with a test license for testing and demonstration purposes.

For licensing reasons, you may not use this machine in the productive process.

**Reaction:** Alarm display.

**Remedy:** Generate a new license key through the Internet at http://www.siemens.com/automation/license and enter in the operating area "Startup", function (HSK) "Licenses".

Enter a valid license key in the operating area "Startup", function (HSK) "Licenses".

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 8089 The function 'Select tool offsets' is not possible

**Explanation:** The current options do not permit a tool offset.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Disable tools offsets or

reset option packages that include the tool offset as a reduced function.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8100 [Channel %1: ] Block %2: function not possible

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** - Impossible due to embargo regulations:
- 1. Synchronized actions: Writing of feedrate, override and axial offsets ($AA_VC, $AC_VC, $AA_OVR, $AA_VC and $AA_OFF) from synchronized actions as well as Continuous Dressing can be programmed only once in a block.
- 2. Extended measurement: The "Cyclic measurement" (MEAC) and "Measurement from synchronized action" are not possible.
- 3. Axis interpolation: The number of axes interpolating with one another must not exceed 4. This also includes synchronized coupling of axes via synchronized actions "DO POS[X]=$A..." "DO FA[X]=$A...".

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8101 [Channel %1: ] Block %2 Function %3 Option '%4<OPTNX>' is not set

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Funktionsname
%4 = Brief description of option

**Explanation:** The option stage is not set for the desired function.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Buy option
- Activate the collision avoidance functionality (set MD19830 $ON_COLLISION_MASK)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8102 [Channel %1: ] Block %2 motion synchronous action: %3 function not possible

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** - Impossible due to embargo regulations:
- 1. Synchronous actions: Writing of feed, override and axial offsets ($AA_VC, $AC_VC, $AA_OVR, $AA_VC and $AA_OFF) from synchronous actions as well as Continuous Dressing can be programmed only once in a block.
- 2. Extended measurement: 'Cyclic measurement' (MEAC) and 'Measurement from synchronous action' is not possible.
- 3. Axis interpolation: The number of axes interpolating with one another must not exceed 4 (this also includes synchronous coupling of axes via synchronous actions "DO POS[X]=$A..." "DO FA[X]=$A...").

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8122 [Channel %1: ] Block %2 Slave axis/spindle %3 Generic coupling option CP-STATIC required (type %4)

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Slave axis
%4 = Option type

**Explanation:** The option level CP-STATIC is required for the required function. Possible reasons:
- More couplings of the option type were created than permissible.
- The functional scope of one or several couplings has not been released.
The generic coupling involved with the specified slave spindle is the following option type:
- 1: COUP with coupling factor |1:1| without superimposed motion

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Purchase an adequate option level (CP-STATIC).
- Reduce the number of simultaneously active couplings of the option type.
- Only use the function scope that has been released.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8124 [Channel %1: ] Block %2 Slave axis/spindle %3 Generic coupling option CP-BASIC required (type %4)

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Slave axis
%4 = Option type

**Explanation:** Option level CP-BASIC is required for the required function. Possible reasons:
- More couplings of the option types less than or equal to the option type were created than permissible.
- The number of permissible master axes was exceeded for one or several couplings.
- The functional scope of one or more couplings has not been released.
- Override for a synchronous spindle (coupling factor |1:1|) is not possible
- The curve table functionality (corresponds to option type 2) has not been released.
The generic coupling involved with the specified slave axis/spindle is the following option type:
- 0: TRAIL (in the BCS)
- 1: COUP with coupling factor |1:1| without superiposed motion
- 2: TRAIL and LEAD also in the Machine (MCS), also mixed in synchronized actions, spindles and rotary axes, COUP

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Purchase an adequate option level (CP-BASIC).
- Reduce the number of simultaneously active couplings of the option type.
- Only use the functional scope that has been released.
- No superimposed programming of synchronous spindles

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8126 [Channel %1: ] Block %2 Slave axis/spindle %3 Generic coupling option CP-COMFORT required (type %4)

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Slave axis
%4 = Option type

**Explanation:** For the required function, option level CP-COMFORT is required. Possible causes:
- More couplings of the option type less than or equal to the option type were created than permissible.
- For one or several couplings, the number permissible master axes was exceeded.
- The functional scope of one or several couplings has not been released.
- Superimposing a synchronous spindle (coupling factor |1:1|) is not possible
- The curve table functionality (corresponds to option type 2) has not been released.

The generic coupling involved with the specified slave axis/spindle is the following option type:
- 0: TRAIL (in the BCS)
- 1: COUP with coupling factor |1:1| without superimposed motion
- 2: TRAIL and LEAD also in Machine (MCS), also mixed in synchronized actions, spindles and rotary axes, COUP
- 3: CP couplings (without curve tables) with up to 3 master axes, also mixed in synchronized actions, spindles and axes

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
- Purchase an adequate option level (CP-COMFORT).
- Reduce the number of simultaneously active couplings of the option type.
- Reduce the number of master axes per coupling.
- Only use the functional scope that has been released.
- No superimposed programming of synchronous spindles

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8128 [Channel %1: ] Block %2 Slave axis/spindle %3 Generic coupling option CP-EXPERT required (type %4)

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Slave axis
%4 = Option type

**Explanation:** For the required function, option level CP-EXPERT is required. Possible causes:
- More couplings of the option type less than or equal to the option type were created than permissible.
- For one or several couplings, the number permissible master axes was exceeded.
- The functional scope of one or several couplings has not been released.
- Superimposing a synchronous spindle (coupling factor |1:1|) is not possible
- The curve table functionality (corresponds to option type 2) has not been released.

The generic coupling involved with the specified slave axis/spindle is the following option type:
- 0: TRAIL (in the BCS)
- 1: COUP with coupling factor |1:1| without superimposed motion
- 2: TRAIL and LEAD also in MCS, also mixed in synchronized actions, spindles and rotary axes, COUP
- 3: CP couplings (without curve tables) with up to 3 master axes, also mixed in synchronized actions, spindles and axes
- 4: CP couplings with up to 5 master axes, also possible mixed in synchronized actions, spindles and axes, cascades

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Purchase an adequate option level (CP-EXPERT).
- Reduce the number of simultaneously active couplings of the option type.
- Reduce the number of master axes per coupling.
- Only use the functional scope released.
- No superimposed programming of synchronous spindles

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 8130 [Channel %1: ] Block %2 Slave axis/spindle %3 Generic coupling function not possible (type %4)

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Slave axis
%4 = Option type

**Explanation:** Executing the required generic coupling function is not possible on this system. Possible reasons:
- More couplings of the option types less than or equal to the option type were created than permissible.
- The number of permissible master axes was exceeded for one or several couplings.
- The functional scope of one or several couplings has not been released.
- Superimposition for a synchronous spindle (coupling factor |1:1|) is not possible
- The curve table functionality (corresponds to option type 2) has not been released.

The generic coupling involved with the specified slave axis/spindle is the following option type:
- 0: TRAIL (in the BCS)
- 1: COUP with coupling factor |1:1| without superimposed motion
- 2: TRAIL and LEAD also in MCS, also possible mixed in synchronized actions, spindles and rotary axes, COUP
- 3: CP couplings (without curve tables) with up to 3 master axes, also possible mixed in synchronized actions, spindles and axes
- 4: CP couplings with up to 5 master axes, also possible mixed in synchronized actions, spindles and axes, cascades

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Reduce the number of simultaneously active couplings of the option type.
- Reduce the number of master axes per coupling.
- Only use the functional scope that has been released.
- No superimposed programming of synchronous spindles

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 9000 Handwheel %1 failed

**Parameters:** %1 = Handwheel number

**Explanation:** For PROFIBUS/PROFINET only:
PROFIBUS/PROFINET handwheel has failed

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Restore connection to PROFIBUS/PROFINET handwheel

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 9050 PROFIBUS/PROFINET I/O: sign of life failure, logical slot / I/O area address %1

**Parameters:** %1 = Area address

**Explanation:** For PROFIBUS/PROFINET only:
The sign of life of the slot / I/O area has failed. No data can currently be read from the PROFIBUS/PROFINET I/O devices.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check the communications link to the PROFIBUS/PROFINET I/O devices.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 9052 PROFIBUS/PROFINET I/O: sign of life failure, logical slot / I/O area address %1

**Parameters:** %1 = Area address

**Explanation:** For PROFIBUS/PROFINET only:
The sign of life of the slot / I/O area has failed. No data can currently be written to the PROFIBUS/PROFINET I/O devices.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check the communications link to the PROFIBUS/PROFINET I/O devices.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10203 [Channel %1: ] NC start without reference point (action=%2<ALNX>)

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** NC start has been activated in the MDI or AUTOMATIC mode and at least one axis that needs to be referenced has not reached its reference point.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Via the channel-specific MD20700: $MC_REFP_NC_START_LOCK (NC Start without reference point) you can decide whether or not the axis has to be referenced before NC Start. The start of referencing can be enabled channel-specific or axis-specific.
Channel-specific reference point approach: The rising edge of the NC/PLC interface signal DB21-30 DBX1.0 (Activate referencing) starts an automatic sequence which starts the axes of the channel in the same sequence as specified in the axis-specific MD34110 $MA_REFP_CYCLE_NR (axis sequence channel-specific referencing). 0: The axis does not participate in channel-specific referencing, but it must be referenced for NC Start, -1: The axis does not participate in channel-specific referencing, but it need not be referenced for NC Start, 1- 8: Starting sequence for the channel-specific referencing (simultaneous start at the same no.), 1 - 31: CPU type
Axis-specific referencing: Press the direction key that corresponds to the approach direction in the axis-specific MD34010 $MA_REFP_CAM_MDIR_IS_MINUS (reference point approach in minus direction).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10204 [Channel %1: ] User action not possible without reference point (internal action=%2<ALNX>)

**Parameters:** %1 = Channel number
%2 = internal action number/internal action name

**Explanation:** A specific user action is to be executed, which leads to a (possibly other) internal action, for which as least one axis that needs to be referenced has not reached its reference point.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Please reference the axis that needs to be referenced.

If the user action as an internal action leads to an NC start, whether or not the axis has to be referenced before NC start can be decided via the channel-specific MD20700 $MC_REFP_NC_START_LOCK (NC start without reference point). If the user action as internal actions leads to a user ASUB start, whether or not the axis has to be referenced before ASUB start can be decided via the channel-specific MD20115 $MC_IGNORE_REFP_LOCK_ASUP (ASUB start without reference point). If the user action as internal actions leads to a Prog Event start, whether or not the axis has to be referenced before Prog Event start can be decided via the channel-specific MD20105 $MC_PROG_EVENT_IGN_REFP_LOCK (Prog Event start without reference point).

Channel or axis-specific referencing can be triggered.

Please inform the authorized personnel/service department. Whether or not the axis has to be referenced before NC start can be determined via the channel-specific MD20700: $MC_REFP_NC_START_LOCK (NC start without reference point). Channel or axis-specific referencing can be triggered.

Channel-specific reference point approach: The rising edge of the NC/PLC interface signal DB21-30 DBX1.0 (activate referencing) starts an automatic sequence, which starts the axes of the channel in the same sequence as specified in the axis-specific MD34110 $MA_REFP_CYCLE_NR (axis sequence channel-specific referencing). 0: The axis does not participate in channel-specific referencing, but it must be referenced for NC start, -1: The axis does not participate in channel-specific referencing, but it need not be referenced for NC start, 1- 8: Starting sequence for the channel-specific referencing (simultaneous start at the same no.), 1- 31: CPU type

Axis-specific referencing: Press the direction key that corresponds to the approach direction in the axis-specific MD34010 $MA_REFP_CAM_MDIR_IS_MINUS (reference point approach in minus direction).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10208 [Channel %1: ] Continue program with NC start

**Parameters:** %1 = Channel number

**Explanation:** After block search with calculation, the control is in the desired state. The program can now be started with NC Start or the state can be changed for the time being with overstore/jog.

**Reaction:** Interpreter stop

Alarm display.

NC Stop on alarm.

**Remedy:** Press NC Start.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10209 [Channel %1: ] Internal NC stop after block search

**Parameters:** %1 = Channel number

**Explanation:** Internal alarm which only initiates the alarm response NC Stop.

The alarm is output in the following situations:

- If MD11450 $MN_SEARCH_RUN_MODE, bit 0 ==1 and the last action block is loaded in the main run after block search. Alarm 10208 is then activated as a function of the NC/PLC interface signal DB21-30 DBX1.6 (PLC action finished).

- Search alarm 10208 has been suppressed by the PI service _N_FINDBL (third decade of the parameter supplied with "2"). Alarm 10209 is set as a function of whether or not a search ASUB has been configured (MD11450 $MN_SEARCH_RUN_MODE bit 1) with the end of the search ASUB or the loading of the last action block in the main run.

**Reaction:** Interpreter stop

NC Stop on alarm.

**Remedy:** Continue the program with NC start.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10222 [Channel %1: ] Inter-channel communication not possible

**Parameters:** %1 = Channel number

**Explanation:** This channel has received a negative acknowledgment from the inter-channel communication because the destination channel number is not known, e.g.: START(x) or WAITE(x) but channel x has not been initialized

**Reaction:** Alarm display.

**Remedy:** This is an indication of possible discrepancies. The program continues if no acknowledgment is called for.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10223 [Channel %1: ] Command %2 is already occupied

**Parameters:** %1 = Channel number
%2 = Event name

**Explanation:** This channel has received a negative acknowledgment from the inter-channel communication because this command is already active or has not yet been terminated, e.g.: INIT(x,"ncprog") but a program select request is already active for channel x.

**Reaction:** Alarm display.

**Remedy:** This is an indication of possible discrepancies. The program continues if no acknowledgment is called for.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10225 [Channel %1: ] command denied

**Parameters:** %1 = Channel number

**Explanation:** The channel has received a command that cannot be executed.

**Reaction:** Alarm display.

**Remedy:** Press RESET.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10226 [Channel %1: ] Reset/program end canceled

**Parameters:** %1 = Channel number

**Explanation:** An error occurred during reset or program end, so that the channel cannot be switched to a ready state.
This can occur, for example, if the interpreter reports an error during the processing of the init. blocks created during reset and program end.
As a rule, further alarms indicate the exact problem.

**Reaction:** NC Start disable in this channel.
Channel not ready.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Rectify the problem indicated by the other alarms, and press RESET again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10299 [Channel %1: ] Auto-Repos function is not enabled

**Parameters:** %1 = Channel number

**Explanation:** The Auto-Repos function (operating mode) was selected in the channel but is not implemented.

**Reaction:** Alarm display.

**Remedy:** This message is purely informational.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10601 [Channel %1: ] Block %2 zero velocity at block end point during thread cutting

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs only when several blocks with G33 follow in succession. The block end velocity in the specified block is zero, although a further thread cutting block follows. The reasons for this can be, for instance:
- G9
- Auxiliary function after motion
- Auxiliary function output before the motion of the following block
- Positioning axis in the block

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the NC part program by removing any programmed "Stop at end of block" G09.
Modify general MD11110 $MN_AUXFU_GROUP_SPEC [n] for selecting the output time of an auxiliary function group by changing "Auxiliary function output before/after the movement" to "Auxiliary function output during the movement".
Bit 5 = 1: Auxiliary function output before movement
Bit 6 = 1: Auxiliary function output during movement
Bit 7 = 1: Auxiliary function output after movement

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10604 [Channel %1: ] Block %2 thread pitch increase too high

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The thread pitch increase is causing an axis overload. A spindle override of 100% is assumed during verification.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the spindle speed, thread pitch increase or path length in the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10605 [Channel %1: ] Block %2 thread pitch decrease too high

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The thread pitch decrease is causing an axis standstill in the thread block.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the thread pitch decrease or path length in the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10610 [Channel %1: ] Axis %2 not stopped

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An axis/spindle has been positioned over several NC blocks using the POSA/SPOSA instruction. The programmed target position had not yet been reached ("exact stop fine" window) when the axis/spindle was reprogrammed.

Example:

N100 POSA[U]=100

:

N125 X... Y... U... ; e.g.: U axis still travels from N100!

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Check and correct the part program (analyze whether motion beyond block boundaries is appropriate here). Prevent block change by means of the keyword WAITP for axes or WAITS for spindles until the positioning axes or positioning spindles have also reached their target position.

Example for axes:

N100 POSA[U]=100

:

N125 WAITP(U)

N130 X... Y... U...

Example for spindles:

N100 SPOSA[2]=77

:

N125 WAITS(2)

N130 M6

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10620 [Channel %1: ] Block %3 axis %2 at software limit switch %4

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = Block number, label

%4 = String

**Explanation:** During the traversing motion, the system detected that the software limit switch would be traversed in the direction indicated. Exceeding the traversing range was not detected during block preparation because there has either been a motion overlay or a work offset has been executed or a coordinate transformation is active.

**Reaction:** Local alarm reaction.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Depending on the reason for this alarm being triggered, the following remedial measures should be undertaken:

- Handwheel override: Cancel the motion overlay and avoid this or keep it smaller when the program is repeated.

- Transformation: Check the preset/programmed work offsets (current frame). If the values are correct, the tool holder (fixture) must be moved in order to avoid triggering the same alarm when the program is repeated, which would again cause the program to be canceled.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10621 [Channel %1: ] Axis %2 rests on software limit switch %3%4

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = String

%4 = The axis of the software limit switch is only output if different from the traversing axis.

**Explanation:** The specified axis is already positioned at the displayed software end delimiter.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check machine data MD36110 $MA_POS_LIMIT_PLUS/ MD36130 $MA_POS_LIMIT_PLUS2 and MD36100 $MA_POS_LIMIT_MINUS/MD36120 $MA_POS_LIMIT_MINUS2 for the software limit switches.

Shut down in JOG mode from the software limit switch.

Please inform the authorized personnel/service department.

Machine data:

Check whether the 2nd software limit switch has been selected in the.axis-specific interface signals: "DB31, ... DBX12.3 (2nd software limit switch plus) and DB31, ... DBX12.2 (2nd software limit switch minus).

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10622 [Channel %1: ] Block %3 Axis %2 reaches software limit switch %4 with active transformation

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = Block number, label

%4 = String

**Explanation:** During the traversing motion, the system detected that the software limit switch would be traversed in the direction indicated due to the active transformation.

**Reaction:** Local alarm reaction.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Depending on the reason for this alarm being triggered, the following remedial measures should be undertaken:

- Handwheel override: Cancel the motion overlay and avoid this or keep it smaller when the program is repeated.

- Transformation: Check the preset/programmed work offsets (current frame). If the values are correct, the tool holder (fixture) must be moved in order to avoid triggering the same alarm when the program is repeated, which would again cause the program to be canceled.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10625 [Channel %1: ] Block %3 Slave axis/spindle %2 with CP-SW limit stop %4

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = Block number, label

%4 = String

**Explanation:** The slave axis/spindle was stopped because there is a risk that the software limit switch will be passed in the displayed direction. Depending on MD30455 $MA_MISC_FUNCTION_MASK, bit 11 and CPMBRAKE, it is possible that also the complete coupling group was braked in the specific direction.

**Reaction:** Local alarm reaction.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Depending on the reason for this alarm being triggered, the following remedial measures should be undertaken:

- Handwheel override: Cancel the motion overlay and avoid this or keep it smaller when the program is repeated.

- Transformation: Check the preset/programmed work offsets (current frame). If the values are correct, the tool holder (fixture) must be moved in order to avoid triggering the same alarm when the program is repeated, which would again cause the program to be canceled.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10630 [Channel %1: ] Block %2 axis %3 at working area limit %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis, spindle number
%4 = String (+ or -)

**Explanation:** The specified axis violates the working area limitation. This is recognized only in the main run either because the minimum axis values could not be measured before the transformation or because there is a motion overlay.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Program other motion or do not perform overlaid motion.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10631 [Channel %1: ] Axis %2 rests at working area limit %3%4

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = String (+ or -)
%4 = The axis of the working area limitation is only output if different from the traversing axis.

**Explanation:** The specified axis reaches the working area limitation in JOG mode.

**Reaction:** Alarm display.

**Remedy:** Check SD43420 $SA_WORKAREA_LIMIT_PLUS and SD43430 $SA_WORKAREA_LIMIT_MINUS for the working area limitation.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10632 [Channel %1: ] Block %2 axis %3 reaches the coordinate system-specific working area limit %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis, spindle number
%4 = String ( + or - )

**Explanation:** The specified axis violates the coordinate system-specific working area limitation. This is not detected until the main run, either because the minimum axis values could not be determined before the transformation or because there is an overlaid movement.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Program other motion or do not perform overlaid motion.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10633 [Channel %1: ] Axis %2 is at coordinate system-specific working area limit %3%4

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = String ( + or - )
%4 = The axis of the coordinate system-specific working area limitation is only output if different from the traversing axis.

**Explanation:** The specified axis reaches the coordinate system-specific working area limitation in JOG mode.

**Reaction:** Alarm display.

**Remedy:** Check the system parameter $P_WORKAREA_CS_xx for the coordinate system-specific working area limitation.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10634 [Channel %1: ] Axis %2, tool radius compensation is inactive for type %3 working area limitation, reason: The tool is not oriented parallel to the axis.

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = 0: BCS, 1: WCS / SZS

**Explanation:** The tool radius compensation of the working area limitation of the stated axis is not taken into account.
Reason: The tool is not oriented parallel to the axis (e.g. because toolcarrier or transformation is active).
The alarm is reported in JOG mode.

**Reaction:** Alarm display.

**Remedy:** The tool radius compensation for working area limitations in JOG mode can only be taken into account if the tool is parallel to the axis.
Active transformation and toolcarrier must be switched off for this function.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10635 [Channel %1: ] Axis %2, tool radius compensation is inactive for type %3 working area limitation, reason: no milling or drilling tool.

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = 0: BCS, 1: WCS / SZS

**Explanation:** The tool radius compensation of the working area limitation of the stated axis is not taken into account.
Reason: The tool must be of type milling cutter or drill.
The alarm is reported in JOG mode.

**Reaction:** Alarm display.

**Remedy:** The tool radius compensation for working area limitations in JOG mode can only be taken into account for milling or drilling tools.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10636 [Channel %1: ] Axis %2, tool radius compensation is inactive for type %3 working area limitation, reason: Transformation is active.

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = 0: BCS, 1: WCS / SZS

**Explanation:** The tool radius compensation of the working area limitation of the stated axis is not taken into account.
Reason: A transformation is active.
The alarm is reported in JOG mode.

**Reaction:** Alarm display.

**Remedy:** The tool radius compensation for working area limitations in JOG mode cannot be taken into account if transfomation is active.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10637 [Channel %1: ] Axis %2, tool radius compensation is inactive for type %3 working area limitation, reason: Tool not active.

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = 0: BCS, 1: WCS / SZS

**Explanation:** The tool radius compensation of the working area limitation of the stated axis is not taken into account.
Reason: No tool is active.
The alarm is reported in JOG mode.

**Reaction:** Alarm display.

**Remedy:** The tool radius compensation for working area limitations in JOG mode cannot be taken into account wihout an active tool.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10650 [Channel %1: ] Axis %2 incorrect gantry machine data, error code %3

**Parameters:** %1 = Channel number
%2 = Axis
%3 = Error no.

**Explanation:** An incorrect value was entered in the gantry-specific axial machine data. Further information can be derived from the error number.
- Error no. = 1 => either an incorrect gantry unit has been entered or the designation of the following axis is incorrect.
- Error no. = 2 => master axis has been specified more than once.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Correct the machine data:
MD37100 $MA_GANTRY_AXIS_TYPE
0: No gantry axis 1: Master axis grouping 1 11: Slave axis grouping 1 2: Master axis grouping 2 12: Slave axis grouping 2 3: Master axis grouping 3 13: Slave axis grouping 3

**Programm continuation:** Switch control OFF - ON.

## 10651 [Channel %1: ] Gantry configuration error. Error code %2

**Parameters:** %1 = Channel number
%2 = Reason

**Explanation:** The gantry configuration set in the machine data is erroneous. Gantry unit and reason for objection can be found in the transfer parameter.
The transfer parameter is made up as follows.
- %2 = error designation + gantry unit (XX).
- %2 = 10XX => no master axis declared
- %2 = 20XX => no slave axis declared
- %2 = 30XX => different contents in MD30550 $MA_AXCONF_ASSIGN_MASTER_CHAN slave axis and master axis
- %2 = 40XX => different channel or NCU assignment of the gantry axes
- %2 = 50XX => no slave axis declared in this channel
- %2 = 60XX => different channel assignment of the master axis
- %2 = 10000 => error: slave axis is geometry axis
- %2 = 11000 => error: competing positioning axis as slave axis
- %2 = 12000 => error: compile cycle axis as slave axis
- %2 = 13000 => error: gantry axis is spindle
- %2 = 14000 => error: gantry axis is Hirth geared

e.g. error code 1001 = no master axis declared, gantry unit 1.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Correct the machine data:
MD37100 $MA_GANTRY_AXIS_TYPE
0: No gantry axis
1: Master axis grouping 1
11: Slave axis grouping 1
2: Master axis grouping 2
12: Slave axis grouping 2
3: Master axis grouping 3
13: Slave axis grouping 3

**Programm continuation:** Switch control OFF - ON.

## 10652 [Channel %1: ] Axis %2 gantry warning threshold exceeded

**Parameters:** %1 = Channel number
%2 = Axis

**Explanation:** The gantry following axis has exceeded the warning limit specified in MD37110 $MA_GANTRY_POS_TOL_WARNING.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
1. Check axis (uneven mechanical movement?)
2. MD not set correctly (MD37110 $MA_GANTRY_POS_TOL_WARNING). Changes to this MD take effect after a RESET.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10653 [Channel %1: ] Axis %2 gantry error threshold exceeded

**Parameters:** %1 = Channel number
%2 = Axis

**Explanation:** The gantry following axis has exceeded the error limit (actual value tolerance) specified in MD37120 $MA_GANTRY_POS_TOL_ERROR.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
1. Check axis (uneven mechanical movement?)
2. MD not set correctly (MD37120 $MA_GANTRY_POS_TOL_ERROR). A POWER ON is necessary after modifying the MD.
If the axes are not yet referenced, MD37130 $MA_GANTRY_POS_TOL_REF is the trigger condition for the error message.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10654 [Channel %1: ] Waiting for synchronization start of gantry group %2

**Parameters:** %1 = Channel number
%2 = Gantry unit

**Explanation:** The alarm message appears when the axes are ready for synchronization. The gantry grouping can now be synchronized. The actual value difference between the master and slave axes is greater than the gantry warning limit MD 37110 $MA_GANTRY_POS_TOL_WARNING. The synchronization must be started explicitly with the NC/PLC interface signal DB31, ... DBX29.4 (Start gantry synchronization).

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
See Function Manual, Special Functions, Gantry Axes (G1)

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10655 [Channel %1: ] Synchronization of gantry group %2 in progress

**Parameters:** %1 = Channel number
%2 = Gantry unit

**Explanation:** The alarm may be suppressed with MD37150 $MA_GANTRY_FUNCTION_MASK Bit2 = 1.

**Reaction:** Alarm display.

**Remedy:** The message disappears as soon as the gantry group is synchronized.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10656 [Channel %1: ] Axis %2 gantry slave axis dynamically overloaded

**Parameters:** %1 = Channel number
%2 = Axis

**Explanation:** The indicated gantry slave axis is dynamically overloaded, i.e. the slave axis cannot follow the master axis dynamically

**Reaction:** Mode group not ready.
Local alarm reaction.
Channel not ready.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Compare the axial machine data of the gantry slave axis with the data of the gantry master axis

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 10657 [Channel %1: ] Axis %2 power OFF in the gantry error limit exceeded status

**Parameters:** %1 = Channel number
%2 = Axis

**Explanation:** Gantry error limit exceeded status (alarm 10653) has been switched off.
The error can only be removed by deleting MD37135 $MA_GANTRY_ACT_POS_TOL_ERROR or by deactivating the extended monitoring (MD37150 $MA_GANTRY_FUNCTION_MASK Bit0).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
1. Remove a mechanical misalignment
2. Check axis (uneven mechanical movement?)
3. Delete MD37135 $MA_GANTRY_ACT_POS_TOL_ERROR or deactivate the extended monitoring
4. MD37120 $MA_GANTRY_POS_TOL_ERROR is set incorrectly
   If the MD is changed, a Power ON will be required.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10658 [Channel %1: ] Axis %2 impermissible axis status %3.

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = Error ID and gantry unit.

**Explanation:** Error ID and gantry unit
- 30XX => Gantry group cannot be closed, as not all gantry axes are in one channel.
- 40XX => Gantry group cannot be closed, as the gantry axes have different axis states (the axis is assigned to the PLC, for example).
- 50XX => Gantry group is to change channel due to a PLC request, not all gantry axes are known in the new channel.
- 60XX => Gantry group is to be transferred to the channel due to an NC program request, but the channel does not know all the gantry axes.
- 70XX => Gantry group cannot be closed, as movement is pending for at least one gantry axis.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Local alarm reaction.

**Remedy:** Error ID:
- 30XX => assign all gantry axes to the current channel, for example via axis exchange.
- 40XX => set all axes of the gantry group to the same axis state, for example assign all axes to the NC program, or assign all axes to the PLC.
- 50XX => make all gantry axes known to the required channel.
- 60XX => make all gantry axes known to the required channel.
:end

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10700 [Channel %1: ] Block %2 NCK protection area %3 violated during automatic or MDI mode

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Protection area number

**Explanation:** The workpiece-related NCK protection area has been violated. Note that another tool-related protection area is still active. The workpiece-related protected area can be traversed after a new NC Start.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm.
The SHOWALARM and SETVDI reactions can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit20.

**Remedy:** Protection area can be traversed after a new NC Start.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10701 [Channel %1: ] Block %2 channel-specific protection area %3 violated during automatic or MDI mode

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Protection area number

**Explanation:** The workpiece-related channel-specific protection area has been violated. Note that another tool-related protection area is still active. The workpiece-related protected area can be traversed after a new NC Start.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm.
The SHOWALARM and SETVDI reactions can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit20.

**Remedy:** Protection area can be traversed after a new NC Start.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10702 [Channel %1: ] NCK protection area %2 violated during manual mode

**Parameters:** %1 = Channel number
%2 = Protection area number

**Explanation:** The workpiece-related NCK protection area has been violated. Note that another tool-related protection area is still active. The workpiece-related protected area can be traversed after a new NC Start.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Protection area can be traversed after a new NC Start.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10703 [Channel %1: ] Channel-specific protection area %2 violated during manual mode

**Parameters:** %1 = Channel number
%2 = Protection area number

**Explanation:** The workpiece-related channel-specific protection area has been violated. Note that another tool-related protection area is still active. The workpiece-related protected area can be traversed after a new NC Start.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Protection area can be traversed after a new NC Start.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10704 [Channel %1: ] Block %2 protection area monitoring is not guaranteed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** New movements of a geometry axis which have been added could not be allowed for at the time of block preparation. It is therefore not certain that the protection areas will not be violated. This is just a warning message without further reactions.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Ensure that the motion of the geometry axes, including the additional motion, does not violate the protection areas. (The warning appears nevertheless) or exclude additional motion.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10706 [Channel %1: ] NCK protection area %2 reached with axis %3 during manual mode

**Parameters:** %1 = Channel number
%2 = Protection area number
%3 = Axis name

**Explanation:** The workpiece-related NCK protection area has been reached with the specified axis. Note that another tool-related protection area is still active. The workpiece-related protection area can be traversed when the PLC has issued an enable signal.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department. The protection area can be traversed after enable signal from PLC.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10707 [Channel %1: ] Channel-specific protection area %2 reached with axis %3 during manual mode

**Parameters:** %1 = Channel number
%2 = Protection area number
%3 = Axis name

**Explanation:** The workpiece-related channel-specific protection area has been reached with the specified axis. Note that another tool-related protection area is still active. The workpiece-related protection area can be traversed when the PLC has issued an enable signal.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department. The protection area can be traversed after enable signal from PLC.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 10710 [Channel %1: ] Block %2 conflict with centerless grinding

**Parameters:** %1 = Channel number
%2 = Spindle number

**Explanation:** Centerless grinding is active and a block has been processed that satisfies at least one of the following conditions:
- G96 active and regulating spindle is master spindle.
- Regulating spindle is in interdependent grouping.
- Axes of centerless transformation overlap with an active transformation and a tool is active.
- Constant wheel peripheral speed for the regulating spindle is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10720 [Channel %1: ] Block %3 axis %2 software limit switch %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label
%4 = String (+ or -)

**Explanation:** The path programmed for the axis violates the currently valid software limit switch. The alarm is activated when preparing the part program block.
If bit 11=0 in the machine data MD11411 $MN_ENABLE_ALARM_MASK, this alarm is issued instead of alarm 10722. If bit 11 is set in the machine data MD11411 $MN_ENABLE_ALARM_MASK, an expanded diagnostics option is offered for the software limit switch violation. The condition for activation is the presence of the ALUN* alarm file in the HMI.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Check and correct positions in the NC program.
Please inform the authorized personnel/service department.
Check machine data: MD36100 $MA_POS_LIMIT_MINUS / MD36120 $MA_POS_LIMIT_MINUS2 and MD36110 $MA_POS_LIMIT_PLUS / MD36130 $MA_POS_LIMIT_PLUS2 for the software limit switches.
Check the axis-specific interface signals: DB31, ... DBX12.3 / 12.2 (2nd software limit switch plus/minus) to see whether the 2nd software limit switch is selected.
Check the currently active work offsets via the current frame.
Work offsets, overlaid movements ($AA_OFF), DRF and transformation components must also be checked.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10721 [Channel %1: ] Block %3 axis %2 software limit switch %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label
%4 = String ( + or - )

**Explanation:** The motion planned for the axis violates the currently valid software limit switch.
The alarm is activated during the preprocessing of approach or rest blocks for REPOS.
Depending on MD11411 $MN_ENABLE_ALARM_MASK, bit11=0 this alarm is output instead of alarm 10723. If this MD11411 $MN_ENABLE_ALARM_MASK, bit11 is set in this machine data $MN_ENABLE_ALARM_MASK, an expanded diagnostics option is offered for the software limit switch violation. The condition for activation is the presence of the ALUN* alarm file in the HMI. See also the Diagnostics Manual for alarm 10723.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Determine the cause of the offset from the initial or target position. The REPOS command is executed at the end of an ASUB or system ASUB. See also cross reference from ASUBs.
Check the axis-specific NC/PLC interface signals DB31, ... DBX12.3 / 12.2 (2nd software limit switch plus/minus) to see whether the 2nd software limit switch is selected.
Check the currently active work offset via the current frame.
Also check the external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.
Cancel the NC program with NC reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10722 [Channel %1: ] Block %5 axis %2 software limit switch %6 violated, residual distance: %7 %3<ALUN> violated

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|number+string(+/-)|residual distance

**Explanation:** This alarm was triggered during the preparation of the displayed block.
Cause:
The programmed path violates the active software limit switch in the traversing direction for the displayed axis.
Note:
Parameter 4 contains the descriptions of parameters 5, 6 and 7 separated by the character "|".
- 5 = Block number, label
- 6 = Number + string (+/-)
- 7 = Distance-to-go

Alarm 10722 is displayed for MD11411 $MN_ENABLE_ALARM_MASK, bit11 == 1 instead of alarm 10720.
Alarm 10722 offers an expanded diagnostics option for the software limit switch violation.
Condition:
Alarm file ALUN* is present in the HMI.
See also:
Diagnostics Manual for alarm 10720

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Check and, if necessary, correct the positions programmed in the NC program.
Please inform the authorised personnel/service department.
Check the parameterisation of the software limit switch:
- MD36100 $MA_POS_LIMIT_MINUS
- MD36120 $MA_POS_LIMIT_MINUS2
- MD36110 $MA_POS_LIMIT_PLUS
- MD36130 $MA_POS_LIMIT_PLUS2

Check the axis-specific NC/PLC interface signals for selecting the 2nd software limit switch
- DB31, ... DBX12.2 and .3

Check currently active work offsets of the current frame.
Also check external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10723 [Channel %1: ] Block %5 axis %2 software limit switch %6 violated, residual distance: %7 %3<ALUN>

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|number+string(+/-)|residual distance

**Explanation:** The alarm is triggered during the preparation of the displayed approach or residual block for repositioning on the contour (REPOS).
Cause:
The programmed path violates the active software limit switch in the displayed traversing direction for the displayed axis.
Note:
Parameter 4 contains the descriptions of parameters 5, 6 and 7 separated by the character "|".
- 5 = Block number, label
- 6 = Number + string (+/-)
7 = Distance-to-go
Alarm 10723 is displayed for MD11411 $MN_ENABLE_ALARM_MASK, bit11 == 1 instead of alarm 10721.
Alarm 10723 offers an expanded diagnostics option for the software limit switch violation.
Condition:
Alarm file ALUN* is present in the HMI.
See also:
Diagnostics Manual for alarm 10721

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Determine the cause of the offset from the initial or target position.
The REPOS command is executed at the end of a user ASUB or system ASUB. See also cross reference from ASUBs.
Please inform the authorised personnel/service department.
Check the parameterisation of the software limit switch:
- MD36100 $MA_POS_LIMIT_MINUS
- MD36120 $MA_POS_LIMIT_MINUS2
- MD36110 $MA_POS_LIMIT_PLUS
- MD36130 $MA_POS_LIMIT_PLUS2
Check the axis-specific NC/PLC interface signals for selecting the 2nd software limit switch
- DB31, ... DBX12.2 and .3
Check the active work offsets of the current frame.
Check the external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10730 [Channel %1: ] Block %3 axis %2 working area limitation %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label
%4 = String (+ or -)

**Explanation:** This alarm is generated if it is determined during block preparation that the programmed path of the axis violates the working area limitation.
If bit 11=0 in machine data MD11411$MN_ENABLE_ALARM_MASK, this alarm is issued instead of alarm 10732. If bit 11 is set in machine dataMD11411 $MN_ENABLE_ALARM_MASK, an expanded diagnostics option is offered for the software limit switch violation. The condition for activation is the presence of the ALUN* alarm file in the HMI.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** a) Check NC program for correct positional data and, if necessary, make corrections.
b) Check work offsets (current frame)
c) Correct working area limitation via G25/G26, or
d) Correct working area limitation via setting data, or
e) Deactivate working area limitation via setting data 43410 WORKAREA_MINUS_ENABLE=FALSE

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10731 [Channel %1: ] Block %3 axis %2 working area limitation %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label
%4 = String ( + or - )

**Explanation:** The motion planned for the axis violates the currently active working area limit.
The alarm is activated during the preparation of approach or rest blocks for REPOS.
This alarm is issued instead of alarm10733 if bit11 is not set in MD11411 $MN_ENABLE_ALARM_MASK.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Determine the cause of the offset from the initial or target position. The REPOS command is executed at the end of an ASUB or system ASUB. See also cross reference from ASUBs.
Check the currently active work offset via the current frame.
Also check the external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.
Cancel NC program with NC reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10732 [Channel %1: ] Block %5 axis %2 working area limitation violated, residual distance: %6 %3<ALUN>

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|residual distance

**Explanation:** This alarm was triggered during the preparation of the displayed block.
Cause:
The programmed path violates the active working area limitation for the displayed axis.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Block number, label
- 6 = Distance-to-go

Alarm 10732 is displayed for MD11411 $MN_ENABLE_ALARM_MASK, bit11 == 1 instead of alarm 10730.
Alarm 10732 offers an expanded diagnostics option for the working area limitation violation.
Condition:
Alarm file ALUN* is present in the HMI.
See also:
Diagnostics Manual for alarm 10730

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** a) Check NC program for correct positional data and, if necessary, make corrections.
b) Check work offsets (current frame)
c) Correct working area limitation via G25/G26, or
d) Correct working area limitation via setting data, or
e) Deactivate working area limitation via SD43410 $SA_WORKAREA_MINUS_ENABLE=FALSE

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10733 [Channel %1: ] Block %5 axis %2 working area limitation violated, residual distance: %6 %3<ALUN>

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|residual distance

**Explanation:** The alarm was triggered during the preparation of the displayed approach or residual blocks for repositioning on the contour (REPOS)
Cause:
The programmed path violates the active working area limitation for the displayed axis.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Block number, label
- 6 = Distance-to-go
Alarm 10733 is displayed for MD11411 $MN_ENABLE_ALARM_MASK, bit11 == 1 instead of alarm 10731.
Alarm 10733 offers an expanded diagnostics option for the working area limitation violation.
Condition:
Alarm file ALUN* is present in the HMI.
See also:
Diagnostics Manual for alarm 10731

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Determine the cause of the offset from the initial or target position. The REPOS command is executed at the end of an ASUB or system ASUB. See also cross reference from ASUBs.
Check the currently active work offset via the current frame.
Also check the external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.
Cancel NC program with NC reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10735 [Channel %1: ] Block %5 axis %2 coordinate system-specific working area limitation violated, residual distance: %6 %3<ALUN>

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|residual distance

**Explanation:** This alarm was triggered during the preparation of the displayed block.
Cause:
The programmed path of the displayed axis violates the coordinate system-specific working area limitation.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Block number, label
- 6 = Distance-to-go
Condition:
Alarm file ALUN* is present in the HMI

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** a) Check NC program for correct positional data and, if necessary, make corrections.
b) Check work offsets (current frame)
c) Correct the working area limitation with WALCS1 ... WALCS9, or
d) Correct the working area limitation in $P_WORKAREA_CS_LIMIT_PLUS or $P_WORKAREA_CS_LIMIT_MINUS, or
e) Deactivate the working area limitation with $P_WORKAREA_CS_MINUS_ENABLE =FALSE or $P_WORKAREA_CS_PLUS_ENABLE.
In cases d) and e), then reactivate the group of the selected coordinate system-specific working area limitation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10736 [Channel %1: ] Block %5 axis %2 coordinate system-specific working area limitation violated, residual distance: %6 %3<ALUN>

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Unit of distance
%4 = Block number, label|residual distance

**Explanation:** This alarm was triggered during the preparation of the displayed approach or residual block for repositioning on the contour (REPOS).
Cause:
The programmed path violates the coordination system-specific working field limitation of the displayed axis.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Block number, label
- 6 = Distance-to-go
Condition:
The alarm file ALUN* is present in the HMI

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Determine the cause of the offset from the initial or target position. The REPOS command is executed at the end of an ASUB or system ASUB. See also cross reference from ASUBs.
Check the currently active work offset via the current frame.
Also check the external work offsets, overlaid movements ($AA_OFF), DRF and transformation components.
Cancel NC program with NC reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10740 [Channel %1: ] Block %2 too many empty blocks in WAB programming

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is forbidden to program more blocks between the WAB block and the block determining the approach and retraction tangents than are specified by MD20202 $MC_WAB_MAXNUM_DUMMY_BLOCKS.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10741 [Channel %1: ] Block %2 direction reversal with WAB infeed motion

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A safety distance which has been programmed is located perpendicular to the machining plane and not between the start and end point of the WAB contour.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10742 [Channel %1: ] Block %2 WAB distance invalid or not programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Possible causes:
In a WAB block, the parameter DISR has not been specified or its value is less than or equal to 0.
During approach or retraction with circle and active tool radius, the radius of the internally generated - WAB contour is negative. The internally generated WAB contour is a circle with a radius which, when offset with the current offset radius (sum of tool radius and offset value OFFN), yields the tool center point path with the programmed radius DISR.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10743 [Channel %1: ] Block %2 WAB programmed several times

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt has been made to activate a WAB motion before a previously activated WAB motion was terminated.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10744 [Channel %1: ] Block %2 no valid WAB direction defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tangent direction for smooth approach or retraction is not defined.
Possible causes:
In the program, no block with travel information follows the approach block.
Before a retraction block, no block with travel information has been programmed in a program.
The tangent to be used for WAB motion is vertical to the current machining plane.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10745 [Channel %1: ] Block %2 WAB end position not clear

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the WAB block and in the following block, the position has been programmed perpendicular to the machining direction.
In the WAB block, no position has been indicated in the machining plane.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program. Either remove the position data for the infeed axis from the WAB block or the following block, or also program a position in the machining plane in the WAB block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10746 [Channel %1: ] Block %2 block search stop for WAB

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A preprocessing stop has been inserted between an SAR approach block and the following block defining the tangent direction or between an SAR retraction block and the following block defining the end position.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10747 [Channel %1: ] Block %2 retraction direction not defined for WAB

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a WAB retraction block with quarter circle or semi-circle (G248 or G348), the end point in the machining plane was not programmed, and either G143 or G140 without tool radius compensation is active.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program. You can make the following changes:
- Specify the end point in the machining plane in the WAB block.
- Activate the tool radius compensation (effective for G140 only, not for G143).
- Specify the retraction side explicitly with G141 or G142.
- Use a straight line instead of a circle for retraction.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10748 [Channel %1: ] Block %2 illegal retract plane with WAB

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** By means of DISRP a position of the retraction plane has been programmed which is not situated between the safety distance (DISCL) and the starting point (during approach) and/or end point (during retraction) of the WAB movement.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10750 [Channel %1: ] Block %2 tool radius compensation activated without tool number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A tool T... must be selected so that the control can make allowance for the associated compensation values.
A correction data block (D1) containing the correction values (parameter P1 - P25) is automatically assigned to each tool (T number). Up to 9 correction data blocks can be assigned to a tool by specifying the required data block with the D number (D1 - D9).
The cutter radius compensation (CRC) is allowed for if function G41 or G42 is programmed. The correction values are contained in parameter P6 (geometry value) and P15 (wear value) of the active correction data block Dx.

**Reaction:** Correction block is reorganized.
Interpreter stop
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Before calling the TRC with G41/G42, program a tool number under the address T...

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10751 [Channel %1: ] Block %2 danger of collision due to tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The "Bottleneck detection" (calculation of intersection for the following compensated traversing blocks) has not been able to calculate a point of intersection for the reviewed number of traversing blocks. It is therefore possible that one of the equidistant paths violates the workpiece contour.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Please inform the authorized personnel/service department. Check the part program and, if possible, modify the programming so that inside corners with smaller paths than the correction value are avoided. (Outside corners are not critical because the equidistants are lengthened or intermediate blocks are inserted, so that there is always a point of intersection).
Increase the number of reviewed traversing blocks via machine data MD20240 $MC_CUTCOM_MAXNUM_CHECK_BLOCKS (default: 3), this increases the amount of computing capacity required and consequently also the block change time.
Another possible remedy: program CDOF2 for 3D-WRK(CUT3DC), program CDOF for 2D-WRK.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10752 [Channel %1: ] Block %2 overflow of local block buffer with tool radius compensation (%3, %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code
%4 = Number of missing blocks

**Explanation:** The tool radius compensation must buffer a variable number of intermediate blocks in order to enable calculation of the equidistant tool path for each NC block. The size of the buffer cannot be determined by simple means. It depends on the number of blocks without traversing information in the compensation plane, the number of contour elements to be inserted and the shape of the curvature in spline and polynomial interpolation.
The size of the buffer must not exceed the size of the system memory.
Additional information about the error state
Error code (3rd parameter).
0 = Overrun of the local block buffer for tool radius compensation.
1 = Local block buffer is presumably parameterized too large by the number of missing blocks (4th parameter).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Please inform the authorized personnel/service department.
Simplify NC program:
- By avoiding:
  Blocks without traversing information in the compensation plane
  Blocks with contour elements having a variable curvature (e.g. ellipses) and with curvature radii that are smaller than the compensation radius. (Such blocks are divided up into several subblocks).
- Increase the number of reviewed blocks for collision monitoring (MD20240 $MC_CUTCOM_MAXNUM_CHECK_BLOCKS).
- If (MD20240 $MC_CUTCOM_MAXNUM_CHECK_BLOCKS) is increased, it must be ensured that the system memory is adequate. That means, if necessary, increasing the number of blocks in MD28070 $MC_MM_NUM_BLOCKS_IN_PREP. Parameter 4 serves as an orientation value for the number of missing block locations. This value depends on the situation and has to be determined individually.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10753 [Channel %1: ] Block %2 selection of the tool radius compensation only possible in linear block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Selection of tool radius compensation with G41/G42 may only be performed in blocks where the G function G00 (rapid traverse) or G01 (feed) is active.
In the block with G41/G42, at least one axis in the plane G17 to G19 must be written. It is always advisable to write both axes because, as a rule, both axes are traversed when selecting the compensation.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct the NC program and put the compensation selection in a block with linear interpolation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10754 [Channel %1: ] Block %2 deselection of the tool radius compensation only possible in linear block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Deselection of tool radius compensation with G40 can only be performed in blocks where the G function G00 (rapid traverse) or G01 (feed) is active.
In the block with G40, at least one axis in the plane G17 to G19 must be written. It is always advisable to write both axes because, as a rule, both axes are traversed when deselecting the compensation.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct the NC program and put the compensation selection in a block with linear interpolation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10755 [Channel %1: ] Block %2 selection of the tool radius compensation via KONT not possible at the current starting point

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When activating the cutter radius compensation with KONT the starting point of the approach block is within the compensation circle and therefore already violates the contour.

If the cutter radius compensation is selected with G41/G42, the approach behavior (NORM or KONT) determines the compensation movement if the present actual position is behind the contour. With KONT, a circle is drawn with the cutter radius around the programmed initial point (= end point of the approach block). The tangent that passes through the present actual position and does not violate the contour is the approach movement.

If the start point is within the compensation circle around the target point, no tangent passes through this point.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Place selection of the CRC such that the starting point of the approach movements comes to rest outside of the correction circle around the target point (programmed traversing movements > compensation radius). The following possibilities are available:

Selection in the previous block

Insert intermediate block

Select approach behavior NORM

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10756 [Channel %1: ] Block %2 deselection of the tool radius compensation via KONT not possible at the programmed end point

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** On deselection of the cutter radius compensation, the programmed end point is within the compensation circle. If this point were in fact to be approached without compensation, there would be a contour violation.

If the cutter radius compensation is deselected via G40, the approach behavior (NORM or KONT) determines the compensation movement if the programmed end point is behind the contour. With KONT, a circle is drawn with the cutter radius about the last point at which the compensation is still active. The tangent passing through the programmed end position and not violating the contour is the retraction movement.

If the start point is within the compensation circle around the target point, no tangent passes through this point.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Place deselection of the CRC such that the programmed end point comes to rest outside the compensation circle around the last active compensation point. The following possibilities are available:

Deselection in the next block

Insert intermediate block

Select retract behavior NORM

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10757 [Channel %1: ] Block %2 Impermissible change of orientation while tool radius compensation is active

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** An orientation change has been programmed which is not permissible with the active tool radius compensation type (G code of group 22, e.g. CUT2D or CUT2DF). As a rule, changes to the tool orientation are only permissible and useful if 3D tool radius compensation is active.

An (impermissible) orientation change can also be triggered by a change of machining plane (G17 - G19).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Activate a G code from group 22 (e.g. CUT3DC), in which the programmed orientation change is permissible.
Execute the program with constant tool orientation.
If a plane change is necessary, first deactivate the tool radius compensation, and reactivate after the plane change.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10758 [Channel %1: ] Block %2 curvature radius with variable compensation value too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The current cutter radius compensation (the cutter used) is too large for the programmed path radius.
In a block with variable tool radius compensation, a compensation must be possible either anywhere or nowhere on the contour with the smallest and the largest compensation value from the programmed range. There must be no point on the contour in which the curvature radius is within the variable compensation range.
If the compensation value varies its sign within a block, both sides of the contour are checked, otherwise only the compensation side.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Use smaller cutters or allow for a part of the cutter radius at the time of contour programming.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10759 [Channel %1: ] Block %2 path is parallel to tool orientation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a block with spline or polynomial interpolation, the corrected path runs parallel to the tool orientation in at least one point, i.e. the path has a tangent perpendicular to the compensation plane.
The tangent at a point on a path is regarded as parallel to the tool orientation if the angle between the two directions is less than the limit value defined by MD21080 $MC_CUTCOM_PARALLEL_ORI_LIMIT.
However, in circumferential milling, single straight lines running parallel to the tool orientation are permissible, as well as circles with a circle plane perpendicular to the compensation plane (application with smooth retraction from the groove). Also only individually, if the circle contains a point with a tangent parallel to the tool orientation.
If a compressor (COMPCAD, COMPSURF) is active, the programmed straight lines (and possibly circles) are shown as non-linear polynomials, and that means a block with polynomial interpolation (see above).
Straight lines in the direction of the tool orientation are not permissible in face milling (CUT3DF, CUT3DFS, CUT3DFF, CUT3DFD).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Do not use splines or polynomials when writing the contour section, but straight lines and circles instead. Divide up the tool piece geometry and deselect the cutter radius compensation between the various sections.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10760 [Channel %1: ] Block %2 helical axis is not parallel to tool orientation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With active tool radius compensation a helix is only permissible if the helix axis is parallel to the tool, i.e. the circle plane and the compensation plane must be identical.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Orient helix axis perpendicular to the machining plane.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10761 [Channel %1: ] Block %2 tool radius compensation for ellipse with more than one revolution not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When machining the inside of an ellipse, in parts of the ellipse the curvature radii are greater than or smaller than the cutter radius compensation.
In ellipses, in this case the block would be split up into 4 subblocks with curvature radii that are greater than and less than the compensation radius. Over several revolutions, there would be a tremendous increase in the amount of calculation required by the unlimited number of resulting subblocks, and therefore this situation is rejected by the error message.
If compensation is possible everywhere or nowhere on the ellipse, then ellipses are also permissible that cover more than one full revolution.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Use cutter with smaller radius or program motion block on blocks with no more than one revolution.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10762 [Channel %1: ] Block %2 too many empty blocks between two traversing blocks with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum permissible number of empty blocks is limited by a machine data.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Modify part program
- Modify machine data
- Check whether SBL2 is activated. With SBL2, a block is generated from each part program line which can lead to exceeding the maximum permissible number of empty blocks between two traversing blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10763 [Channel %1: ] Block %2 path component of the block in the compensation plane becomes zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Due to collision monitoring with active tool radius compensation, the path component of the block in the compensation plane becomes zero. If the original block contains no motion information perpendicular to the compensation plane, it means that this block is excluded.
The alarm is a warning by default. It shows or writes in the alarm log which blocks are omitted, as information for the customer. Machining is not stopped.
The alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit1 = 1.
The alarm can be configured with MD11411 $MN_ENABLE_ALARM_MASK Bit16 = 1 so that the machining is stopped. This setting has priority over the above-mentioned behavior of MD11410 $MN_SUPPRESS_ALARM_MASK Bit1.

**Reaction:** Alarm display.

**Remedy:** - The behavior is correct at narrow places that cannot be machined with the active tool.
- Modify the part program if necessary.
- Use tool with smaller radius if necessary.
- Program CDOF/CDOF2 if bottleneck detection is active.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10764 [Channel %1: ] Block %2 discontinuous path with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs when, with active tool radius compensation, the starting point used for calculating the compensation is not identical to the end point of the preceding block. This situation can occur, for example, when a geometry axis is traversed between two positions as a positioning axis or when, with an active kinematic transformation (e.g. 5-axis transformation) the tool length compensation is altered.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10766 [Channel %1: ] Illegal change of surface orientation between block %2 and block %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Block number, label

**Explanation:** This alarm occurs with 3D face milling when, at the time of block transition, the surface defined in the first block is continued in the second block with the rear side of the surface defined there. The block number in the alarm designates the second block.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10767 [Channel %1: ] Block %2 processing with tilt angle unequal 0 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When face milling with a torus milling cutter, the tilt angle must be 0 if the surface normal vector and the tool orientation include an angle that is less than the limiting angle given by the MD21082 $MC_CUTCOM_PLANE_ORI_LIMIT, i.e. in this case only the lead angle may be unequal to 0.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program. If necessary, use another tool (ball end mill).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10768 [Channel %1: ] Block %2 illegal tool orientation with 3D tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm may occur during 3D face milling: the angle between the surface normal vector of the surface to be machined and the largest surface normal vector of the tool surface is smaller than the limit value given by MD21080 $MC_CUTCOM_PARALLEL_ORI_LIMIT, or the tool is oriented such that machining would have to be performed from the rear side of the surface. In this case, the largest surface normal vector is the vector the direction of which deviates most from the direction in the tool point (i.e. parallel to the tool longitudinal axis).
With cylindrical tools or tools which end in a cylindrical part (e.g. the standard torus milling cutter), this vector is positioned perpendicular to the tool vector. For this type of tool, the alarm indicates that the angle between the tool longitudinal axis of, for example an envelope line of the cylinder, and the surface to be machined is smaller than the minimum permissible value. With tools the (valid) surface of which ends in a tapered part instead of a cylindrical part (e.g. a beveled cutter or a torus milling cutter where the torus is defined to be smaller than 90 degrees), this alarm indicates that the angle between an envelope line of the taper and the surface to be machined is smaller than the minimum permissible value.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program. If necessary, use another tool.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10769 [Channel %1: ] Block %2 Illegal surface normal vector with 3D tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In 3D face milling, surface normal vector and path tangent vector must theoretically be perpendicular to one another, i.e. they must be at 90° to one another. Since both vectors can be programmed independently of each other, deviations from this angle are possible and allowed. This alarm is generated when the angle between surface normal vector and path tangent vector becomes less than the limit angle given by the MD21084 $MC_CUTCOM_PLANE_PATH_LIMIT.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10770 [Channel %1: ] Block %2 change of corner type due to change of orientation with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The type of a corner (inside or outside corner) depends not only on the programmed path but also on the tool orientation. For this purpose, the programmed path is projected in the plane perpendicularly to the actual tool orientation and the corner type is determined there. If a change in orientation is programmed (in one or several blocks) between two traversing blocks, resulting in the type of corner at the end of the first traversing block being different from that at the start point of the second block, the above error message is issued.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10771 [Channel %1: ] Block %2 overflow of local block buffer due to orientation smoothing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This error occurs when more blocks must be buffered than memory space is available.
This error can only occur when the software has been incorrectly configured.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Increase size of local buffer area.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10772 [Channel %1: ] Block %2 illegal orientation change when activating or deactivating 3D face cutting

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In face milling, no intermediate blocks with pure orientation change are allowed between the activation block and the first correction block or between the last correction block and the deactivation block (3D tool radius compensation).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10773 [Channel %1: ] Illegal tool orientation in block %2 at inside corner with block %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Block number, label

**Explanation:** On inside corners, the path of the traversing blocks concerned is reduced but the orientation change originally programmed in the block is retained and is now carried out in synchronism with the shortened path. Because of the ensuing changed relationship between path tangent, surface normal and tool orientation, singular points or points with impermissible side angle can occur in 3D face milling. This is not allowed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10774 [Channel %1: ] Illegal tool dimensions with face cutting in block %2

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs when illegal tool dimensions are programmed for face milling, e.g. negative tool radius, rounding radius zero or negative for tool types that require a rounding radius, taper angle zero or negative for tapered tools.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10775 [Channel %1: ] Illegal tool change with face cutting in block %2

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs when a tool change has been programmed while 3D tool radius compensation is active with the result that the tool type changes or, if the tool type remains unchanged, at least one relevant tool dimension has changed as compared with the deselected tool. Depending on the tool type, relevant tool dimensions can be the tool diameter, the rounding radius or the taper angle. Changes to the tool length are allowed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10776 [Channel %1: ] Block%2 axis %3 must be geometry axis if tool radius compensation is active

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** This alarm occurs when an axis that is required for tool radius compensation is not a geometry axis. With CUT2DF, the axis can be a positioning axis perpendicular to the machining plane; with all other types of compensation (CUT2DF, CUT3DC, CUT3DF, CUT3DFF), all geometry axes must be operated as such.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.
To ensure that the axes involved are known as GEOAX in the channel for the selection of G41/42. program them with GEOAX() or G91 G0 X0 Y0 in the block prior to G41/42.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10777 [Channel %1: ] Block %2 tool radius compensation: too many blocks with suppression of compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum permissible number of blocks with active compensation suppression with tool radius compensation is limited by MD20252 $MC_CUTCOM_MAXNUM_SUPPR_BLOCKS.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Modify the part program.
- Modify the machine data.
- Check whether SBL2 is selected. If SBL2 is selected, a block is generated from each part program line. This can lead to exceeding the maximum permissible number of empty blocks between two traversing blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10778 [Channel %1: ] Block %2 preprocessing stop with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a preprocessing stop is detected with active tool radius compensation (either programmed by the user or generated internally) and the SD42480 $SC_STOP_CUTCOM_STOPRE is set, then this warning is issued because in this situation machine movements which were not intended by the user can occur (termination of radius compensation and new approach).

**Reaction:** Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Continue the machining with CANCEL and Start.
- Modify the part program.
- Set SD42480 $SC_STOP_CUTCOM_STOPRE to FALSE.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10779 [Channel %1: ] Block %2 Inadmissible tool for 3D circumferential milling with TRC.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For 3D circumferential milling with active tool radius compensation (CUT3DC), tools with the relevant cutting edge position, e.g. turning and milling tools, tool types 400 - 599, are not permissible.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Activate a tool without relevant cutting-edge position, e.g. a milling tool.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10780 [Channel %1: ] Block %2 impermissible change of a turning or grinding tool with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A tool change in which the edge offset (difference between edge center and edge reference point) changes, is only permissible in straight and polynomial blocks.
A tool change is not permissible in circular blocks, involute blocks and in blocks including rational polynomials with maximum permissible numerator and denominator degrees.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Continue machining with CANCEL and Start.
- Modify the part program.
- Set SD42480 $SC_STOP_CUTCOM_STOPRE to FALSE.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10781 [Channel %1: ] Block %2 illegal orientation of involute with tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Tool radius compensation is possible for involutes only if the compensation plane matches the involute plane.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10782 [Channel %1: ] Block %2 illegal curve type with tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs, if an attempt is made to apply the tool radius compensation to a curve type for which this function is not implemented. The only cause at present: Involute with 3D tool radius compensation.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10783 [Channel %1: ] Block %2 tool radius compensation type requires orientation transformation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs, if an attempt is made to activate a tool radius compensation which must enable a tool orientation change and the _Orientation transformation_ option is not available. This alarm can only occur if one of the following G code is active in the G code group 22:
- CUT3DC
- CUT3DCC
- CUT3DCCD

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:**
- Modify part program
- Install "Orientation transformation" option

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10784 [Channel %1: ] Block %2 illegal tool for tool radius compensation with constraint surface

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When activating the tool radius compensation with constraint surface, an illegal tool type is active.
Only cutting tools of the tool types 1 to 399 are admitted with the following exceptions:
- 111 ball end milling cutter
- 155 torus milling cutter
- 156 torus milling cutter
- 157 torus milling cutter

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Use another tool.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10785 [Channel %1: ] Block %2 Impermissible tool for TRC with difference tool

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Neither a turning nor a grinding tool nor any other tool with a relevant cutting edge position is permitted during the activation of the tool radius compensation with a difference tool.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Use another tool.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10786 [Channel %1: ] Block %2 Surface normal vector has not been programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** A function (for example 3D TRC face milling) requires the presence of a surface normal, but this has not been programmed.
**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10787 [Channel %1: ] Block %2 Machine data for interpolation of the surface normals via polynomials not set

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** A function (for example 3D TRC face milling) requires smoothed surface normal vectors. The machine data MD28291 $MM_SMOOTH_SURFACE_NORMALS (enable interpolation of the surface normals via polynomials) activates the required display of the surface normals via polynomials, but this has not been set.
**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.
**Remedy:** Set machine data MD28291 $MM_SMOOTH_SURFACE_NORMALS (enable interpolation of the surface normals via polynomials).
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10790 [Channel %1: ] Block %2 plane change during linear programming with angles

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The active plane was changed between the first and second subblock when programming two straight lines with angle parameters.
**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.
**Remedy:** Modify the part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10791 [Channel %1: ] Block %2 invalid angle during linear programming

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No intermediate point was found when programming a contour consisting of two straight lines and an angle specification.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10792 [Channel %1: ] Block %2 illegal interpolation type during linear programming with angles

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only spline or linear interpolation is permitted for programming two straight lines with angle specification. Circular or polynomial interpolation is not allowed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10793 [Channel %1: ] Block %2 second block missing during linear programming with angles

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The second block is missing during programming of two straight lines with angle specification. This situation only occurs if the first subblock is also the last block of a program, or if the first subblock is followed by a block with a preprocessor stop.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10794 [Channel %1: ] Block %2 angle specification missing in 2nd block during linear interpolation with angles

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The angle is missing from the second block when programming two straight lines with angle specification. This error can only occur if an angle was programmed in the preceding block, but no axis of the active plane was programmed in that block. The cause of the error may therefore also have been the intention to program a single straight line with an angle in the previous block. However, in this block, exactly one axis of the active plane must be programmed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10795 [Channel %1: ] Block %2 end point specification during angle programming contradictory

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The programming of a straight line specified both positions of the active plane and an angle. The position of the end point is thus over-specified.

The alarm may also be output if the position of the programmed coordinate cannot be reached with the specified angle. If a contour consisting of two straight lines is to be programmed with angles, it is possible to specify the two axis positions of the plane and an angle in the second block. The error can also occur if, due to a programming error, the preceding block cannot be interpreted as the first subblock of such a contour. A block is interpreted as the first block of a two-block contour if an angle, but not an axis of the active plane, was programmed, and if the block itself is not already the second block of a contour.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10805 [Channel %1: ] Block %2 repositioning after switch of geometry axes or transformation

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In the asynchronous subroutine the assignment of geometry axes to channel axes was changed or the active transformation modified.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10810 [Channel %1: ] Block %2 master spindle not defined

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The function "Revolutional feedrate" (with G95 or G96), or "Rigid tapping" (with G331/G332) has been programmed, although no master spindle is defined from which the speed could be derived.

For the definition the MD 20090 $MC_SPIND_DEF_MASTER_SPIND is available for the default or the keyword SETMS in the part program, thus allowing each spindle of the channel to be redefined as master spindle.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

**Remedy:** Preset the master spindle with MD20090 $MC_SPIND_DEF_MASTER_SPIND[n]=m (n ... channel index, m ... spindel no.) or define it with an identifier in an NC part program before a G function that requires a master spindle is programmed.

The machine axis that is to be operated as a spindle must be equipped in MD35000 $MA_SPIND_ASSIGN_TO_MACHAX[n]=m (n ... machine axis index, m ... spindle no.) with a spindle number. Additionally, the MD20070 $MC_AXCONF_MACHAX_USED[n]=m (n ... channel axis index, m ... machine axis index) must be used to assign it to a channel (channel axis index 1 or 2).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10820 [Channel %1: ] Rotary axis/spindle %2 not defined

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** A revolutional feedrate has been programmed for path and synchronized axes or for an axis/spindle. However, the rotary axis/spindle from which the feedrate is to be derived is not available.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

**Remedy:** Modify the part program or set SD43300 $SA_ASSIGN_FEED_PER_REV_SOURCE correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10860 [Channel %1: ] Block %2 feedrate not programmed

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** Cause:

A traversing velocity has not been programmed for the displayed traversing block.

Feed F or FZ:

With the traversing velocity defined by feed F or FZ, F or FZ was not reprogrammed after the feed type changed, for example linear feed G94 after revolutional feedrate G95 F or G95 FZ.

Modal feed FRCM:

With modal traversing velocity FRCM defined for rounding RND or chamfering CHF, feed FRCM was not reprogrammed after the feed type changed, for example linear feed G94 after revolutional feedrate G95, or revolutional feedrate G95 F after tooth feedrate G95 FZ.

Note:

Feed FRCM also has to be reprogrammed when the feed type changes if the current traversing block does not contain chamfering CHF or rounding RND, but the feed FRCM was programmed active, that is unequal to 0, before the feed type changed.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

**Remedy:** Program feedrate in accordance with the interpolation type.

- G93: The feedrate is specified as a time-reciprocal value under address F in [rev/min].
- G94 and G97: The feedrate is programmed under address F in [mm/min] or [m/min].
- G95: The feedrate is programmed as revolutional feedrate under address F in [mm/revolution] or under the address FZ in [mm/tooth].
- G96: The feedrate is programmed as cutting speed under address S in [m/min]. It is derived from the current spindle speed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10861 [Channel %1: ] Block %3 velocity of positioning axis %2 is zero

**Parameters:** %1 = Channel number
%2 = Axis
%3 = Block number, label

**Explanation:** No axis velocity has been programmed and the positioning velocity set in the machine data is zero.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Enter a different velocity in MD32060 $MA_POS_AX_VELO.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10862 [Channel %1: ] Block %2 master spindle also used as path axis

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A contour has been programmed that also includes the master spindle as contouring axis. However, the velocity of the contour is derived from the rotational speed of the master spindle (e.g. G95).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Modify the program so that no reference is possible to the program itself.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10865 [Channel %1: ] Block %2 FZ active, but no tool offset, tool %3

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Tool

**Explanation:** For the displayed traversing block a tooth feedrate is active, but no tool offset.
Traversing can be performed after the error has been acknowledged. For calculation of the effective feedrate one tooth per revolution will be assumed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Check the NC program for correct tool selection and correct it, if required; then continue the program with NC start.
Or:
Continue the NC program with NC start. For calculation of the effective feedrate one tooth per revolution is assumed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10866 [Channel %1: ] Block %2 FZ is active, but the number of teeth of the active D number %4 of tool %3 is zero.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Identifier
%4 = D number

**Explanation:** Tooth feedrate is active for the displayed traversing block, but a D number of 0 is selected with $TC_DPNT (number of teeth).
Traversing can be performed after acknowledgment of the error. For calculation of the effective feedrate one tooth per revolution is assumed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the NC program for correct tool selection and correct it, if required; then continue the NC program with NC start.
Or:
Continue the NC program with NC start. The feedrate will be calculated assuming 1 tooth.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10870 [Channel %1: ] Block %2 facing axis for constant cutting speed not defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Constant cutting speed was selected although no transverse axis was applied as reference axis for constant cutting speed or assigned through SCC[AX].
Constant cutting speed can be activated as follows:
- Basic position G96, G961 or G962 of G group 29 during booting
- Programming of G96, G961 or G962
A reference axis for G96, G961 or G962 can be applied as a transverse axis in MD20100 $MC_DIAMETER_AX_DEF or defined through the instruction SCC[AX].

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check MD20100 $MC_DIAMETER_AX_DEF. Before programming G96, G961 or G962 a transverse axis must be defined as a reference axis for constant cutting speed via MD20100 $MC_DIAMETER_AX_DEF or SCC[AX].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10880 [Channel %1: ] Block %2 too many empty blocks between two traversing blocks when inserting chamfers or radii

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Between 2 blocks containing contour elements and which are to be joined with a chamfer or a radius (CHF, RND), more blocks without contour information have been programmed than provided for in the MD20200 $MC_CHFRND_MAXNUM_DUMMY_BLOCKS.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify the part program in order that the permissible number of dummy blocks is not exceeded or adapt the channel-specific machine data MD20200 $MC_CHFRND_MAXNUM_DUMMY_BLOCKS (dummy blocks with chamfers/radii) to the maximum number of dummy blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10881 [Channel %1: ] Block %2 overflow of local block buffer in the case of chamfers or radii

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Between 2 blocks containing the contour elements and to be joined with a chamfer or a radius (CHF, RND), so many dummy blocks have been programmed without contour information that the internal buffer is too small.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program such that the number of dummy blocks is reduced.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10882 [Channel %1: ] Block %2 activation of chamfers or radii (non-modal) without traversing movement in the block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No chamfer or radius has been inserted between 2 linear or circle contours (edge breaking) because:
There is no straight line or circle contour in the plane
There is a movement outside the plane
A plane change has taken place
The permissible number of empty blocks without traversing information (dummy blocks) has been exceeded.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Correct the part program according to the above error description or change the number of dummy blocks in the channel-specific MD20200 $MC_CHFRND_MAXNUM_DUMMY_BLOCKS to comply with the maximum number allowed for in the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10883 [Channel %1: ] Block %2 chamfer or fillet has to be reduced

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm is output if, when inserting chamfers or radii, at least one of the relevant blocks is so short that the contour element to be inserted must be reduced from its originally programmed value. The alarm occurs only if bit 4 is set in MD11411 $MN_ENABLE_ALARM_MASK. Otherwise, the chamfer or rounding is adapted without an alarm being output.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify NC program of continue program without modifications after CANCEL and Start or with Start alone.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10890 [Channel %1: ] Block %2 overflow of local block buffer when calculating splines

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum permissible number of empty blocks is limited by a machine data.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** - Modify part program
- Modify machine data
- Check whether SBL2 is activated. With SBL2, a block is generated from each part program line which can lead to exceeding the maximum permissible number of empty blocks between two traversing blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10891 [Channel %1: ] Block %2 multiplicity of node is greater than its order

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the B spline the distance between nodes PL (node = point on spline at which 2 polynomials meet) has been programmed with zero too often in succession (i.e. the "multiplicity" of a node is too great).
In the quadratic B spline the node distance may not be specified more than twice with 0 in succession, and in the cubic B spline not more than 3 times.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Program the node distance PL = 0 in succession no more than the degree of the B spline used.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10900 [Channel %1: ] Block %2 no S value programmed for constant cutting speed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If G96 is active, the constant cutting speed under address S is missing.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Program constant cutting speed under S in [m/min] or deselect the function G96. For example, with G97 the previous feed is retained but the spindle continues to rotate at the current speed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10910 [Channel %1: ] Block %2 irregular velocity waveform of one path axis

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When the path axis waveforms were analyzed during block preparation, a large local deviation relative to the path velocity was detected in the velocity waveform of one or more path axes.
Such a situation can have the following causes:
- The path runs close to singular positions of the machine kinematics.
- The programmed contour characteristic is very uneven.
- The FGROUP definition is unfavorable relative to the contour.
- The setting MD28530 $MC_MM_PATH_VELO_SEGMENTS=0 is inadequate for curvature changes occurring within one block. This problem occurs more frequently with G643, G644 and COMPCAD.
- A kinematic transformation has been implemented with insufficient numerical accuracy.
The path velocity is generally reduced substantially in order to avoid axis overloads safely. An apparent machine standstill may occur. Severe axis movements occur suddenly as soon as the singular position is reached.

**Reaction:** Alarm display.
Warning display.

**Remedy:** Dividing a block into several smaller ones often provides an improvement.
If MD28530 $MC_MM_PATH_VELO_SEGMENTS=0 is set, then the alarm may be avoidable by a value MD28530 $MC_MM_PATH_VELO_SEGMENTS=3 or 5, as the blocks are then analyzed considerably more accurately.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10911 [Channel %1: ] Block %2 transformation prohibits to traverse the pole

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The given curve passes through the pole of the transformation.

**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10913 [Channel %1: ] Block %2 negative feed profile is ignored

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified feedrate profile is in part negative. However, a negative path feedrate is not allowed. The feedrate profile is ignored. The specified feedrate block end value is taken when traversing over the entire block.

**Reaction:** Local alarm reaction.
Alarm display.

**Remedy:** Check the specified feedrate profile for incorrect programming, and correct it.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10914 [Channel %1: ] Block %2: movement not possible while transformation active.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machine kinematics do not allow the specified motion.
The following transformation-dependent error causes can be present in TRANSMIT:
There is a circular area around the pole where positioning is not possible. This area exists because the tool reference point cannot be traversed into the pole.
The area is defined by the following factors:
- The machine data (MD24920 $MC_TRANSMIT_BASE_TOOL..)
- The active tool length compensation (see $TC_DP..). Whether the tool length compensation is included in the calculation depends on the selected working plane (see G17,..).
The following transformation-dependent error causes can be present in TRAINT:
A block with Y<>0 (WCS) was programmed during active TRAINT transformation. (Y axis must always be set to WCS=0 for active TRAINT)
The machine stops before the faulty block.

**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Change the incorrectly specified tool length compensation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10915 [Channel %1: ] Block %2 Preparation problem in LookAhead (Identifier %3, Details %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code
%4 = Error details

**Explanation:** The NCK was incorrectly parameterized (under certain circumstances, the parameterized memory is not sufficient), which is why LookAhead can no longer be operated in the expansion mode.

**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change parameterization (increase LookAhead memory and/or IPO buffer, change tolerances). Use standard LookAhead.
Contact Siemens if necessary.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10916 [Channel %1: ] Block %2 Preparation problem in LookAhead (Identifier %3, Details %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code
%4 = Error details

**Explanation:** The NCK was incorrectly parameterized (under certain circumstances the parameterized memory is not sufficient), this is the reason that the generated profile is not as smooth and uniform as it could be.

**Reaction:** Local alarm reaction.
Alarm display.
Warning display.

**Remedy:** Change the parameterization (increase the LookAhead memory and/or IPO buffer, change tolerances).
1010: Increase IPO buffer to at least 50 blocks, or maximum number of blocks in the braking ramp times 2.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10917 [Channel %1: ] Block %2 Warning of COMPSURF function (code %3, details %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code
%4 = Error details

**Explanation:** COMPSURF was only able to work with restrictions.
The warning is only displayed if MD11411 $MN_ENABLE_ALARM_MASK bit1 is set.

**Reaction:** No alarm reaction.
Warning display.

**Remedy:** 1: Modify parameterization (smaller tolerance, larger block buffer).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10930 [Channel %1: ] Block %2 interpolation type not allowed in stock removal contour

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following types of interpolation are allowed in the contour program for stock removal: G00, G01, G02, G03, CIP, CT

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** In the contour subroutine, program only path elements that consist of straight lines and arcs.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10931 [Channel %1: ] Block %2 incorrect stock removal contour

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following errors occurred in the subroutine for the contour during stock removal:
- Full circle
- Overlapping contour elements
- Wrong start position

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The errors listed above must be corrected in the subroutine for the stock removal contour.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10932 [Channel %1: ] Block %2 preparation of contour has been restarted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The first contour preparation/contour decoding run must be terminated with EXECUTE.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program the keyword EXECUTE to terminate the contour preparation in the part program before again calling up contour segmentation (keyword CONTPRON).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10933 [Channel %1: ] Block %2 contour programm does not contain enough contour blocks

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The contour program contains:
- Less than 3 contour blocks with CONTPRON
- No contour blocks with CONTDCON

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Increase the size of the program with the stock removal contour to include at least 3 NC blocks with movements in both axes of the current machining plane.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10934 [Channel %1: ] Block %2 array for contour segmentation is set too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During contour segmentation (activated with the keyword CONTPRON), the field for the contour table has been detected as too small. For every permissible contour element (circle or straight line) there must be a row in the contour table.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Base the definition of the field variables of the contour table on the contour elements to be expected. The contour segmentation divides some NC blocks into as many as 3 machining cuts. Example: N100 DEF TABNAME_1 [30, 11] Field variables for the contour table provide for 30 machining cuts. The number of columns (11) is a fixed quantity.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10940 [Channel %1: ] Block %2 curve table %3: delete/overwrite not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** The curve table can only be deleted if it is not active in a link.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Deactivate all links that use the curve table that is to be deleted.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10941 [Channel %1: ] Block %2: Curve table %3: NC SRAM memory full, type %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
%4 = Object type

**Explanation:** There is Insufficient free dynamic memory available for definition of the curve table.
The object type parameter specifies for which curve table object the memory is insufficient:
1: Number of curve tables too small (MD18400 $MN_MM_NUM_CURVE_TABS)
2: Number of linear curve table segments too small (MD18403 $MN_MM_NUM_CURVE_SEG_LIN)
3: Number of polynomial curve table segments too small (MD18402 $MN_MM_NUM_CURVE_SEGMENTS)
4: Number of curve table polynomials too small (MD18404 $MN_MM_NUM_CURVE_POLYNOMS)

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel / service department.
Delete curve tables that are no longer required, or reconfigure the memory space for the curve tables.
Then define the curve table again with the following machine data:
MD18400 $MN_MM_NUM_CURVE_TABS, MD18402 $MN_MM_NUM_CURVE_SEGMENTS, MD18403 $MN_MM_NUM_CURVE_SEG_LIN,
MD 18404 $MN_MM_NUM_CURVE_POLYNOMS.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10942 [Channel %1: ] Block %2 curve table %3: illegal instruction during definition

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** Various illegal command sequences cause this alarm to be output during the definition of the curve table.
For example: The definition of a curve table cannot be completed with M30 before the CTABEND command has been programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and start it again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10943 [Channel %1: ] Block %2 curve table %3: direction reversal of lead value in the block not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** The conditions for converting a programmed contour to a curve table were not fulfilled in this block.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and start it again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10944 [Channel %1: ] Block %2 curve table %3: illegal transformation

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** It is impermissible to use a transformation in a curve table if the leading axis or following axis programmed in CTABDEF is involved in the transformation. Exception: TRAANG.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10946 [Channel %1: ] Block %2 curve table %3: no contour defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** No movement for the leading axis was programmed between CTABDEF and CTABEND. A curve table is not permitted without a contour.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and start it again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10947 [Channel %1: ] Block %2 curve table %3: contour not continuous

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** The contour in a curve table must be continuous. Incontinuity can occur, for example, as a result of activating a transformation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and start it again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10948 [Channel %1: ] Block %2 curve table %3: position jump at end of period

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table

**Explanation:** A periodic curve table was defined in which the position of the following axis at the end of the table was different to the position at the start of the table.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct the part program and start it again.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10949 [Channel %1: ] Block %2 curve table %3: missing master axis motion

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
**Explanation:** A slave axis motion has been programmed without a master axis motion.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct the part program and start it again.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10950 [Channel %1: ] Calculation of arc length function too inaccurate

**Parameters:** %1 = Channel number
**Explanation:** With active polynomial interpolation, the arc length function could not be calculated with the required accuracy.
**Reaction:** Alarm display.
Warning display.
**Remedy:** Increase MD20262 $MC_SPLINE_FEED_PRECISION.
Reserve more memory for the representation of the arc length polynomials. Use MD28540 $MC_MM_ARCLENGTH_SEGMENTS to specify how many polynomial segments can be used per block in order to approximate the arc length function.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10951 [Channel %1: ] Block %2 curve table %3: following value period is zero

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
**Explanation:** --
**Reaction:** Alarm display.
**Remedy:** Check that the table specification is correct.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10955 [Channel %1: ] Block %2 curve table %3: missing master axis motion

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
**Explanation:** A slave axis motion has been programmed without a master axis motion. This can also occur if, with active radius compensation, a block is created in which the slave axis moves but not the master axis. The alarm is for information only and can be suppressed by setting MD20900 $MC_CTAB_ENABLE_NO_LEADMOTION = 2.
**Reaction:** Alarm display.

**Remedy:** Alarm can be switched off via MD20900 $MC_CTAB_ENABLE_NO_LEADMOTION = 2.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10956 [Channel %1: ] Block %2 curve table %3: NC memory limit DRAM reached type %4.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
%4 = Object type

**Explanation:** Insufficient memory in the DRAM while defining the curve table.
The object type parameter specifies for which curve table object
the memory will not suffice:
1: Number of curve tables too small (MD18406 $MN_MM_NUM_CURVE_TABS_DRAM)
2: Number of linear curve table segments too small (MD18409 $MN_MM_NUM_CURVE_SEG_LIN_DRAM)
3: Number of polynomial curve table segments too small (MD18408 $MN_MM_NUM_CURVE_SEGMENTS_DRAM)
4: Number of curve table polynomials too small (MD18410 $MN_MM_NUM_CURVE_POLYNOMS_DRAM)

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete the curve tables that are no longer required in DRAM or reconfigure the memory space for the curve tables. The curve table must then be redefined. Machine data for memory configuration of the curve tables in DRAM:
MD18406 $MN_MM_NUM_CURVE_TABS_DRAM, MD18408 $MN_MM_NUM_CURVE_SEGMENTS_DRAM, MD18409 $MN_MM_NUM_CURVE_SEG_LIN_DRAM, MD18410 $MN_MM_NUM_CURVE_POLYNOMS_DRAM.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10958 [Channel %1: ] Lin. curve table %2, memory type %3 includes %4 polynomial segments.

**Parameters:** %1 = Channel number
%2 = Number of curve table
%3 = Memory type
%4 = Number of polynomial segments

**Explanation:** On generating the curve table with the specified ID in the specified memory type
(1 = SRAM, 2 = DRAM), polynomial segments were used instead of possible linear segments.
By increasing the number of linear curve table segments by the indicated number, the
curve table can be saved in a better way.
The following machine data are involved depending on the memory type:
1 (SRAM): MD18403 $MN_MM_NUM_CURVE_SEG_LIN
2 (DRAM): MD18409 $MN_MM_NUM_CURVE_SEG_LIN_DRAM

**Reaction:** Alarm display.

**Remedy:** The indicated curve table can be created and optimized for the memory by increasing
MD18403 $MN_MM_NUM_CURVE_SEG_LIN or MD18409 $MN_MM_NUM_CURVE_SEG_LIN_DRAM
and repeating table generation.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 10959 [Channel %1: ] Block %2 SUPD is not permissible with active 3DF* radius compensation.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Suppression of the tool offset is not permissible with active radius compensation for face milling because of the contour violation.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10960 [Channel %1: ] Block %2 Radius compensation of type CUT3DF* ( TRC for face milling ) can only be used with the function COMPSURF

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Tool radius compensation for face milling must be used with the function COMPSURF. If CUT3DF* tool radius compensation is active, COMPSURF must be activated.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10961 [Channel %1: ] Block %2 maximum cubic polynomials are allowed on active radius compensation.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With active radius compensation, only up to cubic polynomials are permissible for the geometry axes. In this case no 4th or 5th degree polynomials can be programmed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10963 [Channel %1: ] Block %2 COMPSURF is unable to smooth adequately

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Smoothing by COMPSURF is not optimal because limited by internal memory sizes.
The alarm only occurs if MD11400 $MN_TRACE_SELECT bit10 is set; otherwise only warning 10917 is output.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.
Interpreter stop

**Remedy:** Reduce tolerance (CTOL, OTOL, ATOL) in the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10964 [Channel %1: ] Block %2 Certain functions are limited for this system

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Cause

**Explanation:** Some functions are limited for this system. This alarm may be caused by the following:
Cause:
1. When COMPSURF is active, more axes are traversed than are permissible for this system.
2. CUT3DFD is not permitted for this system.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.
Interpreter stop

**Remedy:** 1. Program fewer axes per block.
2. Deactivate CUT3DFD.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 10970 [Channel %1: ] Block %2 continuous-path mode active during punching

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** The active continuous-path mode G64x is ignored during punching/nibbling.

**Reaction:** Alarm display.

**Remedy:** Disable continuous-path mode with G60 during punching/nibbling.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10980 [Channel %1: ] Block %2 Orientation function not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm can have the following causes:
1. Orientation smoothing cannot be activated with OSD or OST, because MD28580 $MC_MM_ORIPATH_CONFIG = 0. This MD must have the value 1.
2. The path-relative orientation cannot be activated with ORIPATH/ORIPATHS and MD21094 $MC_ORIPATH_MODE = 1 because MD28580 $MC_MM_ORIPATH_CONFIG = 0. This MD must have the value 1 if MD21094 $MC_ORIPATH_MODE = 1..
3. The path-relative orientation interpolation cannot be activated with ORIROTC with 6-axis kinematics because MD28580 $MC_MM_ORIPATH_CONFIG = 0 but MD21094 $MC_ORIPATH_MODE = 1. If MD21094 $MC_ORIPATH_MODE = 1 then MD28580 $MC_MM_ORIPATH_CONFIG = 1 must also be set.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10982 [Channel %1: ] Block %2 orientation smoothing not possible with ORISON

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm has the following cause:
The smoothing of the orientation with ORISON is only possible if MD MD28590 $MC_MM_ORISON_BLOCKS >= 4.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program or set MD28590 $MC_MM_ORISON_BLOCKS >= 3.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 10990 [Channel %1: ] Block %2 CPRECON not possible for axis %3 with FIR filter

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis

**Explanation:** CPRECON is active, but for one axis with FIR filter (MD32402 $MA_AX_JERK_MODE=5) no memory space was provided with MD38020 $MA_MM_CPREC_FIR_POINTS.
This is a configuration error.

**Reaction:** Alarm display.
Interface signals are set.
Interpreter stop

**Remedy:** Provide memory space for the function with MD38020 $MA_MM_CPREC_FIR_POINTS.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 12000 [Channel %1: ] Block %2 address %3 programmed repeatedly

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string of the address

**Explanation:** Most addresses (address types) may only be programmed once in an NC block, so that the block information remains unambiguous (e.g. X... T... F... etc. - exception: G and M functions).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
- Remove from the NC program addresses that occur more than once (except for those where multiple value assignments are allowed).
- Check whether the address (e.g. the axis name) is specified via a user-defined variable (this may not be easy to see if allocation of the axis name to the variable is performed in the program through computational operations only).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12010 [Channel %1: ] Block %2 address %3 address type programmed too often

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string of the address

**Explanation:** The number of times each address type may occur in an NC block is defined internally (for instance, all axes together form one address type to which a block limit also applies).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECTION. The correction pointer positions on the incorrect block.

The program information must be split up over several blocks (but make sure that the functions are of the block-by-block type!).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12020 [Channel %1: ] Block %2 illegal address modification

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** Valid address types are 'IC', 'AC', 'DC', 'CIC', 'CAC', 'ACN', 'ACP', 'CACN', 'CACP'. Not each of these address modifications can be used for each address type. The Programming Guide specifies which of these can be used for the various address types. If this address modification is applied to address types that are not allowed, then the alarm is generated, e.g.:

N10 G02 X50 Y60 I=DC(20) J30 F100

interpolation parameters with DC.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Key: Press the NC STOP key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer is then positioned on the incorrect block.

Apply block-by-block address modifications only for permissible addresses, in accordance with the Programming Manual.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12030 [Channel %1: ] Block %2 invalid parameter or data type in %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string

**Explanation:** In polynomial interpolation, polynomials must not be greater than the 3rd degree (refer to Programming Guide).

f(p) = a0 + a1 p + a2 p2 + a3 p3

The coefficients a0 (the starting points) are identical to the end points of the preceding block and need not be programmed. In the polynomial block, a maximum of 3 coefficients per axis is therefore allowed (a1, a2, a3).

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12040 [Channel %1: ] Block %2 expression %3 is not of data type 'AXIS'

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string in the block

**Explanation:** Some keywords require that the data in their parameters be written in variables of the type "AXIS". For example, in the keyword PO the axis identifier must be specified in the parenthesized expression, and it must be defined as a variable of the AXIS type. With the following keywords only parameters of the AXIS type are possible:

AX[..], FA[..], FD[..], FL[..], IP[..], OVRA[..], PO[..], POS[..], POSA[..]

Example:

N5 DEF INT ZUSTELL=Z1 incorrect, this does not specify an axis identifier but the number 26 161

N5 DEF AXIS ZUSTELL=Z1 correct

:

N10 POLY PO[X]=(0.1,0.2,0.3) PO[Y]=(22,33,44) &PO[INFEED]=(1,2,3)

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

Correct the part program in accordance with the instructions given in the Programming Guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12050 [Channel %1: ] Block %2 DIN address %3 not configured

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = DIN address in the block

**Explanation:** The name of the DIN address (e.g. X, U, X1) is not defined in the control. In addition to the fixed DIN addresses, the control also has variable addresses. Refer to "Variable addresses" in the Programming Guide. The names of these addresses can be altered by machine data.

e.g.: DIN identifier -> Configured identifier

G01 -> LINE, G04 -> WAIT ...

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Study the Programming Guide and the machine data with respect to the addresses actually configured and their significance and correct the DIN block accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12060 [Channel %1: ] Block %2 same G group programmed repeatedly

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The G functions that can be used in the part program are divided into groups that are syntax defining or non-syntax defining. Only one G function may be programmed from each G group. The functions within a group are mutually preclusive.

The alarm refers only to the non-syntax defining G functions. If several G functions from these groups are called in one NC block, the last of these in a group is active in each case (the previous ones are ignored).

Syntax defining G functions: 1. to 4th G group

Non-syntax defining G functions: 5. to nth G group

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

No remedy is required. You should, however, check whether the G function last programmed really is the one required.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12070 [Channel %1: ] Block %2 too many syntax-defining G functions

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Syntax defining G functions determine the structure of the part program block and the addresses contained in it. Only one syntax defining G function may be programmed in each NC block. The G functions in the 1st to 4th G group are syntax defining.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Analyze NC block and distribute the G functions over several NC blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12080 [Channel %1: ] Block %2 syntax error in text %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source text area

**Explanation:** The grammar in this block is incorrect at the text position indicated. The precise reason for this error cannot be specified in more detail because there are too many possibilities for error.
Example 1:
N10 IF GOTOF ... ; the condition for the jump is missing!
Example 2:
N10 DEF INT VARI=5
N11 X VARI ; the operation is missing for the X and VARI variables
Example 3:
N13 R1=5
N15 R1=10 M=R1 ; value assignments must stand alone in the block, there must not be any other commands, such as auxiliary function outputs or traversing.
The cause may also be the use of Unicode characters. This is indicated by the representation of characters not included in the ASCII character set in the alarm text.
Whether a character not included in the ASCII character set is transformed into a space or alarm 12080 is output can be set using bit 3 of MD 10280 $MN_PROG_FUNCTION_MASK.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Analyze the block and correct it in accordance with the syntax rules given in the Programming Guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12090 [Channel %1: ] Block %2 unexpected parameter %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Disallowed parameters in the text

**Explanation:** The programmed function has been predefined; no parameters are allowed in its call. The first unexpected parameter is displayed.
Example: On calling the predefined subroutine TRAFOF (switching off a transformation) parameters have been transferred (one or more).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Program function without parameter transfer.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12100 [Channel %1: ] Block %2 number of passes %3 not permissible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of passes

**Explanation:** The subroutines called with MCALL are modal, i.e. after each block with positional information a routine run is automatically performed once. For this reason, programming of the number of passes under address P is not allowed.
The modal call is effective until another MCALL is programmed, either with a new subroutine name or without (delete function).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Program the subroutine call MCALL without number of passes.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12110 [Channel %1: ] Block %2 block syntax cannot be interpreted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The addresses programmed in the block are not permissible together with the valid syntax defining G function, e.g. G1 I10 X20 Y30 F1000.
An interpolation parameter must not be programmed in the linear block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Check the block structure and correct in accordance with the programming requirements.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12120 [Channel %1: ] Block %2 G function not separately programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The G function programmed in this block must be alone in the block. No general addresses or synchronous actions may occur in the same block. These G functions are:
G25, G26: Working area and spindle speed limitation
G110, G111, G112: Pole programming with polar coordinates
G92: Spindle speed limitation with v constant
STARTFIFO, STOPFIFO: Control of preprocessing buffer
E.g. G4 F1000 M100: no M function allowed in the G4 block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program G function by itself in the block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12130 [Channel %1: ] Block %2 illegal tool orientation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool orientation may only be contained in a modal motion block or in a WAB block (repositioning).
It can be programmed via Euler angles (A1, B1, C1), normal vector components (A2, B2, C2), direction vectors (A3, B3, C3) or the axis end values. If the tool orientation is programmed in conjunction with the functions:
G04 (dwell time), G33 (thread cutting with constant lead), G74 (approach reference points) or REPOSL, REPOSQ, REPOSH (repositioning)
then an alarm is issued with Euler angles, direction vectors and normal vector components.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Program tool orientation with the axis end values or use a separate block for this.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12140 [Channel %1: ] Block %2 functionality %3 not implemented

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Software construct in the source text

**Explanation:** In the full configuration of the control functions are possible that are not yet implemented in the current version.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
The displayed function must be removed from the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12150 [Channel %1: ] Block %2 operation %3 not compatible with data type

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String (violating operator)

**Explanation:** The data types are not compatible with the required operation (within an arithmetic expression or in a value assignment).
Example 1:
Arithmetic operation
N10 DEF INT OTTO
N11 DEF STRING[17] ANNA
N12 DEF INT MAX
:
N50 MAX = OTTO + ANNA
Example 2:
Value assignment
N10 DEF AXIS DRILL N11 DEF INT OTTO : N50 OTTO = DRILL

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Alter the definition of the variables used such that the required operations can be executed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12160 [Channel %1: ] Block %2 Value %3 lies beyond the value range

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Impermissible value

**Explanation:** The programmed constant or the variable lies beyond the value range that has previously been established by the definition of the data type.
An initial value in a DEF or REDEF instruction lies beyond the upper (ULI) or lower (LLI) limit values that have been programmed or already exist in the DEF instruction.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Correct value of the constant or adapt data type. If the value for an integer constant is too great, it can be specified as real constant by adding a decimal point.
Example:
R1 = 9 876 543 210 Correct: R1 = 9 876 543 210.
Value range INTEGER: +/-(2**31 - 1)
Value range REAL: +/-(10**-300 .. 10**+300)

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12161 [Channel %1: ] Block %2 Error on defining the limit %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Impermissible limit value

**Explanation:** The alarm may have the following causes.
- During definition (DEF) or redefinition (REDEF) of a variable's limits, a value was entered for the upper limit that is smaller than that for the lower limit.
- A limit for a variable type was programmed that is not of type CHAR, INT or REAL.
- A limit value of type CHAR was programmed for a variable with the data type INT or REAL.
- A string (more than one character) was programmed for one of the limits.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If the alarm occurs in the part program (DEF instruction), press the NC Stop key and select the function "Compensation block" using PROGRAM CORRECT softkey. The cursor is placed on the incorrect block.
Adjust the limit values afterwards or completely remove the limit programming in the case of an incorrect data type.
If the alarm occurs on compiling a GUD or ACCESS file, correct the GUD or ACCESS definition file (DEF file).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12162 [Channel %1: ] Block %2 Physical unit not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a DEF or REDEF instruction, a physical unit may only be defined for variables of data type INT or REAL. Furthermore, only the following values may be programmed for the physical unit:

0 No physical unit
1 Linear or angular position, dependent upon axis type
2 Linear position [mm ; inch]
3 Angular position [degrees]
4 Linear or angular velocity, dependent upon axis type
5 Linear velocity [mm/min]
6 Angular velocity [rev/min ]
7 Linear or angular acceleration, dependent upon axis type
8 Linear accel. [$m/s^2$ ; $inch/s^2$]
9 Angular accel. [$rev/s^2$ ]
10 Linear or angular jerk
11 Linear jerk [$m/s^3$ ; $inch/s^3$]
12 Angular jerk [$rev/s^3$ ]
13 Time [s]
14 Position controller gain [16.667/s]
15 Revolutional feedrate [mm/rev ; inch/rev]
16 Unit for temperature compensation values, dependent upon axis type
18 Force [N]
19 Weight [kg]
20 Moment of inertia [$kgm^2$]
21 Per cent
22 Frequency [Hz]
23 Voltage [V]
24 Current [A]
25 Temperature [degrees Celsius]
26 Angle [degrees]
27 KV [ 1000/min ]
28 Linear or angluar position [mm|deg or inch|deg]
29 Cutting speed [m/min; feet/min]
30 Peripheral velocity [m/s; feet/s]
31 Resistance [ohms]
32 Inductance [mH]
33 Torque [Nm]
34 Torque constant [Nm/A]
35 Current controller gain [V/A]
36 Speed controller gain [Nm/rad s 1]
37 Speed [rev/min]
42 Power [kW]
43 Low power [µA]
46 Low torque [µNm]
48 Per mill HZ_PER_SEC = 49, [Hz/s]
65 Flow [l/min]
66 Pressure [bar]
67 Volume [$cm^3$]
68 Controlled system gain [mm/Vmin]
69 Controlled system gain force controller [N/V]
155 Thread pitch [mm/rev; inch/rev]
156 Thread pitch change [$mm/rev^2$ ; $inch/rev^2$]

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If the alarm occurs in the part program (DEF instruction), press the NC Stop key and select the function "Compensation block" using PROGRAM CORRECT softkey. The cursor is placed on the incorrect block.
In the compensation block the data type can now be adjusted in the DEF instruction, or the physical unit (PHU xy) must be removed.
If the alarm occurs on compiling a GUD or ACCESS file, correct the GUD or ACCESS definition file (DEF file).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12163 [Channel %1: ] Block %2 Change of access protection not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Changing the access rights for system variables (with REDEF) is not allowed in GUD files. They can only be changed in the ACCESS files (_N_SYSACCESS_DEF, _N_SACCESS_DEF, _N_MACCESS_DEF and _N_UACCESS_DEF).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Cut the REDEF instruction from the GUD file and paste it into one of the ACCESS files.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12164 [Channel %1: ] Block %2 access protection programmed more than once %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Duplicate protection level programming

**Explanation:** The language commands APW and APR are used to program access protection for access to both the part program and the OPI. APWP and APRP define access protection from the part program; APWB and APRB define access protection via the OPI. Programming APW in the same block together with APWP or APWB or programming APR in the same block together with APRP or APRB will lead to a conflict, as the protection level assignment is no longer unique.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If access protection in the part program and on the OPI needs to be set to diffferent levels, only the language commands APWP, APWB, APRP and APRB may be used. If access protection is to be the same in the part program and on the OPI, it can also be programmed with APW or APR, although in this case the APWP and APWB or APRP und APRB commands must not be programmed in the same block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12170 [Channel %1: ] Block %2 name %3 defined several times

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Symbol in block

**Explanation:** The symbol shown in the error message has already been defined in the active part program. Note that user-defined identifiers may occur more than once if the multiple definition occurs in other (sub)programs, i.e. local variables may be redefined with the same name if the program has been exited (subprograms) or has already been concluded. This applies both to user-defined symbols (labels, variables) and to machine data (axes, DIN addresses and G functions).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The symbol already known to data management is displayed. This symbol must be looked for in the definition part of the current program using the program editor. The 1st or 2nd symbol must be given a different name.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12180 [Channel %1: ] Block %2 illegal chaining of operators %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Chained operators

**Explanation:** Operator chaining means the writing in sequence of binary and unary operators without using any form of parentheses.
Example:
N10 ERG = VARA - (- VARB) ; correct notation
N10 ERG = VARA - - VARB ; error!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Formulate the expression correctly and unambiguously making use of parentheses. This improves clarity and readability of the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12185 [Channel %1: ] Block %2 a bit combination with %3 is not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Address name

**Explanation:** A bit combination is not possible with the assignment to this address. Bit combinations are permitted only for coupling adresses ( CPMBRAKE, CPMVDI and CPMAL ).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the part rogram.
If the data type of the address permits a bit combination, write the value of the address in a variable, make a bit combination with the variable, and assign the variable to the address.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12190 [Channel %1: ] Block %2 variable of type ARRAY has too many dimensions

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Array with variables of type STRING may be no more than 1-dimensional, and with all other variables no more than 2-dimensional.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Correct the array definition, with multi-dimensional arrays define a second 2-dimensional array if necessary and operate it with the same field index.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12200 [Channel %1: ] Block %2 symbol %3 cannot be created

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Symbol in block

**Explanation:** The symbol to be created with the DEF instruction cannot be created because:
- it has already been defined (e.g. as variable or function)
- the internal memory location is no longer sufficient (e.g. with large arrays)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Make the following checks:
- Check with the text editor whether the name to be allocated in the active program cycle (main program and called subprograms) has already been used.
- Estimate the memory requirements for the symbols already defined and reduce these if necessary by using fewer global and more local variables.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12205 [Channel %1: ] Block %2 area specification missing for GUD area

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The area specification
(NCK or CHAN) was not programmed in the definition instruction for a GUD variable.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Complete the area specification for the GUD variable definition in the GUD definition file.
The definition of a GUD variable must conform to the following syntax:
DEF <Area> <Data type> <Variable name> e.g.
DEF NCK INT intVar1
DEF CHAN REAL realVar1

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12210 [Channel %1: ] Block %2 string %3 too long

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String in the block

**Explanation:**
- In the definition of a STRING type variable, an attempt has been made to initialize more than 200 characters.
- In an allocation, it has been found that the string does not fit the given variable.
- In synchronized actions, a string with more than 31 characters has been programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the "Correction block" function with the PROGRAM CORRECT softkey. The cursor is positioned on the incorrect block.
- Select a shorter string or divide the character string into 2 strings.
- Define a longer string variable.
- Restrict the string to 31 characters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12220 [Channel %1: ] Block %2 binary constant %3 in string too long

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Binary constant

**Explanation:** When initializing or allocating the value of a variable of type STRING more than 8 bits have been found as binary constant.
DEF STRING[8] OTTO = "ABC'H55''B000011111'DEF"

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
In the window for the alarm message, the first characters of the binary constant are always displayed although the surplus bit might not be located until further on. Therefore, the complete binary constant must always be checked for an incorrect value.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12230 [Channel %1: ] Block %2 hexadecimal constant %3 in string too long

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Hexadecimal constant

**Explanation:** A string can also contain bytes that do not correspond to a character that can be entered or one that is available on a keyboard with a minimized number of keys. These characters can be input as binary or hexadecimal constants. They may occupy up to 1 byte each only - therefore be < 256, e.g.
N10 DEF STRING[2] OTTO=" 'HCA' 'HFE' "

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
In the window for the alarm message, the first characters of the hexadecimal constant are always displayed although the surplus bit might not be located until further on. Therefore, the complete hexadecimal constant must always be checked for an incorrect value.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12240 [Channel %1: ] Block %2 tool orientation %3 defined repeatedly

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Text

**Explanation:** Only 1 tool orientation can be programmed per DIN block. This can either be defined via the 3 Euler angles, or the end points of the axes, or through direction vectors.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Since the tool orientation can be set in 3 different ways, the most advantageous should be selected. For this type of specification, the addresses and value assignments must be programmed and all other orientation parameters must be removed.
Axis end points (additional axes): A, B, C axis identifiers Euler angles: A2, B2, C2 Direction vectors: A3, B3, C3

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12250 [Channel %1: ] Block %2 nested macro %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The macro technique supplies a 1-line instruction or series of instructions with a new identifier by means of the keyword DEFINE. There may be additional macros in the string of instructions down to a nesting depth of 3.
Example:
N10 DEFINE MACRO3 AS F100
N20 DEFINE MACRO2 AS MACRO3
N10 DEFINE MACRO1 AS G01 G91 X123 MACRO2

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Nested macros must be replaced by the full program information.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12260 [Channel %1: ] Block %2 too many initialization values specified %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** In the initialization of an array (array definition and value assignments to individual array elements) there are more initialization values than array elements. Example: N10 DEF INT OTTO[2,3]=(..., ..., {more than 6 values})

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Check the NC program to establish whether:
1. During array definition the number of array elements (n,m) was indicated correctly (DEF INT FIELDNAME[n,m] e.g. an array with 2 lines and 3 columns: n=2, m=3). 2. During initialization the value assignments have been made correctly (values of the individual field elements separated by comma, decimal point for variables of the type REAL).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12261 [Channel %1: ] Block %2 initialization of %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** Frame type variables cannot be initialized in the definition. Example: DEF FRAME LOCFRAME = CTRANS(X,200)
Equally, no default values can be programmed for axes in the program run during field initialization via SET.
A REDEF instruction with PRLOC is only permitted for setting data, but not for machine data or variables.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Perform the following initialization in the separate block in the execution part of the program: DEF FRAME LOCFRAME LOCFRAME = CTRANS(X,200)
When using the SET expression for axis variables
replace DEF AXIS AXIS_VAR [10] AXIS_VAR [5] = SET (X, , Y) by: DEF AXIS AXIS_VAR [10] AXIS_VAR [5] = X AXIS_VAR [7] = Y

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12270 [Channel %1: ] Block %2 macro identifier %3 already defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string macro name

**Explanation:** The name of the macro to be selected by the instruction DEFINE is already defined in the control as:
Macro name
Keyword
Variable
Configured identifier.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Select DEFINE instruction with another macro name.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12280 [Channel %1: ] Block %2 maximum macro length %3 exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The string of instructions on the right side of the macro is limited to 256 characters. If an attempt is made to define a longer character string under one macro (possible only through V.24 input of NC blocks, because communication between operator panel and NCK is limited to a block length of 242 characters), an alarm is displayed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Divide the functions defined under the macro into 2 macros.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12290 [Channel %1: ] Block %2 arithmetic variable %3 not defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string arithmetic variable

**Explanation:** Only the R-variables are predefined as arithmetic variables. All other arithmetic variables must be defined with the DEF instruction before being used. The number of arithmetic parameters is defined via machine data. The names must be unambiguous and may not be repeated in the control (exception: local variables).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Define the required variable in the definition part of the program (possibly in the calling program if it is to be a global variable).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12300 [Channel %1: ] Block %2 call-by-reference parameter missing on subroutine call %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** In the subroutine definition, a formal REF parameter (call-by-reference parameter) has been specified with no actual parameter assigned to it.

The assignment takes place in the subroutine call on the basis of the position of the variable name and not on the basis of the name!

Example:

```
Subroutine:     (2 call-by-value parameters X and Y,
        1 call-by-reference parameter Z)
PROC XYZ (INT X, INT Y, VAR INT Z)
 :
M17
ENDPROC
Main program:
N10 DEF INT X
N11 DEF INT Y
N11 DEF INT Z
 :
N50 XYZ (X, Y)    ; REF parameter Z missing
or
N50 XYZ (X, Z)    ; REF parameter Z missing!
```

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Assign a variable to all REF parameters (call-by-reference parameters) of the subroutine when calling. No variable must be assigned to "normal" formal parameters (call-by-value parameters), as these are defaulted with 0.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12310 [Channel %1: ] Block %2 axis parameter missing on procedure call %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** When calling the subroutine, an AXIS parameter is missing which, according to the EXTERN declaration, should be present.
With the EXTERN instruction, user-defined subroutines (procedures) are made "known" that have a parameter transfer.
Procedures without parameter transfer require no EXTERN declaration.
Example:
Subroutine XYZ (with the formal parameters):
PROC XYZ (INT X, VAR INT Y, AXIS A, AXIS B)
EXTERN instruction (with variable types):
EXTERN XYZ (INT, VAR INT, AXIS, AXIS) Subroutine call (with actual parameters):
N10 XYZ (, Y1, R_TISCH)
Variable X is defaulted with value 0
Variable Y is supplied with the value of the variable Y1 and returns the results to the calling program after the subroutine run
Variable A is supplied with the axis in R_TISCH
Variable B missing!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Program the missing AXIS parameter in the call.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12320 [Channel %1: ] Block %2 parameter %3 is no variable

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** A constant or the result of a mathematical expression has been assigned to a REF parameter instead of a variable at the time of the subroutine call, even though only variable identifiers are allowed.
Examples:
N10 XYZ (NAME_1, 10, OTTO) or
N10 XYZ (NAME_1, 5 + ANNA, OTTO)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Remove the constant or the mathematical expression from the NC block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12330 [Channel %1: ] Block %2 type of parameter %3 incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** When calling a procedure (a subroutine) it is found that the type of the actual parameter cannot be converted into the type of the formal parameter. There are two possible cases:

- Call-by-reference parameter: Actual parameter and formal parameter must be of precisely the same type, e.g. STRING, STRING.
- Call-by-value parameter: Actual parameter and formal parameter can in principle be different providing conversion is basically possible. In the present case, however, the types are generally not compatible, e.g. STRING -> REAL.

Overview of type conversions:

- from REAL to: REAL: yes, INT: yes*, BOOL: yes1), CHAR: yes*, STRING: -, AXIS: -, FRAME: -
- from INT to: REAL: yes, INT: yes, BOOL: yes1), CHAR: if value 0 ...255, STRING: -, AXIS: -, FRAME: -
- from BOOL to: REAL: yes, INT: yes, BOOL: yes, CHAR: yes, STRING: -, AXIS: -, FRAME: -
- from CHAR to: REAL: yes, INT: yes, BOOL: yes1), CHAR: yes, STRING: yes, AXIS: -, FRAME: -
- from STRING to: REAL: -, INT: -, BOOL: yes2), CHAR: only if 1 character, STRING: yes, AXIS: -, FRAME: -
- from AXIS to: REAL: -, INT: -, BOOL: -, CHAR: -, STRING: -, AXIS: yes, FRAME: -
- from FRAME to: REAL: -, INT: -, BOOL: -, CHAR: -, STRING: -, AXIS: -, FRAME: yes

1) Value <> 0 corresponds to TRUE, value ==0 corresponds to FALSE.

2) String length 0 => FALSE, otherwise TRUE.

*) At type conversion from REAL to INT fractional values that are >=0.5 are rounded up, others are rounded down.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

Check transfer parameters of the subroutine call and define the application accordingly as call-by-value or call-by-reference-parameter.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12340 [Channel %1: ] Block %2 number of parameters too high %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string

**Explanation:** When calling a function or a procedure (predefined or user-defined) more parameters were transferred than defined.

Predefined functions and procedures: The number of parameters has been set permanently in the NCK.

User-defined functions and procedures: The number of parameters is established by type and name in the definition.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. Check whether the correct procedure/function has been called. Program the number of parameters in accordance with the procedure/function.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12350 [Channel %1: ] Block %2 parameter %3 no longer possible

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string

**Explanation:** An attempt has been made to transfer actual parameters although axis parameters located before them have not been assigned. For procedure or function calls, the assignment of parameters that are no longer required can be omitted if no more parameters are to be transferred subsequently. Example: N10 FGROUP(X, Y, Z, A, B); a max. of 8 axes possible The following call-by-value parameters would then be initialized with zero because the space-dependent assignment has been lost on account of the missing axis parameters. Axes that can be omitted and following parameters do not occur in the predefined procedures and functions.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. In predefined procedures and functions either remove the following parameters or transfer any preceding axis parameters. In user-defined procedures and functions, parameter transfer must be programmed in accordance with the instructions given in the machine manufacturer's programming guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12360 [Channel %1: ] Block %2 dimension of parameter %3 incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The following possibilities of error must be checked:
- The current parameter is an array, but the formal parameter is a variable
- The current parameter is a variable, but the formal parameter is an array
- The current and formal parameters are arrays, but not with the dimensions to be defined.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. Correct the NC part program in accordance with the cause of error as listed above.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12370 [Channel %1: ] Block %2 range of values %3 not permissible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** A variable has been initialized with a value range outside an initialization block. The definition of program-global variables is allowed only in special initialization blocks. These variables can be initialized with a value range.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Remove the value range specification (begins with the keyword OF) or define the variable as a global variable in the initialization block and initialize it with a value range.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12380 [Channel %1: ] Block %2 maximum memory capacity reached

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The data definitions in this block cannot be processed because the maximum available memory for creating the data has been filled, or because the data block cannot accommodate any further data.
The alarm can also occur if several subroutine calls are executed in sequence and no block with an effect on the machine is generated (motion, dwell, M function).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Reduce the number of variables, reduce the size of arrays, or increase the capacity of the data management system.
- If new macro definitions are to be introduced -> Increase MD18160 $MN_MM_NUM_USER_MACROS
- If new GUD definitions are to be introduced -> Check MD18150 $MN_MM_GUD_VALUES_MEM, MD18130 $MN_MM_NUM_GUD_NAMES_CHAN, MD18120 $MN_MM_NUM_GUD_NAMES_NCK
- If the error occurs while executing an NC program with LUD definitions or when using cycle programs (the parameters count as LUD variable of the cycle program), the following machine data must be checked:

MD28040 $MC_MM_LUD_VALUES_MEM,
MD18242 $MN_MM_MAX_SIZE_OF_LUD_VALUE,
MD18260 $MN_MM_LUD_HASH_TABLE_SIZE,
MD28020 $MC_MM_NUM_LUD_NAMES_TOTAL,
MD28010 $MC_MM_NUM_REORG_LUD_MODULES

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12390 [Channel %1: ] Block %2 initialization value %3 cannot be converted

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** During initialization, a value has been assigned to a variable that does not correspond to the type of the variable, nor can it be converted to the data type of the variable.
Overview of type conversions:
- from REAL to REAL: no, INT: yes1), BOOL: yes, CHAR: yes2), STRING: -
- from INT to REAL: yes, INT: no, BOOL: yes, CHAR: yes2), STRING: -
- from BOOL to REAL: yes, INT: yes, BOOL: no, CHAR: yes, STRING: -
- from CHAR to REAL: yes, INT: yes, BOOL: yes, CHAR: no, STRING: yes
- from STRING to REAL: -, INT: -, BOOL: yes, CHAR: yes3), STRING: no

1) Value <> 0 corresponds to TRUE, value ==0 corresponds to FALSE.
2) String length 0 => FALSE, otherwise TRUE.
3) If only one character.

It is not possible to convert from type AXIS and FRAME nor into type AXIS and FRAME.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
- Define variable type such that the initialization value can be assigned, or
- Select initialization value in accordance with the variable definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12400 [Channel %1: ] Block %2 field %3 element does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The following causes are possible:
- Impermissible index list; an axis index is missing
- Array index does not match the definition of the variables
- An attempt was made to access a variable at array initialization via SET or REP; this attempt did not correspond to the standard access. Single character access, partial frame access, omitted indices not possible.

A non-existent element was addressed on initializing this array.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Array initialization: Check the array index of the addressed element. The 1st array element is given the index [0,0], the 2nd array element [0,1] etc. The right array index (column index) is incremented first.
In the 2nd row, the 4th element is also addressed with the index [1,3] (the indices start at zero).
Array definition: Check the size of the array. The 1st number indicates the number of elements in the 1st dimension (number of rows), the 2nd number indicates the number of elements in the 2nd dimension (number of columns).
An array with 2 rows and 3 columns must be defined by specifying [2,3].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12410 [Channel %1: ] Block %2 incorrect index type for %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** In assigning a value to an element of an array variable, the array index was specified in a way that is not allowed.
Only the following are allowed as array index (in square brackets):
- Axis identifier, provided the array variable was defined as data type FRAME.
- Integer values for all other data types.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. Correct indices of the array element with respect to variable definition or define the array variable differently.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12420 [Channel %1: ] Block %2 identifier %3 too long

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The symbol to be defined or the specified jump target has a name which is longer than the 31 characters allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. The symbol to be created or the target of program jumps (label) must conform to the system specifications, that means the name must begin with 2 letters (but the 1st sign must not be "$") and may be up to a maximum of 31 characters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12430 [Channel %1: ] Block %2 specified index is invalid

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In specifying an array index (in the array definition) an index was used that is outside the permissible range.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. Specify array index within the permissible range. Value range per array dimension: 1 - 32 767.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12440 [Channel %1: ] Block %2 maximum number of formal arguments exceeded

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In the definition of a procedure (a subroutine) or in an EXTERN instruction, more than 127 formal parameters have been specified.

Example: PROC ABC (FORMPARA1, FORMPARA2, ... ... FORMPARA127, FORMPARA128, ...) EXTERN ABC (FORMPARA1, FORMPARA2, ... ... FORMPARA127, FORMPARA128, ...)

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. A check must be made to determine whether all parameters really have to be transferred. If so, the formal parameters can be reduced by using global variables or R variables, or by grouping together parameters of the same type to form an array and transfer them in this form.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12450 [Channel %1: ] Block %2 label defined twice

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The label of this block already exists.

If the NC program is compiled off-line, the entire program is compiled block for block. During this procedure all multiple labels are recognized; this is not always the case with on-line compilation. (Only the actual program run is compiled here, i.e. program branches that are not passed through in this run are disregarded and could therefore contain programming errors).

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer is positioned on the block where the displayed label occurs for the 2nd time. Use the editor to search the part program where this label occurs for the 1st time, and change one of the names.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12460 [Channel %1: ] Block %2 maximum number of symbols exceeded with %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string

**Explanation:** The max. number of variable definitions (GUD, LUD), macro definitions, cycle programs and/or cycle parameters (PROC instruction) that the controller's data management system is able to handle has been exceeded.

If this alarm occurs in conjunction with alarm 15175, not enough memory for the preprocessing of the cycle program definitions is available (PROC instruction).

If this alarm occurs in conjunction with alarm 15180, then this alarm shows the name of the file (INI or DEF file) causing the error.

(For a list of names of INI files and their meaning -> please refer to alarm 6010)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Generally reduce the number of symbols in the affected block (possibly by using the array technique or by using R variables), or adapt the corresponding machine data (see below).
MD28020 $MC_MM_NUM_LUD_NAMES_TOTAL with error in LUD blocks (i.e. if more variable definitions were made in the active part program than allowed by the MD).
GUD data blocks can cause errors as part of the 'initial.ini download' process (e.g. in the case of a series start-up) or by selective activation via PI service _N_F_COPY (activate GUD via HMI dialog). If alarm 15180 refers to a GUD definition file, then MD18120 $MN_MM_NUM_GUD_NAMES_NCK or MD18130 $MN_MM_NUM_GUD_NAMES_CHAN is set to a value that is too small.
Macros are loaded during POWER ON/NCK RESET or selectively via PI service _N_F_COPY (activate macro via HMI dialog). If alarm 15180 refers to a macro definition file, then MD18160 $MN_MM_NUM_USER_MACROS is set to a value that is too small.
Cycle program definitions (PROC instruction) are reloaded at each POWER ON/NCK RESET. In case of failure check parameter %3 to find out whether the name of the cycle program has caused the error - in this case, the value of MD18170 $MN_MM_NUM_MAX_FUNC_NAMES should be increased, or whether the name of a cycle call parameter has caused the error - in this case, the value of MD18180 $MN_MM_NUM_MAX_FUNC_PARAM should be increased.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12470 [Channel %1: ] Block %2 G function %3 is unknown

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** With indirectly programmed G functions, an invalid or non-allowed group number has been programmed. Allowed group number = 1. and 5 max. number of G groups. In the displayed block, a non-defined G function has been programmed. Only "real" G functions are checked, which begin with the address G, e.g. G555. "Named" G functions such as CSPLINE, BRISK etc. are interpreted as subroutine names.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. You should decide on the basis of the machine manufacturer's programming guide whether or not the displayed G function exists or is available, or whether a standard G function has been reconfigured (or introduced by an OEM). Remove G function from the part program or program function call in accordance with the machine manufacturer's programming guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12475 [Channel %1: ] Block %2 invalid G function number %3 programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = G code number

**Explanation:** A non-allowed G function number (parameter 3) has been programmed for a G group with indirect G code programming. Only the G function numbers indicated in the Programming Guide "Fundamentals", Section 12.3 "List of G functions/Path conditions" are allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12480 [Channel %1: ] Block %2 subroutine %3 already defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The name used in the PROC or EXTERN instruction has already been defined in another call description (e.g. for cycles).
Example:
EXTERN CYCLE85 (VAR TYP1, VAR TYP2, ...)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block. A program name must be selected that has not yet been used as identifier. (Theoretically, the parameter declaration of the EXTERN instruction could also be adapted to the existing subroutine in order to avoid the alarm output. However, it would have been defined identically twice).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12481 [Channel %1: ] Block %2 program attribute %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The attribute used in the PROC instruction is not permitted in the current operating mode.
The attribute SAVE, for example, is not allowed in a technology cycle.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC STOP button and select the "Compensation block" function using the PROGRAM CORRECT softkey. The cursor jumps to the incorrect block. Then delete the invalid program attribute.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12490 [Channel %1: ] Block %2 access permission level %3 was not set

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The desired access authorization was not set. The desired protection level is either beyond the permitted value range or changing the protection level is not allowed.
The protection level may be changed only if:
1. The current protection level is equal to or higher than the level originally defined, and
2. The new protection level will be below the level originally defined.
The alarm also occurs if the access authorization is to be changed for a user data block that is not available.
The higher numerical values represent the lower protection levels. The lower 4 levels (from 7 to 4) correspond to the keyswitch positions, and the upper 4 levels are associated with 4 passwords.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
- Use the REDEF instruction only in the INITIAL_INI block
- Using the operator panel, set the current protection level to at least the same level as that of the variable with the highest level
- Program protection level within the permissible value range
- Only program new protection levels that are lower than the old values

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12495 [Channel %1: ] Block %2 Change (definition) of data class %3 is not allowed here

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Data class

**Explanation:** Change of the data class in this ACCESS file or definition in this GUD file (for file name see alarm 15180) not possible.
Priority of the new data class may only be smaller or the same as that of the definition file. This means that DCS may only be programmed in SGUD (SACCESS), DCM not in UGUD and GUD9 (UACCESS), DCU not in GUD9. DCI is allowed in all GUD and ACCESS files.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the data class of the area permissible for this GUD or ACCESS file.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12500 [Channel %1: ] Block %2 in this module %3 is not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** The displayed keyword may not be used in this type of block and at this location (all files in the NCK are designated as blocks).
Block types:
Program block
Contains a main program or subroutine
Data block
Contains macro or variable definitions and possibly an M, H or E function
Initialization block
Contains only selected language elements for data initialization

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Remove the displayed language elements (keyword) with its parameters from this block and insert in the block provided for this purpose.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12510 [Channel %1: ] Block %2 too many machine data %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** In the part program, in the machine data file (..._TEA) and in the initialization file (..._INI), no more than 5 machine data may be used per block.

Example:

```
N ...
N 100 $MN_OVR_FACTOR_FEEDRATE [10] = 15,
      $MN_OVR_FACTOR_FEEDRATE [11] = 20
N ...
```

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

- Divide up the part program block into several blocks.
- If necessary, use the local variable for storing intermediate results.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12520 [Channel %1: ] Block %2 too many tool parameters %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source symbol

**Explanation:** In the part program, in the tool offset file (..._TOA) and in the initialization file (..._INI), no more than 5 tool offset parameters may be used per block.

Example:

```
N ...
N 100 $TC_DP1 [5,1] = 130, $TC_DP3 [5,1] = 150.123,
      $TC_DP4 [5,1] = 223.4, $TC_DP5 [5,1] = 200.12,
      $TC_DP6 [5,1] = 55.02
N ...
```

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.

- Divide up the part program block into several blocks.
- If necessary, use the local variable for storing intermediate results.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12530 [Channel %1: ] Block %2 invalid index for %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source string

**Explanation:** In macro definitions, an attempt was made to define a G function with more than 3 decades or an M function with more than 2 decades as identifier of the macro.

Example:

```
_N_UMAC_DEF  DEFINE G4444 AS G01 G91 G1234
             DEFINE M333 AS M03 M50 M99
             :
             M17
```

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Modify the macro definition in accordance with the Programming Guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12540 [Channel %1: ] Block %2 Block is too long or too complex

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum internal block length after translator processing must not exceed 256 characters. After editing, for example, several macros in the block or a multiple nesting, this limit can be exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Divide up the program block into several subblocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12550 [Channel %1: ] Block %2 name %3 is not known or not defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The identifier displayed is not known or was not defined before use.
A definable identifier can be:
A macro, GUD, LUD, program name or a program parameter

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Compensation block" with the softkey PROGRAM CORRECT. The cursor positions itself on the incorrect block.
- Correct the name used (writing error)
- Check definitions of variables, subroutines and macros
- Declare subroutine with EXTERN, load subroutine to SPF-Dir
- Check interface definition of subroutine
- See also MD10711 $MN_NC_LANGUAGE_CONFIGURATION.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12551 [Channel %1: ] Block %2 motion synchronized action: %3 function not available

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** Motion synchronized action: this function is not available for this system.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Correct the name used (write error)
- Use a higher-level software system for reduced functions
- Check the definitions of variables, subroutines and macros
- Declare a subroutine with EXTERN; load the subroutine to SPF-Dir
- Check the interface definition of the subroutine

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12552 [Channel %1: ] Block %2 tool/magazine OEM parameter not defined. Option not set.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed $TC_... Cx system variable is not known in the control.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Correct the name used (writing error)
- $TC_DPCx, $TC_TPCx, $TC_MOPCx, $TC_MAPCx, $TC_MPPCx, $TC_DPCSx, $TC_TPCSx, $TC_MOPCSx, $TC_MAPCSx, $TC_MPPCSx; with x=1,...10
- These are the OEM parameters of the tools magazines, The corresponding machine data value is set to < 10, or the option 'TM OEM parameters' has not been set.
- Use correct parameter number, or - if the name cannot be changed - set machine data correction (see MD18096 $MN_MM_NUM_CC_TOA_PARAM, ... MD18206 $MN_MM_NUM_CCS_TOA_PARAM, ...). )
- Check the option (machine data are only effective when the option is enabled).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12553 [Channel %1: ] Block %2 name %3 option/function is not active

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The option (if MD10711 $MN_NC_LANGUAGE_CONFIGURATION = 1) or the NC function (if MD10711 $MN_NC_LANGUAGE_CONFIGURATION = 3)
related to this language command is not active.
But the name of the language command is known.
Each programming of this language command is rejected with this alarm.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the "Compensation block" function by pressing the PROGRAM CORRECT softkey. The cursor positions itself on the incorrect block.
- Correct the name used (in the case of a typing error).
- Activate the NC function (if a language command of an inactive function has been programmed).
- Enable the option required (if a language command of a function with a non-enabled option has been programmed).
See also MD10711 $MN_NC_LANGUAGE_CONFIGURATION.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12554 [Channel %1: ] Block %2 replacement cycle %3 for the predefined procedure is missing.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Cycle name

**Explanation:** The replacement cycle that is to be called instead of the predefined procedure
is not present / unknown in the control.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC stop key, and select the "Compensation block" function by pressing the PROGRAM CORRECT softkey. The cursor will position itself in the faulty block.
- Correct the name used for the predefined procedure (write error)
- Or load the replacement cycle into one of the cycle directories (+ restart)

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12555 [Channel %1: ] Block %2 function not available (identifier %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Fine ID

**Explanation:** The identifier is not available for this system.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC stop key and select the "Compensation block" function by pressing the "Program correct" softkey. The correction indicator will position in the incorrect block.
- Correct the name used (write error)
- Use a better software system in case of malfunction
- Check the definition of variables, subroutines and macros
- Declare a subroutine with EXTERNAL; load the subroutine to SPF-Dir
- Check the interface definition of the subroutine

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12556 [Channel %1: ] Block %2 name %3 Name is already known

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The name of the symbol to be created is part of the NC language scope and therefore already known. Although the NC function is not active, this name can no longer be used for GUDs, macros and PROC definitions.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press key NC Stop and select "Correction block" function by pressing softkey "Program correct". The correction indicator is set to the incorrect block.
- Correct the name used (typing error)
- With MD10711 $MN_NC_LANGUAGE_CONFIGURATION = 2 or 4, only those language commands are created, the option of which has been set
or the function of which is active.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12560 [Channel %1: ] Block %2 programmed value %3 exceeds allowed limits

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** In a value assignment, the permissible value range of the data type has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the faulty block.
Assign value within the value range of the various data types or, if necessary, use another type in order to increase the size of the value range, e.g. INT ->REAL.
Value ranges of the various variable types:
- REAL: Property: Fractional number with dec. pt., value range: +/-(2.2*10e-308 ... 1.8*10e308)
- INT: Property: Integers with signs, value range: -2147483648 ... +2147483647
- BOOL: Property: Truth value FALSE, TRUE, value range: 0 or 1
- CHAR: Property: 1 ASCII character, value range: 0 ... 255
- STRING: Property: Character string (max. length depends on the variable), value range: 0 ... 255
- AXIS: Property: Axis addresses, value range: Channel identifier
- FRAME: Property: Geometric information, value range: ---

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12571 [Channel %1: ] Block %2 %3 not permissible for motion synchronous action

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The predefined subprogram %3 specified here is not allowed in a block with motion synchronous action. It may only be contained in a "normal" block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12572 [Channel %1: ] Block %2 %3 only permissible for motion synchronous action

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The predefined subprogram %3 specified here is only allowed in a block with motion synchronous action. It must not be contained alone in a "normal" block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12573 [Channel %1: ] Block %2 motion-synchronous action: Call by reference parameters not allowed %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source text area

**Explanation:** Call by reference parameters (keyword VAR) are not possible with technology cycles.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct PROC instruction of technology cycle.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12580 [Channel %1: ] Block %2 %3 not permissible for assignment in motion synchronous action

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** The variable displayed must not be written in a motion synchronous action. Only selected variables are permitted here, e.g. DO $AA_IW[X]=10 is not allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
Modify part program.
In a motion synchronous action, only certain variables are allowed.
E.g. $AA_IM, $AC_DTGPB

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12581 [Channel %1: ] Block %2 invalid read access to %3 while in motion synchronous action

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** In a motion synchronous action, the displayed variable must not be entered as a variable that is to be read online, i.e.
1. The displayed variable must not be written to the left of the comparison in a motion synchronous action. Only selected variables are permissible, e.g. WHEN $AA_OVR == 100 DO ....
2. In a motion synchronous action, the displayed variable must not be used as a $$ variable, e.g. WHEN $AA_IM[X] >= $$P_AD[1] DO ... DO $AC_VC = $$P_F
3. The displayed variable must not be programmed as an online evaluated parameter of a synchronous procedure, e.g. DO SYNFCT(1, $AC_PARAM[0], $SA_OSCILL_REVERSE_POS2[Z])

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12582 [Channel %1: ] Block %2 field index %3 incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** $A or $V variables are assessed in real-time in motion synchronous actions, i.e. in the interpolation cycle. All other variables (e.g. user-defined variables) are still computed at block preparation. It is not permissible to index the index of a variable for block preparation with a real-time variable.

Example:

DEF INT INPUT[3]

WHEN $A_IN[1] == INPUT[$A_INA[1]] DO ...

The locally defined variable INPUT must not be indexed with a real-time variable.

Program editing:

WHEN $A_IN[1] == $AC_MARKER[$A_INA[1]] DO ...

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Modify program: Use real-time variables.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12583 [Channel %1: ] Block %2 variable %3 no system variable

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source symbol

**Explanation:** In motion synchronous actions, only special system variables are allowed on the left side of the compare operation for the assigned variable as input and result variable of SYNFCT and as input variable for PUTFTOCF. Real-time synchronous access is allowed here. The programmed variable is not a system variable.

Example:

DEF REAL OTTO, BERTA[2] DO SYNFCT(2,OTTO, $MN_...) ; Local variables or machine data are not allowed as parameter for SYNFCT.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Modify part program. Local variables or machine data are not allowed as parameters for SYNFCT.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12584 [Channel %1: ] Block %2 variable %3 cannot be read synchronously with motion

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Source symbol

**Explanation:** In motion synchronous actions on the left side of the compare operation, only special variables are allowed as input variables of SYNFCT and as input variables for PUTFTOCF. Motion synchronous access is possible here.

Example:

PUTFTOCF(1, $AA_OVR, 2, 1, 2)

The variable $AA_OVR is not allowed here.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Modify part program. For the functions SYNFCT and PUTFTOCF only certain variables are allowed, for example $AC_DTGPW.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12585 [Channel %1: ] Block %2 variable %3 cannot be changed synchronously with motion

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** When assigning SYNFCT in motion synchronous actions and result variables, only special variables are allowed. Real-time synchronous access is allowed here.
Example:
WHEN $AA_IM[AX1]>= 100 DO $AC_TIME=1000. The variable $AC_TIME (time from beginning of block) cannot be written

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Only certain variables are allowed for the function SYNFCT where real-time synchronous access is possible.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12586 [Channel %1: ] Block %2 motion synchronous action: type conflict in variable %3

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Source symbol

**Explanation:** Type conversion is not possible for online variables $A.. or $V.., which are evaluated or written in the interpolation cycle. Only variables of the same type can be linked or assigned to one another.
Example:
WHENEVER $AA_IM[X] > $A_IN[1] DO ...
An online variable of the REAL type (actual value) cannot be compared with a variable of the BOOL type (digital input).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Use variables of the same type.
Example 1:
WHENEVER $AA_IM[X] > $A_IN[1] DO ...
Instead use: WHENEVER $AA_IM[X] > $A_INA[1] DO ...
Example 2:
WHENEVER ... DO $AC_MARKER[1]=$AA_IM[X]-$AA_MM[X]
Instead use: WHENEVER ... DO $AC_PARAM[1]=$AA_IM[X]-$AA_MM[X]

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12587 [Channel %1: ] Block %2 motion synchronous action: operation/function %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Operator/function

**Explanation:** The specified function / operator is not permissible for logic operations of real-time variables in motion synchronous actions. The following operators/functions are permissible:
- == >= <= > < <> + - * /
- DIV MOD
- AND OR XOR NOT
- B_AND B_OR B_XOR B_NOT
- SIN COS TAN ATAN2 SQRT POT TRUNC ROUND ABS EXP LNX SPI

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12588 [Channel %1: ] Block %2 motion synchronous action: address %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Address

**Explanation:** - The specified address cannot be programmed in motion-synchronous actions. Example: ID = 1 WHENEVER $A_IN[1]==1 DO D3
- The cutting edge cannot be changed out of a motion-synchronous action.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12589 [Channel %1: ] Block %2 motion synchronous action: variable %3 not allowed with modal ID

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Variable name

**Explanation:** The modal ID in motion synchronous action must not be formed by means of an on-line variable.
Examples:
ID=$AC_MARKER[1] WHEN $a_in[1] == 1 DO $AC_MARKER[1] = $AC_MARKER[1]+1
This can be corrected in the following way:
R10 = $AC_MARKER[1]
ID=R10 WHEN $a_in[1] == 1 DO $AC_MARKER[1] = $AC_MARKER[1]+1
The ID in a synchronous action is always permanent, and cannot be changed in the interpolation cycle.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Replace the on-line variable by an arithmetic variable.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12590 [Channel %1: ] Block %2 global user data cannot be created

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Global user data cannot be created because the user data block for this global user data is not available.
The number of global user data blocks is defined in MD18118 $MN_MM_NUM_GUD_MODULES.
Here, _N_SGUD_DEF corresponds to block 1, _N_MGUD_DEF corresponds to block 2, _N_UGUD_DEF corresponds to block 3, _N_GUD4_DEF corresponds to block 4 etc.
In the directory _N_DEF_DIR, there is a file with definitions for global user data, the block number of which is greater than the number of blocks given in the MD.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Increase MD18118 $MN_MM_NUM_GUD_MODULES.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

| 12600 | [Channel %1: ] Block %2 invalid line checksum |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number |
| **Explanation:** | On processing an INI file or when executing a TEA file, an invalid line checksum has been detected. |
| **Reaction:** | Interpreter stop<br>NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Correct the INI file, or correct the MD and create a new INI file via "upload". |
| **Programm continuation:** | Switch control OFF - ON. |

| 12610 | [Channel %1: ] Block %2 Single character access with call-by-reference parameter not possible %3 |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label<br>%3 = Source string |
| **Explanation:** | An attempt has been made to use a single character access for a call-by-reference parameter. |
| **Reaction:** | Correction block is reorganized.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Save single characters in a user-defined CHAR variable, and transfer it. |
| **Programm continuation:** | Clear alarm with NC START or RESET key and continue the program. |

| 12620 | [Channel %1: ] Block %2 accessing this variable as single character not possible %3 |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label<br>%3 = Source string |
| **Explanation:** | The variable is not a user-defined variable. The single character access is only allowed for user-defined variables (LUD/GUD). |
| **Reaction:** | Correction block is reorganized.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Save the variable in a user-defined STRING variable, process it, and save it again. |
| **Programm continuation:** | Clear alarm with NC START or RESET key and continue the program. |

| 12630 | [Channel %1: ] Block %2 skip ID/label in control structure not allowed |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number |
| **Explanation:** | Blocks with control structures (FOR, ENDIF, etc.) cannot be concealed and must not contain any labels. |
| **Reaction:** | Correction block is reorganized.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Correct the part program as follows:<br>Form the skip ID by an IF query.<br>Write the label alone in the block before the control structure block. |
| **Programm continuation:** | Clear alarm with NC START or RESET key and continue the program. |

## 12640 [Channel %1: ] Block %2 invalid nesting of control structures

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** Error in program run: Opened control structures (IF-ELSE-ENDIF, LOOP-ENDLOOP etc.) are not terminated or there is no beginning of loop for the programmed end of loop.
Example:
LOOP ENDIF ENDLOOP

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program so that all open control structures are terminated.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 12641 [Channel %1: ] Block %2 maximum nesting depth of control structures exceeded

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** Max. nesting depth control structures (IF-ELSE-ENDIF, LOOP-ENDLOOP etc.) exceeded. At the present time, the max. nesting depth is 8.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program. If necessary, move parts to a subroutine.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 12650 [Channel %1: ] block %2 axis identifier %3 different in channel %4

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Source symbol
%4 = Channel number with different axis definition

**Explanation:** In cycles that are preprocessed at Power On, only those geometry and channel axis identifiers may be used that exist in all channels with the same meaning. In different channels, different axis indices are assigned to the axis identifier.
The axis identifiers are defined via MD20060 $MC_AXCONF_GEOAX_NAME_TAB and MD20080 $MC_AXCONF_CHANAX_NAME_TAB. Example: C is the 4th channel axis in channel 1 and the 5th channel axis in channel 2.
If the axis identifier C is used in a cycle that is preprocessed at Power On, then this alarm is issued.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
1. Modify machine data: Select the same identifiers for geometry and channel axes in all channels. Example: The geometry axes are called X, Y, Z in all channels. They can then also be programmed directly in preprocessed cycles.
2. Do not program the axis directly in the cycle, but as a parameter of the axis type. Example: Cycle definition:
PROC DRILL(AXIS DRILLAXIS) G1 AX[DRILLAXIS]=10 F1000 M17
Call from the main program:
DRILL(Z)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 12660 [Channel %1: ] Block %2 motion synchronous action: variable %3 reserved formotion synchronous actions and technology cycles

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Variable name

**Explanation:** The displayed variable may only be used in motion synchronous actions or in technology cycles. For example, '$R1' may only be used in motion synchronous actions. In standard part programs R variables are programmed with R1.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12661 [Channel %1: ] Block %2 technology cycle %3: no further subprogram call possible

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Name of the technology cycle call

**Explanation:** In a technology cycle it is not possible to call a subroutine or another technology cycle.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12700 [Channel %1: ] Block %2 contour definition programming not allowed as modal sub-programis active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the external language mode, a block is programmed with contour definition and a modal cycle is active at the same time. Because of unclear address assignment (e.g. R = radius for contour definition or return plane for drilling cycle) contour definition programming must not be used when a modal cycle is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12701 [Channel %1: ] Block %2 illegal interpolation type for contour definition active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In one contour definition block, G01 is not active as interpolation function. In one contour definition block, the linear interpolation always has to be selected with G01. G00, G02, G03, G33 etc. are not permitted.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Program the linear interpolation with G01.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12710 [Channel %1: ] Block %2 illegal language element in external language mode

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed language element is not allowed or unknown in external language mode. Only the language elements from Siemens mode which are used for subprogram calls (except for Lxx) and the language constructs for program repetition with REPEAT (UNTIL) are allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.
Check whether the language command is available in the Siemens mode. Switch to Siemens mode with G290. Program the command in the next block, and switch back to the external language mode in the following block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12712 [Channel %1: ] Block %2 external language mode is not active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not possible to switch to external language mode.
Before external language mode can be used, it has to be configured (see MD18800 $MN_MM_EXTERN_LANGUAGE).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.
Configure external language mode.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12720 [Channel %1: ] Block %2 program number for macro call (G65/G66) missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During macro call with G65/G66 no program number was defined. The program number must be programmed with address "P".

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12722 [Channel %1: ] Block %2 multiple ISO_2/3 macro or cycle calls in the block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A mixture of cycle and macro calls are programmed in a block, e.g. as follows:
- Cycle calls with G81 - G89 together with an M macro in the block
- Macro call with G65/G66 together with M macros in the block.
G05, G08, G22, G23, G27, G28, G29, G30, G50.1, G51.1, G72.1, G72.2 functions (ISO mode) also execute subroutine calls. It is only permissible that one macro or cycle call can appear in an NC block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Deactivate modal cycles or modal macro calls if one of the above mentioned G functions has been programmed.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12724 [Channel %1: ] Block %2 no radius programmed for cylinder interpolation activation/ deactivation

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** When programming G07.1 (cylinder interpolation TRACYL), no cylinder radius has been programmed. Selection of the cylinder interpolation (TRACYL) with G07.1 C <cylinder radius> deselect with G07.1 C0. For "C" the name of the rotary axis defined in the TRACYL machine data has to be programmed.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** G07.1 block, program the cylinder radius under the name of the rotary axis for the cylinder interpolation.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12726 [Channel %1: ] Block %2 illegal plane selection with parallel axes

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** In a block with plane selection (G17 _ G19), a basic axis of the coordinate system must not be programmed together with the parallel axis assigned to it.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** For plane selection with G17, G18, G19 either program the basic axis of the coordinate system or the assigned parallel axis.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12728 [Channel %1: ] Block %2 distance for double turret not set

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The tool clearance for the double turret head in the SD42162 $SC_EXTERN_DOUBLE_TURRET_DIST is 0.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Enter tool clearance for the double turret head in the SD42162 $SC_EXTERN_DOUBLE_TURRET_DIST.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12730 [Channel %1: ] Block %2 no valid transformation machine data parameterized

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The machine data MD24100 $MC_TRAFO_TYPE_1, MD24110 $MC_TRAFO_AXES_IN_1[1], MD24210 $MC_TRAFO_AXES_IN_2[1] are incorrectly set for G07.1, G12.1.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Enter valid transformation identifier for TRACYL in MD24100 $MC_TRAFO_TYPE_1 and the rotary axis number in MD24110 $MC_TRAFO_AXES_IN_1[1] or MD24210 $MC_TRAFO_AXES_IN_2[1].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12740 [Channel %1: ] Block %2 modal macro call %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source string

**Explanation:** When calling a modal macro no other modal macro, modal cycle or modal subroutine may be active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12750 [channel %1: ] block %2 T splitting not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** ISO mode turning: T programming is not possible since the T word cannot be cleary separated by tool number and correction number.
Splitting the T word is determined by the machine dates 10888 $MN_EXTERN_DIGITS_TOOL_NO and 10889 $MN_EXTERN_DIGITS_OFFSET_NO. However, only one of the two functions may be active, and at least one function must be active. Alarm occurs only then when no function is active (both MDs = 0) or both functions are active (both MDs <> 0).

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Machine data
Adjust 10888 EXTERN_DIGITS_TOOL_NO or
10889 EXTERN_DIGITS_OFFSET_NO.
At least one function must be active, but both functions must not be active either.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12755 [channel %1: ] block %2 formatting %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Faulty format instructions

**Explanation:** The format instructions programmed with the ISOPRINT command are incorrect:
- various format instructions %m.nP and %.nP were applied
- other format instructions than %P were applied

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - correct ISOPRINT command
- within an ISOPRINT command, only format instructions of the same type %m.nP or %.nP may be applied

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 12780 [Channel %1: ] Block %2 instruction %3 not allowed for precompiling the program

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source text area

**Explanation:** Not all instructions are available in compile mode.
The invalid language command is shown in the alarm text.

**Reaction:** Alarm display.

**Remedy:** Correct part program.
With external instruction:
- Store the subprogram in cycle directory _N_CUS_DIR, _N_CMA_DIR or _N_CST_DIR
- If bit 0 = 1 (default value) in MD10700 $MN_PREPROCESSING_LEVEL, then the EXTERNAL instruction is no longer required

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14000 [Channel %1: ] Block %2 illegal end of file

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Alarm 14000 is output in the following situations:
- Part program was not terminated with M30, M02 or M17.
- Executing from external: Download was canceled (e.g. because HMI was switched off).
- Executing from external: REPEAT loop does not lie completely within the reload buffer
- Executing from external with GOTOS/M99 command: program start is no longer in the reload buffer

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
- End part program with M30, M02 or M17 and start part program.
- Executing from external: If the download for the selected program was canceled,
  the default program _N_MPF0 is automatically selected with RESET.
  The selection of the user program must be repeated after that.
- Executing from external with REPEAT command: Replace REPEAT loop by EXTCALL call.
- Executing from external with GOTOS/M99 command is generally not possible - switch to EES (Execution from External Storage)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14001 [Channel %1: ] Block %2 illegal end of block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** After system-internal data manipulation (e.g. when reloading from an external source) a part file can end without having LF as the last character.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Read out the part program, modify it with a text editor (e.g., insert blanks or comments before the displayed block), so that after reading it in again the part program has a different structure in the memory.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14004 [Channel %1: ] Program %2 cannot be started because of a channel-specific start disable

**Parameters:** %1 = Channel number
%2 = (path with program name)

**Explanation:** The selected program %2 in channel%1 cannot be executed because the channel-specific start disable is set for this channel.
Background: When ShopMill or ShopTurn programs are selected or changed, the HMI performs a consistency check of the parameters that have been entered. During this time, the processing of the selected NC program is inhibited by the HMI setting what is known as the "channel-specific start disable". If an NC start is now rejected because of a set channel-specific start disable, then alarm 14004 is output as a function of MD 11411 $MN_ENABLE_ALARM_MASK bit 15. The alarm is also output in the event of a block search, but in this case it is not dependent on MD 11411 $MN_ENABLE_ALARM_MASK bit 15.

**Reaction:** Alarm display.

**Remedy:** Repeat NC start

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14005 [Channel %1: ] Block %2 program %3 program-specific start disable has been set

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** Program %3 cannot be executed, because the program-specific start disable has been set for this file.
Background: When an editing operation for a ShopMill or ShopTurn program has been completed, the HMI performs a consistency check of the parameters that have been entered. During this time, CNC program processing is inhibited by setting what is known as the "program-specific start disable" by the HMI. If NC start is pressed during the test, the start is not executed, and alarm 14005 is output as a function of MD 11411 $MN_ENABLE_ALARM_MASK bit 6.
Alarm 14005 is also output if the part program processing encounters a subroutine for which the file attribute "start disable" is set.
After the test step has been completed, the program processing can continue by pressing NC start.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Repeat NC start

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14006 [Channel %1: ] Block %2 invalid program name %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** When selecting or calling an NC program it was found that the program name did not follow NC conventions:
- The length of the program name, without prefix _N_ and Suffix _MPF / _SPF, must not exceed 24 characters, as otherwise the program name is truncated in the OPI variables.

**Reaction:** Alarm display.

**Remedy:** - Shorten the name of the program.
- Suppress the alarm with MD 11415 $MN_SUPPRESS_ALARM_MASK_2 bit 9.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14007 [Channel %1: ] Block %2 Program %3 is being edited

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** Program %3 cannot be executed because it has been disabled by another application, for example the HMI Editor.
Background: Program %3 is on an external data carrier (CF card, network drive, USB device), and should be executed from there in EES mode (Execution from External Storage). But the program cannot be processed because it has been opened for writing by another application, for example the HMI Editor, and the WRITE lock has been set for this file.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Close the application that set the WRITE lock, that is for example the HMI Editor, and continue the program processing with NC start.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14009 [Channel %1: ] Block %2 illegal program path %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program path

**Explanation:** The part program command CALLPATH was called with a parameter (program path) referring to a directory which does not exist in the file system of the NCK.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Modify the CALLPATH instruction such that the parameter contains the complete path name of the loaded directory.
- Load the programmed directory in the file system of the NCK.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14010 [Channel %1: ] Block %2 invalid default parameter in subroutine call

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a subroutine call with parameter transfer, parameters have been omitted that cannot be replaced by default parameters (call-by-reference parameters or parameters of type AXIS. The other missing parameters are defaulted with the value 0 or with the unit frame in the case of frames).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The missing parameters must be provided with values in the subroutine call.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14011 [Channel %1: ] Block %2 program %3 not existing or will be edited

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** A subroutine call was canceled because the called subroutine could not be opened.
The subroutine call can be executed via
- subroutine identifier
- CALL / PCALL / MCALL command
- SETINT command
- M/T function replacement
- event-driven program calls (PROG_EVENT)
- selection of a PLC ASUB via PI "_N_ASUP__" and/or FB-4
- calling a PLC ASUB via interrupt interface (FC-9)

There are various reasons for the alarm:
- the subroutine is not in the part program memory
- the subroutine is not in the search path (selected directory, _N_SPF_DIR or cycle directories _N_CUS_DIR, _N_CMA_DIR, _N_CST_DIR)
- the subroutine has not been released or is being edited
- faulty absolute path name in subroutine call:
  Examples of complete path names: /_N_directoryName_DIR/_N_programmName_SPF or /_N_WKS_DIR/_N_wpdName_WPD/_N_programmName_SPF. directoryName: MPF, SPF, CUS, CMA, CST (predefined directories). wpdName: application-specific designator for workpiece directory (max. of 24 characters). programmName: Name of subroutine (max. of 24 characters)
- A reload buffer for executing from external was called as subroutine.

Note: Unknown identifiers (string) found in the part program line by themselves, are interpreted as subroutine calls.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Ensure that the subroutine (alarm parameter %3)
- is available in the part program memory
- has been released and is not being edited
- is available in the search path if not being called via an absolute path name.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14012 [Channel %1: ] Block %2 maximum subroutine level exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum nesting depth of 16 program levels has been exceeded.
Subroutines can be called from the main program, and these in turn may have a nesting depth of 15.
For interrupt routines, two additional program levels can be used. This means that the total number of program levels is increased to 18.
The program levels are jointly used by user programs and Siemens cycles and/or Siemens applications such as ShopMill and ShopTurn.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the machining program so that the nesting depth is reduced, e.g. using the editor copy a subroutine of the next nesting level into the calling program and remove the call for this subroutine. This reduces the nesting depth by one program level.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14013 [Channel %1: ] Block %2 number of subroutine passes invalid

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a subroutine call the programmed number of passes P is zero or negative.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program number of passes between 1 and 9 999.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14014 [Channel %1: ] Selected program %3 not available or will be edited

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** The selected part program is not in the NCK memory or the execution right for the part program has a higher level than the current access right.
During creation, this program received the protection level of the NC control which was active at the time.
In SW 5 or higher, a program edited on HMI can no longer be started with NC Start.
The alarm will also be issued if a file other than one of the specified definition files has been selected for the GUD or macro definition.

**Reaction:** Alarm display.

**Remedy:** Reload the program in the NCK memory or check and correct the name of the directory (workpiece overview) and the program (program overview) and reselect.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14015 [Channel %1: ] Block %2 program %3 is not enabled

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** The execution right currently set in the control (e.g. key switch position 0) is inadequate to execute part program %3.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Raise the execution right to match the protection level of part program %3
- Assign a lower protection level to part program %3 or release (key switch protection level 0)

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14016 [Channel %1: ] Block %2 error when calling the subroutine via M/T function

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following conflict was detected in a subprogram call per M or T function:
- In the block referenced by parameter %2, an M or T function replacement has already been activated:
- In the block referenced by parameter %2, a modal subprogram call is active
- In the block referenced by parameter %2, a subprogram return jump is programmed
- In the block referenced by parameter %2 , the end of the part program is programmed
- In the block referenced by parameter %2, an M98 subprogram call is active, but only in the external language mode
- In the block referenced by parameter %2, a T function replacement is programmed with D function programming in the same part program line with active TLC (G43/G44) in the ISO2 system.
- In the block referenced by parameter %2, a T function replacement is programmed, configured at the end of block, and a subprogram call, for example by a modal cycle call.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** To replace an M or T function, ensure that a subprogram call or return jump has not already been performed as a result of other program constructs. Correct the part program if necessary.
Under the following conditions, you must perform the T function replacement at the start of the block:
- A T function replacement is configured with execution at end of block and a subprogram call is programmed in the same block
Set MD10719 $MN_T_NO_FCT_CYCLE_MODE bit 1 = 1.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14017 [Channel %1: ] Block %2 syntax error when calling the subroutine via M function

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When calling M code subroutine with parameter transfer, an illegal syntax was detected:
- Address extension not programmed as a constant.
- M function value not programmed as a constant.
Note:
If a parameter transfer has been programmed via MD10718 $MN_M_NO_FCT_CYCLE_PAR for an M function replacement, the following restriction applies to this M function: both the address extension and the M function value must be programmed for replacement as constants.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the programming of the M function.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14018 [Channel %1: ] Block %2 part program command %3 not executable (protection level setpoint value / actual value: %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Programmed command
%4 = Protection level of the command / current protection level

**Explanation:** To part program command %3, a protection level has been assigned that is logically higher (smaller in value) than the current access right, or the command does not exist in the current control configuration.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Please see the Siemens Programming Guide or OEM documentation for the language commands permissible for the relevant system configuration.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14019 [Channel %1: ] block %2 motion synchronous action: %3 wrong value or wrong number of parameters on function or procedure call

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** - An illegal parameter value was specified in a function or procedure call.
- An illegal number of actual parameters was programmed in a function or procedure call.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14020 [Channel %1: ] Block %2 wrong value or wrong number of parameters on function or procedure call

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - An illegal parameter value was specified in a function or procedure call.
- An illegal number of actual parameters was programmed in a function or procedure call.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14021 [Channel %1: ] Block %2 wrong value or wrong number of parameters on function or procedure call

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - An illegal parameter value was specified in a function or procedure call.
- An illegal number of actual parameters was programmed in a function or procedure call.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14022 [Channel %1: ] Block %2 error on function or procedure call, error code %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An error occurred during a function or procedure call.
The cause of the error is indicated more closely by an error code.
The meaning of the error code can be found in the documentation of the function or procedure that caused the error.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14024 [Channel %1: ] Block %2 No access authorization for initialization of %3[%4].

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Variable to be reset
%4 = Index of the variable to be reset

**Explanation:** When the function DELOBJ is called, an attempt is made to reset a variable to its default value. The access authorization is not sufficient for this purpose.
When this alarm occurs, no data are changed, not even that for which the access authorization would be sufficient.
This alarm can only occur when the current value of the system variable, to which the attempt to write led to the alarm, is not equal to its initial setting value.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Increase access authorization.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14025 [Channel %1: ] Block %2 motion synchronous action: illegal modal ID

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In modal motion synchronous actions an illegal ID number has been assigned.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14026 [Channel %1: ] Block %2 motion synchronous action: invalid polynomial number in the FCTDEF command

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An FCTDEF command was programmed with a polynomial number that exceeds the maximum value set in MD28252 $MC_MM_NUM_FCTDEF_ELEMENTS.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14027 [Channel %1: ] Block %2 motion-synchronous action: Too many technology cycles programmed.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** You can call a maximum of eight technology cycles with one motion-synchronous action. You exceeded the upper limit.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14028 [Channel %1: ] Block %2 motion-synchronous action: Technology cycle programmed with too many parameters

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Maximum number of transfer parameters for one technology cycle exceeded.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Change technology cycle
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14030 [Channel %1: ] Block %2 combine OSCILL and POSP during oscillation with infeedmotion

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** When oscillating controlled by synchronized actions, the assignment of oscillating and infeed axis (OSCILL) as well as the definition of the infeed (POSP) must be carried out in one NC block.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify the part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14034 [Channel %1: ] Block %2 involute: angle of rotation too large

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** With programming of the angle of rotation (with AR) for involute interpolation, the maximum programmable angle of rotation is limited if the involute is moving towards the basic circle. The maximum value is reached if the involute touches the basic circle. With MD21016 $MC_INVOLUTE_AUTO_ANGLE_LIMIT = TRUE, each angle is accepted without an alarm; if necessary, the angle is automatically limited during interpolation.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14035 [Channel %1: ] Block %2 involute: start point invalid

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** With involute interpolation, the start point of the involute must be outside the basic circle. The programmed center point or radius must be adapted accordingly.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14036 [Channel %1: ] Block %2 involute: end point invalid

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With involute interpolation, the end point of the involute must be outside the basic circle. The programmed center point / radius or end point must be adapted accordingly.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14037 [Channel %1: ] Block %2 involute: radius invalid

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With involute interpolation, the programmed radius of the basic circle must be greater than zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14038 [Channel %1: ] Block %2 involute not definable: end point error

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed end point does not lie on the involute defined by the start point, radius and center point of the basic circle. The deviation of the effective end radius from the programmed value is greater than the permissible value specified in MD21015 $MC_INVOLUTE_RADIUS_DELTA.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14039 [Channel %1: ] Block %2 involute: end point programmed several times

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With involute interpolation, either the end point with the geometry axis identifiers or the angle of rotation with AR=value can be programmed. Simultaneous programming of end point and angle of rotation in one block is not allowed, since the end point can thus not be defined exactly.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14040 [Channel %1: ] Block %2 error in end point of circle

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In circular interpolation, either the circle radii for the initial point and the end point are further apart or the circle center points are further apart than specified in the machine data.

1. In circle radius programming the starting and end points are identical, thus the circle position is not determined by starting and end points.

2. Radii: The NCK calculates from the present starting point and the other programmed circle parameters the radii for the starting and the end point.

An alarm message is issued if the difference between the circle radii is either

- greater than the value in the MD21000 $MC_CIRCLE_ERROR_CONST (for small radii, if the programmed radius is smaller than the quotient of the machine data MD21000 $MC_CIRCLE_ERROR_CONST divided by MD21010 $MC_CIRCLE_ERROR_FACTOR), or

- greater than the programmed radius multiplied by the MD21000 $MC_CIRCLE_ERROR_FACTOR (for large radii, if the programmed radius is greater than the quotient of the machine data MD21010 $MC_CIRCLE_ERROR_CONST divided by MD21010 $MC_CIRCLE_ERROR_FACTOR).

3. Center points: A new circle center is calculated using the circle radius at the starting position. It lies on the mid-perpendicular positioned on the connecting straight line from the starting point to the end point of the circle. The angle in the radian measure between both straight lines from the starting point to the center calculated/programmed as such must be lower than the root of 0.001 (corresponding to approx. 1.8 degrees).

4. Full circle with INTERSEC: Full circle is not allowed for the INTERSEC function.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

Check MD21000 $MC_CIRCLE_ERROR_CONST and MD21010 $MC_CIRCLE_ERROR_FACTOR. If the values are within reasonable limits, the circle end point or the circle mid-point of the part program block must be programmed with greater accuracy.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14045 [Channel %1: ] Block %2 error in tangential circle programming

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The alarm can be caused by the following:

The tangent direction is not defined in the tangent circle programming, e.g. because no other traversing block has been programmed before the current block. No circle can be formed from start and end point as well as tangent direction because - seen from the start point - the end point is located in the opposite direction to that indicated by the tangent.

It is not possible to form a tangent circle since the tangent is located perpendicular to the active plane.

In the particular case in which the tangent circle changes to a straight line, several complete circular revolutions were programmed with TURN.

**Reaction:** Correction block is reorganized.

Local alarm reaction.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14048 [Channel %1: ] Block %2 wrong number of revolutions in circle programming

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In the circle programming, an inadmissible number of full revolutions has been specified.
The number of revolutions must not be negative and must not be greater than 1000000.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14050 [Channel %1: ] Block %2 nesting depth for arithmetic operations exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For calculating arithmetic expressions in NC blocks, an operand stack with a fixed set size is used. With very complex expressions, this stack can overflow. This may also occur with extensive expressions in synchronized actions.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Divide up complex arithmetic expressions into several simpler arithmetic blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14051 [Channel %1: ] Block %2 arithmetic error in part program

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - In calculating an arithmetic expression, an overflow has occurred (e.g. division by zero)
- In a data type, the representable value range has been exceeded

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Analyze the program and correct the defective point in the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14055 [Channel %1: ] Block %2 impermissible NC language substitution, error code %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** This alarm occurs in conjunction with an NC language substitution configured in MD30465 $MA_AXIS_LANG_SUB_MASK. Error code %3 gives more detailed information about the cause of the problem:
Error code:
1: Several events had been programmed, causing the replacement cycle to be called. Only one substitution is allowed per part program line.
2: A block-by-block synchronized action had also been programmed for the part program line with the NC language substitution.
3: The system variables $P_SUB_SPOSIT and $P_SUB_SPOSMODE were called outside a replacement cycle.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14060 [Channel %1: ] Block %2 invalid skip level with differential block skip

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With "Differential block skip", a skip level greater than 7 has been specified. (In packet 1 specification of a value for the skip level is rejected by the converter as a syntax error, i.e. the only possibility is a "Suppress block" ON/OFF on one level).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Enter a skip level (number behind the slash) less than 8.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14065 [channel %1: ] block %2 error in SPRINT/ISOPRINT command: error code %4 information %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Additional information
%4 = Error code

**Explanation:** When interpreting the SPRINT or ISOPRINT command, an error was detected which was described in more detail by parameter %4. Parameter %3 may supply additional information on the incurring problem.
List of error codes (parameter %4):
1: invalid format description %3 recognized
2: Format %.nP: overrange when converting into 32 bit number
3: Format %P: Character %3 cannot be converted with the code selected by MD 10750 / $MN_SPRINT_FORMAT_P_CODE.
4: Maximum string length of 400 bytes exceeded
5: SPRINT/ISOPRINT command programmed with an invalid number of parameters
6: SPRINT/ISOPRINT parameters programmed with impermissible data type
7: Format %m.nP: overrange due to parameter n with MD 10751 / $MN_SPRINT_FORMAT_P_DECIMAL = 0

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct SPRINT and/or ISOPRINT command(s).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14066 [channel %1: ] block %2 error when outputting to external device on command %3, error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Part program command
%4 = Error code

**Explanation:** When processing the commands ISOOPEN, ISOPRINT, ISOCLOSE or EXTOPEN, WRITE, EXTCLOSE, an error was detected which is described in detail by the error code.

List of error codes:

1: external device cannot be opened
2: external device is not configured
3: external device configured with invalid path
4: no access rights for external device
5: external device already exclusively assigned
6: external device already assigned in shared mode
7: file length greater than LOCAL_DRIVE_MAX_FILESIZE
8: maximum number of external devices exceeded
9: option not set for LOCAL_DRIVE
11: V24 already occupied by Easy-Message function
12: Append/Overwrite specification is inconsistent with extdev.ini
14: external device not assigned or opened
15: error when writing to external device
16: invalid external path programmed
21: error when closing external device
22: external device not installed (mounted)
90: Timeout

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Correcting the parameterization of the ISOOPEN, ISOPRINT or ISOCLOSE command. See also MD 10830 $MN_EXTERN_PRINT_DEVICE and MD 10831 $MN_EXTERN_PRINT_MODE.

Check the configuration of the external device on the memory card in /user/sinumerik/nck/extdev.ini and /oem/sinumerik/nck/extdev.ini.

Check the connection and functioning of the external device.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14070 [Channel %1: ] Block %2 memory for variables not sufficient for subroutine call

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** A called subroutine cannot be processed (opened), either because the internal data memory to be created for general purposes is not large enough, or because the available memory for the local program variables is too small. The alarm can only occur in MDI mode.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Analyze the part program section:

1. Has the most useful data type always been selected in the variable definitions? (For example REAL for data bits is poor; BOOL would be better)

2. Can local variables be replaced by global variables?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14080 [Channel %1: ] Block %2 jump destination %3 not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Jump destination

**Explanation:** In conditional and unconditional jumps, the jump destination within the program must be a block with a label (symbolic name instead of block number). If no jump destination has been found with the given label when searching in the programmed direction, an alarm is output.
For parameterizable returns with RET to block number or label, the jump destination within the program must be a block with the block number or label (symbolic name instead of block number).
For returns over several levels (parameter 2), the jump destination must be a block within the program level you jumped to.
For returns with a string as return destination, the search string must be a name known in the control and the search string must be preceded in the block by a block number and/or a label only.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check NC part program for the following possible errors:
1. Check whether the target designation is identical with the label.
2. Is the jump direction correct?
3. Has the label been terminated with a colon?

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14082 [Channel %1: ] Block %2 label %3 program section not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Start or end label

**Explanation:** The start point for repetition of the program part with CALL <program name> BLOCK <start label> TO <end label> has not been found or the same program part repetition has been called recursively.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check the start and end labels for programming repetition in the user program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14085 [Channel %1: ] Block %2 instruction not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The instruction 'TML()' may only be used in the subprogram, which replaces the T command.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14088 [Channel %1: ] Block %2 axis %3 doubtful position

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** An axis position larger than 3.40e+38 increments has been programmed. This alarm can be suppressed with bit11 in MD11410 $MN_SUPPRESS_ALARM_MASK.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14089 [Channel %1: ] Block %2 Function %3 is no longer supported.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String: function

**Explanation:** An obsolete function was programmed or triggered, which is no longer supported in the current software version. The function in question is named in parameter 3.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** COMPON: Replace "COMPON" with "COMPCAD" and check machine data: MD28070 $MC_MM_NUM_BLOCKS_IN_PREP>=80, MD28520 $MC_MM_MAX_AXISPOLY_PER_BLOCK>=3, MD28530 $MC_MM_PATH_VELO_SEGMENTS>=5, MD28540 $MC_MM_ARCLENGTH_SEGMENTS>=10.
COMPCURV: Replace "COMPCURV" with "COMPCAD" and check machine data: MD28070 $MC_MM_NUM_BLOCKS_IN_PREP>=80, MD28520 $MC_MM_MAX_AXISPOLY_PER_BLOCK>=3, MD28530 $MC_MM_PATH_VELO_SEGMENTS>=5, MD28540 $MC_MM_ARCLENGTH_SEGMENTS>=10.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14091 [Channel %1: ] Block %2 illegal function, index %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index

**Explanation:** A function has been programmed or triggered which is not permitted in the current program context. The function in question is encoded in the "index" parameter:
Index == 1: "RET" command was programmed in the main program level
Index == 2: Conflict between "Cancel level"/"Clear number of passes" and "Implicit GET"
Index == 3: Conflict ASUB start immediately after selection of overstore (up to P3)
Index == 4: MD10760 $MN_G53_TOOLCORR = 1 : SUPA/G153/G53 programmed in G75
Index == 5: POSRANGE command not programmed in synchronized action
Index == 6: SIRELAY command not programmed in synchronized action
Index == 7: GOTOF/GOTOB/GOTO command programmed with string variable in synchronized action.
Index == 8: COA application "Cutting generator" not active
Index == 9: Tool radius compensation active in G75
Index == 10: Number of return levels too big, with RET (...xy) across several program levels
Index == 11: The function is not implemented for this variable

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Index == 1: Substitute "RET" command with M17/M30
Index == 2: Insert an auxiliary block (e.g. M99) after the subroutine call to which the "Cancel level"/"Clear number of passes" refers
Index == 3: Overstore an auxiliary block (e.g. M99), then start ASUB (up to P3)
Index == 4: With MD10760 $MN_G53_TOOLCORR = 1: Do not activate SUPA/G53/G153 in the G75 block
Index == 5: Program POSRANGE command in synchronized action
Index == 6: Program SIRELAY command in synchronized action
Index == 7: Program GOTOF/GOTOB/GOTO command with block number or label
Index == 8: Load COA application "Cutting generator"
Index == 9: Tool radius compensation active in G75

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14092 [Channel %1: ] Block %2 axis %3 is wrong axis type

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** One of the following programming errors has occurred:
1. The keyword WAITP(x) "Wait with the block change until the specified positioning axes has reached its end point", was used for an axis that is not a positioning axis.
2. G74 "Reference point approach from the program" was programmed for a spindle. (Only axis addresses are permissible.)
3. The keyword POS/POSA was used for a spindle. (For spindle positioning, keywords SPOS and SPOSA should be programmed.)
4. If the alarm occurs for the function "Thread tapping without compensating chuck " (G331) the following reasons are conceivable:
- The master spindle is not in position-controlled operation.
- Incorrect master spindle
- Master spindle without encoder
5. An axis name that is no longer available has been programmed, e.g. when using axial variables as index. Or it was programmed as index NO_AXIS.
6. If 14092 is output as note for alarm 20140 motion synchronized action: traverse the command axis, then the the following causes are possible:
- The axis is presently being traversed by the NC program.
- An overlaid movement is active for the axis.
- The axis is active as slave axis of a coupling.
- An interpolation compensation such as a temperature compensation is active for the axis.
7. PRESETON/ PRESETONS were programmed for an unknown channel axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Correct the part program according to which of the above errors is involved.
- Program SPOS.
- Set the correct master spindle with SETMS.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14093 [Channel %1: ] Block %2 path interval <= 0 with polynomial interpolation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the polynomial interpolation POLY, a negative value or 0 has been programmed under the keyword for the polynomial length PL=...

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Press the NC Stop key and select the function "Correction block" with the softkey PROGRAM CORRECT. The correction pointer positions on the incorrect block.
Correct the value given in PL = ...

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14094 [Channel %1: ] Block %2 polynomial degree greater than 3 programmed for polynomial interpolation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The polynomial degree in the polynomial interpolation is based on the number of programmed coefficients for an axis. The maximum possible polynomial degree is 3, i.e. the axes are according to the function:
f(p) = a0 + a1 p + a2 p2 + a3 p3
The coefficient a0 is the actual position at the start of interpolation and is not programmed!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the number of coefficients. The polynomial block may have a form no greater than the following:
N1 POLY PO[X]=(1.11, 2.22, 3.33) PO[Y]=(1.11, 2.22, 3.33)
N1 PO[n]=... PL=44
n ... n ... axis identifier, max. 8 path axes per block

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14095 [Channel %1: ] Block %2 radius for circle programming too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The radius entered for radius programming is too small, i.e. the programmed radius is smaller than half of the distance between start and end point.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14096 [Channel %1: ] Block %2 illegal type conversion

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During the program run, a variable value assignment or an arithmetic operation has caused data to be processed in such a way that they have to be converted to another type. This would lead to the value range being exceeded.
Value ranges of the various variable types:
- REAL: Property: Fractional number with dec. pt., value range: +/-(2.2*10e-308 ... 1.8*10e308)
- INT: Property: Integers with signs, value range: -2147483648 ... +2147483647
- BOOL: Property: Truth value FALSE, TRUE, value range: 0 or 1
- CHAR: Property: 1 ASCII character, value range: 0-255
- STRING: Property: Character string (max. length depends on the variable), value range: 0 ... 255
- AXIS: Property: Axis addresses, value range: Channel identifier
- FRAME: Property: Geometric information, value range: ---

Overview of type conversions:
- from REAL to: REAL: yes, INT: yes*, BOOL: yes1), CHAR: yes*, STRING: -, AXIS: -, FRAME: -
- from INT to: REAL: yes, INT: yes, BOOL: yes1), CHAR: if value 0 ...255, STRING: -, AXIS: -, FRAME: -
- from BOOL to: REAL: yes, INT: yes, BOOL: yes, CHAR: yes, STRING: -, AXIS: -, FRAME: -
- from CHAR to: REAL: yes, INT: yes, BOOL: yes1), CHAR: yes, STRING: yes, AXIS: -, FRAME: -
- from STRING to: REAL: -, INT: -, BOOL: yes2), CHAR: only if 1 character, STRING: yes, AXIS: -, FRAME: -
- from AXIS to: REAL: -, INT: -, BOOL: -, CHAR: -, STRING: -, AXIS: yes, FRAME: -
- from FRAME to: REAL: -, INT: -, BOOL: -, CHAR: -, STRING: -, AXIS: -, FRAME: yes

1) Value <> 0 corresponds to TRUE, value ==0 corresponds to FALSE.
2) String length 0 => FALSE, otherwise TRUE.
3) If only 1 character.

It is not possible to convert from type AXIS and FRAME nor into type AXIS and FRAME.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the program section such that the value range is not exceeded, e.g. by a modified variable definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14097 [Channel %1: ] Block %2 string cannot be converted to AXIS type

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The called function AXNAME - conversion of the transferred parameters of the STRING type to an axis name (return value) of the AXIS type - has not found this axis identifier in the machine data.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check the transferred parameter (axis name) of the function AXNAME to determine whether a geometry, channel or machine axis of this name has been configured by means of the machine data:
MD10000 $MN_AXCONF_MACHAX_NAME_TAB
MD20060 $MC_AXCONF_GEOAX_NAME_TAB
MD20080 $MC_AXCONF_CHANAX_NAME_TAB

Select the transfer string in accordance with the axis name, and change the axis name in the machine data if necessary. (If a change of name is to take place via the NC part program, this change must first be validated by means of a "POWER-ON").

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14098 [Channel %1: ] Block %2 conversion error: no valid number found

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The string is not a valid INT or REAL number.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. If it is an entry, you can check whether the string is a number with the predefined ISNUMBER function with the same parameter.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14099 [Channel %1: ] Block %2 result in string concatenation too long

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The result of the string chaining returns a string which exceeds the maximum string length specified by the system.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adapt the part program. With the STRLEN function, you can query the size of the sum string before executing the chaining operation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14101 [Channel %1: ] Block %2 orientation transformation not active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Euler angles or a vector have been used in programming an orientation and no orientation transformation is active, i.e. the keyword TRAORI(n) (n ... number of transformation grouping) is missing.
Example of correct transformation programming:
N100 ... TRAORI(1)
N110 G01 X... Y... ORIWKS
N120 A3... B3... C3...
N130 A3... B3... C3...
:
N200 TAFOOF

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Before the transformation is applied, the number of the transformation grouping must be specified with the keyword TRAORI(n) (n is between 1 and 4).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14102 [Channel %1: ] Block %2 polynomial degree greater than 5 programmed for orientation vector angle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During polynomial interpolation for the orientation vector, a polynomial degree larger than 5 has been programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14103 [Channel %1: ] Block %2 error %3 when calling function CORRTRAFO.

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Error code

**Explanation:** An error occurred when the CORRTRAFO function was called. The error number specifies the cause of the error.

Error numbers:

1: No transformation active.

2: The current active transformation is not an orientation transformation.

3: The active orientation transformation was not defined with kinematic chains.

10: The call parameter _CORR_INDEX is negative.

11: The call parameter _CORR_MODE is negative.

12: Invalid reference to the section of a partial chain (1st position of _CORR_INDEX). The value must not be greater than the number of orientation axes in the partial chain.

13: Invalid reference to the orientation axis of a partial chain (1st position of _CORR_INDEX). The value must be less than the number of orientiation axes in the partial chain.

14: Invalid reference to a partial chain (10th position of _CORR_INDEX). Only the values 0 and 1 are permissible (reference to part or tool chain). This error number also occurs if the partial chain to which _CORR_INDEX refers, does not exist.

15: In the section referred to with the parameter _CORR_INDEX, no correction element is defined($NT_CORR_ELEM_P or $NT_CORR_ELEM_T).

20: Invalid correction mode (1st position of _CORR_MODE). Only the values 0, 1, 8, and 9 are permissible.

21: Invalid correction mode (10th and / or 100th position of _CORR_MODE). When reading a system variable, the 100th position must always be zero. When reading or writing an axis direction, only the one's position is permitted to be not equal to zero.

30: The 100th position of _CORR_MODE is invalid. Only the values 0 and 1 are permissible.

31: The 1000th position of _CORR_MODE is invalid. Only the values 0 and 1 are permissible.

40: The direction vector to be taken over as the axis direction is the zero vector.

41: In the correction of an offset vector, the deviation from the current value is greater than the maximum value set in setting data 41610 $SN_CORR_TRAFO_LIN_MAX in at least one coordinate.

42: In the correction of a direction vector, the angle deviation from the current direction is greater than the maximum value set in setting data 41611 $SN_CORR_TRAFO_DIR_MAX.

43: The attempt to write a system variable was rejected due to missing write authorization.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

NC Stop on alarm at block end.

**Remedy:** Change function call.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14104 [Channel %1: ] Block %2 Active transformation allows neither vector programming nor interpolation

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The active orientation transformation does not allow either the programming of vectors for the tool orientation or the vector interpolation (ORIVECT, ORICONxx, etc.) of the orientation. This is because the set kinematics of the transformation do not have enough degrees of freedom to represent a general orientation of the tool, although the number of orientation axes (rotary axes) would be sufficient for this purpose.

This occurs with the following kinematics:

The directions of rotation of 2 successive orientation axes are parallel (see MD24570 $MC_TRAFO5_AXIS1_x[0..2], MD24572 $MC_TRAFO5_AXIS2_x[0..2] and MD24573 $MC_TRAFO5_AXIS3_x[0..2] (with 6-axis kinematics)).

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Change the NC program and/or the settings of the machine data

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14106 [Channel %1: ] Block %2 Error when calling the ORISOLH function. Error code %3.

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** An error occurred while processing the ORISOLH function call.

An error code defines the cause of the error in more detail:

-2: A valid transformation (6-axis orientation transformation) is not active.

-3: The first parameter of the function ORISOLH (_CNTRL) is negative.

-4: The units digit of the first parameter of the function ORISOLH (_CNTRL) is invalid.

-5: The tens digit of the first parameter of the function ORISOLH (_CNTRL) is invalid.

-6: The hundreds digit of the first parameter of the function ORISOLH (_CNTRL) is invalid.

-7: The thousands digit of the first parameter of the function ORISOLH (_CNTRL) is invalid.

-10: No tool was active when calling the function ORISOLH.

-11: An error occurred when calling the ORISOLH function (extended orientation cannot be set).

-12: The adjustment of the free axis angle for the Hirth tooth system is not possible for the first or only solution.

-13: The adjustment of the free axis angle for the Hirth tooth system is not possible for the second solution.

-14: The adjustment of the free axis angle for the Hirth tooth system is not possible for either of the two solutions.

-15: The first orientation axis is parameterized as a Hirth axis.

-16: Both the second and the third rotary axis are parameterized as Hirth axes. Only one of the two axes can be a Hirth axis.

-17: With the "Swivel direct" function, at least one of the specified axis positions is not compatible with the associated Hirth tooth system.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14107 [Channel %1: ] Block %2 illegal position in $NT_ROT_AX_POS[%3,%4].

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Trafo index

%4 = Axis index

**Explanation:** The position of the specified manual rotary axis is illegal; in other words, it violates the axis limits defined in $NT_ROT_AX_MIN / $NT_ROT_AX_MAX.

This alarm may occur if a transformation is selected which uses this axis.

In the case of manual axes with Hirth tooth systems, the transformation may involve a position which, due to the rounding of the value contained in $NT_ROT_AX_POS, actually relates to the adjacent grid position. The alarm may, therefore, also occur if the content of $NT_ROT_AX_POS is within permissible limits but the modified position used internally violates these limits.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14109 [Channel %1: ] Block %2 simultaneous linear and rotary axis movement with static orientation transformation.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The interpolation type CP (G group code 49) is not permitted with an active static orientation transformation if linear and rotary axes have to interpolate simultaneously.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the NC program:
Activate dynamic orientation transformation.
Change the G code for group 49.
Execute linear and rotary axis movement successively rather than simultaneously.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14110 [Channel %1: ] Block %2 Euler angles and orientation vector components programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An orientation were programmed with Euler angles and the component of an orientation vector at the same time.
Example:
N50 TRAORI (1)
N55 A2=10 B2=20 C3=50 ; alarm, because Euler angle and orientation vector

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program only one type, in other words when transformation is switched on program either Euler angles only or orientation vectors (direction vectors) only.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14111 [Channel %1: ] Block %2 Euler angles, orientation vector and transformation axes programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An orientation has been programmed at the same time as Euler angles or components of an orientation vector and the machine axis influenced by the orientation.
Example:
N50 TRAORI (1)
N55 A2=70 B2=10 C2=0 X50 ; alarm, because Euler angle and axes were programmed

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program only one type, in other words with transformation switched on program either Euler angles only or orientation vectors (direction vectors) only or deselect transformation (TRAFOOF) and set tool orientation by programming the auxiliary axes.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14112 [Channel %1: ] Block %2 programmed orientation path not possible, error no. %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Error code

**Explanation:** In a 5-axis transformation, the two orientation axes place a coordinate system, comprising lengths and circles of latitude, on a spherical surface. However, in some cases, the complete orientation sphere cannot be reached by the tool orientation. This could be the case, for example, if the directions of rotation of the two orientation axes are not perpendicular to one another. Then, there are usually are up to 2 pole caps on the orientation sphere, the orientation of which cannot be set with the existing kinematics of the machine. This alarm is output if an orientation is programmed that lies outside the possible range on the orientation sphere.

A non-settable orientation can only be specified by vector programming (direct programming of the vector components, Euler or RPY angle, programming with virtual orientation axes), whereas a non-settable orientation cannot arise when the rotary axis positions are programmed. Non-settable intermediate orientations can also only occur if vector interpolation is active, whereas it can never occur with rotary axis interpolation. This alarm can therefore never occur if rotary axes are programmed and the orientation is traversed by means of rotary axis interpolation.

The error number that is also output differentiates between specific situations:

1: The range of settable orientation is limited, but it is not restricted to one plane. This is, for example, the case with "normal" nutator kinematics CA' with a rotary axis inclined at 45 degrees. The possible orientation range is then restricted to one hemisphere.

2: The maximum settable orientation range is reduced to one plane. This means that the orientation can only be swiveled in one plane. This situation is often caused by an incorrect, unwanted configuration of the orientation axes. This is, for example, the case if the orientation axes are entered in the incorrect order. For example, if the axis sequence AC is specified for tool kinematics instead of CA. If the initial setting of the tool is in the Z direction, the orientation can only be swiveled in the YZ plane. This also occurs if the initial setting of the tool points in the X direction for CA tool kinematics.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Change the part program and program an orientation that can be set with the kinematics of the machine. The alarm can also be caused by an error in the configuration of the orientation axes of the transformation. In this case change the configuration.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14113 [Channel %1: ] Block %2 programmed lead angle too large

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** No further explanation.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14114 [Channel %1: ] Block %2 programmed tilt angle too large

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** No further explanation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14115 [Channel %1: ] Block %2 illegal definition of workpiece surface

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The surface normal vectors programmed at the beginning of block and at the end of block point in opposite directions.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify the part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14116 [Channel %1: ] Block %2 absolute orientation programmed while ORIPATH/ORIPATHS is active

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The orientation has been entered as an absolute value (e.g. by a direction vector or a rotation vector), although ORIPATH or ORIPATHS are active. When ORIPATH/ORIPATHS is active, the orientation is determined from the lead angle, tilt angle and angle of rotation relative to the path tangent and surface normal vector.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify the part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14117 [Channel %1: ] Block %2 no angle or direction of the cone programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** With taper circumference interpolation of orientation (ORICONCW and ORICONCC), either the opening angle or the direction vector of the taper must be programmed. Otherwise, the change of orientation is not clearly defined.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14118 [Channel %1: ] Block %2 no end orientation programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** With taper circumference interpolation of orientation, no end orientation has been programmed. The change of orientation is therefore not clearly defined.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14119 [Channel %1: ] Block %2 no intermediate orientation programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With taper circumference interpolation of orientation with ORICONIO, an intermediate orientation must also be programmed in addition to the end orientation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14120 [Channel %1: ] Block %2 plane determination for programmed orientation not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed orientation vectors (direction vectors) in the beginning of block and end of block point include an angle of 180 degrees. Therefore the interpolation plane cannot be determined.
Example:
N50 TRAORI (1)
N55 A3=0 B3=0 C3=1
N60 A3=0 B3=0 C3=-1 ; the vector of this block is precisely opposite to that in the preceding block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program so that the orientation vectors of a block are not directly opposed to each other, for instance by dividing the block up into 2 subblocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14121 [Channel %1: ] Block %2 no orientation defined (distance equals zero).

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed coordinates for the 2nd space curve with XH, YH, ZH
do not define any tool orientation, as the distance of the curve to the TCP is becoming zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the part program so that the distance between the two curves is not becoming zero and
that a tool orientation is defined.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14122 [Channel %1: ] Block %2 angle and direction of the cone programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With taper circumference interpolation of orientation with ORICONCW and ORICONCC, only the opening angle or the direction of the taper may be programmed. Programming of both in one single block is not allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14123 [Channel %1: ] Block %2 nutation angle of the cone too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With taper circumference interpolation, the programmed opening angle of the taper must be greater than the half of the angle between the start and end orientation. Otherwise, a taper cannot be defined.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14124 [Channel %1: ] Block %2 start tangent for orientation is zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With taper circumference interpolation with tangential continuation (ORICONTO), the start tangent of orientation must not be zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14125 [Channel %1: ] Block %2 programmed rotation is not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed rotation of tool orientation cannot be traversed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14126 [Channel %1: ] Block %2 ORIPATH lift factor impermissible.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The value programmed with ORIPLF = r is not within the permissible range. The relative retraction factor must lie within interval 0 <= r < 1.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14127 [Channel %1: ] Block %2 rotation programmed several times

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The rotation (3rd degree of freedom of orientation at 6-axis transformations) has been programmed several times.
The rotation is clearly defined by one of the following specifications:
- Specification of the rotary axis positions included in the transformation
- Specification of Euler or RPY angles (A2, B2, C2)
- Specification of the normal orientation vector (AN3, BN3, CN3)
- Specification of the THETA angle of rotation

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14128 [Channel %1: ] Block %2 absolute programming of the orienting rotation with active ORIROTC.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The rotation of orientation (3rd degree of freedom of orientation for 6-axis transformations) has been programmed with G code ORIROTC active. This is not possible, as the rotation of orientation is oriented relatively to the path tangent when ORIROTC is active.
With ORIROTC, it is only possible to program the angle of rotation THETA that indicates the angle
of the rotation vector to the path tangent.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14130 [Channel %1: ] Block %2 too many initialization values given

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** On assigning an array by means of SET, more initialization values than existing array elements have been specified in the program run.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the number of initialization values.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14132 [Channel %1: ] Block %2 orientation axes incorrectly configured

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following error causes can exist:
- The configuration of the orientation axes does not match the machine kinematics. For example if the position measuring system has not been set for the rotary axes.
- An axis that is required as an orientation axis is currently not available as a path axis.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adapt the machine data.
Provide the required orientation axes using GET(..) or GETD(..).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14133 [Channel %1: ] Block %2 G code for orientation definition not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is only possible to program a G code of the 50th G code group if MD21102 $MC_ORI_DEF_WITH_G_CODE is set to TRUE.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adapt machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14134 [Channel %1: ] Block %2 G code for orientation interpolation not allowed: error no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** The causes of the errors are specified in more detail by the following error numbers:
1: A G code of the 51st G code group may only be programmed if MD21104 $MC_ORI_IPO_WITH_G_CODE has been set to TRUE.
2: Also, if the G code ORIANGLE of the 51st group is programmed, MD21102 $MC_ORI_DEF_WITH_G_CODE must be set to TRUE.
3. The combination of the G code ORIANGLE of the 51st group and ORIAXPOS of the 50th group is not allowed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adapt machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14135 [Channel %1: ] Block %2 Programmed offset of the orientation not possible: Error code %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** The programmed override of the orientation leads to an invalid tool orientation in the specified block or is not defined. The programmed offset vector leads to the end orientation of this block becoming a zero vector (vector with the length 0), or the direction vector of the rotation is not defined.

Possible error codes are:

1: Offset vector $P_OFF_O[i] makes the end orientation a zero vector.

2: Offset vector $P_OFF_R[i] makes the rotation of the orientation a zero vector (occurs only with 6-axis kinematics).

3: An angle of rotation was programmed for the orientation with $P_OFF_O_ANGLE, although the associated rotation vector $P_OFF_O_DIR[i] is not defined.

4: An angle of rotation was programmed for the rotation of the orientation with $P_OFF_R_ANGLE, although the associated rotation vector $P_OFF_R_DIR[i] is not defined.

**Reaction:** Correction block is reorganized.

Interpreter stop

Interface signals are set.

Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14136 [Channel %1: ] Block %2 Orientation polynomial is not permitted

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** Programming of orientation polynomials both for the angles (PO[PHI], PO[PHI]) and for the coordinates of a reference point on the tool (PO[XH], PO[YH], PO[ZH]) is not permitted. Orientation polynomials can only be programmed, if an orientation transformation is active and the orientation is changed by interpolating the vector (ORIVECT, ORICONxxx, ORICURVE/ ORICURINV), i.e. the orientation must not be changed by interpolating the axis (ORIAXES).

**Reaction:** Correction block is reorganized.

Interpreter stop

Interface signals are set.

Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14137 [Channel %1: ] Block %2 Polynomials PO[PHI] and PO[PSI] are not permitted

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** A polynomial for the angles PHI and PSI can only be programmed, if the orientation is interpolated in the plane between start and end orientation (ORIVECT, ORIPLANE) or on a taper (ORICONxxx). If interpolation type ORICURVE is active, no polynomials can be programmed for angles PHI and PSI.

**Reaction:** Correction block is reorganized.

Interpreter stop

Interface signals are set.

Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14138 [Channel %1: ] Block %2 Polynomials PO[XH], PO[YH] and PO[ZH] are not permitted

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** Polynomials for the coordinates of a reference point on the tool (PO[XH], PO[YH], PO[ZH]) can only be programmed, if interpolation type ORICURVE/ORICURINV is active. If ORIVECT, ORIPLANE, ORICONxxx is active, no polynomials can be programmed for coordinates XH, YH and ZH.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14139 [Channel %1: ] Block %2 Polynomial for angle of rotation PO[THT] is not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A polynomial for the angle of rotation of orientation (PO[THT]) can only be programmed, if the active transformation supports it.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Change the NC program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14140 [Channel %1: ] Block %2 position programming without transformation not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A transformation must be active in order to program position information for an axis position.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14144 [Channel %1: ] Block %2 PTP movement not allowed, error code %3.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** The desired PTP movement is not possible.
The causes of the errors are described in more detail by the following error codes.
- 1. A PTP interpolation is not possible with the currently active transformation.
- 2. PTP interpolation and tool radius compensation must not be active simultaneously.
- 3. The PTP interpolation types PTPWOC and PTPWOC2 are only permissible with orientation transformations.
- 4. PTP interpolation and COMPSURF must not be active simultaneously.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**14146** **[Channel %1: ] Block %2 CP or PTP movement without transformation not allowed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A transformation must be active in order to program a G code, CP or PTP movement.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**14147** **[Channel %1: ] Block %2 spline for orientation not possible.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If an orientation has been programmed while BSPLINE is active, the interpolation of
tool orientation must be interpolated via a 2nd space curve. This means that G code ORICURVE/ORICURINV
must be active for the interpolation of the orientation.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Change the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14148** **[Channel %1: ] Illegal reference system for Cartesian manual traverse**

**Parameters:** %1 = Channel number

**Explanation:** In the SD42650 $SC_CART_JOG_MODE, an illegal value has been entered for the reference system with Cartesian manual travel.

**Reaction:** Alarm display.

**Remedy:** Enter a permitted value in the SD42650 $SC_CART_JOG_MODE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**14149** **[Channel %1: ] Block %2 Error %3 on selection of the tool carrier with the number %4.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code
%4 = Tool carrier number

**Explanation:** An error occurred during the activation of the orientable tool carrier with the stated number, whose geometry data are to be read from kinematic chains.

The geometry data of a tool carrier are read from kinematic chains if bit0 is set in system data $TC_CARR_KIN_CNTRL[n].

The type of error is indicated more precisely by the number of the error code.

Error code:

1 No kinematic chain elements are available. Remedy: Machine data MD18880 $MN_MM_MAXNUM_KIN_CHAIN_ELEM must not be equal to zero.

2 An error occurred during the analysis of the kinematic machine model.

3 The tool carrier has an invalid type. Only types "T", "P" and "M" (optionally in upper or lower case) are permissible.

4 No tool chain was specified, this means that system data $TC_CARR_KIN_TOOL_END[n] is empty. For tool carrier types "T" and "M", this system data must refer to a kinematic chain element.

5 No part chain was specified, this means that system data $TC_CARR_KIN_PART_END[n] is empty. For tool carrier types "P" and "M", this system data must refer to a kinematic chain element.

6 The kinematic chain element to which the system data $TC_CARR_KIN_TOOL_END[n] refers was not found.

7 The kinematic chain element to which the system data $TC_CARR_KIN_PART_END[n] refers was not found.

8 The kinematic chain element to which the system data $TC_CARR_KIN_TOOL_END[n] refers was found, but it has no connection to the ROOT element. Kinematic chain elements are only part of the valid machine model if they are connected to the ROOT element by references.

9 The kinematic chain element to which system data $TC_CARR_KIN_PART_END[n] refers was found, but it has no connection to the ROOT element. Kinematic chain elements are only part of the valid machine model if they are connected to the ROOT element by references.

10 The kinematic chain element to which system data $TC_CARR_KIN_TOOL_START[n] refers is not part of the kinematic chain that forms the connection between the ROOT element and the end point of the tool chain ($TC_CARR_KIN_TOOL_END[n]).

11 The kinematic chain element to which system data $TC_CARR_KIN_PART_START[n] refers is not part of the kinematic chain that forms the connection between the ROOT element and the end point of the part chain ($TC_CARR_KIN_PART_END[n]).

12 The kinematic chain (tool chain) that forms the connection between the ROOT element and the end point of the tool chain ($TC_CARR_KIN_TOOL_END[n]) contains too many elements.

13 The kinematic chain (part chain) that forms the connection between the ROOT element and the end point of the part chain ($TC_CARR_KIN_PART_END[n]) contains too many elements.

14 The kinematic chain (tool chain) that forms the connection between the ROOT element and the end point of the tool chain ($TC_CARR_KIN_TOOL_END[n]) contains too many rotary axes. With tool carrier type "T", a maximum of 2, with tool carrier type "M" a maximum of one rotary axis is permissible in this chain.

15 The kinematic chain (part chain) that forms the connection between the ROOT element and the end point of the part chain ($TC_CARR_KIN_PART_END[n]) contains too many rotary axes. With tool carrier type "P", a maximum of 2, with tool carrier type "M" a maximum of one rotary axis is permissible in this chain.

16 The kinematic chain (tool chain) that forms the connection between the ROOT element and the end point of the tool chain ($TC_CARR_KIN_TOOL_END[n]) does not contain any rotary axes. This chain must contain at least one rotary axis.

17 The kinematic chain (part chain) that forms the connection between the ROOT element and the end point of the part chain ($TC_CARR_KIN_PART_END[n]) does not contain any rotary axes. This chain must contain at least one rotary axis.

18. The kinematic chain (tool chain) for the definition of the tool carrier contains an element of type "AXIS_LIN_VIRT", that is not permissible for a tool carrier ("virtual" linear axis).

19. The kinematic chain (part chain) for the definition of the tool carrier contains an element of type "AXIS_LIN_VIRT", that is not permissible for a tool carrier ("virtual" linear axis).

20. The kinematic chain (tool chain) for the definition of the toolcarrier contains an element of type "AXIS_ROT_VIRT", that is not permissible for a tool carrier ("virtual" rotary axis)).

21. The kinematic chain (part chain) for the definition of the toolcarrier contains an element of type "AXIS_ROT_VIRT", that is not permissible for a tool carrier ("virtual" rotary axis)

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct the incorrect data in the tool carrier definition or the incorrect definition of the kinematic chains used to parameterise the tool carrier.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14150 [Channel %1: ] Block %2 illegal tool carrier number programmed or declared (MD)

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A toolholder number was programmed which is negative or greater than the MD18088 $MN_MM_NUM_TOOL_CARRIER.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department. Program a valid tool carrier number or adapt MD 18088 $MN_MM_NUM_TOOL_CARRIER.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14151 [Channel %1: ] Block %2 illegal tool carrier rotation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A toolholder was activated with an angle of rotation unequal to zero, although the associated axis is not defined. A rotary axis is not defined when all three direction components are zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Set the angle of rotation to zero, or define the associated rotary axis.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14152 [Channel %1: ] Block %2 tool carrier: invalid orientation. Error code: %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An attempt was made to define a tool orientation by means of the active frame, which cannot be reached with the current tool carrier kinematics.
This behavior can be caused by the following:
- The two rotary axes of the tool carrier are not perpendicular to one another.
- The tool carrier has less than two rotary axes;
- Rotary axis positions must be set that violate the corresponding axis limitations.
An error code is output with the alarm, which specifies the cause in detail:
1: 1st rotary axis of the first solution violates the lower limit
2: 1st rotary axis of the first solution violates the upper limit
10: 2nd rotary axis of the first solution violates the lower limit
20: 2nd rotary axis of the first solution violates the upper limit
100: 1st rotary axis of the second solution violates the lower limit
200: 1st rotary axis of the second solution violates the upper limit
1000: 2nd rotary axis of the second solution violates the lower limit
2000: 2nd rotary axis of the second solution violates the upper limit
3: The required orientation cannot be set with the given axis configuration
Several of the error codes that indicate a violation of the axis limits can occur simultaneously
As, when an axis limit is violated, an attempt is made to reach a valid position within the permissible axis limits by adding or subtracting multiples of 360 degrees, it is - if this is not possible - not unequivocally defined whether the lower or upper axis limit has been violated.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program:
- Use TCOABS instead of TCOFR.
- Activate a different frame.
- Change the tool carrier data.
- Change the machining plane G17-G19.

If the alarm cannot be cleared and an additional alarm 14710 is generated at RESET, the machine data 20126 $MC_TOOL_CARRIER_RESET_VALUE must be set to zero.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14153 [Channel %1: ] Block %2 unknown tool carrier type: %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Tool carrier type

**Explanation:** An invalid tool carrier type was specified in $TC_CARR23[]. Only the following are allowed: t, T, p, P, m, M.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Change the content of the tool carrier data.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14154 [Channel %1: ] Block %2 The amount of fine correction in parameter %3of the orientable toolholder %4 is too large

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Invalid parameter of the orientable toolholder
%4 = Number of the orientable toolholder

**Explanation:** The maximum permissible value of the fine correction in an orientable toolholder is limited by the MD20188 $MC_TOCARR_FINE_LIM_LIN for linear variables, and by the MD20190 $MC_TOCARR_FINE_LIM_ROT for rotary variables. The alarm can only occur if the SD42974 $SC_TOCARR_FINE_CORRECTION is not equal to zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Enter a valid fine correction value.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14155 [Channel %1: ] Block %2 invalid base frame definition for tool carrier offset

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a tool carrier selection causes a change in the table offset, a valid base frame must be defined in order to store this offset. For more information see machine data MD20184 $MC_TOCARR_BASE_FRAME_NUMBER.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Change the part program.
Change MD20184 $MC_TOCARR_BASE_FRAME_NUMBER.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14156 [Channel %1: ] Toolholder selection error at reset

**Parameters:** %1 = Channel number

**Explanation:** The settings in MD20110 $MC_RESET_MODE_MASK require that an active orientable toolholder is maintained after the reset. This is done by deselecting the old orientable toolholder and then reselecting it with data that may have been modified. If an error occurs during the reselection, this alarm is issued (as a warning) and then an attempt is made to select the orientable toolholder in the initial setting. If this second attempt is successful, the reset cycle is continued without any further alarms.
Typically, the alarm only occurs when the old orientable toolholder has been selected with TCOFR, and its axis directions have been changed in such a way before the reset that a setting suitable for the associated frame is no longer possible. If there is another cause for the alarm, this results in an alarm also being issued when attempting to select in the initial setting. This is then also displayed in plain text.

**Reaction:** Alarm display.

**Remedy:** Check the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14157 [Channel %1: ] Block %2 illegal interpolation type with MOVT

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If MOVT is programmed, linear or spline interpolation (G0, G1, ASPLINE, BSPLINE, CSPLINE). must be active.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14159 [Channel %1: ] Block %2 more than two angles programmed with ROTS or AROTS

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Frame rotations are described using space angles with the language commands ROTS or AROTS. A maximum of two angles can be programmed.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14160 [Channel %1: ] Block %2 tool length selection without geometry axis specification

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If variant C (tool length acts on the programmed axis) is activated by machine data MD20380 $MC_TOOL_CORR_MODE_G43G44 for tool length compensation with H word and G43/G44 in ISO_2 mode, at least one geometry axis must be specified.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** You have the following possibilities of eliminating the error:
Change the part program.
Change MD20380 $MC_TOOL_CORR_MODE_G43G44.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14161 [Channel: %1: ] Block%2 Error %3 for call of the function CORRTC.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An error occurred when the CORRTC function was called. The error number specifies the cause of the error.
Error numbers:
1: No tool carrier active.
2: The active tool carrier was not defined with kinematic chains.
10: The call parameter _CORR_INDEX is negative.
11: The call parameter _CORR_MODE is negative.
12: Invalid reference to the section of a partial chain ( _CORR_INDEX).
13: No correction element is defined in the section to which the _CORR_INDEX parameter refers ($TC_CARR_CORR_ELEM).
20: The 100s digit of _CORR_MODE is invalid. Only the values 0 and 1 are permissible.
21: The 1000s digit of _CORR_MODE is invalid. Only the values 0 and 1 are permissible.
30: In the correction of an offset vector, the deviation from the current value is greater than the maximum value set in setting data 41612 $SN_CORR_TOCARR_LIN_MAX in at least one coordinate.
31: The attempt to write a system variable was rejected due to missing write authorization.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change function call.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14162 [Channel %1: ] Block %2 error %3 on activation of the CUTMOD or CUTMODK function

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An error occurred during the activation of the CUTMOD or CUTMODK function. The type of error is more closely defined by the error code number:

For errors with error codes less than 100, MD20125 $MC_CUTMOD_ERR can be used to determine whether the error condition is to lead to the issue of an alarm, and whether the alarm is only to be displayed or also trigger a program stop.

Errors with error codes greater than or equal to 100 always lead to a program stop.

Error code:

1 No valid cutting direction is defined for the active tool.

2 The cutting edge angles (clearance angle and holder angle) of the active tool are both zero.

3 The clearance angle of the active tool has an impermissible value (less than 0 degrees or greater than 180 degrees).

4 The holder angle of the active tool has an impermissible value (less than 0 degrees or greater than 90 degrees).

5 The tool tip angle of the active tool has an impermissible value (less than 0 degrees or greater than 90 degrees for cutting edge position 1-4 or if the tool tip is located in 3 quadrants).

6 The cutting edge position - holder angle combination of the active tool is impermissible (with cutting edge positions 1 through 4, the holder angle must be greater than or equal to 90 degrees, with cutting edge positions 5 through 8, it must be less than or equal to 90 degrees).

7 The tool tip is not located in the machining plane, and the angle GAMMA between the tool tip and machining plane exceeds the upper limit specified using setting data SD42998 $SC_CUTMOD_PLANE_TOL.

8 The cutting plate is not located in the machining plane. Angle ALPHA is greater than 1 degree. The angle ALPHA is the angle of rotation around the coordinate axis, which is perpendicular to both the axis of rotation of the angle BETA and the axis of rotation of the angle GAMMA (with G18 the X axis).

100 The rotation matrix to be used for calculating the modification of the cutting edge position does not describe a pure rotation, that is it contains mirroring, scaling or shearing.

101 When CUTMODK is activated, there is no valid orientation transformation active. A 5 or 6-axis transformation defined with kinematic chains must be active.

102 The language command "CUTMODK" was called with an invalid parameter. Only the parameters "NEW", "CLEAR", "ON" and "OFF" are permitted.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct the tool data of the active tool, or modify the part program.

Alternatively, suppress the alarm for all errors with error numbers less than 100 with the aid of MD20125 $MC_CUTMOD_ERR.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14163 [Channel %1: ] Block %2 Tool carrier: Hirth tooth system is not a divisor of the full circle.

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The value of the Hirth increment (in degrees) in at least one axis is not a divisor of the full angle. This can be a problem for the display if, for example, a negative solution, which matches the Hirth tooth system, is increased by 360 degrees. The result is no longer divisible by the Hirth increment.

**Reaction:** Alarm display.

**Remedy:** Set the angle of rotation to zero, or define the associated rotary axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14165 [Channel %1: ] Block %2 selected ISO H/D number %3 does not match tool %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = ISO H/D number

%4 = Tool number

**Explanation:** When an H or D number is programmed in ISO_2 or ISO_3 mode, it must be available in the active tool. The active tool may also be the last tool loaded on the master spindle or master toolholder. This alarm is output if there is no H or D number on this tool.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Set the ISO H/D number correctly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14166 [Channel %1: ] Block %2 error %3 when programming a tool length offset with TOFF / TOFFL

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An error occurred while programming a tool length offset with TOFF or TOFFL. More precise information about the type of error is given by the error code number:
Error code
1 At least one tool length offset component has been programmed twice in one block (with TOFF).
2 At least one tool length offset component has been programmed twice in one block (with TOFFL).
3 Tool length offset components have been programmed in one block with both TOFF and TOFFL.
4 An index must be declared when a tool length offset is programmed with TOFF, the form TOFF=.... is not permissible.
5 An illegal index was declared when programming TOFFL (permissible values 1..3).
6 An illegal axis was declared as the index when programming TOFF. Only geometry axes are permitted. Can also occur with TRAFOOF if TOFFON is active and no geometry axes are known without transformation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct errors in program block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14170 [Channel %1: ] Block %2 illegal interpolation type with tool length compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If tool compensation (G43/G44) is activated in the language mode ISO_M, linear interpolation must be activated as the type of interpolation.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14180 [Channel %1: ] Block %2 H number %3 is not defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = H number of ISO mode

**Explanation:** The specified H number is not assigned to a tool (ISO_M).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14181 [Channel %1: ] Block %2 ISO tool offset %3 not present

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Offset number

**Explanation:** Only relevant in ISO2 and ISO3 modes:
When selecting the tool offset with H or D:
Only tool offsets 1 - 98 are permissible in ISO2 and ISO3 modes.
Exception: The structured cutting edge D1 of the active tool can also be selected with H99 in ISO2 mode or with the offset component in the tool selection in ISO3 mode.
When writing the tool offset with G10:
Only tool offsets 1 - 98 are permissible in ISO2 and ISO3 modes.
Tool offset H99 can only be written in Siemens programming mode (G290) with $TC_DPx[y,z]=.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct NC block and select a permissible tool offset in the range 1 to 98.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14182 [Channel %1: ] Block %2 different values under H and D addresses

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only relevant in ISO2 mode:
Tool length and tool radius are programmed with H and D. The programming leads to contradictory offset numbers in the coupled offset memories.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct NC block. Only program H or D, or program the same value under H and D addresses.
Set MD10890 $MN_EXTERN_TOOLPROG_MODE, Bit6=1. Different values can then be programmed in the H and D addresses.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14183 [Channel %1: ] Block %2 H and D addresses must be programmed after Siemens offset

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only relevant in ISO2 mode:
A tool offset in Siemens mode with D>1 is active and an ISO2 command G43, G44,G49 is applied. Furthermore an ISO offset with H0 - H99 or D0-D98 must be selected.
The alarm is also output, if MD10890 $MN_EXTERN_TOOLPROG_MODE, bit6=1:
If the Siemens offset memory with H99 or a cutting edge has been selected in Siemens mode, both the tool length and tool radius offsets will have to be reselected the next time the ISO offset memory is selected.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct NC block.
Program H and/or D address in the block.
If MD10890 $MN_EXTERN_TOOLPROG_MODE, bit6=0, only H or D address must be programmed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14184 [Channel %1: ] Block %2 G44 is not possible with tool offset H99

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only relevant in ISO2 mode:
The structured D number D1 of the active tool has been selected with H99. These offset values cannot be calculated negatively with G44.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct NC block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14185 [Channel %1: ] Block %2 D number %3 is not defined

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = D number of ISO mode

**Explanation:** The specified D number is not assigned to a tool (language mode ISO_M).

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14186 [Channel %1: ] Block %2 ISO2 mode, and toolcarrier or tool adapter are both active (identifier %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Identifier

**Explanation:** Only relevant in ISO2 mode:
An attempt has been made to activate an ISO2 offset and toolcarrier or tool adapter together.
Identifier 1: ISO2 offset is active (activated in ISO2 mode) and an attempt has been made to activate an additional toolcarrier in Siemens mode.
Identifier 2: A toolcarrier has been activated in Siemens mode, and a tool offset is now activated in ISO2 mode.
Identifier 3: A tool is active in the adapter in Siemens mode, and a tool offset is now activated in ISO2 mode.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Correct NC block.
For identifier 1: Select a Siemens offset before activating the toolcarrier.
For identifier 2: Deactivate the toolcarrier before selecting a TLC in ISO2 mode.
For identifier 3: Load a tool (T=0) or activate a tool without an adapter before selecting a TLC in ISO2 mode.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14196 [Channel %1: ] Block %2 error %3 on interpreting the contents of $SC_CUTDIRMOD

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** An error has occured during the interpretation of the strings contained in SD42984 $SC_CUTDIRMOD. This setting data is always read when a new edge is selected. The error code indicates the cause of the error:
1: The string only consists of blanks or a sign
2: Unknown frame name after $P_
3: No colon after the first valid frame name
4: Insufficient memory space for creating a frame internally
5: Invalid frame index
6: Further characters found after complete string
7: Second frame name is missing after the colon
8: Impermissible frame rotation (surface normals are rotated against each other by 90 degrees or more)
9: Invalid frame chain (the first frame must come before the second frame in the frame chain)
10: Invalid axis name
11: Axis is not a rotary axis
12: Invalid string that cannot be assigned to any of the error types 1 to 11
20: Invalid angle statement (numerical value)
30: Invalid angle of rotation (not an integer multiple of 90 degrees)

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter valid string in SD42984 $SC_CUTDIRMOD.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14197 [Channel %1: ] Block %2 D number and H number programmed simultaneously

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A D word and H word have been programmed simultaneously.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14199 [Channel %1: ] Block %2 illegal plane change for tool with diameter component

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a tool has a wear or length component which is evaluated as a diameter for the facing axis (bit 0 and/or bit 1 in MD20360 $MC_TOOL_PARAMETER_DEF_MASK is set) and bit 2 of this MD is also set, this tool may only be used in the plane active on tool selection. A plane change results in an alarm.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify the part program.
Reset bit 2 in MD20360 $MC_TOOL_PARAMETER_DEF_MASK.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14200 [Channel %1: ] Block %2 negative polar radius

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the endpoint specification of a traversing block with G00, G01, G02 or G03 in polar coordinates, the polar radius entered for the keyword RP=... is negative.
Definition of terms:
- Specification of end of block point with polar angle and polar radius, referring to the current pole (preparatory functions: G00/G01/G02/G03).
- New definition of the pole with polar angle and pole radius, referring to the reference point selected with the G function. G110 ... last programmed point in the plane, G111 ... zero point of the current work, G112 ... last pole

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct NC part program - permissible inputs for the pole radius are only positive absolute values that specify the distance between the current pole and the block end point. (The direction is defined by the polar angle AP=...).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14210 [Channel %1: ] Block %2 polar angle too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In specifying the endpoints in a traversing block with G00, G01, G02 or G03 in polar coordinates, the value range of the polar angle programmed under the keyword AP=... has been exceeded. It covers the range from -360 to +360 degrees with a resolution of 0.001 degrees.

Definition of terms:

- Specification of end of block point with polar angle and polar radius, referring to the current pole (preparatory functions: G00/G01/G02/G03).

- New definition of the pole with polar angle and pole radius, referring to the reference point selected with the G function. G110 ... referred to the last programmed point in the plane, G111 ... referred to the zero point of the current workpiece coordinate system (Work), G112 ... referred to the last pole.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct NC part program. The permissible input range for the polar angle is between the values -360 degrees and +360 degrees with a resolution of 0.001 degrees.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14250 [Channel %1: ] Block %2 negative pole radius

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In redefining the pole with G110, G111 or G112 in polar coordinates, the pole radius specified under keyword RP=... is negative. Only positive absolute values are permitted.

Definition of terms:

- Specification of end of block point with polar angle and polar radius, referring to the current pole (preparatory functions: G00/G01/G02/G03).

- New definition of the pole with polar angle and pole radius, referring to the reference point selected with the G function. G110 ... last programmed point in the plane, G111 ... zero point of the current work, G112 ... last pole

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct the NC part program. Permissible inputs for the pole radius are only positive, absolute values that specify the distance between the reference point and the new pole. (The direction is defined with the pole angle AP=...).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14260 [Channel %1: ] Block %2 pole angle too large

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** In redefining the pole with G110, G111 or G112 in polar coordinates, the value range of the pole angle specified under keyword AP=... has been exceeded. It covers the range from -360 to +360 degrees with a resolution of 0.001 degrees.

Definition of terms:

- Specification of end of block point with polar angle and polar radius, referring to the current pole (preparatory functions: G00/G01/G02/G03).

- New definition of the pole with polar angle and pole radius, referring to the reference point selected with the G function. G110 ... last programmed point in the plane, G111 ... zero point of the current work, G112 ... last pole

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct NC part program. The permissible input range for the polar angle is between the values -360 degrees and +360 degrees with a resolution of 0.001 degrees.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14270 [Channel %1: ] Block %2 pole programmed incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When defining the pole, an axis was programmed that does not belong to the selected processing level. Programming in polar coordinates always refers to the plane activated with G17 to G19. This also applies to the definition of a new pole with G110, G111 or G112.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC part program. Only the two geometry axes may be programmed that establish the current machining plane.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14280 [Channel %1: ] Block %2 polar coordinates programmed incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The end point of the displayed block has been programmed both in the polar coordinate system (with AP=..., RP=...) and in the Cartesian coordinate system (axis addresses X, Y,...).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC part program - the axis motion may be specified in one coordinate system only.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14290 [Channel %1: ] Block %2 polynomial degree greater than 5 programmed for polynomial interpolation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A polynomial degree greater than five was programmed for the polynomial interpolation. You can only program polynomials up to the 5th degree.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14300 [Channel %1: ] Block %2 overlaid handwheel motion activated incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Handwheel override has been called up incorrectly:
- 1st For positioning axes:
- Handwheel override programmed for indexing axes,
- No position programmed,
- FA and FDA programmed for the same axis in the block.
- 2nd For contouring axes:
- No position programmed,
- G60 not active,
- 1st G group incorrect (only G01 to CIP).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14320 [Channel %3: ] Axis %4: handwheel %1 used twice (%2)

**Parameters:** %1 = Handwheel number
%2 = Use
%3 = Channel
%4 = Axis

**Explanation:** Informational alarm indicating that the mentioned handwheel is used twice:
The second parameter provides the explanation:
1: Block with axial handwheel override for this axis cannot be executed as the handwheel for this axis performs a DRF movement
2: Block with velocity override of the path cannot be executed as the handwheel performs a DRF movement for this axis of the path
3: Block with contour handwheel cannot be executed as the handwheel performs a DRF movement for this axis of the path
4: PLC axis with axial handwheel override cannot be started immediately as the handwheel performs a DRF movement for this axis
5: The axis is a reciprocating axis with axial handwheel override; the reciprocating movement cannot be started immediately as the handwheel performs a DRF movement for this axis
6: The DRF movement for this axis cannot be executed as an axial handwheel override is active for this axis with the handwheel
7: The DRF movement for this axis cannot be executed as a velocity override of the path with the handwheel is active and the axis belongs to the path
8: The DRF movement for this axis cannot be executed as the contour handwheel is active with this handwheel and the axis belongs to the path
9: The DRF movement for this axis cannot be executed as the axis is a PLC axis with handwheel override that is active with this handwheel
10: The DRF movement for this axis cannot be executed as the axis is active as reciprocating axis with handwheel override with this handwheel

**Reaction:** Alarm display.

**Remedy:** Use the handwheel for one purpose at a time only.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 14400 [Channel %1: ] Block %2 tool radius compensation active at transformation switchover

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A change of transformation is not allowed when tool radius compensation is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Perform tool radius compensation in the NC part program with G40 (in a block with G00 or G01) before performing a transformation change.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14401 [Channel %1: ] Block %2 transformation not available. Error code %3.

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Error code

**Explanation:** The required transformation is not available. The cause of the error is explained more closely by the error code.

1: No transformations are available.

2: No transformations of the type "inclined axis" are available.

3: No orientation transformations are available.

4: No transmit transformations are available.

5: No tracyl transformations are available.

6: No chained transformations are available.

7: No OEM transformations are available.

8: No OEM orientation transformations are available.

22: The required transformation of the type "inclined axis" was not found.

23: The required orientation transformation was not found.

24: The required transmit transformation was not found.

25: The required tracyl transformation was not found.

26: The required chained transformation was not found.

40: An attempt was made to activate a transformation defined by kinematic chains. However, no such transformations have been enabled (MD18866 $MN_MM_NUM_KIN_TRAFOS is zero).

41: No transformation name (first call parameter) was specified for the transformation call TRAFOON.

42: An attempt was made to activate a transformation defined by kinematic chains. However, no such transformation with the specified name was found.

43: An attempt was made to activate a transformation defined by kinematic chains whose name had been changed since the last activation. Changed transformation data does not become active until after a NEWCONF or RESET.

44: An attempt was made to activate a transformation defined by kinematic chains. But the stated name is empty (zero string).

45: An attempt was made to activate a transformation defined by kinematic chains. However, the system variables $NT_NAME[..] are all empty.

46: An attempt was made to activate a transformation defined by kinematic chains. The stated transformation name was found more than once in the array of system variables $NT_NAME.

52: An attempt was made to activate a RESET transformation defined by kinematic chains (MD20142 $MC_TRAFO_RESET_NAME). However, no transformation was found with the stated name.

55: An attempt was made to activate a RESET transformation defined by kinematic chains (MD20142 $MC_TRAFO_RESET_NAME). However, the system variables $NT_NAME[..] are all empty.

56: An attempt was made to activate a RESET transformation defined by kinematic chains (MD20142 $MC_TRAFO_RESET_NAME). However, the stated transformation name was found more than once in the array of system variables $NT_NAME.

201: A transformation has been incorrectly parameterized.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Error codes 1 to 6 indicate that the control does not contain the requisite software. The transformation cannot even be activated by setting machine or option data.

For the remaining error codes:

Modify part program; program defined transformations only.

Check MD24... $MC_TRAFO_TYPE_... (assigns the transformation to the part program operation).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14402 [Channel %1: ] Block %2 spline active at transformation change

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A change of transformation is not allowed in a spline curve section. A series of spline blocks must be concluded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14404 [Channel %1: ] Block %2 illegal parameterization of transformation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Error has occurred when selecting transformation.
Possible causes of error:
- An axis traversed by the transformation has not been enabled:
- is being used by another channel (-> enable)
- is in spindle mode (-> enable with SPOS)
- is in POSA mode (-> enable with WAITP)
- is concurrent Pos axis (-> enable with WAITP)
- Parameterization via machine data has an error
- Axis or geometry axis assignment to the transformation has an error,
- Machine data has an error (-> modify machine data, restart)
Please note: Any axes not enabled might be signaled via alarm 14092 or alarm 1011 instead of alarm 14404.
Transformation-dependent error causes can be in: TRAORI: -
TRANSMIT:
- The current machine axis position is unsuitable for selection (e.g. selection in the pole) (-> change position slightly).
- Parameterization via machine data has an error.
- Special requirement with respect to the machine axis has not been fulfilled (e.g. rotary axis is not a modulo axis) (-> modify machine data, restart).
TRACYL:
The programmed parameter is not allowed when transformation is selected.
TRAANG:
- The programmed parameter is not allowed when transformation is selected.
- Parameterization via machine data has an error.
- Parameter is faulty (e.g. TRAANG: unfavorable angle value (-> modify machine data, restart)
Persistent transformation:
- Machine data for persistent transformation are wrong (-> consider dependencies, change machine data, restart)
Only with active "OEM transformation" compile cycle:
The axes included in the transformation must be referenced.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify part program or machine data.
Only with active "OEM transformation" compile cycle:
Reference the axes included in the transformation before selecting transformation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14406 [Channel %1: ] Block %2 Parameter error %3 on calling a transformation.

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Error code

**Explanation:** An error was detected during the attempt to activate a transformation. The cause of the error is indicated more precisely by the following error code.

- 80. The geometry axes are (almost) linearly dependent. This means that two geometry axes are almost parallel or three geometry axes lie almost in one plane.
- 81. An orientation axis is impermissible or not completely parameterized as a spindle (with $NT_CNTRL, $NT_ROT_AX_CNT).
- 90. More than one inclined axis was parameterized in the definition of a TRANSMIT or TRACYL transformation with kinematic chains.
- 91. Impermissible direction of an inclined axis in the definition of a TRANSMIT or TRACYL transformation with kinematic chains. The inclined axis does not lie in a main plane.
- 92. The polar axis and the longitudinal axis are not parallel in a TRANSMIT or TRACYL transformation.
- 93. The radial axis must be perpendicular to the polar axis if no longitudinal axis is present.
- 94. The center offset axis must be perpendicular to the polar axis if no longitudinal axis is present.
- 120. During the redirection of a TRAANG transformation to a transformation defined by kinematic chains, a parameter was stated as an angle that was not the same as the angle defined by the kinematic chains.
- 121. During the redirection of a TRAANG transformation to a transformation defined by kinematic chains, a parameter was stated as an angle, although the angle of the inclined axis was not defined. This case occurs if there is more than one inclined axis or if the inclined axis does not lie in a main plane.
- 150. The call of a TRACYL transformation did not state a value for the reference or work diameter.
- 200. The transformation can only be activated in a transformation chain, and not as a single transformation.
- 250. The spindle rotation vector is not parallel to the Z axis of the WCS (see $NT_P_CHAIN_LAST_ELEM). The element to be entered here must be the last element in the table chain that is not a rotary axis. (If the part of the table chain before $NT_P_CHAIN_LAST_ELEM contains rotary axes, WKS jumps will occur, which (as described above) violate the prerequisites for activation).
- 251. The tool is oriented incorrectly. The tool must point to the center of rotation when TRAINT is called.

**********

The following error codes are only output with OEM transformations if an error is detected during the selection of the transformation:

- 1000. The basic direction of the tool orientation must be parallel to one of the coordinate axes X, Y or Z.
- 1001. The basic direction of the tool orientation must not point in the X direction.
- 1002. The basic direction of the tool orientation must not point in the Y direction.
- 1003. The basic direction of the tool orientation must not point in the Z direction.
- 1004. The normal vector of the tool in the basic position must be parallel to one of the coordinate axes X, Y or Z.
- 1005. The normal vector of the tool in the basic position must not point in the X direction.
- 1006. The normal vector of the tool in the basic position must not point in the Y direction.
- 1007. The normal vector of the tool in the basic position must not point in the Z direction.

Note: Error codes 1000 to 1007 can only occur if $NC_IGNORE_TOOL_ORIENT = FALSE (default value), and the active tool contains orientations that are not permissible.

In this case, basic directions defined in the variables $NT_BASE_ORIENT and $NT_BASE_ORIENT_NORMAL do not become active

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Correct incorrect parameterisation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14407 [Channel %1: ] Block %2 constant axis %3 has an invalid position

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** An axis with a position that must not be changed during active transformation, has an impermissible position when the transformation is activated.
The permissible positions are described in the relevant documentation of the transformation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Before activation of the transformation, traverse the affected axis to a permissible position.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14408 [Channel %1: ] Block %2 Transformation TRAINT and function cannot be active simultaneously. ( %3 )

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** TRAINT cannot be operated with the following functions.
- 10. CUT3DC, CUT3DF, CUT3DCD, CUT3DFF, CUT3DFS, CUT3DCC, CUT3DCCD, CUT3DFD
- 20. PTP, PTPG0, PTPWOC, PTPWOC2
- 30. G17, G19
- 40. G33, G331, G332, G334, G335, G34, G35
- 50. TOFFON
- 60. TOWMCS, TOWWCS, TOWBCS, TOWTCS, TOWKCS
- 70. DIAMONA, DIACYCOFA, DIAM90A, DIAMOFA
- 80. G63
- 90. G961, G962, G97, G971, G972
- 100. LFON
- 110. DRIVE
- 120. NPV (G54, G55, etc.), TRANS, ROT, MIRROR, SCALE, ATRANS, AROT, AMIRROR, ASCALE
- 130. G53, G153, SUPA, SUPD
- 140. The tool type must lie between 500 and 599.
- 150. SPCOF
- 160. Extended lookahead is active MD20443 $MC_LOOKAH_FFORM[n]=1, n=G-code group 59

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Eliminate the incorrect parameterization.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14409 [Channel %1: ] Block %2: Transformation TRAINT has detected a %3-WCS position %4 unequal to 0.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Identifier of the 2nd geometry axis
%4 = WCS position

**Explanation:** he programmed positions result in a WCS position of the 2nd geometry axis unequal to 0 during active transformation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program the axes or the spindle so that the position of the 2nd geometry axis in the WCS is 0, taking into account the correct tool lengths.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14410 [Channel %1: ] Block %2 spline active at geometry axis changeover

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not allowed to change the assignment of geometry axes to channel axes in a spline curve definition.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14411 [Channel %1: ] Block %2 tool radius compensation active at geometry axis changeover

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible to change the assignment of geometry axes to channel axes when tool radius compensation is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14412 [Channel %1: ] Block %2 transformation active at geometry axis changeover

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible to change the assignment of geometry axes to channel axes when transformation is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14413 [Channel %1: ] Block %2 fine tool correction: changeover geometry/channel axis not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible to change the assignment of geometry axes to channel axes during active tool fine compensation.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14414 [Channel %1: ] Block %2 GEOAX function: incorrect call

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The parameters for calling the GEOAX(...) are incorrect.
Possible causes:
- Uneven number of parameters.
- More than 6 parameters were specified.
- A geometry axis number was programmed which was less than 0 or greater than 3.
- A geometry axis number was programmed more than once.
- An axis identifier was programmed more than once.
- An attempt was made to assign a channel axis to a geometry axis which has the same name as one of the channel axes.
- An attempt was made to assign a channel axis to a geometry axis lacking IPO functionality (see MD30460 $MA_BASE_FUNCTION_MASK, Bit8).
- An attempt was made to remove a geometry axis with the same name as one of the channel axes from the geometry axis grouping.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program or the correction block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14415 [Channel %1: ] Block %2 tangent control: changeover geometry/channel axis not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An assignment change of the geometry axes to channel axes is not permitted with active tangential control.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change part program and delete active tangential control with TANGDEL.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14420 [Channel %1: ] Block %2 index axis %3 frame not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis

**Explanation:** The axis is to be traversed as an indexing axis, but a frame is active. This is not allowed by MD32074 $MA_FRAME_OR_CORRPOS_NOTALLOWED.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Modify the part program.
Change MD32074 $MA_FRAME_OR_CORRPOS_NOTALLOWED.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14430** **[Channel %1: ] Block %2 tangential axis %3 must not be traversed as POS axis**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** A tangentially followed-up axis cannot be traversed as positioning axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change part program and delete active tangential control with TANGDEL.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14432** **[Channel %1: ] Block %2 Rounding length for tangential axis %3 is too small.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** For a tangential axis that is coupled during preparation, a rounding length must be indicated with TANGON() on activating the tangential control, or possibly occuring discontinuities of the tangential axis cannot be smoothed. This rounding length must be larger than 1 increment.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14434** **[Channel %1: ] Block %2 rel. lift-off path for tangential axis %3 is invalid**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** Factor r as programmed on TLIFT for the relative lift-off path must be within range 0 =< r < 1.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14450** **[Channel %1: ] Block %2: Transformation has been deleted in the search.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A transformation has been deleted in the search and is no longer activated in the search Prog Event/ASUB.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** In the search Prog Event/ASUB in the state $P_PROG_EVENT==5, restore the deleted transformation by calling SEATRAON().

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**14460** **[Channel %1: ] Block %2: SEATRAON was called outside the search Prog Event/ASUB.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** SEATRAON was called outside the search Prog Event/ASUB.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Call SEATRAON only in the search Prog Event/ASUB in the state $P_PROG_EVENT==5.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**14500** **[Channel %1: ] Block %2 illegal DEF or PROC instruction in the part program**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** NC part programs with high-level language elements are divided into a preceding definition part followed by a program part. The transition is not marked specifically; a definition statement is not allowed to follow the 1st program command.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Put definition and PROFC statements at the beginning of the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**14510** **[Channel %1: ] Block %2 PROC instruction missing on subroutine call**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In subroutine calls with parameter transfer ("call-by-value" or "call-by-reference") the called subroutine must begin with a PROC statement.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Define the subroutine in accordance with the type used.
1. Conventional subroutine structure (without parameter transfer):
% SPF 123456
:
M17
2. Subroutine structure with keyword and subroutine name (without parameter transfer):
PROC UPNAME
:
M17
ENDPROC
3. Subroutine structure with keyword and subroutine name (with parameter transfer "call-by-value"):
PROC UPNAME (VARNAME1, VARNAME2, ...)
:
M17
ENDPROC
4. Subroutine structure with keyword and subroutine name (with parameter transfer "call-by-reference"):
PROC UPNAME (Typ1 VARNAME1, Typ2 VARNAME2, ...)
:
M17
ENDPROC

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14520 [Channel %1: ] Block %2 illegal PROC instruction in data definition section

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The PROC statement may only be programmed at the beginning of the subroutine.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify NC part program appropriately.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14530 [Channel %1: ] Block %2 EXTERN and PROC instruction do not correspond

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Subroutines with parameter transfer must be known before they are called in the program. If the subroutines are always available (fixed cycles) the control establishes the call interfaces at the time of system power-up. Otherwise an EXTERN statement must be programmed in the calling program.
Example:
N123 EXTERN UPNAME (TYP1, TYP2, TYP3, ...)
The type of the variable must match the type given in the definition (PROC statements) or it must be compatible with it. The name can be different.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the variable types in the EXTERN and the PROC statements for correspondence and correctness.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14540 [Channel %1: ] Block %2 contour tool: the min. limit angle has been programmed more than once (edge D%3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** The limit angle of a contour tool must be unequal zero in an involved edge only.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14541 [Channel %1: ] Block %2 contour tool: the max. limit angle has been programmed more than once (edge D%3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** The limit angle of a contour tool must be unequal zero in an involved edge only.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14542 [Channel %1: ] Block %2 contour tool: the min. limit angle has not been programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** On defining a contour tool, either no limit angle must be indicated, or both the minimum and the maximum limit angle must be programmed once for each.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14543 [Channel %1: ] Block %2 contour tool: the max. limit angle has not been programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** On defining a contour tool, either no limit angle must be indicated, or both the minimum and the maximum limit angle must be programmed once for each.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14544 [Channel %1: ] Block %2 contour tool: edge D%3 is not positioned between the two border edges

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** On defining a form tool with limit, all edges must be positioned between the edge with the minimum limit angle and the edge with the maximum limit angle when rotating counter-clockwise.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14545 [Channel %1: ] Block %2 contour tool: edge D%3 completely encircles edge D%4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label
%4 = Edge number, label

**Explanation:** On defining a contour tool, tangents are placed on the adjacent circular edges. It will not be possible, if one edge is completely encircled by another one.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14546 [Channel %1: ] Block %2 contour tool: edge D%3 defines a concave corner

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** The contour of a contour tool must be convex throughout, i.e. there must not be any concave corners.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14547 [Channel %1: ] Block %2 contour tool: checksum erroneous or not available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When MD20372 $MC_SHAPED_TOOL_CHECKSUM was set, no edge was found for which the tool length components and the tool radius equal the negative sum of the previous edges.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Check tool definition. An edge must exist, the tool length components and tool radius of which equal the negative sum of the previous edges. This will not take the tool length components of the first edge into consideration. On comparing the components, the relevant sums of basic value and wear value are compared with each other, not the part components themselves.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14548 [Channel %1: ] Block %2 contour tool: negative radius in edge D%3 is not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** No negative radii are permitted for contour tools, i.e. the sum of basic radius and wear value must be at least 0.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Check tool definition. Change edge radius.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14549 [Channel %1: ] Block %2 contour tool: impermissible programming. Code no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** Impermissible programming has been found for contour tools on active tool radius compensation. The error cause is explained in detail by the error code.
1: In G code group 17, KONT is active during activation
2: In G code group 17, KONT is active during deactivation
9: In G code group 40, CUTCONOF is not active
10: Reprogramming of G41 / G42 in already active tool radius compensation not permissible
20: Circle with more than one rotation not permissible
21: Ellipse (circle not in compensation level)
23: Involute not permissible
24: Several polynomials not permitted in one block only. These blocks could be created by e.g. COMPCAD or G643.
30: Preprocessing stop not permitted
41: Starting point of first compensation block cannot be reached by anyone of the defined cutting edges
42: End point of last compensation block cannot be reached by anyone of the defined cutting edges

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14550 [Channel %1: ] Block %2 contour tool: impermissible tool contour change. Code no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** A new tool with deviating tool contour was activated for contour tools on active tool radius compensation
The error cause is explained further by an error code.
If the error code is an integer, the lower-value three decimal places specify the number of the edge, in which the error was detected, while the thousandth digit explains the reason in more detail.
-1: The tool was deleted.
-2: The number of contour elements (edges) explaining the tool, has changed.
1000: The edge center has changed
2000: The edge radius has changed.
3000: The initial angle has changed.
4000: The final angle has changed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Change the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14551 [Channel %1: ] Block %2 contour tool: angle area of edge D%3 larger than 359 degrees

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Edge number, label

**Explanation:** A single edge must cover a max. angle area of 359 degrees.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Check tool definition.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14600 [Channel %1: ] Block %2 reload buffer %3 cannot be established

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name

**Explanation:** The download buffer for "execute from external" could not be created. Possible causes:
- Not enough memory available (for minimum see MD18360 $MN_MM_EXT_PROG_BUFFER_SIZE)
- No resources available for HMI NCK communication (see MD18362 $MN_MM_EXT_PROG_NUM)
- The file already exists

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
- Release memory, e.g. by deleting part programs
- Modify MD18360 $MN_MM_EXT_PROG_BUFFER_SIZE and/or MD18362 $MN_MM_EXT_PROG_NUM.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14601 [Channel %1: ] Block %2 reload buffer could not be deleted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The reload buffer for "Execute from external" could not be deleted because, for example, communication with HMI/PLC had not been terminated.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** To clear all reload buffers, perform a power on.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14602 [Channel %1: ] Block %2 timeout while reloading from external.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No connection could be made to the HMI while reloading EXTCALL external subprograms or executing from external drives within the monitoring time set in MD10132 $MN_MMC_CMD_TIMEOUT.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
- Check the connection to the HMI
- Increase the monitoring time in MD10132 $MN_MMC_CMD_TIMEOUT.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14603 [Channel %1: ] Block %2 timeout during execution from external source.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a program is selected for execution from an external source, it is assumed that the first part program line can be read from the reload buffer within 60s after the part program has started.
Otherwise, part program processing will be canceled with alarm 14603 based on the assumption that the connection to the HMI or the external device is faulted.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the connection to the HMI and repeat selection of the program that is to be executed from external source.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
- Acknowledge the alarm by pressing the RESET key
- Repeat program selection
- Start the part program

## 14615 [Channel %1: ] An error occurred while handling the function 'syntax check': identifier %3

**Parameters:** %1 = Channel number
%2 = Is not used
%3 = Error code

**Explanation:** An error occurred while handling the function syntax check via the PI services _N_CHKSEL, _N_CHKRUN, _N_CHKABO and _N_SEL_BL. Parameter %3 describes the error situation more closely:
Value
1: An invalid line number was transferred with the PI service _N_SEL_BL
2: An invalid line number for the range end was transferred with the PI service _N_CHKRUN
3: PI service _N_CHKSEL was activated although a block selection (PI service _N_SEL_BL) was active for the selected program.

**Reaction:** Alarm display.

**Remedy:** Value
1: Supply PI service _N_SEL_BL with the correct line number
2: Supply PI service _N_CHKRUN with the correct line number for the range end
3: Ensure that the channel is in reset status before activating the PI service _N_CHKSEL.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14620 [Channel %1: ] Block %2 Error on opening program %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** Program %3 cannot be executed because it has been locked by another application, e.g. HMI Editor.
Background: Program %3 is stored on an external data medium (CF Card, network drive, USB device), and should be executed from there in EES mode (execution from external storage). However, program %3 cannot be edited because it is locked by another application, e.g. HMI Editor, is open for writing and WRITE lock is set for this file.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Cancel program with Reset
- Close the application that set the WRITE lock, for example the HMI Editor, and continue program editing with NC Start.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14621 [Channel %1: ] Block %2 Timeout on access to external program %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Program name

**Explanation:** Program %3 is stored on an external data medium (CF card, network drive, USB device). A timeout occurred when the program was accessed.
Possible cause of error: network disturbance.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Rectify network disturbances if applicable

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14622 [Channel %1: ] Access to file %2 disrupted by %3 %4

**Parameters:** %1 = Channel number
%2 = File which could not be accessed
%3 = Function with which it is accessed
%4 = Error message

**Explanation:** The program is stored on an external data medium (CF card, network drive, USB device). An error occurred when the program was accessed.
Possible cause of error: network disturbance.

**Reaction:** Alarm display.

**Remedy:** - Rectify network disturbances if applicable

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14623 The EES library does not exist

**Explanation:** The EES library does not exist; no part programs can be executed with EES.

**Reaction:** Channel not ready.
Alarm display.

**Remedy:** Load EES library

**Programm continuation:** Switch control OFF - ON.

## 14624 The EES library is incompatible.

**Explanation:** The EES library is incompatible; no part programs can be executed with EES.

**Reaction:** Channel not ready.
Alarm display.

**Remedy:** Replace EES library

**Programm continuation:** Switch control OFF - ON.

## 14625 [Channel %1: ] Block %2 Problems in EES mode accessing file %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File which could not be accessed

**Explanation:** The program is located on an external data medium (network drive, USB device). Problems occurred when accessing the program.
Possible cause or error: network fault.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - if necessary, remedy network faults und resume program

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14650 [Channel %1: ] Block %2 SETINT instruction with invalid ASUB input

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Asynchronous subroutines (ASUBs) are subroutines that are executed following a hardware input (interrupt routine started by a rapid NC input).
The NC input number must lie between 1 and 8. It is assigned a priority from 1 to 128 (1 is the highest priority) in the SETINT instruction with the keyword PRIO = ... .
Example:
If NCK input 5 changes to "1 signal", the subroutine AB-HEB_ Z should be started with the highest priority.
N100 SETINT (5) PRIO = 1 ABHEB_Z
Restriction for SW PLC2xx: The number of the NCK input must be 1 or 2.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the NC input of the SETINT statement with a value of not less than 1 or greater than 8.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14660 [Channel %1: ] Block %2 SETINT instruction with invalid priority

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The NC input number must lie between 1 and 8. It is assigned a priority from 0 to 128 (1 is the highest priority) in the SETINT instruction with the keyword PRIO = ... .
Example:
If NC input 5 changes to "1-signal" the subroutine ABHEB_ Z should be started with the highest priority.
N100 SETINT (5) PRIO = 1 ABHEB_Z
Restriction for SW PLC2xx: The number of the NC input must be 1 or 2.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the priority of the NC input with a value of not less than 1 or greater than 128.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14700 [Channel %1: ] Block %2 timeout during command to interpreter

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A timeout has occurred in control-internal commands such as ANWAHL (part program selection), RESET (channel reset), REORG (reorganization of the preprocessing buffer) and NEWCONFIG (change in the configuration-specific machine data = restart).

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
If the runtime error occurred as the result of a temporary excessive load on the system (e.g. in the HMI area or in OEM applications) error-free execution is possible on if the program or operator action are repeated.
If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 14701 [Channel %1: ] Block %2 number of available NC blocks reduced by %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of non-available blocks

**Explanation:** After the reset, it was found that the number of available blocks has decreased compared with the last reset. This is due to a system error. The part program execution can be resumed after acknowledging the alarm. If the number of blocks no longer available is less than MD28060 $MC_MM_IPO_BUFFER_SIZE, then the PowerON alarm 14700 is output.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Proceed as in the case of a system error.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14710 [Channel %1: ] Block %2 error in initialization sequence in function %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Identifier of the function which caused the error

**Explanation:** Initialization blocks are generated (or not) after control power-up, (program) RESET and (program) START, depending on the settings in machine data MD20110 $MC_RESET_MODE_MASK and MD20112 $MC_START_MODE_MASK.

Errors can occur because of incorrect machine data settings. The errors are output with the same error messages as would appear if the function had been incorrectly programmed in the part program.

This alarm is also generated in order to indicate that an error relates to the initialization sequence.

Parameter %3 specifies which function triggers the alarm:

Control power-up and (program) RESET:

Value:

0: Error during synchronization preprocessing/main run

1: Error on selection of tool length compensation

2: Error on selection of transformation

3: Error on selection of work offset

The macro definitions and cycle interfaces are also read in during the power-up procedure. If an error occurs here, this is indicated by value = 4, or value = 5

6: Error creating 2 1/2 D protection areas during power up.

(Program) START:

Value

100: Error during synchronization preprocessing/main run

101: Error on selection of tool length compensation

102: Error on selection of transformation

103: Error on selection of synchronized spindle

104: Error on selection of work offset

105: Error after WRITE lock on the selected program

Particularly when tool management is active, it is possible that a tool on the spindle or the toolholder is disabled but still needs to be activated.

These tools are automatically activated on RESET. On START, machine data MD22562 $MC_TOOL_CHANGE_ERROR_MODE can be used to specify whether an alarm is to be generated or an automatic bypass strategy selected.

If the parameter contains 3 values from 200 to 203, this means that an insufficient number of NC blocks is available for NC block preparation on certain commands (ASUB start, overstore selection, teach-in).

Remedy: Increase machine data MD28070 $MC_MM_NUM_BLOCKS_IN_PREP.

**Reaction:** Interpreter stop

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
If parameter %3= 0 -3:
If the alarm or alarms occur on RESET:
Check the settings of machine data MD20110 $MC_RESET_MODE_MASK,
MD20120 $MC_TOOL_RESET_VALUE, MD20121 $MC_TOOL_PRESEL_RESET_VALUE,
MD20122 $MC_TOOL_RESET_NAME (only if tool management is active),
MD20130 $MC_CUTTING_EDGE_RESET_VALUE, MD20132 $MC_SUMCORR_RESET_VALUE,
MD20126 $MC_TOOL_CARRIER_RESET_VALUE,
MD20150 $MC_GCODE_RESET_VALUES, MD20154 $MC_EXTERN_GCODE_RESET_VALUES,
MD20140 $MC_TRAFO_RESET_VALUE,
MD21330 $MC_COUPLE_RESET_MODE_1,
MD24002 $MC_CHBFRAME_RESET_MASK

If parameter %3= 100 - 104:
Check the setting of MD20112 $MC_START_MODE_MASK and the machine data specified under '..._RESET_...'. If tool management is active, if necessary remove the tool stated in the associated alarm from the toolholder/spindle and cancel the 'disabled' status.
If parameter %3= 4 or 5:
Check macro definitions in _N_DEF_DIR
Check cycle directories _N_CST_DIR and _N_CUS_DIR
If parameter %3= 6:
Alarm 18002 or 18003 was also issued. This alarm contains the number of the incorrectly defined protection area and an identifier of what is incorrect about the protection area. The system variables must be appropriately corrected.
If Parameter %3= 200 bis 203:
Increase MD28070 $MC_MM_NUM_BLOCKS_IN_PREP.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14711 [Channel %1: ] Transformation selection not possible as axis %2 not available

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** Based on the configuration of machine data MD20110 $MC_RESET_MODE_MASK and MD20140 $MC_TRAFO_RESET_VALUE, a transformation shall be selected by performing a reset or control ramp-up. However, this is not possible as axis %2 required for this is not available. Possible reason: The axis was occupied by another channel or the PLC.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** - Use the GET command to get axis %2 in the channel in which the transformation is to be selected.
- Select the transformation by means of the part program command.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14712 [Channel %1: ] Error selecting JOG Retract: error code %4 info %3

**Parameters:** %1 = Channel number
%2 = Is not used
%3 = Additional information
%4 = Error code

**Explanation:** An error occurred on the selection of JOG Retract, which is described in more detail by the error code (parameter%4):
List of error codes:
1: No retract data available
2: Selection is active during taper turning
3: Error preparing the initialization blocks. The additional info (parameter %3) states the initialization step in which the error occurred. The alarm output immediately before also refers to this initialization step:
100: Error synchronizing the preprocessing/main run
101: Error selecting the tool length compensation
102: Error selecting the transformation
103: Error generating the tool frame
104: Error generating the tapping block
105: Error replacing geometry axes
4: The position of the axis stated in the additional info does not have the status "synchronized" or "restored"
5: The axis stated in the additional info is already assigned in another channel by JOG Retract
6: The geometry axis stated by the selection of JOG Retract does not exist
7: MD 20110 $MC_RESET_MODE_MASK bit 0 is not set
8: Thread cutting is active. The thread direction cannot be explicitly assigned to a JOG axis

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The following conditions have to be fulfilled in order to select JOG Retract:
- A program execution with active tool offset has been canceled by Reset or PowerOff
- PLC signal DB21-30 DBX377.5 (Retract data available) or OPI variable retractState bit 1 is set
- JOG mode is active
- The channel in which JOG Retract is to be selected is in Reset state
- The function "Taper turning" must not be active when JOG Retract is selected
- Synchronized or restored axis positions must be present for the axes involved in the transformation
  If necessary, activate position restoration for incremental encoders (MD34210 $MA_ENC_REFP_STATE[]=3)
- MD 20110 $MC_RESET_MODE_MASK bit 0 must be set (default value)

In the case of an error, the alarm must be acknowledged with Reset. The selection can then be repeated, observing the above-mentioned conditions.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14720 [Channel %1: ] Block %2 axes for centerless transformation not available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the channel not all of the axes/spindles are available that have been defined in machine data for centerless grinding.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
1. Modify part program.
2. Modify machine data:
24110 TRAFO_AXES_IN_n
21522 TRACLG_GRINDSPI_NR
21524 TRACLG_CTRLSPI_NR.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14730 [Channel %1: ] Block %2 conflict at activation of centerless transformation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - Centerless transformation may not be activated when:
- G96 is active and regulating spindle is also master spindle.
- Regulating spindle is in interdependent grouping.
- Axes of centerless transformation overlap with an active transformation and a tool is active.
- For grinding or for regulating wheel spindle, tools are active that are not centerless tools (T1, T2).
- Constant wheel peripheral speed for the regulating spindle is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Modify part program.
- Check tool data.
- Check machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14740 [Channel %1: ] Block %2 no tool data available for centerless grinding

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For centerless grinding, the tool data must be contained in T1, D1 (grinding wheel) or T2,D1 (regulating wheel). An error has been found here.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Modify part program.
- Check tool data.
- Check machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14745 [Channel %1: ] Block %2 centerless grinding not active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt has been made to switch off the centerless grinding function even though it was not active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14750 [Channel %1: ] Block %2 too many auxiliary functions programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** More than 10 auxiliary functions have been programmed in an NC block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check whether all auxiliary functions are necessary in one block - modal functions need not be repeated. Create separate auxiliary function block or divide the auxiliary functions over several blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14751 [Channel %1: ] Block %2 resources for motion synchronous actions not sufficient (code: %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Identifier

**Explanation:** Processing of motion-synchronous actions requires resources that are configured using MD28060 $MC_MM_IPO_BUFFER_SIZE, MD28070 $MC_MM_NUM_BLOCKS_IN_PREP, MD28251 $MC_MM_NUM_SAFE_SYNC_ELEMENTS, MD28250 $MC_MM_NUM_SYNC_ELEMENTS, and MD28253 $MC_MM_NUM_SYNC_STRINGS. If these resources are insufficient for the execution of the part program, then this alarm is issued. Parameter %3 shows which resource has run out:
Increase identifier <= 2: MD28060 $MC_MM_IPO_BUFFER_SIZE or
MD28070 $MC_MM_NUM_BLOCKS_IN_PREP.
Increase identifier > 2: MD28250 $MC_MM_NUM_SYNC_ELEMENTS, MD28251 $MC_MM_NUM_SAFE_SYNC_ELEMENTS.
Increase identifier 7: MD28253 $MC_MM_NUM_SYNC_STRINGS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct part program or increase resources.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14752 [Channel %1: ] Block %2 DELDTG | STOPREOF conflict

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In a group of motion synchronous actions referring to a motion block, both DELDTG (delete distance-to-go) and STOPREOF (preprocessing stop) have been programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The functions DELDTG and STOPREOF exclude each other in a block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14753 [Channel %1: ] Block %2 motion synchronous action: %3 illegal interpolation type

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The active interpolation type (e.g. 5-axis interpolation) is not allowed for the motion synchronous action or for the function "Several feeds".

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14754 [Channel %1: ] Block %2 motion synchronous action: %3 wrong feed type

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The active feed type is not allowed for the motion synchronous action or for the function "Several feeds".

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14756 [Channel %1: ] Block %2 motion synchronous action: %3 wrong value

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** Assignment: Illegal value.
The assignment to a variable or transfer parameter of a procedure or function was found to overshoot or undershoot the value range.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.
Comply with the value range of the variable or transfer parameter

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14757 [Channel %1: ] Block %2 motion synchronous action and wrong type

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Programmed combination between action and type of motion synchronized action is not allowed.
- RET allowed in technology cycle only
- Function "Several feeds" not allowed in technology cycle
- H and M function outputs not allowed with WHENEVER, FROM and DO
- MEASA / MEAWA / MEAC not allowed with WHENEVER, FROM and DO
- DELDTG and STOPREOF allowed only in block-by-block synchronized action with WHEN and EVERY
- PRESETON / PRESETONS may only be used together with WHEN or EVERY

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14758 [Channel %1: ] Block %2 programmed value not available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The synchronous variables $AA_LOAD, $AA_TORQUE, $AA_POWER and $AA_CURR are activated by the MD36730 $MA_DRIVE_SIGNAL_TRACKING. The system variable $VA_IS: Safe actual position is only available if the MD36901 $MA_SAFE_FUNCTION_ENABLE is set and the option $ON_NUM_SAFE_AXES is set to a sufficient size.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify program or machine data.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14760 [Channel %1: ] Block %2 auxiliary function of a group programmed repeatedly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The M and H functions can be divided up as required over machine data in groups in any variation. Auxiliary functions are thus put into groups that mutually preclude several individual functions of one group. Within one group only one auxiliary function is advisable and permissible.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Only program one help function per help function group. (For the group division, see the machine manufacturer's programming guide).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14761 [Channel %1: ] Block %2 motion synchronous action: DELDTG function not allowed with active tool radius compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Rapid delete distance-to-go for synchronous actions is not allowed with DELDTG when tool radius compensation is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Select the tool radius compensation before performing rapid delete distance-to-go, and then reselect.
As from SW 4.3: "Delete distance-to-go without preparation".

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14762 [Channel %1: ] Block %2 too many PLC variables programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The number of programmed PLC variables has exceeded the maximum permissible number.
For each write operation, one element is required for the following writing of PLC variables quickly one after the other.
If several write operations that are available as elements are to be executed, the block transport must be guaranteed (under certain circumstances, initiate preprocessing stop), or if available, increase MD28150 $MC_MM_NUM_VDIVAR_ELEMENTS.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify the part program or where necessary, the machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14763 [Channel %1: ] Block %2 too many link variables programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The number of NCU link variables programmed exceeds the maximum limit. The number is defined in MD28160 $MC_MM_NUM_LINKVAR_ELEMENTS.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify the part program or the machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14764 NCU-Link cannot transfer all non-cyclic link messages of type %2 immediately

**Parameters:** %1 = Type of non-cyclic link message (e.g. link variables, machine data, alarms)

**Explanation:** This alarm is used by cycle developers for diagnostic purposes.
The activation of these alarms can be configured with MD11416 $MN_LINK_DYNMSG_ALARM_MASK. The specified type corresponds to the relevant bit in MD11416 (see bit description there).
A value assignment to a link variable (e.g. $a_dld[16]=19) is performed in the main run, and transferred via NCU link to all NCUs in the link network. The bandwidth of this connection restricts the number of value assignments which can be transferred in one interpolation cycle.
All value assignments are combined in the next main run block and performed immediately this block is executed. A main run block is the block at which you would stop in single block mode SLB1.
Examples:
Blocks with real traversing motion (G0 X100), Stopre, G4, WAITM, WAITE,...
The alarm occurs if the number of link variables set in any interpolation cycle exceeds the number that can be transferred. The link variables are first transferred in one of the next interpolation cycles. The assignment is not lost!

**Reaction:** Alarm display.
Warning display.

**Remedy:** Insert main run blocks between the assignments if the program sequence allows. See also $A_LINK_TRANS_RATE.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14765 NCU link cannot transfer all link variables

**Explanation:** A value assignment to a link variable (e.g. $a_dld[16]=19) is performed in the main run and transferred via NCU link to all NCUs in the link network. The bandwidth of this connection restricts the number of value assignments which can be transferred in one interpolation cycle. Assignment operations which are not transferred are stored in a buffer memory. This buffer is full!

All value assignments are combined in the next main run block and performed immediately this block is executed.

A main run block is the block at which you would stop in single block mode SLB1.

Examples:

Blocks with real traversing motion (G0 X100), Stopre, G4, WAITM, WAITE,...

Link variable scanning operations are not affected (e.g.: R100= $a_dld[16])

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Between the assignments, insert main run blocks that require a sufficient number of interpolation cycles for execution, e.g. G4 F10. A block with an additional preprocessor stop does not improve the situation! See also $A_LINK_TRANS_RATE, for a variable which you can test before an assignment.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14766 NCU link is heavily loaded, impending memory shortage

**Explanation:** Informational alarm for part program developers.

The bandwidth of the NCU link is not currently large enough to transfer all the data. This non-cyclic data includes link variable assignments, machine data write operations, values for the container switch and setting data write operations.

These data are buffered and are not lost. This buffer memory is now 70% full.

**Reaction:** Alarm display.

Warning display.

**Remedy:** Equalize non-cyclic data in the part program in terms of time.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14767 Machine data matching via NCU link not complete

**Explanation:** A non-released option has been used in the block.

**Reaction:** NC not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Change fewer setting or machine data at the same time.

**Programm continuation:** Switch control OFF - ON.

## 14768 Axial auxiliary function for the NCU link cannot be output

**Explanation:** Informational alarm for the part program developer.

An axial auxiliary function transmitted via an NCU link cannot be output as the transmission buffer for the PLC is filled up to 100%.

**Reaction:** Alarm display.

Warning display.

**Remedy:** In the part program, cyclic data - in this case the output of auxiliary functions for link axes on the interpolating NCU - should be separated with regard to the time.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 14769 [Channel %1: ] Block %2 Spindle %3 Implicit auxiliary function %4 Buffer full

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number
%4 = Auxiliary function number

**Explanation:** A maximum of 5 auxiliary functions of type "M" may be entered in an NC block. The upper limit is the total of programmed and implicitely generated M auxiliary functions. Implicit auxiliary functions M19 and M70 are generated, if in MD35035 $MA_SPIND_FUNCTION_MASK, bit 19 has been set for M19 and/or bit 20 for M70. M19 is generated with SPOS and SPOSA depending on the configuration. The same applies to M70 and transition into axis operation. The address extension corresponds to the spindle number like it is output to the PLC.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Distribute the M auxiliary functions and spindle functions that implicitely generate M19 and M70 to several blocks.
- Deactivate any implicit auxiliary functions that are not required in MD35035 $MA_SPIND_FUNCTION_MASK, bit 19 and/or bit 20.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14770 [Channel %1: ] Block %2 auxiliary function programmed incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The permissible number of programmed auxiliary functions per NC block has been exceeded or more than one auxiliary function of the same auxiliary function group has been programmed (M and S function).
In the user-defined auxiliary functions, the maximum number of auxiliary functions per group in the NCK system settings has been defined for all auxiliary functions by means of the MD11100 $MN_AUXFU_MAXNUM_GROUP_ASSIGN (default: 1)
For each user-defined auxiliary function to be assigned to a group, the assignment is effected through 4 channel-specific machine data.
Return jump from asynchronous subprogram with M02/M17/M30, whereby the M code is not alone in the block. This is impermissible if the asynchronous subprogram interrupts a block with WAITE, WAITM or WAITMC. Remedy: Program M02/M17/M30 alone in the block or replace via RET.
22010 AUXFU_ASSIGN_TYPE: type of auxiliary function, e.g. M
22000 AUXFU_ASSIGN_GROUP: required group
22020 AUXFU_ASSIGN_EXTENSION: any required extension
22030 AUXFU_ASSIGN_VALUE: function value

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program - max. 16 auxiliary functions, max. 5 M functions per NC block, max. 1 auxiliary function per group.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14780 [Channel %1: ] Block %2 option '%3<OPTNX>' is not set.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Brief description of option

**Explanation:** A non-released option has been used in the block.
The stated or an equivalent option is required to execute the action.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program, retrofit option.
In this context, please compare the available option data and/or (if available) the license image of your controller.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14781 [Channel %1: ] Block %2 motion synchronized action: %3 Option '%4<OPTNX>' is not set

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Brief description of option
**Explanation:** Motion synchronized action: a non-enabled option was used.
The specified or an equivalent option is required to execute the action.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Change motion synchronized action, retrofit option.
In this context, please compare the available option data and/or (if available) the license image of your control
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14782 [Channel %1: ] Block %2 non-active function used (identification %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Fine ID
**Explanation:** A non-active function is used in the block
Code Short description
1 Transformation
2 Tool H numbers
3 3D protection areas
4 Tool management, multitools
5 COMPSURF and MD28071 $MC_MM_NUM_SURF_LEVELS=0
6 TOFF (see OD19320 $ON_TECHNO_FUNCTION_MASK)
In a handling channel, the following functions are not active either:
10 Synchronous actions
11 COMPCAD with MD20482 $MC_COMPRESSOR_MODE > 99 (Advanced Surface)
12 COMPSURF (Top Surface)
13 AFISON with MD20630 $MC_AFIS_MODE=0 (automatic filter switching)
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** - Modify part program.
- Activate function.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14783 [Channel %1: ] Block %2 coordinate system-specific working area limitation is not active

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** An attempt is made in the block to activate a group of the coordinate system-specific working area limitation.
However, this group is not set up (see MD28600 $MC_MM_NUM_WORKAREA_CS_GROUPS).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
The NC program is stopped. The G code of the group WALCS01 - WALCS10 can be changed.
**Remedy:** - Modify part programm.
- Activate more coordinate system-specific working area limitations.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14784 [Channel %1: ] Block %2 motion synchronous action: %3 function not possible

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
**Explanation:** It is not possible to execute the function:
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14785 [Channel %1: ] Block %2 Option '%3<OPTNX>' active, function not possible

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Brief description of option
**Explanation:** It is not possible to execute the function:
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Please notify the authorized personnel/service.
- Deactivate option
- Change part program
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 14790 [Channel %1: ] Block %2 axis %3 programmed by PLC

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis
**Explanation:** In the NC block, an axis has been programmed that is already being traversed by the PLC.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** - Modify part program, do not use this axis.
- Stop traversing motion of the axis by the PLC, modify part program (insert WAITP).
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14800 [Channel %1: ] Block %2 programmed path velocity less or equal to zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Zero or a negative F or FZ value has been programmed in conjunction with the G functions G93, G94, G95 or G96. The path velocity may be programmed in the range of 0.001 to 999 999.999 [mm/min, mm/rev, mm/tooth, deg/min, deg/rev] for the metric input system and 0.000 1 to 39 999.999 [inch/min, inch/rev, inch/tooth] for the inch input system.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the path velocity (geometric sum of the velocity components of the geometry axes involved) within the limits given above.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14810 [Channel %1: ] Block %2 negative axis speed programmed for positioning axis %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis

**Explanation:** A negative feed (FA value) has been programmed for the displayed axis presently operating as a positioning axis. The positioning velocity may be programmed in the range 0.001 to 999 999.999 [mm/min, deg/min] for the metric input system and 0.000 1 to 39 999.999 9 [inch/min, inch/rev] for the inch input system.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the positioning velocity within the limits given above.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14811 [Channel %1: ] Block %2 Incorrect value range for programmed dynamic value of axis/spindle %3, error no. %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis, spindle
%4 = Error no.

**Explanation:** A value outside the permissible input range of a programmable dynamic value was used. The following causes of error are possible:
1: The value programmed for the axis velocity with VELOLIM or VELOLIMA lies outside the permissible range. The permissible range for VELOLIM is from 1 to 100 percent and for VELOLIMA from 1 to 200 percent.
2: The value programmed for the axis acceleration with ACC or ACCLIMA lies outside the permissible range from 1 to 200 percent.
3: The value programmed for the axis jerk with JERKLIM or JERKLIMA lies outside the permissible range from 1 to 200 percent.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Adjust the value range in accordance with the Programming Guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14812 [Channel %1: ] Block %2 Incorrect value range for the programmed dynamic path response, error no. %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error no.

**Explanation:** The permissible input range for a programmable dynamic path response value was not observed. The causes of the error are as follows:
1: The value programmed for path acceleration with PACCLIM lies outside the permitted range. The permitted range for PACCLIM is from 1.0e-6 to 1.0e+38 m/s².
2: The value programmed for path speed with FLIM lies outside the permitted range of 1.0e-6 to 1.0e+38.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Adjust the value range in accordance with the Programming Guide.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14815 [Channel %1: ] Block %2 negative thread pitch change programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A negative thread pitch change has been programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the value assignment. Ensure that the programmed F value is greater than zero. Zero is allowed, but has no effect.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14820 [Channel %1: ] Block %2 negative value for maximum spindle speed programmed with constant cutting speed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For the function "Constant cutting speed G96" a maximum spindle speed can be programmed with the keyword LIMS=.... The values are in the range 0.1 - 999 999.9 [rev/min].

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the maximum spindle speed for the constant cutting speed within the limits given above. The keyword LIMS is modal and can either be placed in front of or within the block that selects the constant cutting speed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14821 [Channel %1: ] Block %2 error in selection or deselection of GWPS

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** On selecting GWPS programming (constant grinding wheel peripheral speed) with GWPSON, one of the following errors occurred:
- An attempt has been made to select the GWPS programming for a spindle that has already been assigned to another tool by TMON, GWPSON, CLGON or activation of the tool length compensation.
- An attempt has been made to select a tool which has not been defined.
- An attempt has been made to select an edge (implicitely) which has not been defined (implicit selection: D1 of a tool, if no tool has been specified.)
- Selection does not refer to a grinding-specific tool (400-499).
- An attempt has been made to select GWPS for the active tool, although the TLC is not switched on.
- Selection refers to an invalid spindle number.
- A grinding wheel radius equal to zero has been specified.

On deselecting GWPS programming with GWPSOFF, one of the following errors occurred:
- Deselection does not refer to a grinding-specific tool (400-499).
- An attempt has been made to deselect GWPS for the active tool, although the tool length compensation has not been activated.
- Deselection refers to an invalid spindle number.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:**
- Check GWPSON and GWPSOF command.
- Check tool compensation data:

$TC_DP1 : 400 - 499;
$TC_TGP1: Spindle number.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14822 [Channel %1: ] Block %2 incorrect programming of GWPS

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When selecting GWPS (constant grinding wheel peripheral speed) with GWPSON or programming the GWPS with "S[spindle number] = value" one of the following errors has occurred:
Invalid spindle number.
Invalid parameter number for radius calculation in $TC_TPG9.
The following values are valid:
3 for $TC_DP3 (length 1)
4 for $TC_DP4 (length 2)
5 for $TC_DP5 (length 3)
6 for $TC_DP6 (radius)
Invalid angle in $TC_TPG8.
The following values are valid: -90 <= $TC_TPG8 < +90.
A grinding wheel radius equal to zero was specified.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check tool compensation data.
- $TC_DP1 : 400 - 499.
- $TC_TPG1: Spindle number.
- $TC_TPG8: Inclination angle for slope grinding wheel.
- $TC_TPG9: Compensation parameters for radius computation, e.g. 3 for $TC_GP3.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14823 [Channel %1: ] Block %2 error on selection or deselection of tool monitoring

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When selecting tool monitoring with TMON, one of the following errors occurred:
- Selection does not refer to a grinding-specific tool (tool types 400-499).
- Selection refers to an invalid spindle number.
- An attempt has been made to select tool monitoring for a spindle that is already assigned to another tool by TMON, GWPSON, CLGON or activation of tool length compensation.
- An attempt has been made to select a tool that has not been defined.
- An attempt has been made to select an edge (implicitly) that has not been defined. (Implicit selection: D1 of a tool, if no edge has been specified.)
- An attempt has been made to select tool monitoring for the active tool, although no tool length compensation has been activated.
- Invalid parameter number for radius calculation in $TC_TPG9.

The following values are valid:
3 for $TC_DP3 (length 1)
4 for $TC_DP4 (length 2)
5 for $TC_DP5 (length 3)
6 for $TC_DP6 (radius)
A grinding wheel radius equal to zero has been specified.
On deselecting tool monitoring with TMOF, one of the following errors occurred:
- Deselection does not refer to a grinding-specific tool (400-499).
- An attempt has been made to deselect tool monitoring for the active tool, although tool length compensation is not active.
- Deselection refers to an invalid spindle number.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check TMON and TMOF command.
Check tool compensation data.
- $TC_DP1 : 400 - 499.
- $TC_TPG1: Spindle number.
- $TC_TPG8: Inclination angle for slope grinding wheel.
- $TC_TPG9: Parameter number for radius computation, e.g. 3 for $TC_GP3.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14824 [Channel %1: ] Block %2 conflict with GWPS

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The functions of constant grinding wheel peripheral speed GWPS and constant cutting speed G96 S... have been activated at the same time for a spindle.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14840 [Channel %1: ] Block %2 incorrect value range for constant cutting speed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed cutting speed is not within the input range
Input range metric: 0.01 to 9 999.99 [m/min]
Input range inch: 0.1 to 99 999.99 [inch/min]

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program cutting speed under address S within the permissible range of values.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14850 [Channel %1: ] Block %2 changing the reference axis for a constant cutting speed not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The attempt was made via the SCC[AX] instruction to change the reference axis for a constant cutting speed.
This is not allowed if the indicated axis is no geometry axis.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform authorized personnel/service.
When programming SCC[AX] indicate a geometry axis known in the channel.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14860 [Channel %1: ] Block %2 Selection of the tool cutting speed not allowed. Cause %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Cause of the error

**Explanation:** Selection of the cutting speed SVC is not permissible in the current state
Causes of the problem: the following function is active.
1: Constant cutting speed G96, G961 or G962 active
2: SPOS/SPOSA/M19 (spindle positioning mode) active
3: M70/axis mode active
4: SUG active

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Activate the speed control mode for the spindle prior to programming SVC, for example with M3, M4 or M5.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14861 [Channel %1: ] Block %2 SVC programmed, but no tool offset active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Cutting speed SVC programmed in the block, but no tool offset active.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Select an appropriate tool prior to the SVC instruction.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14862 [Channel %1: ] Block %2 SVC has been programmed, but the radius of the active tool correction is zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A cutting speed SVC has been programmed in the block, but the radius of the active tool offset is zero.
The radius of the active tool offset consists of the offset parameters $TC_DP6, $TC_DP12, $TC_SCPx6 and $TC_ECPx6.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Select an appropriate tool offset with a positive tool radius prior to the SVC instruction.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14863 [Channel %1: ] Block %2 The programmed SVC value is zero or negative

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed value for the cutting speed SVC is zero or negative.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Program an SVC value larger than zero.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14900 [Channel %1: ] Block %2 center point and end point programmed simultaneously

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When programming a circle by means of the opening angle, the circle center point was programmed together with the circle end point. This is too much information for the circle. Only one of the two points is allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Select the programming variant guaranteeing that the dimensions are definitely taken over from the workpiece drawing (avoidance of calculation errors).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14910 [Channel %1: ] Block %2 invalid angle of aperture for programmed circle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When programming a circle by means of the opening angle, a negative opening angle or an opening angle greater than or equal to 360 degrees has been programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program opening angle within the allowed range of values between 0.0001 and 359.9999 [degrees].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 14920 [Channel %1: ] Block %2 intermediate point of circle incorrect

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** When programming a circle by means of an intermediate point (CIP) all 3 points (initial, end and intermediate points) are on a straight line and the intermediate point (programmed by means of interpolation parameters I, J, K) is not located between the initial and end points.

If the circle is the component of a helix, the specified number of turns (keyword TURN=...) determines further block processing:

- TURN>0: alarm display because the circle radius is infinitely great.

- TURN=0 and CIP specified between initial and end points. A straight line is generated between the initial and end points (without alarm message).

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Locate the position of the intermediate point with the parameters I, J and K in such a way that it actually is located between the initial and end points of the circle or do not make use of this type of circle programming and instead program the circle with radius or opening angle or center point parameters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15000 [Channel %1: ] Block %2 channel-sync command using illegal marker

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** A WAITM/WAITMC/SETM/CLEARM instruction was programmed with a marker number of less than 1 or greater than the maximum number of markers.

Exception: CLEARM(0) is allowed and clears all markers in the channel!

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct the instruction accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15010 [Channel %1: ] Block %2 program coordination instruction with invalid channel number

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** A WAITM, WAITMC,INIT or START instruction was programmed with an invalid channel number.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Correct the instruction accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15020 [Channel %1: ] block %2 CHANDATA instruction cannot be executed. Channel %3 is not active

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = String (CHANDATA parameter)

**Explanation:** With a CHANDATA instruction, the data input for a channel is selected that has not been activated. For structural reasons, the input of multi-channel data must take place twice.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Activate the channel concerned by means of machine data or option data or
- Delete the CHANDATA instruction and all following assignments to channel data. This error message occurs regularly when first reading in an INITIAL Init block with which a multi-channel system is to be installed. In this case:
1. NCK Restart must be executed in order to activate the global machine data already input for the installation of the other channels.
2. Input of the INITIAL Init block must be repeated.

**Programm continuation:** Switch control OFF - ON.

## 15021 [Channel %1: ] Block %2 CHANDATA instruction with invalid channel number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A CHANDATA instruction is used to enter data for an illegal channel, e. g. <1,> maximum number of channels, not the active channel.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program CHANDATA instruction in accordance with the actual configuration.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15025 CHANDATA(%3): channel is not active. Channel data will be ignored.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = CHANDATA parameter

**Explanation:** With a CHANDATA instruction, the data input for a channel is selected that has not been activated.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** This is an informational alarm referring to the fact that the file loaded into the NCK contains data of an inactive channel. The number of the inactive channel is specified. Subsequently, the data of this channel are not available in the NCK.
The alarm may have two causes:
(1) The channel is supposed to be activated by a following NCK RESET/POWER ON, i.e. the file must subsequently be reloaded.If the alarm occurs again, the reason is: (2) the specified channel is actually not supposed to be activated, however, the file contains the relevant data.
For the 2nd reason, please check whether the system has correctly not activated the channel mentioned.
If the channel has been activated, operation may be continued after another NCK RESET/POWER ON without further measures, i.e. reloading the file is not required. If the channel has not been activated, make sure that the channel inactivated by mistake is re-activated.
If the settings of the channel activation are part of the file to be loaded (e.g. archive file), the file must either be modified with the relevant program or the file has to be created once more in the same system with the correct channel number.
Similar alarms: 15020, 15021.

**Programm continuation:** Switch control OFF - ON.

## 15030 [Channel %1: ] Block %2 different measurement system settings

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The INCH or METRIC instruction describes the system of measurement in which the data sets have been read from the control. In order to prevent the incorrect interpretation of data intended for a particular system of measurement, a data block is only accepted if the above instruction matches the active system of measurement.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Change the measuring system or load a data block that matches the measuring system setting.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15100 [Channel %1: ] Block %2 REORG cancelation caused by log file overflow

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In order to synchronize the preprocessing run and the main run with REORG, the control accesses modification data which are maintained in a logfile. The alarm indicates that no more capacity is available in the logfile for the specified block in the channel.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. No remedial measures are available for the further execution of the current part program, however:
1. Reduce log file size requirement by:
Reducing the distance between the preprocessing and the main run via appropriate preprocessing stops STOPRE.
2. Increase the size of the logfile by means of the channel-specific machine data:
MD28000 $MC_MM_REORG_LOG_FILE_MEM and
MD 28010 $MC_MM_NUM_REORG_LUD_MODULES

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15110 [Channel %1: ] Block %2 REORG not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In order to synchronize the preprocessing run and the main run with REORG, the control accesses modification data which are maintained in a logfile. The alarm indicates that no more capacity is available in the logfile for the specified block in the channel.
The alarm message means that the logfile has been deleted in order to obtain additional memory for program reorganization. Consequently, it is no longer possible to REORG the preprocessing memory up to the next coincidence point.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. No remedial measures are available for the further execution of the current part program, however:
1. Reduce log file size requirement by:
Reducing the distance between the preprocessing and the main run via appropriate preprocessing stops (STOPRE).
2. Increase the size of the logfile by means of the channel-specific machine data:
Modify MD28000 $MC_MM_REORG_LOG_FILE_MEM and
Modify MD MD28010 $MC_MM_NUM_REORG_LUD_MODULES

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 15120 If a power failure occurs now, the most recently changed data will be lost (index/buffer size = %1)

**Parameters:** %1 = Index/buffer size

**Explanation:** Notification alarm. The alarm has no negative impact on the current machining.
One of the system-internal data buffers, in which the last changed, buffered data are stored,
has overflowed because the current data change rate is too high.
The alarm warns that a spontaneous power failure in this situation
(mains fault, disconnect the system from the power supply) would
cause a loss of the immediately previously changed buffered data
(tool data, part programs, R variables, GUDs,...)
For information, parameter %1 specifies the index of the machine data,
and the buffer size set there.

**Reaction:** Alarm display.

**Remedy:** If the alarm is present only sporadically, it can simply be regarded as a notification.
The regular control behavior is not affected.
If the cause should not or cannot be eliminated, the alarm can be suppressed by setting
MD11415 $MN_SUPPRESS_ALARM_MASK_2; Bit3=1 ('H8').
If the alarm is permanently present, please inform the authorized personnel/service department.
If the system is used in an environment in which a power failure cannot occur,
this alarm output can be prevented by MD18232 $MN_MM_ACTFILESYS_LOG_FILE_MEM[ index ] = 0.

The value of MD18232 $MN_MM_ACTFILESYS_LOG_FILE_MEM[ index ] may be increased.
If this is not an option, the number of data changing per unit time must be reduced.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 15122 Power ON after power failure: %1 data were restored, of which %2 machine data, %3 errors.

**Parameters:** %1 = Number of data
%2 = Number of machine data
%3 = Number of errors occurred

**Explanation:** Notification alarm. The alarm has no negative effect as long as %3 the number of errors occurred is zero.
%1 indicates the number of elementary and complex data restoring steps which were taken after a power OFF during power ON orduring a power failure to restore the persistent NCK data.
%2 indicates the number of restored machine data. If the value is larger than zero, another warm restart (NCK reset) may be necessary to make the - possibly configuring - machine data changes prior to the power failure effective.
%3 indicates the number of errors occurred during data restoring.

**Reaction:** Alarm display.

**Remedy:** As long as %3 number of errors occurred is zero, the alarm is only informative.
As long as %3 number of errors occurred is larger than zero, the alarm indicates a software error.
Further machining with the data is not recommended.
Please load a suitable archive file before continuing machining to avoid subsequent problems.
Please inform the authorized personnel/service department.
File /_N_MPF_DIR/_N_SIEMDIAGMEMPF_MPF contains information that may help Siemens for error diagnostics.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15150 [Channel %1: ] Block %2 reload from external canceled

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Execution from external was canceled because the reload buffer does not have enough machine function blocks (traversing blocks, auxiliary function, dwell time etc.). Background: When already executed machine function blocks are released, memory becomes available in the reload buffer. If machine function blocks are no longer released, nothing can be reloaded - this results in a deadlock situation.

Examples:

- Definition of extremely long curve tables via execution from external.
- REPEAT command: REPEAT loop does not lie completely within the reload buffer.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Insert machine function blocks into the part program.

- Increase the size of the reload buffer (MD18360 $MN_MM_EXT_PROG_BUFFER_SIZE).
- Decrease the size of the curve table (Note: Blocks within CTABDEF/CTABEND are not machine function blocks).
- REPEAT command: Replace REPEAT loop by EXTCALL call.
- Surface Turning: If alarm 15150 occurs with the function "Surface Turning" when using program sections, reduce the number of blocks commented out in programs generated with SFT.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15160 [Channel %1: ] Block %2 wrong preprocessing configuration, number of blocks %3, function ID %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Number of missing blocks for block preparation

%4 = ID of the function that identified the problem

**Explanation:** For the block preparation, the number of blocks specified in parameter %3 is also required.

Using parameter %4, for additional error diagnostics, the area in which the problem occurred can be identified based on the following list:

100 - 199: Interpreter
200 - 299: Tool radius compensation
300 - 399: Compile cycle
400 - 499: LookAhead
500 - 599: Spindle
600 - 699: Repositioning
700 - 999: Contour preparation
1000 - 1099: Nibbling
1100 - 1499: Tool orientation
1500 - 1599: Soft approach/retraction

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Increase the block search configuration MD28070 $MC_MM_NUM_BLOCKS_IN_PREP by the number of blocks specified in parameter %3.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15165 [Channel %1: ] Block %2 error when translating or interpreting ASUB %3

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = String

**Explanation:** At part program start and at start of an ASUB under Reset condition, the relevant data of all the ASUBs that can be activated at that time are processed:
- PLC ASUBs
- With MD20108 $MC_PROG_EVENT_MASK configured event-controlled program calls
- ASUB after block search (MD11450 $MN_SEARCH_RUN_MODE bit 1=1)
- Editable system ASUB (MD11610 $MN_ASUP_EDITABLE)

If an error occurs (converter or interpreter), alarm 15165 will be output first and then a converter or interpreter alarm that describes more details of the error. Alarm 15165 will cause an interpreter stop. A compensation block will not be possible.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15166 [Channel %1: ] User system asub _N_ASUP_SPF not available

**Parameters:** %1 = Channel number

**Explanation:** By means of the MD11610 $MN_ASUP_EDITABLE the function "User-defined system ASUB" has been activated. However, the relevant user program could not be found in the specified search path:
- 1. /_N_CUS_DIR/_N_ASUP_SPF
- 2. /_N_CMA_DIR/_N_ASUP_SPF

The default system ASUB is used.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Load the user-defined system ASUB in /_N_CUS_DIR/_N_ASUP_SPF or /_N_CMA_DIR/_N_ASUP_SPF laden.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15170 [Channel %1: ] Block %2 program %3 could not be compiled

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String

**Explanation:** An error has occurred in compile mode. The (compiler) error message refers to the program specified here.

**Reaction:** Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15171 [Channel %1: ] Block %2 compiled program %3 older than the relevant subroutine

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Compiled program file name

**Explanation:** When calling a precompiled subroutine, it was noticed that the compiled program is older than the relevant SPF file. The compiled program was deleted and during start the subroutine is executed instead of the compiled program.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Perform another precompilation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**15172** **[Channel %1: ] Block %2 subroutine %3. No interface available at time of preprocessing.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Subroutine name

**Explanation:** In compilation mode no program interface of the subroutine to be called was available at the time of pre-compilation.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Modify part program or recreate program interfaces and pre-compile programs again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15173** **[Channel %1: ] Block %2 variable %3 was unknown at the time of preprocessing.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Variable

**Explanation:** At the time of program precompilation, variable %3 was not known to the control.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program or introduce the variable at the time of precompilation, i.e. activate the new GUD variable prior to precompilation. Then restart precompilation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15175** **[Channel %1: ] Block %2 program %3. Interfaces could not be built**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String

**Explanation:** An error has occurred in interface generation mode. The (compiler) error message refers to the program specified here. In particular when loading new cycle program on the NCK, problems can occur if the value settings in MD18170 $MN_MM_NUM_MAX_FUNC_NAMES and MD18180 $MN_MM_NUM_MAX_FUNC_PARAM are too small.

**Reaction:** Alarm display.

**Remedy:** - Modify part program.
- If new cycle programs have been loaded on the NCK, you will normally need to increase the values of MD18170 $MN_MM_NUM_MAX_FUNC_NAMES and MD18180 $MN_MM_NUM_MAX_FUNC_PARAM. See also the explanations for alarm 6010.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**15176** **[Channel %1: ] Block %2 Program%3 may only be executed after Power ON**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name

**Explanation:** If an encrypted program is loaded to the NCK, an NCK reset (restart) must be performed afterwards, because internal data for efficient processing of the encrypted program are preprocessed during NCK power-up. On calling an encrypted NC program it has now been detected that these data do not exist or are obsolete compared to the current version of the encrypted NC program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Perform an NCK reset (restart).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15177 [Channel %1: ] Block %2 Error on preprocessing of program %3, error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Error code

**Explanation:** If an encrypted program is loaded to the NCK, an NCK reset (restart) must be performed afterwards, because internal data for efficient processing of the encrypted program are preprocessed during NCK power-up. The following problem has occurred:
Error code 1: Error on read-in of program %4
Error code 2: There is not enough DRAM memory available for storing the preprocessed data.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code 1: Encrypt and load program %4 again. Then perform an NCK reset (restart).
Error code 2: Where possible, increase $MN_MM_T_FILE_MEM_SIZE.
Otherwise increase $MN_MM_DRAM_FILE_MEM_SIZE.
Then perform an NCK reset (restart).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15180 [Channel %1: ] Block %2: Error on editing program %3 as INI/DEF file.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String

**Explanation:** Errors were found when processing an initialization program (INI file), or a GUD or macro definition file (DEF file).
The error message which is then displayed refers to the program specified here.

**Reaction:** Alarm display.

**Remedy:** Correct the initialization program (INI file), or the GUD or macro definition file (DEF file).
In connection with Alarm 12380 or 12460, also change the memory configuration.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15182 [channel %1: ] cycle alarm from the modified SIEMENS cycle %3

**Parameters:** %1 = Channel number
%2 = Is not used
%3 = Path and file name of the modified SIEMENS cycle

**Explanation:** When executing a SIEMENS cycle modified by the user, a cycle alarm was output with SETAL() (see follow-up alarm in the alarm output).
Since the SIEMENS cycle was modified by the user (e.g. machine manufacturer), the cause for the cycle alarm must be determined / eliminated by the user who modified the cycle.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** The error cause leading to the cycle alarm cannot be investigated by SIEMENS since the know-how of the modified cycle sequence is with those who are responsible for the cycle change.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15185 [Channel %1: ] %2 errors in INI file

**Parameters:** %1 = Channel number
%2 = Number of detected errors

**Explanation:** Errors were found when processing initialization program _N_INITIAL_INI.
This alarm will also be output, if errors are found during editing of _N_INITIAL_INI in the GUD definition files or if errors are found on ramp-up in the macro definition files.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Correct the INI or DEF file, or correct the MD and create a new INI file via 'Upload'.

**Programm continuation:** Switch control OFF - ON.

## 15186 [Channel %1: ] %2 errors in GUD, macro or INI file

**Parameters:** %1 = Channel number
%2 = Number of detected errors

**Explanation:** %2 errors were found when processing GUD/macro definition files (DEF files) or initialization files (INI files)
Alarm 15180 has already informed about the corresponding file.
Prior to that the errors shown were reported by error-specific alarms, e.g. 12080 "syntax error".

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify definition file or initialization file

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15187 [Channel %1: ] Error during execution of PROGEVENT file %3.

**Parameters:** %1 = Channel number
%2 = Is not used
%3 = PROGEVENT file name

**Explanation:** An error has occurred on executing PROGEVENT.
With alarm 15187, the name of the program that was started as PROGEVENT is displayed. Alarm 15187 is displayed together with the alarm that describes the error cause. Alarm 15187 is also output when the alarm occurs in a subroutine started from PROGEVENT.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Correct the PROGEVENT file (subroutine).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15188 [Channel %1: ] Error during execution of ASUB file %3.

**Parameters:** %1 = Channel number
%2 = Is not used
%3 = ASUB file name

**Explanation:** An error has occurred on executing an ASUB.
Alarm 15188 displays the name of the program that was started as ASUB. Alarm 15188 is output together with the alarm that describes the error cause. Alarm 15188 is also output when the alarm occurs in a subroutine started from the ASUB.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Correct the ASUB file (subroutine).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15189 [Channel %1: ] Error executing SAFE.SPF

**Parameters:** %1 = Channel number

**Explanation:** An error occurred while processing the NC initialization program for Safety Integrated /_N_CST_DIR/_N_SAFE_SPF. This alarm is output together with the alarm describing the cause of the error.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct /_N_CST_DIR/_N_SAFE_SPF and perform an NCK reset.

**Programm continuation:** Switch control OFF - ON.

## 15190 [Channel %1: ] Block %2 not enough free memory for subroutine call

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following deadlock has been found in the interpreter: Memory is needed for calling a subroutine. The module memory is, however, empty and there is no prospect of module memory becoming free again by executing the preprocessing/main run queue, because this queue is empty.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Increase machine data MD28010 $MC_MM_NUM_REORG_LUD_MODULES / MD28040 $MC_MM_LUD_VALUES_MEM / MD18210 $MN_MM_USER_MEM_DYNAMIC or program a preprocessing stop STOPRE before calling the subroutine.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15300 [Channel %1: ] Block %2 invalid number-of-passed-blocks during block search

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the function "Block search with calculation" a negative number of passes has been entered in column P (number of passes). The permissible range of values is P 1 - P 9 999.

**Reaction:** Alarm display.

**Remedy:** Enter only positive number of passes within the range of values.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15320 [Channel %1: ] Block %2 invalid block search command

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The block search command (type of search target) is smaller than 1 or greater than 5. It is entered in column type of the block search window. The following block search orders are allowed.

Type Meaning
1 Search for block number
2 Search for label
3 Search for string
4 Search for program name
5 Search for line number in a file

**Reaction:** Alarm display.

**Remedy:** Modify the block search command.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15330 [Channel %1: ] Block %2 invalid block number as search target

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Syntax error! Positive integers are allowed as block numbers. Block numbers must be preceded by ":" and subblocks by an "N".

**Reaction:** Alarm display.

**Remedy:** Repeat the input with corrected block number.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15340 [Channel %1: ] Block %2 invalid label as search target

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Syntax error! A label must have at least 2 but no more than 32 characters, and the first two characters must be alphabetic or underscore characters. Labels must be concluded with a colon.

**Reaction:** Alarm display.

**Remedy:** Repeat the input with corrected label.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15350 [Channel %1: ] Block %2 search target not found

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified program has been searched to the end of the program without the selected search target having been found.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the part program, change the search target (typing error in the part program) and restart the search.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15370 [Channel %1: ] Target of block search not found

**Parameters:** %1 = Channel number

**Explanation:** In a block search, an impermissible search target has been specified (e.g. negative block number).

**Reaction:** Alarm display.

**Remedy:** Check the specified block number, label or character string. Repeat entry with correct search target.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15380 [Channel %1: ] Block %2 illegal incremental programming in axis %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis

**Explanation:** The first axis programming after block search to block end point is performed incrementally. This is not allowed in the following situations:
- A transformation change took place after the search target.
- A frame with rotation component is active. The programmed axis is involved in the rotation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Find a search target in which the axes are programmed using an absolute reference.
Deactivate the addition of the accumulated search position with SD42444 $SC_TARGET_BLOCK_INCR_PROG = FALSE.
Use block search run with calculation at the contour.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15390 [Channel %1: ] Block %2 %3 not executed during block search

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Source symbol

**Explanation:** During block search, commands for switching, deleting and defining of the electronic gear are not executed and not gathered but simply skipped.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set the desired gear status using the ASUB.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15395 [Channel %1: ] Master-slave not executable during block search

**Parameters:** %1 = Channel number

**Explanation:** A master-slave coupling is to be closed in the part program via the instruction MASLON. The position offset $P_SEARCH_MASLD, however, cannot be correctly calculated during block search, as the axes to be coupled are located in different channels.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Make sure that all relevant axes are in the same channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15400 [Channel %1: ] Block %2 selected initial INIT block does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The operator has selected an INI block for a read, write or execution function which:
1. Does not exist in the NCK range or
2. Does not have the necessary protection level required for performing the function.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
Check whether the selected INI block is contained in the file system of the NCK. The present protection level must be selected to be at least equal to (or greater than) the protection level that has been defined for the read, write or execution function at the time of creating the file.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15410 [Channel %1: ] Block %2 initialization file contains invalid M function

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The only M function allowed in an Init block is the M02, M17 or M30 end-of-program function.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remove all M functions from the Init block except for the end identifier.
An Init block may contain value assignments only (and global data definitions if they are not defined again in a program that can be executed later) but no motion or synchronous actions.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15420 [Channel %1: ] Block %2 instruction in current mode not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The alarm is output in the following situations:
- The interpreter has detected an illegal instruction (e.g. a motion command) while processing an INI file or a definition file (macro or GUD).
- In a GUD file, the access security for a machine data item is to be changed with REDEF, although
an ACCESS file (_N_SACCESS_DEF, _N_MACCESS_DEF, _N_UACCESS_DEF) is available.
Access rights for machine data can then only be changed via one of the ACCESS files with REDEF.
- When processing the safety initialization program /_N_CST_DIR/_N_SAFE_SPF an illegal instruction was detected due to the reduced language scope configured.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Correct the INI, GUD or macro file.
- Correct part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15450 [Channel %1: ] Block %2 compiled program cannot be stored

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the compile mode, a compiled program could not be stored. One of the following reasons applies:
- Not enough memory
- Intermediate code line (compilate) too large

**Reaction:** Alarm display.

**Remedy:** Create space in work memory or modify part program (make it less complex).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 15460 [Channel %1: ] Block %2 syntax error when locking

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The addresses programmed in the block are not compatible with the modal syntax-determining G function.
Example:
N100 G01 ... I .. J.. K.. LF

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the displayed block and ensure that the G functions and addresses in the block are in agreement.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15500 [Channel %1: ] Block %2 illegal angle of shear

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The function CSHEAR has been called with an illegal (impossible) angle of shear, e.g. when the sum of angles between the axis vectors is greater than 360 degrees.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program the angle of shear in accordance with the geometrical conditions of the machine and workpiece system.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 15700 [Channel %1: ] Block %2 illegal cycle alarm number %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Cycle alarm number

**Explanation:** A SETAL command has been programmed with a cycle alarm number smaller than 60 000 or greater than 69 999.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program alarm number in the SETAL instruction in the correct range.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15701** **[Channel %1: ] Block %2 motion synchronous action: %3 illegal cycle alarm number %4**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Cycle alarm number

**Explanation:** A SETAL command has been programmed with a cycle alarm number smaller than 60 000 or greater than 69 999.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Program alarm number in the SETAL instruction in the correct range.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15800** **[Channel %1: ] Block %2 wrong starting conditions for CONTPRON/CONTDCON**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** There is an error in the start conditions for CONTPRON/CONDCON:
- G40 not active
- SPLINE or POLY active
- Unknown machining type programmed
- Transferred machining direction not defined
- Definition of LUDs in incorrect subroutine level
- Transferred circle coordinates

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15810** **[Channel %1: ] Block %2 wrong array dimension for CONTPRON/CONTDCON**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The number of columns for the array created for CONTPRON/CONTDCON does not conform to the current programming guide.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**15900** **[Channel %1: ] Block %2 touch probe not allowed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Measure with deletion of distance-to-go
In the part program, an illegal probe has been programmed with the command MEAS (measure with deletion of distance-to-go). The probe numbers
0 ... no probe
1 ... probe 1
2 ... probe 2
are allowed, whether the probe is actually connected or not.
Example:
N10 MEAS=2 G01 X100 Y200 Z300 F1000
Probe 2 with deletion of distance-to-go

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Include a probe number within the limits given above in the keyword MEAS=... This must correspond to the hardware connection of the probe.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15950 [Channel %1: ] Block %2 no traverse motion programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Measure with deletion of distance-to-go
In the part program, no axis or a traversing path of zero has been programmed with the command MEAS (measure with deletion of distance-to-go).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and add the axis address or the traversing path to the measurements block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 15960 [Channel %1: ] Block %2 no traverse motion programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Measure without deletion of distance-to-go
In the part program, no axis or a traversing path of zero has been programmed with the command MEAW (measure without deletion of distance-to-go).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program and add the axis address or the traversing path to the measurements block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16000 [Channel %1: ] Block %2 invalid value for lifting direction

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During the "rapid lift from contour" (keyword: LIFTFAST), a code value for the lifting direction (keyword: ALF=...) which lies outside the permissible range (permissible value range: 0 to 8) was programmed.
With active cutter radius compensation:
Code numbers 2, 3 and 4 cannot be used in G41
Code numbers 6, 7 and 8 cannot be used in G42 because they code the direction to the contour.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Program the lifting direction under ALF=... within the permissible limits.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16005 [Channel %1: ] Block %2 invalid value for lifting distance

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Mistake in programming: the value for the lifting path must not be negative.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify the part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16010 [Channel %1: ] Block %2 machining stop after lift fast

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** LIFTFAST without interrupt routine (ASUB) has been programmed. The channel is stopped after the lift motion has been carried out.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** After the channel stop, you must retract the axes manually in JOG and cancel the program with Reset.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16015 [Channel %1: ] Block %2 wrong axis identifier %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
**Explanation:** Axis names from different coordinate systems were used to program axes for LIFTFAST. The retraction movement is no longer clear.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Use axis identifiers of a coordinate system.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16016 [Channel %1: ] Block %2 no retraction position programmed for axis %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
**Explanation:** The retraction enable was programmed for LIFTFAST without defining a retraction position for the axis. The retraction movement is no longer clear.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program a retraction position for the relevant axis.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16017 [Channel %1: ] Axis %2 Identifier %3, LIFTFAST ignores this axis, current axis not capable of retraction

**Parameters:** %1 = Channel
%2 = Axis, spindle
%3 = Identifier

**Explanation:** LIFTFAST cannot be applied to the axis.
Alarm can be suppressed via MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 11.
Identifiier (parameter 3) is bit-coded and displays some possible causes for the alarm:
0x01 Axis is in another channel
0x02 Axis is in spindle mode (e.g. SPOS)
0x04 Axis is PLC axis
0x08 Axis is oscillating axis
0x10 Axis is neutral axis
0x20 Axis is coupled slave axis
0x40 Axis is in static synchronized action
Overview of reactions of common programming to LIFTFAST:

| Axis | Synact | Reaction to LIFTFAST |
|---|---|---|
| Path | | STOP + LIFTFAST |
| POS | | STOP + LIFTFAST |
| POS | non-modal | STOP + LIFTFAST |
| POS | modal | STOP + LIFTFAST |
| POS | stati. | RUN + SHOWALARM 16017 |
| POSA | | STOP + LIFTFAST |
| MOV | non-modal | STOP + LIFTFAST |
| MOV | modal | STOP + LIFTFAST |
| MOV | stati. | RUN + SHOWALARM 16017 |
| PLC | | RUN + SHOWALARM 16017 |
| Oscill. | | RUN + SHOWALARM 16017 |
| SPOS | | STOP + SHOWALARM 16017 |
| SPOS | non-modal | STOP + SHOWALARM 16017 |
| SPOS | modal | STOP + SHOWALRAM 16017 |
| SPOS | stati. | RUN + SHOWALARM 16017 |
| SPOSA | | STOP + SHOWALARM 16017 |

**Reaction:** Alarm display.

**Remedy:** Remove axis from POLFMLIN or POLFMASK.
Alarm can be suppressed via MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 11.
At the time of LIFTFAST, an axis for LIFTFAST is programmed, but the status of the axis does not allow LIFTFAST (e.g. oscillating axis or spindle), or the axis is not in the channel. LIFTFAST should only be applied to those axes that are capable of retracting at that time; POLFMASK or POLFMLIN should be adapted accordingly.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16020 [Channel %1: ] Repositioning in block %2 is not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Programming or operator action incorrect:
Repositioning via REPOS command is only possible in an asynchronous subprogram (interrupt routine).
If the REPOS command was programmed, e.g. in the main program or in a cycle, part program execution is cancelled with alarm 16020.
In addition, the alarm is output in the following situations:
- Access to $AC_RETPOINT (repositioning point) outside an ASUB (e.g. in the main program)
- An axis to be repositioned was an oscillating axis with synchronous infeed (OSCILL) in the interrupted block and is now in a state that does not allow it to be traversed as a oscillating axis. Remedy: Change the axis to "neutral axis" state before repositioning with WAITP.
- An axis to be repositioned was an infeed axis for an oscillating axis in the interrupted block; now it can no longer be traversed as one. Remedy: Change the axis back to "POS axis" state before repositioning.
- Thread cutting (G33, G34, G35, G335, G336) was active in the interrupted block.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program if necessary.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16025 [Channel %1: ] Block %2 impermissible axis exchange in REPOS command by axis %3.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis identifier

**Explanation:** With the REPOS command, an axis or spindle was programmed that was in the NEUTRAL state at that time. As the REPOS command cannot execute any implicit GET, these axes/spindles cannot be
repositioned. Part program editing is therefore canceled.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Assign the axes/spindles that are to be repositioned to the channel via GET command prior to the REPOS command.
Example:
GET(A) ; assign the A axis to the channel
REPOSL A ; reposition the geometry axes and A axis

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16100 [Channel %1: ] Block %2 spindle %3 not available in the channel

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String

**Explanation:** Incorrect programming:
This channel does not recognize the spindle number.
The alarm can occur together with a dwell or a spindle function.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
Check the part program to determine whether the programmed spindle number is correct and whether the program is run in the correct channel.
Check MD35000 $MA_SPIND_ASSIGN_TO_MACHAX for all machine axes to see whether one of them contains the programmed spindle number. This machine axis number must be entered in a channel axis of the machine data MD20070 $MC_AXCONF_MACHAX_USED.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16105 [Channel %1: ] Block %2 spindle %3 cannot be assigned

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String

**Explanation:** Mistake in programming: The programmed spindle is not assigned a real spindle by the spindle number converter. The alarm can be issued after improper use of SD42800 $SC_SPIND_ASSIGN_TAB[].

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the setting data or modify the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16111 [Channel %1: ] Block %2 spindle %3 No speed programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle

**Explanation:** Programming of a speed is expected.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program speed with S[spindle number]=..

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16112 [Channel %1: ] Block %2 following spindle %3 Impermissible programming

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle

**Explanation:** With synchronous spindle-VV-coupling an additional motion for the following spindle can only be programmed with M3, M4, M5 and S... The paths created by specified positions cannot be maintained safely for a velocity coupling, especially if a position control is missing. If dimensional accuracy or reproducibility are not important, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK Bit27 = 1.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Use synchronous spindle-DV-coupling or program direction of rotation and speed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16120 [Channel %1: ] Block %2 invalid index for tool fine compensation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Mistake in programming: The 2nd parameter in the PUTFTOC command indicates for which tool parameter the value is to be corrected (1 - 3 tool lengths, 4 tool radius). The programmed value is beyond the permitted range.
Permissible values are 1 - 4 if on-line tool radius compensation is allowed (see MD20254 $MC_ONLINE_CUTCOM_ENABLE), otherwise values 1 - 3.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program: Length 1 - 3 or 4 permissible for radius.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16130 [Channel %1: ] Block %2 command not allowed with FTOCON

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - Case 1: A plane change is not allowed if the modal G function FTOCON: "fine tool compensation" is active.
- Case 2: Transformation selection is allowed only for zero transformation or transformation inclined axis, Transmit or Tracyl if FTOCON is active.
- Case 3: Tool change is not allowed with M06 if FTOCON has been active since the last tool change.
- Case 4: Orientable tool holder is active.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program: Deselect fine tool compensation with FTOCOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16140 [Channel %1: ] Block %2 FTOCON not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The fine tool compensation (FTOC) is not compatible with the currently active transformation.
This also applies with an active tool carrier.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program: Deselect fine tool compensation with FTOCOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16150 [Channel %1: ] Block %2 invalid spindle number with PUTFTOCF

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The spindle number programmed for PUTFTOC or PUTFTOCF is beyond the permitted range for the spindle numbers.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Is the programmed spindle number available?

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16200 [Channel %1: ] Block %2 spline and polynomial interpolation not available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The spline and polynomial interpolation are options that are not contained in the basic version of the control.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Do not program spline and polynomial interpolation, or retrofit the necessary option.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16300 [Channel %1: ] Block %2 denominator polynomial with zero places within parameter range not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed denominator polynomial (with PL [ ] = ... , i.e. without specification of geometry axis) has a zero place within the defined parameter range (PL = ...). This means that the quotient of the numerator polynomial and the denominator polynomial is infinite or indeterminate.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the polynomial block so that there is no zero place within the polynomial length in the denominator polynomial.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16400 [Channel %1: ] Block %2 positioning axis %3 cannot participate in spline

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** An axis assigned to a spline grouping (n) with SPLINEPATH (n, AX1, AX2, ...) has been programmed as positioning axis with POS or POSA.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Do not assign the positioning axis to the spline grouping.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16410 [Channel %1: ] Block %2 axis %3 is not a geometry axis

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A geometry axis has been programmed that cannot be imaged on any machine axis in the current transformation (possibly there is no transformation active at the moment).
Example:
Without transformation: Polar coordinate system with X, Z, and C axis
With transformation: Cartesian coordinate system with X, Y, and Z, e.g. with TRANSMIT.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Activate transformation type with TRAORI (n) or do not program geometry axes that do not participate in the transformation grouping.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16420 [Channel %1: ] Block %2 axis %3 programmed repeatedly

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** It is not allowed to program an axis more than once.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Delete the axis addresses that have been programmed more than once.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16421 [Channel %1: ] Block %2 angle %3 programmed repeatedly in the block

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Angle

**Explanation:** It is not permissible to program more than one PHI or PSI angle for an orientation vector in the same block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16422 [Channel %1: ] Block %2 angle %3 programmed repeatedly in the block

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Angle

**Explanation:** It is not allowed to program more than one rotation angle THETA for the orientation in one block. The angle of rotation can either be programmed explicitly with THETA or by programing with Euler angles or RPY angles.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16423 [Channel %1: ] Block %2 angle %3 programmed repeatedly in the block

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Angle

**Explanation:** It is not allowed to program more than one polynomial for the orientation rotation angle with PO[THT] in one block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16424 [Channel %1: ] Block %2 coordinate %3 programmed repeatedly in the block

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Coordinate

**Explanation:** It is not allowed to program a coordinate of the 2nd contact point of the tool for description of the tool orientation several times in one block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16430 [Channel %1: ] Block %2 geometry axis %3 cannot traverse as positioning axis in rotated coordinate system

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** In the rotated coordinate system, traversing of a geometry axis as positioning axis (i.e. along its axis vector in the rotated coordinate system) would mean traversing of several machine axes. This is in conflict with the positioning axis concept, however, in which one axis interpolator runs in addition to the path interpolator!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Traverse geometry axes as positioning axes only with rotation deactivated.
Deactivate rotation:
Keyword ROT without further specification of axis and angle.
Example: N100 ROT

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16440 [Channel %1: ] Block %2 rotation programmed for non-existent geometry axis

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A rotation of a geometry axis which does not exist was programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16500 [Channel %1: ] Block %2 chamfer or rounding negative

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A negative chamfer or rounding has been programmed under the keywords CHF= ..., RND=... or RNDM=...

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Values for chamfers, roundings and modal roundings must be programmed with positive values only.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16510 [Channel %1: ] Block %2 no facing axis for diameter programming available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Diameter programming has been activated although no transverse axis with diameter programming has been applied.
Transverse axes can be applied with MD20100 $MC_DIAMETER_AX_DEF or MD30460 $MA_BASE_FUNCTION_MASK bit2 for diameter programming.
Diameter programming can be applied through:
- basic position DIAMON or DIAM90 of the G 29 group during booting
- programming of DIAMON or DIAM90
- programming of DIAMONA[AX], DIAM90A[AX] or DAC, DIC, RAC, RIC

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
When programming DIAMON/DIAM90, a traverse axis must be configured via MD20100 $MC_DIAMETER_AX_DEF.
When programming DIAMONA[AX], DIAM90A[AX] or DAC, DIC, RAC, RIC, the AX axis must be a transverse axis for diameter programming configured via MD30460 $MA_BASE_FUNCTION_MASK bit2.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16600 [Channel %1: ] Block %2 spindle %3 gear stage change not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number

**Explanation:** The programmed speed is outside the speed range of the set gear stage. In order to execute the programmed speed, the gear stage must be changed. In order to be able to execute the automatic gear stage change (M40 is active), the spindle must be in speed control operation.
The alarm will no longer be output after having set bit 30 (0x40000000) in MD11410 $MN_SUPPRESS_ALARM_MASK. However, the function will not be affected by this.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The changeover to speed control operation is performed by programming M3, M4 or M5. The M functions can be written together with the S word in the same block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16605 [Channel %1: ] Block %2 Spindle %3 Gear stage change in %4 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number
%4 = Gear stage

**Explanation:** A gear stage change for the spindle will not be possible, if:
- thread cutting (G33, G34, G35) is active
- the spindle is active as master or slave spindle in a coupling
- the spindle is being positioned

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The gear stage is to be set prior to the corresponding machining step.
If it is necessary, however, to change the gear stage within one of the above mentioned functions, this function must be switched off for the time of the gear stage change. Thread cutting is deselected with G1; synchronous spindle coupling is switched off with COUPOF; the spindle positioning operation is exited with M3, M4 or M5.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16670 [Channel %1: ] Block %2 following axis/spindle %3 maximum number of CP modules (%4) has been exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Max. number of CP modules

**Explanation:** An attempt was made to activate more generic couplings than are configured in MD18450 $MN_MM_NUM_CP_MODULES.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the number of defined or active couplings, or increase the number of coupling modules configured in MD18450 $MN_MM_NUM_CP_MODULES.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16671 [Channel %1: ] Block %2 following axis/spindle %3 maximum number of CP modules (%4) has been exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Max. number of CP modules

**Explanation:** An attempt was made to activate more generic couplings than are configured in MD18450 $MN_MM_NUM_CP_MODULES.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reduce the number of defined or active couplings, or increase the number of coupling modules configured in MD18450 $MN_MM_NUM_CP_MODULES.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 16672 [Channel %1: ] Block %2 leading axis/spindle %3 maximum number of CP master values (%4) exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Max. number of CP master values

**Explanation:** An attempt was made to activate more master values of generic couplings than are configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the number of defined or active master values, or increase the total number of master values configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16673 [Channel %1: ] Block %2 leading axis/spindle %3 maximum number of CP master values (%4) exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Max. number of CP master values

**Explanation:** An attempt was made to activate more master values of generic couplings than are configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reduce the number of defined or active master values, or increase the total number of master values configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 16674 [Channel %1: ] Block %2 motion synchronous action: %3 following axis/spindle %4 maximum number of CP modules exceeded

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** An attempt was made to activate more generic couplings than are configured in MD18450 $MN_MM_NUM_CP_MODULES.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reduce the number of defined or active couplings, or increase the number of coupling modules configured in MD18450 $MN_MM_NUM_CP_MODULES.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 16675 [Channel %1: ] block %2 following axis/spindle %3 coupling module already defined in channel %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis/spindle
%4 = Channel number

**Explanation:** An attempt was made to define or activate a CP coupling, although a coupling had already been defined or activated on this following axis/spindle in another channel.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the part program: A CP coupling module must not be simultaneously defined in multiple channels for the same following axis/spindle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16676 [Channel %1: ] Block %2 motion synchronous action: %3 leading axis/spindle %4 maximum number of CP modules exceeded

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** An attempt was made to activate more master values of generic couplings than are configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reduce the number of defined or active master values, or increase the total number of master values configured in MD18452 $MN_MM_NUM_CP_MODUL_LEAD.
If necessary, buy another option stage of the generic coupling.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 16677 [Channel %1: ] Block %2 motion synchronous action %3 coupling module is already defined in the channel %4

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Channel number

**Explanation:** An attempt was made to define or activate a CP coupling, although a coupling had already been defined or activated on this following axis/spindle in another channel.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the part program: A CP coupling module must not be simultaneously defined in multiple channels for the same following axis/spindle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16678 [Channel %1: ] Block %2 following axis/spindle %3 status %4 impermissible traversing instruction

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Status

**Explanation:** An addtional traversing in the following axis/spindle is not permitted in the current status of the generic coupling.
Example: CPOF=X G0 X100 is not permitted.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.
A motion in the following axis/spindle can be programmed with CPFPOS, CPON or CPOF

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16679 [Channel %1: ] Block %2 Motion synchronized action: %3 Slave spindle/axis %4 not available

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** A coupling was switched-in or switched-out, where the slave spindle/axis is presently not available. Possible causes are:
- The spindle/axis is active in the channel.
- The spindle/axis is active in the other channel.
- The spindle/axis was controlled from the PLC and has still not been enabled.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Slave spindle/axis enabled with spindle/axis exchange or enabled from the PLC.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16680 [Channel %1: ] Block %2 following axis/spindle %4 instruction %3 programmed repeatedly

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = CP instruction
%4 = Axis name, spindle number

**Explanation:** The stated instruction has been programmed repeatedly in the block for the same following axis/spindle of a generic coupling.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16681 [Channel %1: ] Block %2 following axis/spindle %3 CPFPOS not permitted (reason %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Reason

**Explanation:** CPFPOS must not be declared for a following axis/spindle of a generic coupling in the current status. The reasons for this may be:
- Reason 1: The coupling does not completely switch off, at least one leading axis/spindle remains active in the coupling.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The following remedies are available for the reasons stated below:
- Reason 1: Only declare CPFPOS when switching off the coupling, if it is completely closed.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16682 [Channel %1: ] Block %2 following axis/spindle %3 instructions %4 are not possible.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = CP instruction

**Explanation:** The stated instructions are not permitted together in one block for a following axis/spindle of a generic coupling.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16684 [Channel %1: ] Block %2 following axis/spindle %3 instructions %4 are not possible separately.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = CP instructions

**Explanation:** The stated instructions are only permitted together in one block for a following axis/spindle of a generic coupling.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16685 [Channel %1: ] Block %2 following axis/spindle %3 instructions %4 are not possible separately.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = CP instructions

**Explanation:** The stated instructions are only permitted together in one block for a following axis/spindle of a generic coupling.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16686 [Channel %1: ] Block %2 following axis/spindle %3 type of coupling/instruction %4 is not possible.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = CP instructions
**Explanation:** The stated instruction is not permitted for the stated type of generic coupling.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16687 [Channel %1: ] Block %2 motion synchronous action %3 type of coupling/instruction %4 is not possible.

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Coupling type
**Explanation:** The stated instruction is not permitted for the stated type of generic coupling.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16690 [Channel %1: ] Block %2 following axis/spindle %3 changing the reference system %4 is not possible.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Reference system
**Explanation:** An attempt was made to change the reference system with generic coupling active.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part programm.
End coupling and reactivate with desired reference system.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16692** **[Channel %1: ] Block %2 following axis/spindle %3 maximum number of couplings in the block %4 has been exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Maximum number of couplings

**Explanation:** The maximum number of generic couplings in the block has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.
Reduce the number of generic couplings programmed in the block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16694** **[Channel %1: ] Block %2 following axis/spindle %3 status/instruction %4 is not possible.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Status, instruction

**Explanation:** The stated instruction is not permitted for the current status of the generic coupling.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16695** **[Channel %1: ] Block %2 following axis/spindle %3 status/instruction %4 is not possible.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Status, instruction

**Explanation:** The stated instruction is not permitted for the current status of the generic coupling.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16696** **[Channel %1: ] Block %2 following axis/spindle %3 coupling has not been defined.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** An instruction to an undefined coupling is to be executed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part programm.
Define the coupling and activate, if necessary, before the instruction.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16697 [Channel %1: ] Block %2 following axis/spindle %3 coupling has not been defined.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
**Explanation:** An instruction to an undefined coupling is to be executed.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part programm.
Define the coupling and activate, if necessary, before the instruction.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16698 [Channel %1: ] Block %2 following axis/spindle %3 leading axis/spindle %4 has not been defined.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Axis name, spindle number
**Explanation:** An instruction to an undefined leading axis/spindle of a coupling is to be executed.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Modify part programm.
Define the leading axis/spindle and activate, if necessary, before the instruction.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16699 [Channel %1: ] Block %2 motion synchronous action %3 leading axis/spindle %4 has not been defined.

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name
**Explanation:** An instruction to an undefined leading axis/spindle of a coupling is to be executed.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part programm.
Define the leading axis/spindle and activate, if necessary, before the instruction.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16700 [Channel %1: ] Block %2 axis %3 invalid feed type

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** In a thread cutting function, the feed has been programmed in a unit that is impermissible.
G33 (thread with constant lead) and the feed have not been programmed with G94 or G95.
G33 (thread with constant lead) is active (modal) and G63 is programmed additionally in a following block. (Conflict situation! G63 is in the 2nd G group, G33, G331 and G332 are in the 1st G group).
G331 or G332 (rigid tapping) and the feed have not been programmed with G94.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Use only the feed type G94 or G95 in the thread cutting functions.
After G33 and before G63, deselect the thread cutting function with G01.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16701 [Channel %1: ] Block %2 motion synchronous action %3 following axis/spindle %4 coupling is not defined

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** An instruction to an undefined coupling is to be executed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part programm.
Define the coupling and activate, if necessary, before the instruction.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16715 [Channel %1: ] Block %2 axis %3 spindle not in standstill

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number

**Explanation:** The spindle must be stationary for the applied function (G74, reference point approach, interpolated turning).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program M5 or SPOS/SPOSA in front of the defective block in the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16720 [Channel %1: ] Block %2 axis %3 thread pitch is zero

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** No pitch was programmed in a thread block with G33 (thread with constant pitch) or G331 (rigid tapping).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The thread pitch must be programmed for the specified geometry axis under the associated interpolation parameters.
X -> I
Y -> J
Z -> K

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16730 [Channel %1: ] Block %2 axis %3 wrong parameter

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** In G33 (tapping with constant pitch) the pitch parameter was not assigned to the axis that determines the velocity.
For longitudinal and face threads, the thread pitch for the specified geometry axis must be programmed under the associated interpolation parameter.
X -> I
Y -> J
Z -> K
For taper threads, the address I, J, K depends on the axis with the longer path (thread length). A 2nd lead for the other axis is, however, not specified.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Assign lead parameters to the axis that determines the velocity.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16735 [Channel %1: ] Block %2 Incorrect geometry parameter (error %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error specification

**Explanation:** For G335/G336 (thread cutting with a convex thread) the pitch parameter could not be assigned to a velocity-defining axis.
The error number specifies the precise cause:
Error 1 : The pitch parameter does not match the end points or the program circular plane.
Error 2 : A circular path angle of greater than 90 degrees was programmed.
Error 3 : The circular path has a helical component (helix).
Error 4 : The circular path exceeds one of the angles 45/135/225/315 degrees in the programming.
Error 5 : The circular path exceeds one of the angles 45/135/225/315 degrees after calculating in the frame.
Error 6 : The pitch was not programmed for the axis with the longest traversing path.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - check circle programming or
- assign pitch parameter to the axis with the longest traversing distance.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16736 [Channel %1: ] In block %2: Prog. thread block too short to comply with the dynamic limit values %3, %4 is required

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Smoothing length that can be taken from the programmed thread block
%4 = Smoothing length required for dynamic response adjustment with compliance with the limit values

**Explanation:** If programming requires a dynamic response adjustment from one thread element to the next, a check is made to see if the path length is long enough to comply with the dynamic limit values. Only a part of the programmed path length can be used for this smoothing because the programmed target speed of the thread block for the required thread geometry (thread pitch, spindle speed) has to be reached and output. It must be assumed that the dynamic limit values will be exceeded for the dynamic response adjustment to the required thread geometry.
The alarm is only output if it is not suppressed by bit 25 of MD11415 $MN_SUPPRESS_ALARM_MASK_2.

**Reaction:** Alarm display.

**Remedy:** 1. Change part program and lengthen the path of thread block %2.
There is a danger of collision as a result of path lengthening, especially for female threads. This must be checked.
2. Lengthen smoothing length of the thread block with DITRB = -1.
3. Set MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 25.
4. Set setting data SD42010 $SC_THREAD_RAMP_DISP[2] = 0.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16740 [Channel %1: ] Block %2 no geometry axis programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No geometry axis was programmed for tapping (G33) or for rigid tapping (G331, G332). The geometry axis is, however, essential if an interpolation parameter has been specified.
Example:
N100 G33 Z400 K2 ; thread pitch 2mm, thread end Z=400 mm
N200 SPOS=0 ; position spindle in axis mode
N201 G90 G331 Z-50 K-2 ; tapping to Z=-50, counterclockwise
N202 G332 Z5 ; retraction, direction reversal automatic
N203 S500 M03 ; spindle again in spindle mode

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Specify geometry axis and corresponding interpolation parameters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16746 [Channel %1: ] Block %2 spindle %3 selected gear stage %4 not installed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number
%4 = Gear stage

**Explanation:** The first gear stage data block is active. The required gear stage is not installed in the 1st gear stage data block. The number of gear stages installed is configured in MD35090 $MA_NUM_GEAR_STEPS.
Examples of the occurrence of the alarm with 3 gear stages installed (MD 35090 $MA_NUM_GEAR_STEPS = 3):
* ... M44 or M45 has been programmed for the spindle concerned
*...M70 has been programmed and MD35014 $MA_GEAR_STEP_USED_IN_AXISMODE is larger than 3.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program: Only those valid gear stages can be entered which have also been installed according to MD35090 $MA_NUM_GEAR_STEPS.
Limit M70 configuration (MD 35014 $MA_GEAR_STEP_USED_IN_AXISMODE) to MD35090 $MA_NUM_GEAR_STEPS.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16747 [Channel %1: ] Block %2 spindle %3 inserted gear stage %4 for tapping not installed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number
%4 = Gear stage

**Explanation:** The second gear stage data block has been activated for tapping with G331.
However, the current gear stage has not been installed in the second gear stage data block. The number of gear stages installed is configured in MD35092 $MA_NUM_GEAR_STEPS2. The gear stage cannot be changed in traversing blocks. The gear stage appropriate for the speed must be loaded before the traversing block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Procedure for automatically engaging the suitable gear stage prior to thread cutting:
* Program the spindle speed (S) in a G331 block without axis motions and prior to thread cutting, e.g. G331 S1000.
* Activate M40 for the spindle.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16748 [Channel %1: ] Block %2 spindle %3 gear stage %4 expected

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number
%4 = Gear stage

**Explanation:** G331 activates the second gear stage data block for tapping.
The programmed speed (S) of the master spindle lies outside the speed range of the active gear stage in the current traversing block.
The gear stage cannot be changed in the traversing block. The gear stage appropriate for the speed must be loaded prior to the traversing block.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Procedure for automatically engaging the suitable gear stage prior to thread cutting:
* Program the spindle speed (S) in a G331 block without axis motions and prior to thread cutting, e.g. G331 S1000.
* Activate M40 for the spindle.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16750 [Channel %1: ] Block %2 axis %3 SPCON not programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** For the programmed function (rotary axis, positioning axis), the spindle must be in position control mode.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program position control of the spindle with SPCON in the previous block.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16751 [Channel %1: ] Block %2 spindle/axis %3 SPCOF not executable

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** For the programmed function, the spindle must be in the open-loop control mode. In the positioning or axis mode, the position control must not be deselected.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Put the spindle into open-loop control mode in the preceding block. This can be done with M3, M4 or M5 for the relevant spindle.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16757 [Channel %1: ] Block %2 for following spindle %3 coupling as leading spindle/axis already existing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following spindle number

**Explanation:** A coupling has been switched on in which the following spindle/axis has already been active as leading spindle/axis in another coupling. Chained couplings cannot be processed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check in the part program whether the following spindle/axis is already active as leading spindle/axis in another coupling.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16758 [Channel %1: ] Block %2 for leading spindle %3 coupling as following spindle/axis already existing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Leading spindle number

**Explanation:** A coupling has been switched on in which the leading spindle/axis has already been active as following spindle/axis in another coupling. Chained couplings cannot be processed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check in the part program whether the leading spindle/axis is already active as following spindle/axis in another coupling.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16760 [Channel %1: ] Block %2 axis %3 S value missing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** No spindle speed has been given for rigid tapping (G331 or G332).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the spindle speed under address S in [rpm] (in spite of axis mode); the direction of rotation is given by the sign of the spindle lead:
- Positive thread pitch: Rotational direction as M03.
- Negative thread pitch: Rotational direction as M04 N2.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16761 [Channel %1: ] Block %2 axis/spindle %3 not programmable in the channel

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** Mistake in programming: The axis/spindle cannot be programmed in the channel at this time. This alarm can occur when the axis/spindle is being used by another channel or by the PLC.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Use "GET()".

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16762 [Channel %1: ] Block %2 spindle %3 thread function is active

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle number

**Explanation:** Incorrect programming: the spindle function can currently not be executed. This alarm occurs when the spindle (master spindle) is linked with the axes by an interpolation function.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program. Deselect thread cutting or tapping.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16763 [Channel %1: ] Block %2 axis %3 programmed speed is illegal (zero or negative)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A spindle speed (S value) was programmed with the value zero or with a negative value.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program the speed (S value) with a positive value. Depending on the application case, the value zero may be permissible, e.g. G25 S0.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16765** **[Channel %1: ] Block %2 motion synchronous action: %3 following spindle/axis missing**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The following spindle/axis has not been written in the part program.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16766** **[Channel %1: ] Block %2 motion synchronous action: %3 string cannot be interpreted**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** A coupling has been switched on in which a non-interpretable string has been written (e.g. block change behavior).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16767** **[Channel %1: ] Block %2 motion synchronous action: %3 leading spindle/axis missing**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The master spindle/axis has not been programmed in the part program.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**16769** **[Channel %1: ] Block %2 motion synchronous action: %3 too many couplings for axis %4**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** For the specified axis/spindle, more master axes/spindles have been defined than are allowed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16770 [Channel %1: ] Block %2 axis %3 no measuring system available

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** One of the following spindle functions has been programmed, the position control requires:
SPCON,
SPOS, SPOSA,
COUPON,
G331/G332.
The position control requires at least one measuring system.
No measuring system has been configured in MD30200 $MA_NUM_ENCS of the programmed spindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Retrofit a measuring system.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16771 [Channel %1: ] Block %3 following axis %2 overlaid movement not enabled

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** No gear synchronization and no overlay movement can be executed for the stated axis because this is not enabled at the VDI interface. This alarm can be supressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit17 = 1 or for CP programming with CPMALARM[FAx] bit11 = 1.

**Reaction:** Alarm display.

**Remedy:** Set the NC/PLC interface signal DB31, ... DBX26.4 (enable following axis overlay).

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16772 [Channel %1: ] Block %2 axis %3 is the slave axis, the coupling is being opened

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis, spindle

**Explanation:** The axis is active as a following axis in a coupling. In REF operating mode, the coupling is opened. The alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 29 = 1 or with CP programming by setting CPMALARM[FAx] bit 0 = 1.

**Reaction:** Alarm display.

**Remedy:** The coupling will be closed again after having exited the REF operation mode.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16773 [Channel %1: ] Axis %2 is the following axis. The axis/spindle disables of leading axes %3 and %4 differ from one another.

**Parameters:** %1 = Channel number
%2 = Axis, spindle
%3 = Axis, spindle
%4 = Axis, spindle

**Explanation:** The axis is active in a coupling as a following axis. The leading axes have different states regarding axis/spindle disable. The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2, bit 0 = 1 or with CP programming by setting CPMALARM[FAx] bit 1 = 1.

**Reaction:** Alarm display.

**Remedy:** Set the same axis/spindle disable for all master axes.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16774 [Channel %1: ] Synchronization canceled for slave axis/spindle %2

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** For the indicated axis, the synchronization procedure (EGONSYN or EGONSYNE) was canceled.
There are several reasons for canceling the synchronization process:
- RESET
- End of program
- Axis goes to follow-up mode
- Rapid stop caused by an alarm

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** If canceling the synchronization procedure can be tolerated or is intended, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 31 = 1 or with CP programming by setting CPMALARM[FAx] bit 2 = 1.
Only applicable for electronic gear (EG):
If it is not possible to cancel the synchronization procedure, specify the block change criterion FINE in EGONSYN or EGONSYNE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16775 [Channel %1: ] Block %2 motion synchronous action: %3 axis %4 no measuring system available

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** One of the following spindle functions has been programmed, the position control requires:
SPCON,
SPOS, SPOSA,
COUPON,
G331/G332.
The position control requires at least one measuring system.
No measuring system has been configured in MD30200 $MA_NUM_ENCS of the programmed spindle.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Retrofit a measuring system.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16776 [Channel %1: ] Block %2 curve table %3 does not exist for axis %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
%4 = Axis name, spindle number

**Explanation:** An attempt was made to couple axis %4 with curve table number %3, but no curve table of this number exists.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify the NC part program so that the required curve table exists when axis coupling is to be activated.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16778 [Channel %1: ] Block %2 coupling: Ring coupling at following axis %3 and leading axis %4 impermissible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Axis name, spindle number

**Explanation:** A coupling has been switched on which results in a cyclic coupling, allowance being made for further couplings. This cyclic coupling cannot be uniquely computed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Configure the coupling in accordance with MD21300 $MC_COUPLE_AXIS_1 or correct the NC part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16779 [Channel %1: ] Block %2 coupling: too many couplings for axis %3, see active leading axis %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Axis name, spindle number

**Explanation:** More leading axes and spindles were defined for the specified axis/spindle than are allowed. The last parameter to be specified is a leading value object/leading axis to which the specified axis/spindle is already linked.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16780 [Channel %1: ] Block %2 following spindle/axis missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following spindle/axis has not been written in the part program.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16781 [Channel %1: ] Block %2 master spindle/axis missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The master spindle/axis has not been programmed in the part program.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16782 [Channel %1: ] Block %2 following spindle/axis %3 not available

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A coupling has been switched on in which the slave spindle/axis is currently not available. Possible causes:
- The spindle/axis is active in the other channel.
- The spindle/axis has been accessed by the PLC and has not yet been released.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Put the master spindle/axis with spindle/axis exchange into the necessary channel or release from the PLC.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16783 [Channel %1: ] Block %2 master spindle/axis %3 not available

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A coupling has been switched on in which the master spindle/axis is currently not available. Possible causes:
- Setpoint linkage has been selected and spindle/axis is active in the other channel.
- The spindle/axis has been accessed by the PLC and has not yet been released.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Put the master spindle/axis with spindle/axis exchange into the necessary channel or release from the PLC.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16785 [Channel %1: ] Block %2 identical spindles/axes %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A coupling has been switched on in which the following spindle/axis is identical to the master spindle/axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Configure link accordingly in MD21300 $MC_COUPLE_AXIS_1
- or modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16787 [Channel %1: ] Block %2 coupling parameter not changeable

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified coupling is write-protected. Therefore, the coupling parameters cannot be modified.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Remove write protection (see channel MD21340 $MC_COUPLE_IS_WRITE_PROT_1)
- or modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16788 [Channel %1: ] Block %2 cyclic coupling

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A coupling has been switched on which results in a cyclic coupling, allowance being made for further couplings. This cyclic coupling cannot be uniquely computed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Configure link accordingly in MD21300 $MC_COUPLE_AXIS_1
- or modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16790 [Channel %1: ] Block %2 Parameter is zero or missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A coupling has been switched on in which a relevant parameter has been specified with zero or has not been written (e.g. denominator in the transmission ratio, no slave axis).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Configure link accordingly in SD42300 $SC_COUPLE_RATIO_1
- or correct part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16791 [Channel %1: ] Block %2 parameter is not relevant

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A coupling has been switched on in which a non-relevant parameter has been written (e.g. parameter for ELG).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16792 [Channel %1: ] Block %2 too many couplings for axis/spindle %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** For the specified axis/spindle, more master axes/spindles have been defined than are allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16793 [Channel %1: ] Block %2 coupling of axis %3 prohibits transformation change

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The specified axis is a slave axis in a transformation grouping. When the coupling is switched on, the transformation cannot be changed to another one.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Switch off coupling(s) of this axis before changing transformation or do not change the transformation.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16794 [Channel %1: ] Block %2 coupling of axis/spindle %3 prohibits reference point approach

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The specified axis is a (gantry) slave axis and cannot therefore approach the reference point.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Switch off coupling(s) of this axis before reference point approach or do not reference. A gantry slave axis cannot reference for itself.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16795 [Channel %1: ] Block %2 string cannot be interpreted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A coupling has been switched on in which a non-interpretable string has been written (e.g. block change behavior).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16796 [Channel %1: ] Block %2 coupling not defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A coupling is to be switched the parameters of which have neither been programmed nor configured.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Correct the NC part program or MD, program the coupling with COUPDEF or configure by means of MD.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16797 [Channel %1: ] Block %2 coupling is active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An operation is to be performed in which no coupling may be active, e.g. COUPDEL or TANGDEL must not be used on active couplings.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct NC part program, deselect the link with COUPOF or TANGOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16798 [Channel %1: ] Block %2 axis %3 is following axis and prohibits axis container rotation

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The programmed axis/spindle is active as a slave axis/spindle in a coupling. When the coupling is active, the axis container cannot be rotated.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program. Deactivate the coupling(s) for this axis/spindle before rotating the axis container or rotate the axis container at a later time.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16799 [Channel %1: ] Block %2 axis %3 is master axis and prohibits axis container rotation

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The programmed axis/spindle is active as a master axis/spindle in a coupling. When the coupling is active, the axis container cannot be rotated.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the part program. Deactivate the coupling(s) for this axis/spindle before rotating the axis container or rotate the axis container at a later time.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16800 [Channel %1: ] Block %2 traverse instruction DC/CDC for axis %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The keyword DC (Direct Coordinate) can only be used for rotary axes. This causes approach of the programmed absolute position along the shortest path.
Example:
N100 C=DC(315)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
Replace the keyword DC in the displayed NC block by specifying AC (Absolute Coordinate).
If the alarm display is the result of an error in the axis definition, the axis can be declared as a rotary axis by means of the axis-specific MD30300 $MA_IS_ROT_AX.
Corresponding machine data:
Modify MD30310: $MA_ROT_IS_MODULO
Modify MD30320: $MA_DISPLAY_IS_MODULO

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16810 [Channel %1: ] Block %2 traverse instruction ACP for axis %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The keyword ACP (Absolute Coordinate Positive) is only allowed for "modulo axes". It causes approach of the programmed absolute position in the specified direction.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
In the displayed NC block, replace the keyword ACP by specifying AC (Absolute Coordinate).
If the alarm display is based on an incorrect axis definition, the axis with the axis-specific MD30300 $MA_IS_ROT_AX and MD30310 $MA_ROT_IS_MODULO can be declared a rotary axis with modulo change.
Corresponding machine data:
Modify MD30320 $MA_DISPLAY_IS_MODULO

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16820 [Channel %1: ] Block %2 traverse instruction ACN for axis %3 not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The keyword ACN (Absolute Coordinate Negative) is only allowed for "modulo axes". It causes approach of the programmed absolute position in the specified direction.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
In the displayed NC block, replace the keyword ACN by specifying AC (Absolute Coordinate).
If the alarm display is based on an incorrect axis definition, the axis with the axis-specific machine data MD30300: $MA_IS_ROT_AX and MD30310: $MA_ROT_IS_MODULO can be declared a rotary axis with modulo change.
Corresponding machine data:
MD30320: $MA_DISPLAY_IS_MODULO

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16830 [Channel %1: ] Block %2 incorrect position programmed for axis/spindle %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A position beyond the range of 0 - 359.999 has been programmed for a modulo axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program position in the range 0 - 359.999.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16904 [Channel %1: ] Program control: action '%2<ALNX>' not allowed in the current state

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The operation (program, JOG, block search, reference point, etc.) cannot be started or continued in the current status.

**Reaction:** Alarm display.

**Remedy:** Check the program status and the channel status.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16905 [Channel %1: ] Program control: action '%2<ALNX>' not allowed

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** Operation cannot be started or continued. A start is only accepted when an NCK function can be started.
Example: A start is accepted in JOG mode when, for example, the function generator is active or a JOG movement has first been stopped with the Stop key.

**Reaction:** Alarm reaction in Automatic mode.

**Remedy:** Check the program status and the channel status.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16906 [Channel %1: ] Program control: action '%2<ALNX>' is canceled due to an alarm

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The action was canceled due to an alarm.

**Reaction:** Alarm display.

**Remedy:** Eliminate the error and acknowledge the alarm. Then restart the operation.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16907 [Channel %1: ] Action '%2<ALNX>' only possible in stop state

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action may only be performed in Stop state.

**Reaction:** Alarm display.

**Remedy:** Check the program status and the channel status.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16908 [Channel %1: ] Action '%2<ALNX>' only possible in reset state or at the block end

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action may only be performed in the Reset state or at the end of block.
In JOG mode, no axis that is traversed as geometry axis in the rotated coordinate system, must be active as PLC or command axis (started through static synchronized action) on mode change. This means that axes like that must be in the state 'neutral axis' again.

**Reaction:** Alarm display.

**Remedy:** Check the program status and channel status.
Check whether the axes are active as PLC or command axes in JOG mode.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**16909** **[Channel %1: ] Action '%2<ALNX>' not allowed in current mode**

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** A different operating mode must be activated for the activated function.

**Reaction:** Alarm display.

**Remedy:** Check operation and operating mode.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**16911** **[Channel %1: ] Mode change is not allowed**

**Parameters:** %1 = Channel number

**Explanation:** The change from overstoring into another operating mode is not allowed.

**Reaction:** Alarm display.

**Remedy:** Terminate the "Overstore" function to change to another operating mode.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**16912** **[Channel %1: ] Program control: action '%2<ALNX>' only possible in reset state**

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action can only be performed in Reset state.
Example: Program selection through HMI or channel communication (INIT) can only be performed in Reset state.

**Reaction:** Alarm display.

**Remedy:** Reset or wait until processing has finished.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**16913** **[Mode group %1: ] [Channel %2: ] Mode change: action '%3<ALNX>' not allowed**

**Parameters:** %1 = Mode group number
%2 = Channel number
%3 = Action number/action name

**Explanation:** The change to the desired mode is not permitted. The change can only take place in the Reset state.
Example:
Program processing is halted in AUTO mode by NC Stop. Then there is a mode change to JOG mode (program status interrupted). From this operating mode, it is only possible to change to AUTO mode and not to MDI mode!

**Reaction:** Alarm display.

**Remedy:** Either actuate the Reset key to reset the program execution, or select the mode in which the program was previously being executed.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**16914** **[Mode group %1: ] [Channel %2: ] Mode change: action '%3<ALNX>' not allowed**

**Parameters:** %1 = Mode group number
%2 = Channel number
%3 = Action number/action name

**Explanation:** Incorrect mode change, e.g.: Auto -> MDIREF.

**Reaction:** Alarm display.

**Remedy:** Check the operation and/or the selected mode.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16915 [Channel %1: ] Action '%2<ALNX>' not allowed in the current block

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** If traversing blocks are interrupted by asynchronous subroutines, then it must be possible for the interrupted program to continue (reorganization of block processing) after termination of the asynchronous subroutine.
The 2nd parameter describes which action wanted to interrupt block processing.

**Reaction:** Alarm display.

**Remedy:** Let the program continue to a reorganized NC block or modify the part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16916 [Channel %1: ] Repositioning: action '%2<ALNX>' not allowed in the current state

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** Repositioning of block processing is presently not possible. A mode change cannot take place.
The 2nd parameter describes which action should be used to perform repositioning.

**Reaction:** Alarm display.

**Remedy:** Let the program continue to a repositioned NC block or modify the part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16918 [Channel %1: ] For action '%2<ALNX>' all channels must be in reset state

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** All channels must be in the initial setting in order to carry out the action! (For example, for machine data loading)

**Reaction:** Alarm display.

**Remedy:** Either wait until the channel status is canceled or press the Reset key.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16919 [Channel %1: ] Action '%2<ALNX>' is not allowed due to a pending alarm

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action cannot be performed due to an alarm, or the channel is in the fault condition.

**Reaction:** Alarm display.

**Remedy:** Press the Reset key.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16920 [Channel %1: ] Action '%2<ALNX>' is already active

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** An identical action is still being processed.

**Reaction:** Alarm display.

**Remedy:** Wait until the previous procedure has been completed and then repeat the operation.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16921 [Mode group %2: ] [Channel %1: ] Machine data: channel/mode group assignment not allowed or assigned twice

**Parameters:** %1 = Channel number
%2 = Mode group number

**Explanation:** On powering up, an illegal channel/mode group assignment was detected.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Check MD10010 $MN_ASSIGN_CHAN_TO_MODE_GROUP.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 16922 [Channel %1: ] Subprograms: action '%2<ALNX>' maximum nesting depth exceeded

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** Various actions can cause the current procedure to be interrupted. Depending on the action, asynchronous subroutines are activated. These asynchronous subroutines can be interrupted in the same manner as user programs. Unlimited nesting depth is not possible for asynchronous subroutines due to memory limitations.
Example: An interrupt interrupts the current program processing. Other interrupts with higher priorities interrupt processing of the previously activated asynchronous subroutines.
Possible actions are: DryRunOn/Off, DecodeSingleBlockOn, delete distance-to-go, interrupts .....

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Do not trigger the event on this block.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16923 [Channel %1: ] Program control: action '%2<ALNX>' not allowed in the current state

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The current processing cannot be stopped since a preprocessing process is active.
This applies, for example, to the loading of machine data, and in block searches until the search target is found.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Cancel the procedure by pressing Reset.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16924 [Channel %1: ] Caution: program test modifies tool management data

**Parameters:** %1 = Channel number

**Explanation:** Tool management data is changed during program testing. It is not possible to automatically rectify the data after termination of the program testing.

**Reaction:** Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Save the tool data on HMI and reimport this data after "ProgtestOff".

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16925 [Channel %1: ] Program control: action '%2<ALNX>' not allowed in the current state, action '%3<ALNX>' active

**Parameters:** %1 = Channel number
%2 = Action number/action name
%3 = Action number/action name

**Explanation:** The action has been rejected since a mode or sub-mode change (change to automatic mode, MDI, JOG, overstoring, digitizing, etc.) is taking place.
Example: This alarm message is output if the Start key is pressed during a mode or sub-mode change from, for example, automatic to MDI, before the NCK has confirmed selection of the mode.

**Reaction:** Alarm display.

**Remedy:** Repeat the action.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16926 [Channel %1: ] Channel coordination: action %2 not allowed in block %3, marker %4 is already set

**Parameters:** %1 = Channel number
%2 = Aktion
%3 = Block number
%4 = Marker number

**Explanation:** The action was denied, the marker was already set.
Check the program.
Example:
SETM(1) ; CLEARM(1) ; Marker must be reset first.
SETM(1)

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Repeat the action.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16927 [Channel %1: ] Action '%2<ALNX>' at active interrupt treatment not allowed

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action may not be activated during interrupt processing (e.g. mode change).

**Reaction:** Alarm display.

**Remedy:** Press Reset or wait until interrupt processing has finished.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16928 [Channel %1: ] Interrupt treatment: action '%2<ALNX>' not possible

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** A program interrupt has been activated in a non REORG capable block.
Examples of possible program interrupts in this case:
- Traversing to fixed stop
- Vdi channel delete distance-to-go
- Vdi axial delete distance-to-go
- Measuring
- Software limit
- Axis interchange
- Axis comes from tracking
- Servo disable
- Gear stage change at actual gear stage unequal to setpoint gear stage.

The block affected is a:
- collection block from block search (except for the last collection block)
- Block in overstore interrupt.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Do not trigger the event on this block.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16930 [Channel %1: ] Preceding block and current block %2 must be separated through an executable block

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** The language functions WAITMC, SETM, CLEARM and MSG must be programmed in separate NC blocks. To avoid velocity dips, these blocks are attached to the next NC block internally in the NCK (for WAITMC to the previous NC block). For this reason, there must always be an executable block (not a calculation block) between the NC blocks. An executable NC block always includes e.g. travel movements, a help function, STOPRE, dwell time etc.
Note: This does not apply to the programming of MSG with the additional parameter "1". In this case a separate block is generated, which interrupts the continuous-path mode.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Program an executable NC block between the previous and current NC blocks.
Example:
N10 SETM.
N15 STOPRE ; insert executable NC block.
N20 CLEARM.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 16931 [Channel %1: ] Subprograms: action '%2<ALNX>' maximum nesting depth exceeded

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** Various actions can cause the current procedure to be interrupted. Depending on the action, asynchronous subroutines (ASUBs) are activated. These ASUBs can be interrupted in the same manner as the user program. Unlimited nesting depth is not possible for ASUBs due to memory limitations.

Example: In the case of an approach block in a repositioning procedure do not interrupt repeatedly, instead wait until processing is completed.

Possible actions are: mode change, SlashOn/Off, overstoring.

**Reaction:** Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Initiate a block change and repeat the action.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16932 [Channel %1: ] Conflict when activating user data type %2

**Parameters:** %1 = Channel number

%2 = Data type

**Explanation:** The "activate user data" function (PI service _N_SETUDT) modifies a data block (tool offset, settable work offset or base frame) which is also written by the NC blocks in preparation.

In the event of a conflict, the value entered by the HMI is reset.

Parameter %2 specifies which data block is affected:

1: Active tool offset

2: Base frame

3: Active work offset

**Reaction:** Alarm display.

**Remedy:** Check the inputs on the HMI and repeat the procedure if necessary.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16933 [Channel %1: ] Interrupt treatment: action '%2<ALNX>' not allowed in the current state

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** If a temporary standstill has occurred because of a Reorg event across block boundaries, it is possible that a block without Reorg capability has been loaded. In this situation, it is unfortunately necessary to cancel the Reorg event handling! Reorg events are, e.g. cancelation subprogram, delete distance-to-go and interrupts.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Cancel program with the RESET key.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16934 [Channel %1: ] Interrupt treatment: action '%2<ALNX>' not possible due to stop

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** Reorg events are, e.g. cancelation subprogram, delete distance to go and interrupts, axis exchange, termination of follow-up mode. Two Reorg events overlap in this situation. The 2nd Reorg event coincides with the 1st block generated by the previous event. (e.g. an axis exchange is induced twice in rapid succession). Axis exchange leads to Reorg in the channels in which an axis is removed without preparation. This block must be stopped in the above sequence in order to prevent the interpolator buffer from overflowing. This can be achieved by pressing the Stop or StopAll key, configuring an alarm with INTERPRETERSTOP or by decode single block.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** The program must be canceled with Reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16935 [Channel %1: ] Action '%2<ALNX>' not possible due to search run

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The action is not allowed as block search is currently running via program test. Block search via program test: "PI Service _N_FINDBL with mode parameter 5.
With this block search type, it is not permissible to activate program test or dry run feedrate.

**Reaction:** Alarm display.

**Remedy:** Activate the action after block search is terminated.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16936 [Channel %1: ] Action '%2<ALNX>' not possible due to active dry run

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action is not allowed as dry run feedrate is currently active.
Example: It is not permissible to activate block search via program test (PI service _N_FINDBL with mode parameter 5) when dry run feedrate is active.

**Reaction:** Alarm display.

**Remedy:** Cancel program with the RESET key.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16937 [Channel %1: ] Action '%2<ALNX>' not possible due to program test

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** This action is not allowed as program test is currently active.
Example: It is not permissible to activate block search via program test (PI service _N_FINDBL with mode parameter 5) when program test is active.

**Reaction:** Alarm display.

**Remedy:** Deactivate program test.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16938 [Channel %1: ] Action '%2<ALNX>' canceled due to active gear change

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** Reorganization events are, among others, subprogram cancelation, delete distance-to- go and interrupts, axis exchange, exiting the correction state. These events wait for the end of a gear change. However, the maximum waiting period has elapsed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Cancel the program with Reset and, if necessary, increase MD10192 $MN_GEAR_CHANGE_WAIT_TIME.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16939 [Channel %1: ] Action '%2<ALNX>' rejected due to active gear change

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** Reorganization events that are possible in Stop state, e.g mode change, are waiting for the end of the gear change. However, the maximum waiting period has elapsed.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Repeat the action or increase MD10192 $MN_GEAR_CHANGE_WAIT_TIME.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16940 [Channel %1: ] Action '%2<ALNX>' wait for gear change

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** Reorganization events are waiting for the end of a gear change. The alarm is displayed during the waiting period.

**Reaction:** Alarm display.

Warning display.

**Remedy:** To suppress the alarm, set MD11411 $MN_ENABLE_ALARM_MASK bit 1 = 0.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16941 [Channel %1: ] Action '%2<ALNX>' rejected because no program event has been executed yet

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** The setting of the MD20108 $MC_PROG_EVENT_MASK forces an asynchronous subprogram to be triggered automatically on RESET or PowerOn. The implicitly triggered asynchronous subprograms are normally called "Event-triggered program call" or "Program event".

In the alarm situation, this asynchronous subprogram could not yet be activated; that is why the action (normally start of part program) must be rejected.

Reasons for the fact that the asynchronous subprogram could not be triggered:

1. The asynchronous subprogram does not exist (/_N_CMA_DIR/_N_PROG_EVENT_SPF)
2. The asynchronous subprogram is allowed to start in the referenced state only (see MD11602 $MN_ASUP_START_MASK)
3. READY is missing (because of alarm)

**Reaction:** Alarm display.

**Remedy:** Load program

Check MD11602 $MN_ASUP_START_MASK

Acknowledge alarm

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16942 [Channel %1: ] Start program command action '%2<ALNX>' not possible

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** Currently, the alarm occurs only in combination with the SERUPRO action. SERUPRO stands for search via program test.

SERUPRO is currently searching the target and has therefore switched this channel to the program test mode. With the START program command in channel 1, another channel 2 would actually be started, which means that axes would really be started during the search action.

If this alarm is switched off (see help), the user can make use of the above behavior by initially selecting via PLC the program test mode in channel 2, leaving channel 2 executing until its natural end, stopping channel 2 in order to deselect program test again.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Alarm can be switched off with MD10708 $MN_SERUPRO_MASK bit 1.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16943 [Channel %1: ] Action '%2<ALNX>' not possible due to ASUB

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** The action in the 2nd parameter was rejected, since an asynchronous subprogram is currently active.

Currently, only the integrated search run is rejected with this alarm. The integrated search run is activated, if search run is triggered in the Stop program state. In other words: Parts of a program have already been executed and a following program part is "skipped" with search run in order to continue the program afterwards.

The event is not possible if the program is stopped within an asynchronous subprogram or if an asynchronous subprogram had been selected before the event. An asynchronous subprogram is selected, when the triggering asynchronous subprogram event arrives, but the asynchronous subprogram cannot be started (e.g. the asynchronous start program is not started because of a read-in disable or because the Stop key is active).

In this case, it is irrelevant whether a user ASUB or a system ASUB has been triggered. User ASUBs are activated via FC-9 or via the fast inputs.

The following events lead to system ASUBS:

- Mode change
- Overstore on
- Canceling subprogram level
- Switching on of single block, type 2
- Setting machine data effective
- Setting user data effective
- Change skip levels
- Dry run on/off
- Program test off
- Correction block alarms
- Editing modi in Teach
- External work offset
- Axis exchange
- Delete distance-to-go
- Measuring

**Reaction:** Alarm display.

**Remedy:** Repeat the action after the end of the asynchronous subprogram.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16944 [Channel %1: ] Action '%2<ALNX>' not possible due to active search blocks

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** The NCK is currently processing either the action blocks of the search run or the approach motion after the search run. In this situation, the action (2nd parameter of the alarm) must be rejected. Currently, only the integrated search run is rejected with this alarm. The integrated search run is activated, if search run is triggered in the Stop program state. In other words: Parts of a program have already been executed and a following program part is "skipped" with search run in order to continue the program afterwards.

**Reaction:** Alarm display.

**Remedy:** Repeat the action after the approach motion of the search run.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16945 [Channel %1: ] Action '%2<ALNX>' delayed up to the block end

**Parameters:** %1 = Channel number

%2 = Action number/action name

**Explanation:** The currently executing action (e.g. dry run on/off, change skip levels, etc.) should be active immediately, but it can become active not earlier than at the end of the block, since a thread is currently being machined. The action is activated with a slight delay.

Example: Dry run is started in the middle of the thread, then traversing at high speed does not start before the next block.

**Reaction:** Alarm display.

**Remedy:** Alarm can be switched off via MD11410 $MN_SUPPRESS_ALARM_MASK bit17==1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16946 [Channel %1: ] Start via START is not allowed

**Parameters:** %1 = Channel ID

**Explanation:** This alarm is active with "Group Serupro" only. "Group Serupro" is activated by means of MD10708 $MN_SERUPRO_MASK, Bit 2 and enables the retrace support of entire channel groups during block search.

The MD22622 $MC_DISABLE_PLC_START specifies which channel is generally started from the PLC and which channel is only allowed to be started from another channel via the START part program command.

This alarm occurs if the channel was started via the START part programm command and MD22622 $MC_DISABLE_PLC_START==FALSE was set.

**Reaction:** Alarm display.

**Remedy:** Modify MD22622 $MC_DISABLE_PLC_START of switch off "Group Serupro" (see MD10708 $MN_SERUPRO_MASK).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16947 [Channel %1: ] Start via PLC is not allowed

**Parameters:** %1 = Channel ID

**Explanation:** This alarm is active with "Group Serupro" only. "Group Serupro" is activated by means of MD10708 $MN_SERUPRO_MASK, Bit 2 and enables the retrace support of entire channel groups during block search.

The machine data MD22622 $MC_DISABLE_PLC_START specifies which channel is generally started from the PLC and which channel is only allowed to be started from another channel via the START part program command.

This alarm occurs if the channel was started via the PLC and MD22622 $MC_DISABLE_PLC_START==TRUE was set.

**Reaction:** Alarm display.

**Remedy:** Modify MD22622 $MC_DISABLE_PLC_START of switch off "Group Serupro" (see MD10708 $MN_SERUPRO_MASK).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16948 [Channel %1: ] dependent channel %2 still active

**Parameters:** %1 = Channel ID

%2 = Channel ID

**Explanation:** This alarm is active with "Group Serupro" only. "Group Serupro" is activated by means of MD10708 $MN_SERUPRO_MODE, bit 2 and enables the retrace support of entire channel groups during block search.

A _dependent channel_ is a channel that had indirectly been started by the currently active channel. The currently active channel was started via PLC.

This channel m_u_s_t be terminated (i.e. reached M30) before the current channel is terminated.

This alarm occurs if the currently active channel is terminated before the dependent channel.

**Reaction:** Alarm display.

**Remedy:** Switch off "Group Serupro" (see MD10708 $MN_SERUPRO_MASK) or install WAITE.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16949 Correspondence between marker of channel %1 and channel %2 is invalid.

**Parameters:** %1 = Channel ID

%2 = Channel ID

**Explanation:** This channel defines a WAIT marker with other channels, which on their part have no correspondence with this wait marker.

This channel's WAIT marker has no explicit counterpart in the other channel; i.e. the channels do not mutually wait.

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Example

Ch 3 Ch 5 Ch 7

WAITM(99,3,5) WAITM(99,3,5) WAITM(99,5,7)

The wait markers in channels 3 and 5 mutually wait for each other and channel 7 only waits for channel 5. Therefore, channel 7 may continue when 5 and 7 have reached the wait marker, but channel 3 is still far in front of the wait marker.

When it continues, channel 7 deletes its wait marker. When wait marker 99 is reached again, you can no longer determine the behavior precisely.

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**Reaction:** Alarm display.

**Remedy:** In each wait marker, list all channels with which you want to synchronize, or suppress the alarm with MD11410 $MN_SUPPRESS_ALARM_MASK, bit 23.

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Sample solution A:

Ch 3 Ch 5 Ch 7

WAITM(99,3,5,7) WAITM(99,3,5,7) WAITM(99,3,5,7)

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Sample solution B:

Ch 3 Ch 5 Ch 7

WAITM(99,3,5) WAITM(99,3,5)

WAITM(88,5,7) WAITM(88,5,7)

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Sample solution C:

Ch 3 Ch 5 Ch 7

WAITM(88,5,7) WAITM(88,5,7)

WAITM(99,3,5) WAITM(99,3,5)

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16950 [Channel %1: ] Search run with hold block

**Parameters:** %1 = Channel number

**Explanation:** Informational alarm.

The search run was not performed on the interruption block, instead, it touches down shortly before that. This so-called "hold block" is generated by the part program command IPTRLOCK, or implicitly defined by MD22680 $MC_AUTO_IPTR_LOCK. This is to prevent you from performing a search run in critical program areas (e.g. gear hobbing). The alarm also displays that, instead of searching for the block that actually was interrupted before, another block is being searched for. This behavior is desired and the alarm serves only informational purposes.

**Reaction:** Alarm display.

**Remedy:** MD11410 $MN_SUPPRESS_ALARM_MASK, MD22680 $MC_AUTO_IPTR_LOCK and language command IPTRLOCK

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16951 [Channel %1: ] Search run in a protected program section.

**Parameters:** %1 = Channel number

**Explanation:** A part programmer can define protected part program sections with the language commands IPTRLOCK and IPTRUNLOCK. Every search run in these program sections will then be acknowledged with alarm 16951. In other words: When the alarm appears, the user has started a search run (Serupro type) and the search target lies in a protected area. A protected area can also be defined implicitly with the MD22680 $MC_AUTO_IPTR_LOCK.

Note:

The alarm can only be generated if the simulation has been completed during the search run. The alarm cannot be output immediately at the start of the search run.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** MD11410 $MN_SUPPRESS_ALARM_MASK, MD22680 $MC_AUTO_IPTR_LOCK and language command IPTRLOCK

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16952 [Channel %1: ] Start program command not possible due to MDI

**Parameters:** %1 = Channel number

**Explanation:** NCK is currently executing an ASUB in MDI mode. In this constellation, part program command "Start" is not allowed for another channel. Attention: If an ASUB is started from JOG, the NCK can internally change to MDI, if the NCK was previously in MDI and not in RESET. Note: Without this alarm, the MDI buffer of the other channel would always be started.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Start ASUB in AUTO or ->JOG in AUTO

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16953 [Channel %1: ] For slave axis %2 SERUPRO not allowed, as master axis %3 not subject to axis/spindle disable

**Parameters:** %1 = Channel number

%2 = Slave axis name, following spindle number

%3 = Master axis name, master spindle number

**Explanation:** Currently, the alarm occurs only in combination with the SERUPRO action. SERUPRO stands for search via program test.

SERUPRO is possible only with an active coupling, if the axis/spindle disable is active for all master axes/spindles of the slave axis/spindle

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Set axis/spindle disable of the master axis

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16954 [Channel %1: ] Block %2 programmed stop prohibited in stop delay area

**Parameters:** %1 = Channel ID
%2 = Block number, label

**Explanation:** In a program area (stop delay area) that is bracketed with DELAYFSTON and DELAYFSTOF, a program command was used that causes a stop. No commands other than G4 are permissible that might cause a stop even though only shortly. A stop delay area can also be defined by MD11550 $MN_STOP_MODE_MASK.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** MD11550 $MN_STOP_MODE_MASK and language command DELAYFSTON DELAYFSTOF

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 16955 [Channel %1: ] Stop in stop delay area is delayed

**Parameters:** %1 = Channel ID

**Explanation:** In a program area (stop delay area) that is bracketed by DELAYFSTON and DELAYFSTOF, an event has been detected that causes a stop. The stop is delayed and executed after DELAYFSTOF. A stop delay area can also be defined by MD11550 $MN_STOP_MODE_MASK.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** MD11550 $MN_STOP_MODE_MASK and language command DELAYFSTON DELAYFSTOF

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16956 [Channel %1: ] Program %2 cannot be started due to global start disable.

**Parameters:** %1 = Channel ID
%2 = (path with program name)

**Explanation:** The program selected in this channel cannot be started as "Global start disable" had been set.

Note:
PI "_N_STRTLK" sets the "Global start disable" and PI "_N_STRTUL"
deletes the "Global start disable".
The alarm is switched on with MD11411 $MN_ENABLE_ALARM_MASK bit 6.

**Reaction:** Alarm display.

**Remedy:** Delete the "Global start disable" and restart.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16957 [Channel %1: ] Stop-Delay area is suppressed

**Parameters:** %1 = Channel ID

**Explanation:** The program area (Stop-Delay area), which is bracketed by DELAYFSTON and DELAYFSTOF, could not be activated. Every stop therefore becomes effective immediately and is not delayed!
This occurs every time, when braking into a stop Stop-Delay area, i.e. a braking process starts before the Stop-Delay area and ends not earlier than in the Stop-Delay area.
If the Stop-Delay area is entered with override 0, the Stop-Delay area can also not be activated
Example: a G4 before the Stop-Delay area allows the user to reduce the override to 0. The next block in the Stop-Delay area then starts with override 0 and the alarm situation described occurs.
MD11411 $MN_ENABLE_ALARM_MASK, bit 7 switches on this alarm.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** MD11550 $MN_STOP_MODE_MASK and language command DELAYFSTON DELAYFSTOF

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 16959 [Channel %1: ] Action '%2<ALNX>' prohibited during simulation block search.

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The function (2nd parameter) must not be activated during simulation search.

**Reaction:** Alarm display.

**Remedy:** Wait for search end.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16960 [Channel %1: ] Action '%2<ALNX>' prohibited during EXECUTE PROGRAM AREA.

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The function (2nd parameter) must not be activated during EXECUTE PROGRAM AREA.

**Reaction:** Alarm display.

**Remedy:** Wait for end of program area EXECUTE.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16961 [Channel %1: ] Action '%2<ALNX>' prohibited during syntax check.

**Parameters:** %1 = Channel number
%2 = Action number/action name

**Explanation:** The function (2nd parameter) must not be activated during the syntax check.
Comment: The syntax check is served by the following PI services:
_N_CHKSEL _N_CHKRUN _N_CHKABO

**Reaction:** Alarm display.

**Remedy:** Wait for the end of the syntax check, or
Cancel the syntax check with reset, or
Cancel the syntax check with PI _N_CHKABO.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16962 [Channel %1: ] NCK computing time reduced, start is not allowed.

**Parameters:** %1 = Channel number

**Explanation:** The computing time available to the NCK has been reduced, starts have therefore been locked. The computer performance is inadequate for smooth program execution. The computing time of the NCK may have been reduced by the HMI because of an HMI part program simulation.

**Reaction:** Alarm display.

**Remedy:** Wait for the simulation to end or press RESET in any channel.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16963 [Channel %1: ] ASUB start declined

**Parameters:** %1 = Channel number

**Explanation:** An external ASUB start from the canceled program state has been declined for the following reasons:
- Bit 0 is not set in MD11602 $MN_ASUP_START_MASK
- ASUB priority has been set too low (value too high) or MD11604 $MN_ASUP_START_PRIO_LEVEL has been set too high (value too low)

**Reaction:** Alarm display.
**Remedy:** Correct the machine data or change the priority of the ASUB to be executed.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16964 [Channel %1: ] Executing of init blocks not fully completed

**Parameters:** %1 = Channel number
**Explanation:** Init blocks are processed during ramp-up; they ensure that the control is initialized correctly. The alarm is set if processing could not be completed correctly (usually due to alarms which were already pending).
**Reaction:** Alarm display.
**Remedy:** Eliminate pending alarms.
**Programm continuation:** Switch control OFF - ON.

## 16965 [channel %1: ] SAFE.SPF ramp-up not completed

**Parameters:** %1 = Channel number
**Explanation:** The alarm is triggered if the safety program /N_CST_DIR/N_SAFE_SPF needs to be executed during ramp-up and this has not been completed after four times the time set in MD $MN_SAFE_SPL_START_TIMEOUT has elapsed. This can be caused by SAFE.SPF taking a very long time to execute. The channel number indicates which channel is causing the problem.
**Reaction:** NC not ready.
NC Start disable in this channel.
Channel not ready.
Interface signals are set.
NC Stop on alarm.
Alarm display.
**Remedy:** Increase MD $MN_SAFE_SPL_START_TIMEOUT.
**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 16966 [Channel %1: ] Action '%2<ALNX>' prohibited during Jog Retract

**Parameters:** %1 = Channel number
%2 = Action number/action name
**Explanation:** The function (2nd parameter) must not be activated during Jog Retract.
**Reaction:** Alarm display.
**Remedy:** End Jog Retract by Reset.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16967 [Channel %1: ] Action '%2<ALNX>' while preparing the protection areas not permissible

**Parameters:** %1 = Channel number
%2 = Action number/action name
**Explanation:** The function (2nd parameter) must not be activated while the protection areas, which are activated using the PI _N_PROT_A, are being prepared.
**Reaction:** Alarm display.
**Remedy:** Wait until PI _N_PROT_A has been completed, or cancel PI with a RESET.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 16968 [Channel %1: ] Machine data %2[%3] contains invalid syntax, error code: %4

**Parameters:** %1 = Channel number

%2 = String: MD identifier

%3 = Index: MD array index

%4 = Error code

**Explanation:** A syntax rule was violated when defining an auxiliary function or a subprogram name. The error code helps pinpoint the problem:

1 - An auxiliary function definition must start with M, D, H or T.

2 - An auxiliary function definition needs an extension or a value.

3- If present, an auxiliary function extension must be a a wild card '*' or a natural number enclosed in square brackets '[', ']'. A natural number is only allowed for 'T' auxiliary functions when $MC_T_M_ADDRESS_EXT_IS_SPINO = TRUE or with active magazine management (MD18080 $MN_MM_TOOL_MANAGEMENT_MASK, MD20310 $MC_TOOL_MANAGEMENT_MASK).

4 - If present, the value of an auxiliary function must be a natural number or a wild card '*' after an equals sign '='.

5 - With active tool management (MD18080 $MN_MM_TOOL_MANAGEMENT_MASK, MD20310 $MC_TOOL_MANAGEMENT_MASK), a numerical value must not be given for 'T', only a wild card '*' is allowed.

6 - Other entries as auxiliary functions are interpreted as subprogram names. A subprogram name must be a valid NC subprogram name with the prefix '_N_', without path specification and without '/'. It must not contain special or control characters. It must not be a keyword of the NC language (e.g. POSA).

7 - '_N_ASUP1' and '_N_ASUP2' are not permitted as subprogram definitions because these are the subprogram names from system ASUBs.

- Examples of correct auxiliary function definitions are: 'H[3]=7', 'M[22]', 'D[*]=4', 'T[*]=*', 'T=*', .

An example of a correct subprogram name is '_N_TOOL_TWIST'.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Please notify the authorized personnel/service department. Enter auxiliary function definition or subprogram name with correct syntax in the displayed MD.

- CFG_STOP positions: SD42220 $SC_CFG_STOP_ARRAY

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17001 [Channel %1: ] Block %2 no memory left for tool/magazine data. Data type: %3 %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Data type

%4 = Cause

**Explanation:** Data type:
1-Tools, 2-Cutting edges, 3-Multitools, 4-Multitool locations, 5-Sum or setup offsets
6-Adapters, 7-Magazines, 8-Magazine locations, 9-Wear group, 10-Magazine distance
Cause (only if data type is tool):
1-Tool count limit reached, 2-Tool list handles, 3-Tool bodies, 4-Tool groups handles, 5-Tool groups
The number of the following tool/magazine data variables in the NC is specified using machine data:
- Number of tools + number of grinding data blocks: MD18082 $MN_MM_NUM_TOOL
- Number of cutting edges: MD18100 $MN_MM_NUM_CUTTING_EDGES_IN_TOA
Tools, grinding data blocks, cutting edges can be used independently of the tool management.
The memory for the following data is available only if the corresponding bit has been set in MD18080 $MN_MM_TOOL_MANAGEMENT_MASK.
- Number of monitoring data blocks: MD18100 $MN_MM_NUM_CUTTING_EDGES_IN_TOA
- Number of magazines: MD18084 $MN_MM_NUM_MAGAZINE
- Number of magazine locations: MD18086 $MN_MM_NUM_MAGAZINE_LOCATION
- Number of adapters: MD18104 $MN_MM_NUM_TOOL_ADAPTER and MD18103 $MN_MM_NUM_TOOL_ADAPTER_TYPE2
The following variable is determined by the software configuration: Number of magazine spacing data blocks: P2 permits 32 such spacing data blocks.
Definition:
- 'Grinding data blocks': Grinding data can be defined for a tool of type 400 to 499.
A data block of this type occupies as much additional memory as that provided for a cutting edge.
- 'Monitoring data blocks': Each cutting edge of a tool can be supplemented with monitoring data.
- If the alarm occurs while writing one of the parameters $TC_MDP1/$TC_MDP2/$TC_MLSR,
check whether machine data MD18077 $MN_MM_NUM_DIST_REL_PER_MAGLOC / MD18076$MN_MM_NUM_LOCS_WITH_DISTANCE has been set correctly.
MD18077 $MN_MM_NUM_DIST_REL_PER_MAGLOC defines the number of different Index1 statements that may be made for an Index2 value.
MD18076 $MN_MM_NUM_LOCS_WITH_DISTANCE defines the number of different buffer locations that may be named in Index2.
If a multitool or its locations are to be generated, the alarm indicates that either more multitools need to be generated than are permitted by the setting of MD18083 $MN_MM_NUM_MULTITOOL
or, if the alarm occurs when the multitool locations are being generated, that more multitool locations need to be generated than is permitted by the setting of MD18085 $MN_MM_NUM_MULTITOOL_LOCATIONS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Modify machine data
- Modify NC program, i.e. reduce number of rejected variable.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17010 [Channel %1: ] Block %2 no memory left

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When executing/reading files from the active working memory, it was found that there is not enough memory space (e.g. for large multidimensional arrays such as LUD or GUD arrays or when creating tool offset memory).

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Make arrays smaller or make more memory space available for memory management of subroutine calls, tool offsets and user variables (machine data MM_...).
See /FB/, S7 Memory Configuration

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17018 [Channel %1: ] Block %2 incorrect value for parameter %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Parameter name

**Explanation:** An incorrect value has been assigned to the stated parameter.
Only the following values are permissible for the parameter $P_WORKAREA_CS_COORD_SYSTEM
=1 for workpiece coordinate system
=3 for settable zero system.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Assign another value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17020 [Channel %1: ] Block %2 illegal array index 1

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** General:
Read or write access has been programmed to an array variable with an invalid 1st array index. The valid array indices must lie within the defined array size and the absolute limits (0 - 32 766).
PROFIBUS/PROFINET I/O:
An illegal slot / I/O area index was used while reading/writing data.
Cause:
1.: Slot / I/O area index >= max. number of available slot / I/O areas.
2.: Slot / I/O area index references a slot / I/O area that has not been configured.
3.: Slot / I/O area index references a slot / I/O area that has not been released for system variables.
The following applies specifically: If the alarm occurs while writing one of the parameters $TC_MDP1/$TC_MDP2/$TC_MLSR, check whether MD18077 $MN_MM_NUM_DIST_REL_PER_MAGLOC has been set correctly.
MD18077 $MN_MM_NUM_DIST_REL_PER_MAGLOC defines the number of different Index1 statements that may be made for an Index2 value.
If an MT number is programmed, the value may collide with a previously defined T number or a previously defined magazine number.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the specification of array elements in the access instruction to match the defined size.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17030 [Channel %1: ] Block %2 illegal array index 2

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** General:
A read or write access has been programmed to an array variable with an invalid 2nd array index. The valid array indices must lie within the defined array size and the absolute limits (0 - 32 766).
PROFIBUS/PROFINET I/O:
An attempt was made to read/write data outside the slot / I/O area limits of the stated slot / I/O area.
The following applies specifically: If the alarm occurs while writing one of the parameters $TC_MDP1/$TC_MDP2/$TC_MLSR, check whether MD18076 $MN_MM_NUM_LOCS_WITH_DISTANCE has been set correctly.
$MN_MM_NUM_LOCS_WITH_DISTANCE defines the number of different buffer storage locations that may be named in Index2

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the specification of array elements in the access instruction to match the defined size.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17035 [Channel %1: ] Block %2 illegal array index 3

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** General:
A read or write access has been programmed to an array variable with an invalid 3rd array index. The valid array indices must lie within the defined array size and the absolute limits (0 - 32766).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the specification of array elements in the access instruction to match the defined size.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17040 [Channel %1: ] Block %2 illegal axis index

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A read or write access has been programmed to an axial variable in which the axis name cannot be unambiguously imaged on a machine axis.
Example:
Writing of an axial machine data
$MA_... [X]= ... ; but geometry axis X cannot be imaged on a machine axis because of a transformation!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Deselect transformation before writing into the axial data (keyword: TRAFOOF) or use the machine axis names as axis index.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17050 [Channel %1: ] Block %2 illegal value

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A value has been programmed that exceeds the value range or a limit value of a variable or a machine data item.

For example: In a string variable (e.g. GUD or LUD), a string needs to be written that exceeds the agreed string length in the variable definition.

- If an illegal value is to be written to a tool or magazine management variable (e.g. illegal cutting edge number in $TC_DPCE[x,y] or illegal magazine location number in $TC_MDP2[x,y])

- The value of MTL is incorrect. MTL must be programmed with a multitool location number of a multitool that is programmed in the command T=magazine location number in the same NC block.

- An illegal value is to be written in $P_USEKT or $A_DPB_OUT[x,y]

- An illegal value is to be written in a machine data (e.g. MD10010 $MN_ASSIGN_CHAN_TO_MODE_GROUP[0] = 0)

- On accessing an individual frame element, a frame component other than TRANS, ROT, SCALE or MIRROR was addressed or the CSCALE function was assigned a negative scale factor.

A multitool number has been programmed that collides with a previously defined T number or a previously defined magazine number.

When programming DELMLOWNER: The command cannot be programmed with the T number of a tool that is part of a multitool.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Address frame components only with the keywords provided; program the scale factor between the limits of 0.000 01 to 999.999 99.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17052 [channel %1: ] block %2 impermissible value / parameter value of the STRING type

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** A STRING type programmed value is already being used.

E.g. - the name of the multitool to be generated is already assigned to another multitool, tool or magazine.

- the name of a tool to be generated is already assigned to another tool with the same duplo number or to a multitool.

- the name of a magazine to be generated is already assigned to a multitool.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Programmed value of STRING type not permitted

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17055 [Channel %1: ] Block %2 GUD variable not existing

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The required GUD variable was not found for a MEACALC procedure during read or write access.

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Check whether all the GUDs were created for MEACALC.
DEF CHAN INT _MVAR, _OVI[11]
DEF CHAN REAL _OVR[32], _EV[20], _MV[20], _SPEED[4], _SM_R[10], _ISP[3]
DEF NCK REAL _TP[3,10], _WP[3,11], _KB[3,7], _CM[8], _MFS[6]
DEF NCK BOOL _CBIT[16]
DEF NCK INT _CVAL[4].

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17060 [Channel %1: ] Block %2 requested data area too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum memory space of 8 KB available for a symbol has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Reduce array dimensions.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17070 [Channel %1: ] Block %2 data is write-protected

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to write into a write-protected variable (e.g. a system variable). Safety Integrated: Safety system variables can only be written into via the safety SPL program.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify part program.
Safety Integrated:
- Delete write accesses to safety system variables in part programs other than the safety SPL program
- Verify the release of the safety functionality

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17071 [Channel %1: ] Block %2 data read-protected

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt has been made to read a read-protected variable (e.g. a system variable).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please set the corresponding access right or modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17080 [Channel %1: ] Block %2 %3 value below lower limit

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = MD

**Explanation:** An attempt was made to write into a machine data with a value smaller than the defined lower limit.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Determine the input limits of the machine data and assign a value within these limits.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17090 [Channel %1: ] Block %2 %3 value exceeds upper limit

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = MD

**Explanation:** An attempt was made to write into a machine data with a value greater than the defined upper limit.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Determine the input limits of the machine data and assign a value within these limits.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17095 [Channel %1: ] Block %2 invalid value

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to write an invalid value, e.g. zero, into a machine data.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the value assignment, e.g. set a value not equal to zero within the value range.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17100 [Channel %1: ] Block %2 digital input/comparator no. %3 not activated

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Input number

**Explanation:** Either an attempt was made to read a digital input n via the system variable $A_IN[n] and this input has not been activated via NCK MD10350 $MN_FASTIO_DIG_NUM_INPUTS; or to read a comparator input via system variable $A_INCO[n] and this input belongs to a comparator which has not been activated.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify part program or machine data accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17110 [Channel %1: ] Block %2 digital output no. %3 not activated

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = No. of output

**Explanation:** An attempt was made to read or set a digital NC output (connector X 121) via the system variable $A_OUT [n] with the index [n] greater than the specified upper limit in MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program index [n] of the system variable $A_OUT [n] only between 0 and the value in MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17120 [Channel %1: ] Block %2 analog input no. %3 not activated

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Input number

**Explanation:** An attempt has been made by means of the system variable $A_INA[n] to read an analog input n that has not been activated by the MD10300 $MN_FASTIO_ANA_NUM_INPUTS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify part program or machine data accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17130 [Channel %1: ] Block %2 analog output no. %3 not activated

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = No. of output

**Explanation:** An attempt has been made by means of the system variable $A_OUTA[n] to write or read an analog output n that has not been activated by the MD10310 $MN_FASTIO_ANA_NUM_OUTPUTS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify part program or machine data accordingly.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17140 [Channel %1: ] Block %2 NC output %3 is assigned to a function via machine data

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = No. of output

**Explanation:** The programmed digital/analog output is assigned to an NC function (e.g. software cams).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Use another output or deactivate concurrent NC function via MD.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17150 [Channel %1: ] Block %2 maximum of %3 NC outputs programmable in the block

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Quantity

**Explanation:** No more than the specified number of outputs may be programmed in an NC block.
The quantity of hardware outputs is defined in the MDs:
MD10360 $MN_FASTIO_DIG_NUM_OUTPUTS and
MD10310 $MN_FASTIO_ANA_NUM_OUTPUTS

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program fewer digital/analog outputs in a block. The specified maximum number applies in each case separately for analog or digital outputs. If necessary, program two NC blocks.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17160 [Channel %1: ] Block %2 no tool selected

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt has been made to access the current tool offset data via the system variables:
$P_AD [n]: Contents of the parameter (n: 1 - 25)
$P_TOOL: Active D number (tool edge number)
$P_TOOLL [n]: Active tool length (n: 1- 3)
$P_TOOLR: Active tool radius
although no tool had been selected previously.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program or activate a tool offset in the NC program before using the system variables.
Example:
N100 G.. ... T5 D1 ... LF
With the channel-specific machine data:
Modify MD22550 $MC_TOOL_CHANGE_MODE
New tool offset for M function
Modify MD22560 $MC_TOOL_CHANGE_M_CODE
M function with tool change
It is established whether a tool offset is activated in the block with the T word or whether the new offset values are allowed for only when the M word for tool change occurs.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17170 [Channel %1: ] Block %2 number of symbols too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The predefined symbols could not be read in during power-up.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17180 [Channel %1: ] Block %2 illegal D number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the displayed block, access is made to a D number that is not defined and therefore is not available.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check tool call in the NC part program:
- Correct tool correction number D programmed? If no D number is specified with the tool change command, then the D number set by MD20270 $MC_CUTTING_EDGE_DEFAULT will be active automatically. It is D1 by default.
- Tool parameters (tool type, length,...) defined? The dimensions of the tool edge must have been entered previously either through the operator panel or through a tool data file in NCK.
Description of the system variables $TC_DPx[t, d] as included in a tool data file.
x ... Correction parameter number P
t ... Associated tool number T
d ... Tool correction number D

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17181 [Channel %1: ] Block %2 T no.= %3, D no.= %4 not existing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = T number
%4 = D number

**Explanation:** A programmed D number was not recognized by the NC. By default, the D number refers to the specified T number. If the flat D number function is active, T= 1 is output.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
- The program is incorrect: Eliminate the error with a correction block and continue the program.
- The data block is missing: Load a data block for the specified T/D values onto the NCK via HMI with overstore, and continue the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17182 [Channel %1: ] Block %2 illegal sum correction number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to access a non-defined total offset of the current tool edge.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check the access to the total offset memory with $TC_SCP*, $TC_ECP*, total offset selection DLx or tool selection Ty or offset selection Dz.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17183 [Channel %1: ] Block %2 H number already available in T no.= %3, D no.= %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = T number
%4 = D number

**Explanation:** Each H number (except for H=0) must be assigned in a TO unit only once. The indicated edge already has the H number. If the H number shall be assigned more than once, MD10890 $MN_EXTERN_TOOLPROG_MODE, bit 3 must be set = 1.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Change program:
- Select different H number

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17184 [Channel %1: ] Block %2 Tool %3, Duplo no. %5, D no.= %6 does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Tool identifier
%4 = Duplo number | D number

**Explanation:** A D number has been programmed that does not exist for the selected tool.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If the selected tool does not contain the programmed D number,
* the data block for the cutting edge can be loaded into the NC (via HMI, with overstore) or
* the cutting edge can be created subsequently, or,
* if necessary, the D number and/or the tool identifier can be corrected in the displayed block,
and the NC program can be continued..

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17188 [Channel %1: ] D number %2 defined in tool T no. %3 and %4

**Parameters:** %1 = Channel number
%2 = Offset number D
%3 = T number of first tool
%4 = T number of second tool

**Explanation:** The specified D number %2 in the TO unit of channel %1 is not unique. The specified T numbers %3 and %4 each have an offset with number %2.
If tool management is active:
The specified T numbers belong to tool groups with different names.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
1. Use unique D numbering within the TO unit.
2. Use another command.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17189 [Channel %1: ] D number %2 of tools defined on magazine/location %3 and %4

**Parameters:** %1 = Channel number
%2 = Offset number D
%3 = Magazine/location number of first tool, '/' as separator
%4 = Magazine/location number of second tool, '/' as separator

**Explanation:** The specified D number %2 in the TO unit of channel %1 is not unique. The specified T numbers %3 and %4 each have an offset with number %2.
If tool management is active:
The specified T numbers belong to tool groups with different names.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
1. Use unique D numbering within the TO unit. Rename the D numbers if necessary.
2. Use another command.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17190 [Channel %1: ] Block %2 illegal T number %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = T number

**Explanation:** In the displayed block, a tool is accessed that is not defined and is therefore not available. The tool has been named by its T number, its name or its name and duplo number.
If the function T=magazine location is activated and programmed, the programmed T number indicates the magazine location number. The alarm can then indicate that the programmed magazine location number is illegal.
If the function T=magazine location is activated and programmed, and the multitool function is also activated and programmed in the program line MTL, the alarm can also indicate that there is no multitool at the location programmed with T=magazine location
or that there is no tool at the multitool location programmed with MTL.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check tool call in the NC part program:
- Is the correct tool number T.. programmed?
- T=magazine location programming: Is the correct magazine location number programmed?
- MTL programming: Is there a multitool at the programmed magazine location or is there a tool at the programmed multitool location?
- Are tool parameters P1 - P25 defined? The dimensions of the tool edge must have been entered previously either via the operator panel or the V.24 interface.
Description of the system variables $P_DP x [n, m]
n ... Associated tool number T
m ... Tool edge number D
x ... Parameter number P

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17191 [Channel %1: ] Block %2 T= %3 not existing, program %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = T number or T identifier
%4 = Program name

**Explanation:** A tool identifier which the NCK does not recognize was programmed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If the program pointer is at an NC block which contains the specified T identifier: If the program is incorrect, remedy the error with a correction block and continue the program. If the data block is missing, create one. You can do this by downloading a data block with all the defined D numbers onto the NCK (via HMI with overstore) and continue the program.
If the program pointer is at an NC block which does not contain the specified T identifier: The error occurred at an earlier point in the program where the T command appeared, but the alarm was not output until the change command was detected.
If the program is incorrect - T5 programmed instead of T55 - the current block can be corrected with a correction block; i.e. if only M06 is entered, you can correct the block with T55 M06. The incorrect T5 line remains in the program until it is terminated by a RESET or end of program.
In complex program structures with indirect programming, it may not be possible to correct the program. In this case, you can only intervene locally with an overstore block - with T55 in the example. If the data block is missing, create one. You can do this by downloading the data block of the tool with all the defined D numbers onto the NCK (via HMI with overstore), program the T command with overstore, and continue the program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17192 [TO unit %1: ] Invalid tool designation of '%2', duplo no. %3. No more replacement tools possible in '%4'.

**Parameters:** %1 = TO unit
%2 = Tool identifier
%3 = Duplonummer
%4 = Group identifier

**Explanation:** The tool with the specified tool identifier, duplo number cannot accept the group identifier. Reason: The maximum number of replacement tools allowed has already been defined. The name allocation causes the tool to be reallocated to a tool group which already contains the maximum number of replacement tools allowed on this machine.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Use fewer replacement tools or request a different maximum setting from the machine manufacturer.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17193 [Channel %1: ] Block %2 the active tool is no longer on toolholder no./spindle no. %3, program %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Toolholder no., spindle no.
%4 = Program name

**Explanation:** The tool at the specified toolholder/spindle at which the last tool change was carried out as master toolholder or master spindle, has been replaced.
Example:
N10 SETHTH(1)
N20 T="Wz1" ; Tool change at master toolholder 1
N30 SETMTH(2)
N40 T1="Wz2" ; Toolholder 1 is only a secondary toolholder.
Changing the tool does not result in compensation deselection.
N50 D5; New correction selection. At present, there is no active tool which D can refer to, i.e. D5 refers to T no. = 0, which results in zero correction.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** - Modify program:
- Set desired spindle as master spindle or toolholder as master toolholder.
- Then, if required, reset master spindle or master toolholder.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17194 [Channel %1: ] Block %2 no suitable tool found

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - An attempt was made to access a tool which has not been defined.
- The specified tool does not permit access.
- A tool with the desired properties is not available.
- MTL=MT location T=magazine location number was programmed. There is no multitool at the programmed location

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check access to tool:
- Are the parameters of the command correctly programmed?
- Does the status of the tool prevent access?

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17195 [Channel %1: ] block %2 illegal tool holder number %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Tool holder number

**Explanation:** In the displayed block, a tool holder that is not defined is accessed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check the programming of the tool holder in the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17200 [Channel %1: ] Block %2: Tool data cannot be deleted. Tool %3 Error ID: %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = T number
%4 = Error reason, error status

**Explanation:** An attempt has been made to delete the tool data from the part program for a tool currently being processed.
Tool data for tools involved in the current machining operation must not be deleted.
This applies both for the tool preselected with T or that has been changed in place of another, and also for tools for which the constant grinding wheel peripheral speed or tool monitoring is active.
The first part of parameter 4 ("Error reason") shows why the tool cannot be deleted. The possible values:
1 - Tool is active
2 - WZ is at a magazine location
3 - Tool is active and at a magazine location
4 - Tool is being moved
5 - Tool is active and is being moved
6 - Tool is at a magazine location and is being moved
7 - Tool is active, is at a magazine location, and is being moved

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check access to tool offset memory by means of $TC_DP1[t,d] = 0 or deselect tool.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17202 [Channel %1: ] Block %2 deleting magazine data not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to delete magazine data which cannot currently be deleted. A magazine with the 'tool in motion' status active cannot be deleted. A tool adapter which is currently allocated to a magazine location cannot be deleted. A tool adapter cannot be deleted if MD18104 $MN_MM_NUM_TOOL_ADAPTER has the value -1.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** If an attempt to delete a magazine fails
$TC_MAP1[ m ] = 0 ; Delete magazine with m=magazine no.
$TC_MAP1[ 0 ] = 0 ; Delete all magazines
$TC_MAP6[ m ] = 0 ; Delete magazines and all their tools you must ensure that the magazine does not have the 'tool in motion' status at the time of the call.
If an attempt to delete a tool adapter fails
$TC_ADPTT[ a ] = -1 ; Delete adapter with number a
$TC_ADPTT[ 0 ] = -1 ; Delete all adapters
then the data association with the magazine location or locations must first be canceled with $TC_MPP7[ m,p ] = 0 ; m = magazine no., p = no. of the location to which the adapter is assigned.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17210 [Channel %1: ] Block %2 access to variable not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The variable cannot be written/read directly from the part program. It is allowed only in motion synchronous actions.
Example for variable:
$P_ACTID (which planes are active)
$AA_DTEPB (axial distance-to-go for reciprocating infeed)
$A_IN (test input)
Safety Integrated: Safety PLC system variables can only be read during the safety SPL setup phase.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17212 [Channel %1: ] Tool management: Load manual tool %3, duplo no. %2 onto spindle/toolholder %4

**Parameters:** %1 = Channel number
%2 = Duplo no.
%3 = Tool identifier
%4 = Toolholder number (spindle number)

**Explanation:** Indicates that the specified manual tool must be loaded in the specified toolholder or spindle before the program continues. A manual tool is a tool whose data is known to the NCK but has not been assigned to a magazine location and is, therefore, not fully accessible to the NCK for automatic tool change or, in most cases, to the machine either.
The specified manual tool can also be a tool in a multitool. In this case the multitool has to be changed.

**Reaction:** Alarm display.

**Remedy:** Make sure that the specified tool is loaded in the toolholder. The alarm is cleared automatically after PLC acknowledgment of the tool change on command.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 17214 [Channel %1: ] Tool management: remove manual tool %3 from spindle/toolholder %2

**Parameters:** %1 = Channel number
%2 = Toolholder number (spindle number)
%3 = Tool identifier

**Explanation:** Indicates that the specified manual tool must be removed from the specified toolholder or spindle before the program continues. A manual tool is a tool whose data is known to the NCK but has not been assigned to a magazine location and is, therefore, not fully accessible to the NCK for automatic tool change or, in most cases, to the machine either.
The specified manual tool may be a tool in a multitool. In this case the multitool has to be removed.

**Reaction:** Alarm display.

**Remedy:** Make sure that the specified tool is removed from the toolholder. The alarm is cleared automatically after PLC acknowledgment of the tool change on command. Manual tools can only be used efficiently if this is supported by the PLC program.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 17215 [Channel %1: ] Tool management: Remove manual tool %3 from buffer location %2

**Parameters:** %1 = Channel number
%2 = Buffer location number
%3 = Tool identifier

**Explanation:** Indicates that the specified manual tool must be removed from the specified buffer location before the program continues. A manual tool is a tool whose data is known to the NCK but has not been assigned to a magazine location and is, therefore, not fully accessible to the NCK for automatic tool change or, in most cases, to the machine either.
The specified manual tool may also be included in a multitool. In this case the multitool has to be removed.

**Reaction:** Alarm display.

**Remedy:** Make sure that the specified manual tool is removed from the buffer location. The alarm is cleared automatically after PLC acknowledgment of the tool change OFF command. Manual tools can only be used efficiently if this is supported by the PLC program.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 17216 [Channel %1: ] Remove manual tool from toolholder %4 and load manual tool %3 %2

**Parameters:** %1 = Channel number
%2 = Duplo no.
%3 = Tool identifier
%4 = Toolholder number (spindle number)

**Explanation:** Indicates that the specified manual tool must be loaded in the specified toolholder or spindle before the program is continued and that the manual tool located there must be removed. A manual tool is a tool whose data are known to the NCK but which is not assigned to a magazine location and is thus not fully accessible to the NCK, and usually also to the machine, for an automatic tool change.

**Reaction:** Alarm display.

**Remedy:** Make sure that the manual tools are exchanged. The alarm is cleared automatically after PLC acknowledgment of the tool change on command. Manual tools can only be used efficiently if this is supported by the PLC program.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 17218 [Channel %1: ] Block %2 Tool %3 cannot become a manual tool

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Tool identifier

**Explanation:** The specified tool has a dedicated location and/or a location has been reserved for this tool in an actual magazine. Therefore, it cannot become a manual tool.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Correct the NC program
- Use the programming of "DELRMRES" to check that there is no reference to an actual magazine location

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17220 [Channel %1: ] Block %2 tool not existing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs if a T no., the tool name or the tool name and duplo number is used in an attempt to access a tool that has not been defined or is yet to be defined (e.g. if tools are to be positioned in magazine locations by programming $TC_MPP6 = 'toolNo'). This will only be possible if both the magazine location and the tool specified with 'toolNo' have been defined.
The tool which does not exist can also be a multitool (the multitool is treated like a tool).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17224 [Channel %1: ] Block %2 tool T/D= %3 - tool type %4 is not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Incorrect T no. / D no.
%4 = Incorrect tool type

**Explanation:** On this system, it is not possible to select tool offsets of the indicated tool types.
The variety of tool types can both be limited by the machine OEM and be reduced on individual control models.
Only use tools of the tool types permitted for this system.
Check whether an error has occurred on defining the tool.

**Reaction:** Correction block is reorganized.
Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program or correct the tool data

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17230 [Channel %1: ] Block %2 Duplo no. already assigned

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If an attempt is made to write a tool Duplo number to the name of which another tool (another T number) already exists with the same Duplo number.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17240 [Channel %1: ] Block %2 illegal tool definition

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If an attempt is made to modify a tool data that would subsequently damage the data consistency or lead to a conflicting definition, this alarm will appear.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17241 [Channel %1: ] Block %2 illegal adapter definition

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Possible causes of the error:
- For an old-type tool adapter (type 1), parameters belonging to the new-type adapter (type 2) cannot be written.
- For a new-type tool adapter (type 2), parameters belonging to the old-type adapter (type 1) cannot be written.
The adapter type can neither be changed nor set to less than 0 or greater than 2.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:**
- For an old-type tool adapter (type 1), only write parameters belonging to type 1.
- For a new-type tool adapter (type 2), only write parameters belonging to type 2.
- The adapter type can only be set once with the value 1 or 2.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17250 [Channel %1: ] Block %2 illegal magazine definition

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If an attempt is made to modify a magazine data that would subsequently damage the data consistency or lead to a conflicting definition, this alarm will appear.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17255 [Channel %1: ] Block %2 magazine location hierarchies have been deleted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If $TC_MAMP2, bit 15 is changed, existing hierarchies may be deleted because of a change in meaning.

**Reaction:** Alarm display.

**Remedy:** Redefine magazine location hierarchies.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17260 [Channel %1: ] Block %2 illegal magazine location definition

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** This alarm occurs if an attempt is made to change a magazine location data which would subsequently damage data consistency irreparably or lead to a conflicting definition.
Example: If parameter $TC_MPP1 (= type of location) is written with 'spindle/toolholder location',
this may conflict with the limiting MD18075 $MN_MM_NUM_TOOLHOLDERS.
The remedy is then either - if permitted by the control model - to increase the value of MD18075 $MN_MM_NUM_TOOLHOLDERS
or to correct the magazine definition.
A tool cannot be simultaneously:
- Loaded in two different magazine locations.
- A part of a multitool and in a magazine location.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the NC program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17261 [TO unit %1: ] Not all the values of %3 from magazine %2 can be displayed.

**Parameters:** %1 = TO unit
%2 = Magazine number
%3 = Parameter names

**Explanation:** Not all user magazine location data ($TC_MPPCx[magNo, locNo] can be accessed via OPI.

**Reaction:** Alarm display.

**Remedy:** - Either reduce the number of OEM magazine location parameters. (MD18092 $MN_MM_NUM_CC_MAGLOC_PARAM)
- Or reduce the number of magazine locations in the stated magazine. ($TC_MAP6[magNo], $TC_MAP7[magNo])
The product of the 3 stated parameters must not exceed 32767.

**Programm continuation:** Clear alarm with the Delete key or NC START.
This is just an information alarm.

## 17262 [Channel %1: ] Block %2 illegal tool adapter operation (Cause: %3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Cause

**Explanation:** Meaning of the error causes:
1: There is already another adapter on the intended magazine or multitool location.
Note: If MD18104 $MN_MM_NUM_TOOL_ADAPTER = -1 is set, each magazine location is assigned a type 1 adapter from the start.
2: There is already a tool on the intended magazine or multitool location.
3: The adapter cannot be removed from the location because there is still a tool on the location.
4: An attempt is being made to place a non-existent adapter at a magazine or multitool location.
5: The adapter cannot be deleted because it is still assigned to a location.
6: If $MN_MM_NUM_TOOL_ADAPTER = -1, all adapters or one adapter of type 1 cannot be deleted.
6: If $TC_ADPTT[n] = -1, a type 2 adapter cannot be deleted.
6: If $TC_ADPTT[0] = -1, no adapter can be deleted, if $MN_MM_NUM_TOOL_ADAPTER_TYPE2 > 0.
21: Grinding tools (type 4xx) and turning tools (type 5xx) are not allowed on a location with a new-type adapter (type 2):
22: An old-type tool adapter (type 1) cannot yet be assigned to a multitool location.
23: A new-type tool adapter (type 2) cannot yet be assigned to a magazine location.
24: If a multitool with an adapter is placed at a magazine location with an adapter, only a type 1 adapter may be on the magazine location with the default setting.
(($TC_ADPT1[n]= 0.0, $TC_ADPT2[n]= 0.0, $TC_ADPT3[n]= 0.0, $TC_ADPTT[n]= 1)
25: Initially a type 2 adapter may only be placed on a multitool location with one location

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Assign a maximum of one adapter to a magazine location.
- If MD18104 $MN_MM_NUM_TOOL_ADAPTER = -1, only write adapter data already associated with the magazine locations.
- When assigning an adapter to a magazine location, the magazine location must not contain a tool.
- When removing an adapter from a magazine location, the magazine location must not contain a tool.
- Only place existing adapters at a magazine or multitool location.
- Only type 1 adapters can be deleted with $TC_ADPTT[n] = -1.
- All adapters with $TC_ADPTT[0] = -1 can only be deleted if $MN_MM_NUM_TOOL_ADAPTER_TYPE2=0.
- Set only permitted tool types on a location with new type adapters (type 2).
- Assign old-type tool adapters (type 1) only to a magazine location.
- Assign new-type tool adapters (type 2) only to a multitool location.
- Do not cascade an adapter to a magazine location and a multitool location.
- Set up a multitool with only one magazine location for a type 2 adapter.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17270 [Channel %1: ] Block %2 call-by-reference: illegal variable

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Machine data and system variables must not be transferred as call-by-reference parameters.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify NC program: Assign the value of the machine data or of the system variable to a program-local variable and transfer this as parameter.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17500 [Channel %1: ] Block %2 axis %3 is not an indexing axis

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** An indexing axis position has been programmed for an axis with the keywords CIC, CAC or CDC that has not been defined as indexing axis in the machine data.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Remove programming instruction for indexing axis positions (CIC, CAC, CDC) from the NC part program or declare the relevant axis to be an indexing axis.
Indexing axis declaration:
Modify MD30500: $MA_INDEX_AX_ASSIGN_POS_TAB (indexing axis assignment)
The axis will become an indexing axis when an assignment to an indexing position table was made in the stated MD. 2 tables are possible (input value 1 or 2).
Modify MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1
Modify MD10920 $MN_INDEX_AX_LENGTH_POS_TAB_2 (Number of positions for 1st/2nd indexing axis)
Standard value: 0 Maximum value: 60
Modify MD10910 $MN_INDEX_AX_POS_TAB_1 [n]
Modify MD10930 $MN_INDEX_AX_POS_TAB_2 [n]
(Positions of the 1st indexing axis) The absolute axis positions are entered. (The list length is defined via MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17501 [Channel %1: ] Block %2 indexing axis %3 with Hirth tooth system is active

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** The 'Hirth tooth system' function is activated for the indexing axis. This axis can therefore approach only indexing positions. A different traverse of the axis is not possible.
It is not permissible to program PRESETON or PRESETONS.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Correct the part program.
Correct the call FC16 or FC18.
Deselect MD30505 $MA_HIRTH_IS_ACTIVE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**17502** **[Channel %1: ] Block %2 indexing axis %3 with Hirth tooth system stop is delayed**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** For the indexing axis, the 'Hirth tooth system' function is activated and the override has been set to 0 or another stop condition (e.g. VDI interface signal) is active. Since it is possible to stop only on indexing axes, the next possible indexing position is approached. The alarm is displayed until this position is reached or the stop condition is deactivated.

**Reaction:** Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Wait until the next possible indexing position is reached.
Set the override > 0.
Deactivate another stop condition.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

**17503** **[Channel %1: ] Block %2 indexing axis %3 with Hirth tooth system and axis not referenced**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** The "Hirth tooth system" function is activated for the indexing axis and the axis is to be traversed although it is not referenced.

**Reaction:** Alarm display.

**Remedy:** Reference the axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**17505** **[Channel %1: ] Block %2 motion synchronous action: %3 indexing axis %4 is active with Hirth tooth system**

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** The 'Hirth tooth system' function is activated for the indexing axis. This axis can therefore approach only indexing positions, another travel movement of the axis is not possible.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Correct part program.
Correct FC16 or FC18 call.
Deselect machine data MD30505 $MA_HIRTH_IS_ACTIVE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**17510** **[Channel %1: ] Block %2 invalid index for indexing axis %3**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The programmed index for the indexing axis is beyond the position table range.
Example:
Perform an absolute approach of the 56th position in the list allocated via the axis-specific MD30500 $MA_INDEX_AX_ASSIGN_POS_TAB with the 1st positioning axis, the number of positions is e.g. only 40 (MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1 = 40).
N100 G.. U=CAC (56)
Or, with equidistant distances, the programmed index is smaller or equal 0.
Or, an attempt is made with a MOV movement to travel to a position outside the permitted area.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program the indexing axis position in the NC part program in accordance with the length of the current position table, or add the required value to the position table and adjust the length of the list.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17600 [Channel %1: ] Block %2 preset on transformed axis %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The programmed preset key axis is involved in the current transformation. This means that setting the actual value memory (PRESET) is not possible for this axis (valid for PRESETON and PRESETONS).
Example:
Machine axis A should be set to the new actual value A 100 at the absolute position A 300.
:
N100 G90 G00 A=300
N101 PRESETON A=100

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Avoid preset actual value memory for axes which are participating in a transformation or deselect the transformation with the keyword TRAFOOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17601 [Channel %1: ] Block %2 motion synchronous action: %3 preset not possible on axis %4

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** Actual value preset not possible for this axis because
- the axis is moving
- the axis is involved in a transformation
- the axis is currently being monitored for collision
- the spindle traverse movement has not yet been completed
- reference point approach (G74) is active
- the geometry axis is not in the 'neutral axis' state

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Avoid actual value preset or put the relevant geometry axis in the 'neutral axis' state in good time with RELEASE(...).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17602 [Channel %1: ] Block %2 motion synchronized action: %3 preset not possible on axis %4 in JOGREF mode

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** The actual value cannot be preset for this axis if the mode group to which this axis is assigned is in JOG mode and if the machine function reference point approach is also selected.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Avoid setting actual value in this configuration or deselect the machine function reference point approach.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17603 [Channel %1: ] Block %2 motion synchronized action: %3 preset is only possible on a stationary axis %4 in JOG mode

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** In JOG mode, an actual value can only be preset on stationary axes.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Avoid setting an actual value while the axis is in motion; wait until the axis is stationary.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17604 [Channel %1: ] Block %2 motion synchronized action: %3 preset not possible on active oscillating axis (axis %4)

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** An actual value cannot be preset on an active oscillating axis controlled via synchronized actions.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Avoid setting actual value during active oscillating movement.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17605 [Channel %1: ] Block %2 axis %3 transformation active: inhibits rotation of axis container

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The programmed axis/spindle is active in a transformation and the axis container cannot be rotated for this reason.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Modify part program. Deactivate the transformation for this axis/spindle before rotating the axis container or perform the axis container rotation later.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17610 [Channel %1: ] Block %2 axis %3 involved in the transformation, action cannot be carried out

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The axis is involved in the active transformation. It can therefore not execute the demanded action, traversing as positioning axis, enable for axis exchange.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Deselect the transformation with TRAFOOF ahead of time or remove the action from the part program block

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17620 [Channel %1: ] Block %2 approaching fixed point for transformed axis %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** In the displayed block, an axis is programmed for the fixed point approach (G75) that is involved in the active transformation. Fixed point approach is not performed with this axis!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Remove G75 instruction from the part program block or previously deselect transformation with TRAFOOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17630 [Channel %1: ] Block %2 referencing for transformed axis %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** In the displayed block, an axis is programmed for reference point approach (G74) that is involved in the active transformation. Reference point approach is not performed with this axis!

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Remove G74 instruction, or the machine axes involved in transformation, from the part program block or previously deselect the transformation with TRAFOOF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17640 [Channel %1: ] Block %2 spindle operation for transformed axis %3 not possible

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The axis programmed for the spindle operation is involved in the current transformation as geometry axis. This is not allowed.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** First disable the transformation function.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17650 [Channel %1: ] Block %2 machine axis %3 not programmable

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** The machine axis cannot be used in an active transformation. You may be able to program the function in a different coordinate system. For example, it may be possible to specify the retraction position in the basic coordinate system or the workpiece coordinate system. The axis identifier is used to select the coordinate system.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Deactivate the transformation or use another coordinate system.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17800 [Channel %1: ] Block %2 illegally coded position programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The position number n specified with the keyword FP=n is not permissible. Two (2) absolute axis positions can be directly defined as fixed points by the axis-specific machine data MD30600 $MA_FIX_POINT_POS[n].
Or, if position numbers 3 and/or 4 are to be used, then machine data MD30610 $MA_NUM_FIX_POINT_POS must be set accordingly.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Program keyword FP with machine fixed points 1 or 2.
Example:
Approach fixed point 2 with machine axes X1 and Z2.
N100 G75 FP=2 X1=0 Z2=0
Or modify MD30610 $MA_NUM_FIX_POINT_POS and, if necessary, MD30600 $MA_FIX_POINT_POS[].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 17810 [Channel %1: ] Axis %2 not referenced

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** A function has been activated for the axis in JOG mode, e.g. fixed-point approach, JOG to position, JOG in circles, but the axis has not been referenced.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Reference axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17811 [Channel %1: ] Fixed-point approach not possible for axis %2 in JOG, reason %3

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Cause

**Explanation:** A 'fixed-point approach in JOG' has been requested for an axis. This is not possible because:
Reason 1: The axis is involved in the active transformation.
Reason 2: The axis is a following axis in an active coupling.
The fixed point approach will therefore not be executed.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Deselect fixed-point approach in JOG, or previously deselect the transformation with TRAFOOF or disband the coupling.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17812 [Channel %1: ] Axis %2 fixed-point approach in JOG: Fixed point %3 changed

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Fixed-point number

**Explanation:** 'Fixed-point approach in JOG' is active for the axis, but another fixed point has been selected, or the fixed-point approach has been deactivated. The approach motion is canceled.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Trigger JOG motion again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17813 [Channel %1: ] Axis %2 fixed-point approach in JOG and override motion active

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** 'Fixed-point approach in JOG' is active for the axis, but another offset motion - for example a synchronization offset $AA_OFF - has been interpolated simultaneously.
The position of the selected fixed-point is not reached if offset values are changed during the traversing motion.
The target point then becomes "fixed-point position + change in offset value".
The end point will be reached if the traversing motion is restarted after the offset value has been changed.
(For example: incremental traversing in which the traversing motion stops intermittently).
Reason:
Restarting the motion takes the current offset value into account.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Trigger JOG motion again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17814 [Channel %1: ] Axis %2 fixed-point position not available

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Number of fixed-point position

**Explanation:** No fixed-point position is available for the fixed point selected in JOG mode. See MD30610 $MA_NUM_FIX_POINT_POS.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Adapt MD30610 $MA_NUM_FIX_POINT_POS and, if necessary, MD30600 $MA_FIX_POINT_POS[].
Deselect fixed-point approach or select a valid fixed point, and restart the JOG motion.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17815 Indexing axis %1 fixed point %2 unequal indexing position

**Parameters:** %1 = Axis number
%2 = Array index of machine data

**Explanation:** The axis is a referenced indexing axis, and the fixed-point number %2 to be approached in JOG mode (defined in MD30600 $MA_FIX_POINT_POS) does not coincide with an indexing position. In JOG mode, referenced indexing axes approach indexing positions.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** MD30600 $MA_FIX_POINT_POS[] or adapt the indexing positions.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17821 [Channel %1: ] Axis %2 JOG to position and override motion active

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** 'JOG to position' is active for the axis, but an offset motion - for example a synchronization offset $AA_OFF - has been interpolated simultaneously.
The position of the SD43320 $SA_JOG_POSITION is not reached if offset values are changed during the traversing motion.
The target point then becomes "Jog position + change in offset value".
The position SD43320 $SA_JOG_POSITION will be reached if the traversing motion is restarted after the offset value has been changed.
(For example: incremental traversing in which the traversing motion stops intermittently).
Reason:
Restarting the motion takes the current offset value into account.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Trigger JOG motion again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17822 [Channel %1: ] Axis %2 JOG to position: Position changed

**Parameters:** %1 = Channel number

**Explanation:** An axis motion is active for the axis with 'JOG to position' but the position, that is the content of SD43320 $SA_JOG_POSITION, has been changed. The approach motion is canceled.

**Reaction:** Interface signals are set.
Alarm display.
**Remedy:** Trigger JOG motion again.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17823 [Channel %1: ] Axis %2 JOG to position deactivated

**Parameters:** %1 = Channel number
**Explanation:** An axis motion is active for the axis with 'JOG to position' but 'JOG to position' has been deactivated. The approach motion is canceled.
**Reaction:** Interface signals are set.
Alarm display.
**Remedy:** Trigger JOG motion again.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17825 Indexing axis %1 $SA_JOG_POSITION unequal indexing position

**Parameters:** %1 = Axis number
**Explanation:** The axis is a referenced indexing axis and 'JOG to position' is activated in JOG mode, but SD43320 $SA_JOG_POSITION does not coincide with an indexing position. In JOG mode, referenced indexing axes approach indexing positions.
**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify SD43320 $SA_JOG_POSITION or indexing positions.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 17830 [Channel %1: ] JOG in a circle is activated, but the axis %2 required for this is not a geometry axis.

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
**Explanation:** The function JOG in circles has been activated, but the axis required for this has not been defined as a geometry axis.
**Reaction:** Interface signals are set.
Alarm display.
**Remedy:** Define axis as geometry axis.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17831 [Channel %1: ] JOG a circle is not possible, reason %2

**Parameters:** %1 = Channel number
%2 = Cause

**Explanation:** The JOG in circles function was activated, but this is not possible because:
1. The current positions of the axes involved lie outside the selected pitch circle.
2. The current positions of the axes involved, with pitch circle selected and tool radius offset active, are too near to the center of the circle.
3. The current positions of the axes involved, with tool radius offset active, are too near to the limiting circle during internal machining.
4. The current positions of the axes involved, with tool radius offset active, are too near to the limiting circle during external machining.
5. The current positions of the axes involved in internal machining are outside the defined circle.
6. The current positions of the axes involved in external machining are inside the defined circle.
10. A rotation is acting on the current plane, that is the current plane is inclined in space. This is not currently supported.
20. JOG Retract is active. This mode is not supported.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Define axis as geometry axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17833 [Channel %1: ] JOG a circle is active and JOG circles deactivated

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** A circular motion is active but 'JOG in circles' has been deactivated. The circular motion is canceled.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Reactivate 'JOG circles' and trigger JOG motion again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 17900 [Channel %1: ] Block %2 motion synchronous action: %3 axis %4 is not a machine axis

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** At this point, the block context calls for a machine axis. This is the case with:
- G74 (reference point approach)
- G75 (fixed point approach)
- PRESETON/PRESETONS on GANTRY synchronous axis

If a geometry or special axis identifier is used, then it must also be permitted as machine axis identifier (MD10000 $MN_AXCONF_MACHAX_NAME_TAB

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Use machine axis identifier when programming.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18000 [Channel %1: ] Block %2 NCK-specific protection area %3 wrong. Error code %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of NCK protection area
%4 = Error specification

**Explanation:** There is an error in the definition of the protection area. The error number gives the specific reason for the alarm:

No. Meaning

1: Incomplete or conflicting contour definition.

2: Contour encompasses more than one surface area.

3: Tool-related protection area is not convex.

4: If both boundaries are active in the 3rd dimension of the protection area and both limits have the same value.

5: The number of the protection area does not exist (negative number, zero or greater than the maximum number of protection areas).

6: Protection area definition consists of more than 10 contour elements.

7: Tool-related protection area is defined as inside protection area.

8: Incorrect parameter used.

9: Protection area to be activated is not defined.

10: Incorrect modal G code used for protection area definition.

11: Contour definition incorrect or frame activated.

12: Other, not further specified errors.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify definition of the protection area and check MD.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18001 [Channel %1: ] Block %2 channel-specific protection area %3 incorrect. Error code %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Number of the channel-specific protection area

%4 = Error specification

**Explanation:** There is an error in the definition of the protection area. The error number gives the specific reason for the alarm.

No. Meaning

1: Incomplete or conflicting contour definition.

2: Contour encompasses more than one surface area.

3: Tool-related protection area is not convex.

4: If both boundaries are active in the 3rd dimension of the protection area and both limits have the same value.

5: The number of the protection area does not exist (negative number, zero or greater than the maximum number of protection areas).

6: Protection area definition consists of more than 10 contour elements.

7: Tool-related protection area is defined as inside protection area.

8: Incorrect parameter used.

9: Protection area to be activated is not defined.

10: Incorrect modal G code used for protection area definition.

11: Contour definition incorrect or frame activated.

12: Other, not further specified errors.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Modify definition of the protection area and check MD.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18002 [Channel %1: ] Block %2 NCK protection area %3 cannot be activated. Error code %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Number of NCK protection area

%4 = Error specification

**Explanation:** An error has occurred on activating the protection area. The error number gives the specific reason for the alarm.

No. Meaning

1: Incomplete or conflicting contour definition.

2: Contour encompasses more than one surface area.

3: Tool-related protection area is not convex.

4: If both boundaries are active in the 3rd dimension of the protection area and both limits have the same value.

5: The number of the protection area does not exist (negative number, zero or greater than the maximum number of protection areas).

6: Protection area definition consists of more than 10 contour elements.

7: Tool-related protection area is defined as inside protection area.

8: Incorrect parameter used.

9: Protection area to be activated is not defined or number of contour element <2 or >MAXNUM_CONTOURNO_PROTECTAREA.

10: Error in internal structure of the protection areas.

11: Other, not further specified errors.

12: The number of simultaneously active protection areas exceeds the maximum number (channel-specific machine data).

13,14: Contour element cannot be created for protection areas.

15,16: No more memory space for the protection areas.

17: No more memory space for the contour elements.

18: The product of simultaneously activated or preactivated workpiece-related protection areas and tool-related protection areas is greater than 31.

Example: 16 workpiece-related and 1 tool-related protection area can be active.

The number of workpiece-related protection areas can then be increased, for example, to 19 (19 * 1 = 19).

However, the number of tool-related protection areas cannot be increased to 2 (16 * 2 = 32).

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

If the alarm is output on ramp-up (2nd parameter: "INIT" instead of block number), "Channel not ready to operate" will be set.

**Remedy:** Please inform the authorized personnel/service department.

1. Reduce the number of simultaneously active protection areas (MD).

2. Modify part program:

- Delete other protection areas.

- Preprocessing stop.

When the alarm occurs during control ramp-up, the system variables $SN_PA_... have to be corrected for the specified protection area. Afterwards perform a restart. If the erroneous data cannot be recognized, the protection area's immediate activation can be removed, and the system variables of the protection area can be written again by means of NPROTDEF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

If the alarm occurs during NC program execution, the current block can be changed. This way, the NPROT parameters can also be adjusted. However, if there is an error in the definition of the protection area, the NC program must be canceled and the definition must be corrected under NPROTDEF.

If the alarm occurs on control ramp-up, system variables $SN_PA_... must be corrected for the specified protection area. This can be done by downloading an Initial.ini file that includes the relevant corrected date. If afterwards a restart is performed again, the alarm will have been removed provided that the data are consistent.

## 18003 [Channel %1: ] Block %2 channel-specific protection area %3 cannot be activated. Error code %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Number of the channel-specific protection area

%4 = Error specification

**Explanation:** An error has occurred on activating the protection area. The error number gives the specific reason for the alarm.

No. Meaning

1: Incomplete or conflicting contour definition.

2: Contour encompasses more than one surface area.

3: Tool-related protection area is not convex.

4: If both boundaries are active in the 3rd dimension of the protection area and both limits have the same value.

5: The number of the protection area does not exist (negative number, zero or greater than the maximum number of protection areas).

6: Protection area definition consists of more than 10 contour elements.

7: Tool-related protection area is defined as inside protection area.

8: Incorrect parameter used.

9: Protection area to be activated is not defined or number of the contour element <2 or >MAXNUM_CONTOURNO_PROTECTAREA.

10: Error in internal structure of the protection areas.

11: Other, not further specified errors.

12: The number of protection areas simultaneously active exceeds the maximum number (channel-specific machine data).

13,14: Contour element for protection areas cannot be created.

15,16: No more memory space for the protection areas.

17: No more memory space for the contour elements.

**Reaction:** Correction block is reorganized.

Interface signals are set.

Alarm display.

If the alarm is output on ramp-up (2nd parameter: "INIT" instead of block number), "Channel not ready to operate" will be set.

**Remedy:** Please inform authorized personnel / the service department.

1. Reduce the number of simultaneously active protection areas (MD).

2. Modify part program:

- Delete other protection areas.

- Preprocessing stop.

When the alarm occurs on control ramp-up, system variables $SC_PA_... must be corrected for the specified protection area. Afterwards perform a restart. If the erroneous data cannot be recognized, the protection area's immediate activation can be removed, and the system variables of the protection area can be written again by means of CPROTDEF.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

The current block can be changed if the alarm occurs during NC program execution. The CPROT parameters can also be adjusted. However, if the error lies in the definition of the protection area, the NC program must be canceled and the definition corrected under CPROTDEF.

If the alarm occurs on control power-up, the system variables $SC_PA_... must be corrected for the specified protection area. This can be done by downloading an Initial.ini file that includes the relevant corrected data. If another restart is then made, the alarm will have been eliminated provided that the data are now consistent.

## 18004 [Channel %1: ] Block %2 orientation of workpiece-related protection area %3 does not correspond to the orientation of tool-related protection area %4

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Number of workpiece-related protection area

**Explanation:** The orientation of the workpiece-related protection area and the orientation of the tool-related protection area differ. If the protection area number is negative, then this is an NCK protection area.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Modify the protection area definition or do not simultaneously activate protection areas that have different orientations.
- Check machine data and modify the protection area definition if necessary.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18005 [Channel %1: ] Block %2 serious error in definition of NCK-specific protection area %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Protection area number

**Explanation:** The protection area definition must be terminated with EXECUTE before a preprocessing stop is performed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18006 [Channel %1: ] Block %2 serious error in definition of channel-specific protection area %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Protection area number

**Explanation:** The protection area definition must be terminated with EXECUTE before a preprocessing stop is performed.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Modify the part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18100 [Channel %1: ] Block %2 invalid value assigned to FXS[]

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The following values are valid at the present time:
0: "Deselect traverse against fixed stop"
1: "Select traverse against fixed stop" valid.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check the use of permissible values of the program command FXS, and correct the assignment.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18101 [Channel %1: ] Block %2 invalid value assigned to FXST[]

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only the range 0.0 - 100.0 is valid at the present time.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Check the use of permissible values of the program command FXST, and correct the assignment.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18102 [Channel %1: ] Block %2 invalid value assigned to FXSW[]

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Only positive values including zero are valid at the present time.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Check the use of permissible values of the program command FXSW, and correct the assignment.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18200 [Channel %1: ] Block %2 curve table: block search stop not allowed with definition CTABDEF

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Program instructions that lead to a preprocessing stop are not allowed within a curve table definition. The system variable $P_CTABDEF can be queried to check whether a table definition is currently active.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Put the block in parenthesis using "IF NOT($P_CTABDEF) ... ENDIF" or remove the instruction that causes the preprocessing stop. Then start the part program again.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18201 [Channel %1: ] Block %2 curve table: table %3 does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of curve table
**Explanation:** An attempt was made to use a curve table whose table number is not known in the system \par.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Change the table number in the program instruction or define the curve table with the desired table number.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18202 [Channel %1: ] Block %2 curve table: instruction CTABEND without CTABDEF not allowed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The CTABEND instruction, with which the definition of curve tables is completed, is programmed in the program. However, a CTABDEF instruction was not programmed to start the definition of curve tables.
Another cause of error may be that the CTABDEF and CTABEND instructions were not programmed in the same program level.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remove the command CTABEND from the program or insert the instruction CTABDEF ( ..) at the corresponding point in the program.
Program CTABDEF and CTABEND instructions on the same program level, main program or subroutine. Restart the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18203 [Channel %1: ] Block %2 curve table: instruction CTABDEF not within CTABDEF

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the program, the instruction CTABDEF that starts the definition of curve tables, is programmed within the definition part of a curve table. This is not allowed, as the current curve table must be completed with CTABEND first.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remove command CTABEND from program or insert instruction CTABDEF ( ..) at the relevant point in the program. The CTABDEF and CTABEND instructions must be programmed on the same program level (main program or subroutine). Restart the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18204 [Channel %1: ] Block %2 curve table: instruction SUPA/SUPD not within CTABDEF

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The G codes SUPA and SUPD are not allowed for the definition of a curve table, as they trigger a preprocessing stop.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remove G code SUPA/SUPD from the curve table definition. If possible, use G codes G53 or G153 instead of SUPA.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18205 [Channel %1: ] Block %2 motion synchronous action: %3 curve table %4 does not exist

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Number of curve table

**Explanation:** An attempt was made to use a curve table whose table number is not known in the system \par.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the table number in the program instruction or define the curve table with the desired table number.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18300 [Channel %1: ] Block %2 frame: fine shift not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Allocation of a fine shift to settable frames or the basic frame is not possible since MD18600 $MN_MM_FRAME_FINE_TRANS is not equal to 1.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Modify the program or set MD18600 $MN_MM_FRAME_FINE_TRANS to 1.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 18310 [Channel %1: ] Block %2 frame: illegal rotation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Rotations are not possible with NCU global frames.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18311 [Channel %1: ] Block %2 frame: illegal instruction

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to read or write a frame which does not exist.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18312 [Channel %1: ] Block %2 frame: fine shift not configured

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Fine shift must be configurd with G58 and G59.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify machine data.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18313 [Channel %1: ] Block %2 frame: illegal switchover of geometry axes

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** It is not allowed to change the geometry axis assignment because the current frame contains rotations.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Change NC program or set other mode with MD10602 $MN_FRAME_GEOAX_CHANGE_MODE.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 18314 [Channel %1: ] Block %2 frame: type conflict

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** It is not possible to chain global frames and channel-specific frames. The alarm occurs if a global frame is programmed with a channel axis name and no machine axis on this NCU is assigned to the channel axis. Channel-specific frames cannot be programmed with machine axis names if there is no corresponding channel axis on this NCU.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20000 [Channel %1: ] Axis %2 reference cam not reached

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
**Explanation:** After starting the reference point approach, the rising edge of the reduction cam must be reached within the section defined in the MD34030 $MA_REFP_MAX_CAM_DIST (phase 1 of referencing). (This error occurs only with incremental encoders).
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Please inform the authorized personnel/service department.
There are 3 possible causes of error:
1. The value entered in MD34030 $MA_REFP_MAX_CAM_DIST is too small.
Determine the maximum possible distance from the beginning of reference motion up to the reduction cam and compare with the value in MD34030 $MA_REFP_MAX_CAM_DIST, increase the value in the MD if necessary.
2. The cam signal is not received by the PLC input module.
Operate the reference point switch manually and check the input signal on the NC/PLC interface (route: Switch! Connector! Cable! PLC input! User program).
3. The reference point switch is not operated by the cam.
Check the vertical distance between reduction cam and activating switch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20001 [Channel %1: ] Axis %2 no cam signal present

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** At the beginning of phase 2 of reference point approach, the signal from the reduction cam is no longer available.

Phase 2 of reference point approach begins when the axis remains stationary after deceleration to the reduction cam. The axis then starts in the opposite direction in order to select the next zero marker of the measuring system on leaving the reduction cam or approaching it again (negative/positive edge).

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Check whether the deceleration path after the approach velocity is greater than the distance to the reference point cam - in which case the axis cannot stop until it is beyond the cam. Use a longer cam or reduce the approach velocity in MD34020 $MA_REFP_VELO_SEARCH_CAM.

When the axis has stopped at the cam, it must be checked whether the signal DB31, ... DBX12.7 (Deceleration reference point approach) is still available at the interface to the NCK.

- Hardware: Wire break? Short circuit?

- Software: User program?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20002 [Channel %1: ] Axis %2 zero marker not found

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** The hardware zero marker of the incremental position encoder or the substitute zero mark of the absolute position encoder is not within a defined section.

Phase 2 of the reference point approach ends when the zero marker of the encoder has been detected after the rising/falling edge of the NC/PLC interface signal DB31, ... DBX12.7 (Deceleration reference point approach) has given the trigger start. The maximum distance between the trigger start and the zero marker that follows is defined in the MD34060 $MA_REFP_MAX_MARKER_DIST.

The monitor prevents a zero marker signal from being overtraveled and the next being evaluated as reference point signal. (Faulty cam adjustment or excessive delay by the PLC user program).

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.

Check the cam adjustment and make sure that the distance is sufficient between the end of the cam and the zero marker signal that follows. The path must be greater than the axis can cover in the PLC cycle time.

Increase the MD34060 $MA_REFP_MAX_MARKER_DIST, but do not select a value greater than the distance between the 2 zero markers. This might result in the monitor being switched off.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20003 [Channel %1: ] Axis %2 measuring system error

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** In a measuring system with distance-coded reference marks, the distance between two adjacent markers has been found to be more than twice the value entered in MD34300 $MA_ENC_REFP_MARKER_DIST. The control does not issue the alarm until it has again detected a distance that is too long after having made a 2nd attempt in reverse direction with half the traversing velocity.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Determine the distance between 2 odd reference marks (reference mark interval). This value (which is 20.00 mm on Heidenhain scales) must be entered in MD34060 $MA_REFP_MAX_MARKER_DIST.
Check the reference track of the scale including the electronics for the evaluation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20004 [Channel %1: ] Axis %2 reference mark missing

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** In the distance-coded length measurement system, 2 reference marks were not found within the defined searching distance (axis-specific MD34060 $MA_REFP_MAX_MARKER_DIST).
A reduction cam is not required for distance-coded scales (but an existing cam will be evaluated). The conventional direction key determines the direction of search.
The searching distance MD34060 $MA_REFP_MAX_MARKER_DIST, within which the two reference marks are expected is counted commencing at the start point.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Determine the distance between 2 odd reference point markers (reference point marker interval). This value (which is 20.00 mm on Heidenhain scales) must be entered in the MD34060 $MA_REFP_MAX_MARKER_DIST.
Check the reference point track of the scale including the electronics for the evaluation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20005 [Channel %1: ] Axis %2 reference point approach canceled

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** Referencing could not be completed for all stated axes (e.g., cancelation caused by missing servo enable, measuring system switchover, release of direction key, etc.).
In distance-coded measuring systems, the alarm will also be displayed if the value 1 has been set in MD34000 $MA_REFP_CAM_IS_ACTIV (reference cams) and one of the conditions stated in the remedy has been fulfilled.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized service personnel. Check the possible reasons for termination:
- Servo enable missing: NC/PLC interface signal DB31, ... DBX2.1 (Servo enable)
- Measuring system switchover: NC/PLC interface signal DB31, ... DBX1.5 / 1.6 (Position measuring system 1/2)
- Traversing key + or - missing: NC/PLC interface signal DB31, ... DBX4.7 / 4.6 (Traversing keys plus/minus)
- Feed override = 0
- The feed disable is active
- Exact stop not reached within MD36020 $MA_POSITIONING_TIME.
- Drive-side error messages, e.g. reference mark signal, not received

The axis-specific MD34110 $MA_REFP_CYCLE_NR determines which axes are involved in the channel-specific referencing.

Value Meaning

-1: No channel-specific referencing, NC Start without referencing.

0: No channel-specific referencing, NC Start with referencing.

1-8: Channel-specific referencing. The number entered here corresponds to the referencing sequence. (When all axes with contents 1 have reached the reference point, then the axes with contents 2 start, etc.).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20006 [Channel %1: ] Axis %2 reference point shutdown velocity not reached

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** In phase 2 of reference point approach (wait for zero mark), the cam end was reached but the reference point approach velocity was not within the tolerance window. (This can occur when the axis is already at the end of the cam at the beginning of reference point approach. Phase 1 is therefore considered as being already concluded and will not be started.)

Phase 2 has been interrupted (this time before the cam) and the reference point approach will be started once again automatically with phase 1. If the approach velocity is not reached at the 2nd attempt either, referencing will be stopped and the alarm displayed.

Approach velocity: MD34040 $MA_REFP_VELO_SEARCH_MARKER

Velocity tolerance: MD35150 $MA_SPIND_DES_VELO_TOL.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.

Reduce the MD for the approach velocity MD34040 $MA_REFP_VELO_SEARCH_MARKER and/or increase the MD for the velocity tolerance MD35150 $MA_SPIND_DES_VELO_TOL.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20007 [Channel %1: ] Axis %2 reference point approach requires 2 measuring systems

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** 2 encoders are needed for setting MD34200 $MA_ENC_REFP_MODE = 6!

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.

Modify the referencing mode for MD34200 $MA_ENC_REFP_MODE or install and configure a second encoder.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20008 [Channel %1: ] Axis %2 reference point approach requires second referenced measuring system

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** When setting MD34200 $MA_ENC_REFP_MODE = 6 the 2nd encoder must first be referenced.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the referencing mode in MD34200 $MA_ENC_REFP_MODE or reference the 2nd encoder.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20050 [Channel %1: ] Axis %2 handwheel mode active

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The axes cannot be traversed in JOG mode using the traversing keys because traversing is still taking place via the handwheel.

**Reaction:** Alarm display.

**Remedy:** Decide whether the axis is to be traversed by means of the direction keys or the handwheel. End handwheel travel and delete the axial distance-to-go if necessary (NC/PLC interface signal DB31, ... DBX2.2 (Delete distance-to-go/Spindle reset)).

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20051 [Channel %1: ] Axis %2 handwheel mode not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The axis is already traveling via the traversing keys, so handwheel mode is no longer possible.

**Reaction:** Alarm display.

**Remedy:** Decide whether the axis is to be traversed by means of the jog keys or via the handwheel.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20052 [Channel %1: ] Axis %2 already active

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The axis is to traverse as a machine axis in JOG mode using the direction keys on the machine control panel. However, this is not possible because:
1. It is already traversing as a geometry axis (through the channel-specific interface DB21-30 DBX12.6 / 12.7 (Traversing keys -/+) or DB21-30 DBX16.6 / 16.7 (Traversing keys -/+) or DB21-30 DBX20.6 / 20.7 (Traversing keys -/+)) or
2. It is already traversing as a machine axis (through the axis-specific interface DB31, ... DBX4.7 / 4.6 (Traversing keys plus/minus)) or
3. A frame is valid for a rotated coordinate system, and another geometry axis involved in this is already traversing in JOG mode by means of the direction keys.
4. As part of a retraction motion (submode JOG-Retract) it cannot be traversed as a machine axis.

**Reaction:** Alarm display.

**Remedy:** Stop traversing through the channel or axis interface or stop the other geometry axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20053 [Channel %1: ] Axis %2 DRF, $AA_OFF, FTOCON, external zero point offset not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The axis is traversed in a mode (e.g. referencing) that allows no additional overlaid interpolation.

**Reaction:** Alarm display.

**Remedy:** Wait until the axis has reached its reference position or terminate reference point approach with "Reset" and start DRF once again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20054 [Channel %1: ] Axis %2 wrong index for indexing axis in JOG mode

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** 1. The displayed indexing axis is to be traversed incrementally in JOG mode (by 1 indexing position). However, no further indexing position is available in the selected direction.
2. The axis is stationary at the last indexing position. In incremental traversing the working area limitation or the software limit switch is reached without an indexing position being located in front of it at which a stop could be made.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Correct (add to) the list of indexing positions by means of the machine data
MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1
MD10910 $MN_INDEX_AX_POS_TAB_1
MD10920 $MN_INDEX_AX_LENGTH_POS_TAB_2
MD10930 $MN_INDEX_AX_POS_TAB_2
or set the working area limits or the software limit switches to other values.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20055 [Channel %1: ] Master spindle not present in JOG mode

**Parameters:** %1 = Channel number

**Explanation:** The displayed axis is to be traversed as machine axis in JOG mode with revolutional feed, but no master spindle has been defined from which the actual speed could have been derived.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
If the revolutional feed is also to be active in JOG mode, a master spindle must be declared via the channel-specific MD20090 $MC_SPIND_DEF_MASTER_SPIND. In this case you have to open a screen in the PARAMETER operating area with the softkeys "SETTINGDATA" and "JOG DATA" and preselect the G function G95 there. The JOG feedrate can then be entered in [mm/rev]. (If 0 mm/rev is set as JOG feed, the control takes the value assigned in the axis-specific MD 32050 $MA_JOG_REV_VELO or in the case of rapid traverse overlay MD32040 $MA_JOG_REV_VELO_RAPID).
The revolutional feed in JOG mode is deactivated by changing the G function from G95 to G94.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20056 [Channel %1: ] Axis %2 no revolutional feedrate possible. Axis/spindle %3 stationary

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Axis name, spindle number

**Explanation:** An axis is to traverse in JOG with revolutional feedrate. However, the feedrate of the spindle/axis from which the feedrate is to be derived is 0.

**Reaction:** Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
- Traverse the spindle/axis from which the feedrate is to be derived.
- Deselect revolutional feedrate G95 in JOG via the Settings screenform.
- Deselect revolutional feedrate G95 in setting data SD41100 $SN_JOG_REV_IS_ACTIVE.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20057 [Channel %1: ] Block %2 revolutional feedrate for axis/spindle %3 is <= zero

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** Revolutional feed has been programmed for an axis/spindle, but the velocity was not programmed or the programmed value is smaller than or equal to zero.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
You have the following possibilities of canceling the alarm;
- Correct the part program
- Specify a correct feedrate for PLC axes at the VDI interface,
- Specify a feedrate for oscillating axes in SD43740 $SA_OSCILL_VELO.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20058 [Channel %1: ] Axis %2 revolutional feedrate: illegal feed source

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** An axis/spindle is to be traversed at revolutional feedrate. The reference axis/spindle defined in SD 43300 $SA_ASSIGN_FEED_PER_REV_SOURCE refers to itself. The coupling caused cannot be executed.

**Reaction:** Alarm display.

**Remedy:** The reference axis/spindle must be modified accordingly in SD 43300.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20059 [Channel %1: ] Axis %2 already active due to %3

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Cause

**Explanation:** The axis (machine axis, geometry axis or orientation axis) is to be traversed in operation mode "Automatic&Jog" (see MD10735 $MN_JOG_MODE_MASK) by using the direction keys or a handwheel. This is not possible, as (see parameter 3):

1. the axis is active as a rotating spindle
2. the axis is a PLC axis
3. the axis is active as an asynchronous reciprocating axis
4. the axis is active as a command axis
5. the axis is active as a slave axis
6. a frame applies for a rotated coordinate system and an axis involved in the required JOG movement of the geometry axis is not available for this
7. an axis container rotation is activated via NCU link

Note: This alarm identifies an axis not capable of JOG which received a JOG order. In this case, the NCK will not proceed according to "Internal JOG".

**Reaction:** Alarm display.

**Remedy:** Wait for the axis to traverse or cancel with distance-to-go delete or RESET.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20060 [Channel %1: ] Axis %2 cannot be traversed as geometry axis

**Parameters:** %1 = Channel number

%2 = Axis name

**Explanation:** The axis is currently not in "Geometry axis" state. Therefore, it cannot be traversed in JOG mode as geometry axis.

If the word Work (WCS = workpiece coordinate system) is displayed in the "Position" screen, only the geometry axes can be traversed by means of the direction keys! (MCS ... Machine coordinate system; all machine axes can now be traversed by using the direction keys on the machine control panel).

**Reaction:** Alarm display.

**Remedy:** Check the operating steps to establish whether geometry axes really must be traversed, otherwise switch over to the machine axes by activating the "Work/Machine" key on the machine control panel.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20062 [Channel %1: ] Axis %2 already active

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** The displayed axis is already traversing as a machine axis. Therefore, it cannot be operated as a geometry axis.

Traversing an axis can take place in JOG mode through 2 different interfaces.

1. As a geometry axis: via the channel-specific interface DB21-30 DBX12.6 / 12.7 (Traversing keys -/+)
2. As a machine axis: via the axis-specific interface DB31, ... DBX4.7 / 4.6 (Traversing keys plus/minus)

With the standard machine control panel, it is not possible to operate an axis as a machine axis and as a geometry axis at the same time.

**Reaction:** Alarm display.

**Remedy:** Do not start the geometry axis until the traversing motion as machine axis has been concluded.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20064 [Channel %1: ] Axis %2 selection of several axes with an active taper angle is not permitted.

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** With an active taper angle, only one geometry axis at the time can be traversed in JOG mode by pressing traversing keys. Simultaneous traversing of a geometry axis as a machine axis is not permitted either.

**Reaction:** NC not ready.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Starting the geometry axis only if traversing of the other geometry axis or machine axis completed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20065 [Channel %1: ] Master spindle not defined for geometry axes in JOG mode

**Parameters:** %1 = Channel number

**Explanation:** The displayed axis is to be traversed as geometry axis in JOG mode with rotary feed, but no master spindle has been defined from which the actual speed could be derived.

**Reaction:** Local alarm reaction.
Interface signals are set.
Alarm display.

**Remedy:** If the revolutional feedrate is to be active in JOG mode too, then a master spindle must be declared in the channel-specific machine data MD20090 $MC_SPIND_DEF_MASTER_SPIND. In this case, you have to open a screen in the PARAMETER operating area with the softkeys "SETTINGDATA" and "JOG DATA", and preselect the G function G95 there. The JOG feedrate can then be entered in [mm/rev]. (If 0 mm/rev is set as JOG feedrate, the control takes the value assigned in the axis-specific machine data MD32050 $MA_JOG_REV_VELO or in the case of rapid traverse override MD32040 $MA_JOG_REV_VELO_RAPID).
The revolutional feedrate in JOG mode is deactivated by changing the G function from G95 to G94.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20070 [Channel %1: ] Axis %2 software limit switch %3 programmed end position %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "1+" or "1-" for software limit switches 1, "2+" or "2-" for software limit switch 2,
%4 = Programmed end position

**Explanation:** The axis is to be traversed by the PLC as a concurrent positioning axis to the limit position. This would violate the corresponding software limit switch for the axis. No traversing takes place.
With an additional message to alarm 20140, the axis is to be traversed as a command axis.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Specify smaller target position. Modify MD for SW limit switch. Possibly activate another SW limit switch. Retract axis via JOG.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20071 [Channel %1: ] Axis %2 working area limit %3 end position %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "+" or "-"
%4 = Programmed end position

**Explanation:** The displayed axis is to be traversed as a "concurrent positioning axis" to the programmed limit position and the corresponding working area limitation active for the axis is violated. No traversing takes place.
With an additional message to alarm 20140, the axis is traversed as a command axis.

**Reaction:** Alarm display.

**Remedy:**
- Specify smaller target position.
- Deactivate working area limitation.
- Set working area limitation differently.
- Retract axis with JOG.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20072 [Channel %1: ] Axis %2 is not an indexing axis

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** The displayed axis is operated as a concurrent positioning axis. Its target position is parameterized in the FC INDEX-AXIS as indexing position number, but the axis is not an indexing axis.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. The FC POS-AXIS for linear and rotary axes should be used or the axis should be declared as an indexing axis. Corresponding machine data for indexing axis declaration:
Modify MD30500 $MA_INDEX_AX_ASSIGN_POS_TAB
Modify MD10900 $MN_INDEX_AX_LENGTH_POS_TAB_1
Modify MD10910 $MN_INDEX_AX_POS_TAB_1
Modify MD10920 $MN_INDEX_AX_LENGTH_POS_TAB_2
Modify MD10930 $MN_INDEX_AX_POS_TAB_2

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20073 [Channel %1: ] Axis %2 cannot be repositioned

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** The concurrent positioning axis cannot be positioned because it has already been restarted via the VDI interface and is still active. No repositioning motion takes place and the motion initiated by the VDI interface is not affected.

**Reaction:** Alarm display.

**Remedy:** None.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20075 [Channel %1: ] Axis %2 can currently not oscillate

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** The axis cannot perform an oscillating movement now because it is already being traversed, e.g. in JOG mode.

**Reaction:** Alarm display.

**Remedy:** End the other traversing motion.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20076 [Channel %1: ] Axis %2 oscillating - mode change not possible

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** The axis is performing an oscillating movement. Mode change is not possible because oscillation is not allowed in the selected mode.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Do not initiate mode change. Cause the PLC to check the axis and make sure in the PLC program that the axis ends oscillation if such mode changes take place.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20077 [Channel %1: ] Axis %2 programmed position %4 is behind software limit switch %3

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "+" or "-"
%4 = Target position

**Explanation:** The axis is traversed as an oscillating axis and the target position (reversal position or end position) is located behind the corresponding software limit switch. The axis is not traversed.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Specify smaller target position.
Modify MD for SW limit switch.
Possibly activate another SW limit switch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20078 [Channel %1: ] Axis %2 programmed position %4 is behind working area limit %3

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "+" or "-"
%4 = Target position

**Explanation:** The axis is traversed as an oscillating axis and the target position (reversal position or end position) is located behind the corresponding effective working area limitation. The axis is not traversed.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Specify smaller target position.
Deactivate working area limitation.
Set working area limitation differentially.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20079 [Channel %1: ] Axis %2 oscillation path %3 <= 0

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = Length

**Explanation:** The axis is traversed as an oscillating axis and the distance to be traversed is smaller than or equal to zero. For example, both reversal points are situated on an identical position, one reversal point was shifted against the oscillating direction beyond the other reversal point. The axis is not traversed.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Specify correct target position (reversal position, end position).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20080 [Channel %1: ] Axis %2 no handwheel assigned for override

**Parameters:** %1 = Channel number
%2 = Axis number

**Explanation:** No handwheel has been assigned for this specified axis after handwheel overlay has been started in automatic mode. If the axis identifier is missing in the alarm with active velocity overlay FD > 0, then the 1st geometry axis has not been defined in the NC channel. In this case the block is executed without handwheel control.

**Reaction:** Alarm display.

**Remedy:** If handwheel control is required, a handwheel must be activated.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20082 [Channel %1: ] Axis %2 coordinate system-specific working area limit %3 end position %4

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "+" or "-"
%4 = End position

**Explanation:** The displayed axis is operated as a "concurrent positioning axis", and the corresponding active coordinate system-specific working area limitation for the axis is violated. No traversing movement.
With an additional message to alarm 20140, the axis is traversed as a command axis.

**Reaction:** Alarm display.

**Remedy:** - Specify smaller target position.
- Deactivate working area limitation.
- Set working area limitation differently.
- Retract axis with JOG.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20083 [Channel %1: ] Axis %2 programmed position %4 lies behind the coordinate system-specific working area limit %3

**Parameters:** %1 = Channel number
%2 = Axis number
%3 = "+" or "-"
%4 = End position

**Explanation:** The axis is traversed as a reciprocating axis, and the target position (reversal position or end position) is located behind the corresponding, valid, coordinate system-specific working area limitation. The axis is not traversed.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Specify smaller target position.
Deactivate working area limitation.
Set working area limitation differentially.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20085 [Channel %1: ] Contour handwheel: traverse direction or overtravel of beginning of block not allowed

**Parameters:** %1 = Channel number

**Explanation:** Travel takes place on the path with the contour handwheel in the opposite direction to the programmed travel direction and the starting point of the path has been reached at the start of the block.

**Reaction:** Alarm display.

**Remedy:** Turn the contour handwheel in the opposite direction.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20090 Axis %1 travel to fixed stop not possible. Check programming and axis data.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** 1. The "Traverse against fixed stop" function has been programmed with FXS[AX]=1 but the axis does not (yet) support this. Check MD37000 $MA_FIXED_STOP_MODE. This function is not available for gantry axes and simulated axes.

2. On selection, no movement was programmed for axis AX. AX is a machine axis identifier.

3. It is always necessary to program a traversing movement in the selection block for the axis/spindle for which the "Traverse against fixed stop" function is activated.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
- Check the axis type.
- Check MD37000 $MA_FIXED_STOP_MODE.
- Is a machine axis movement missing in the approach block?

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20091 Axis %1 has not reached fixed stop

**Parameters:** %1 = Axis name, spindle number

**Explanation:** On attempting to traverse against a fixed stop, the programmed end position has been reached or the traversing movement has been canceled. The alarm can be concealed by means of the MD37050 $MA_FIXED_STOP_ALARM_MASK.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Correct the part program and the settings:
- Has the traversing block been canceled?
- If the axis position does not correspond to the programmed end position, then correct the end position.
- If the programmed end position is in the part, the triggering criterion must be checked.
- Has the contour deviation leading to triggering been dimensioned too large? Has the torque limit been set too high?

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20092 Axis %1 travel to fixed stop still active

**Parameters:** %1 = Axis name, spindle number

**Explanation:** An attempt has been made to move an axis while it is in fixed stop or while the deselection function has not yet been completed.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
Check the following:
- Has the axis at the fixed stop also been moved by a traversing movement of geometry axes?
- Is a selection carried out even though the axis is stationary at the stop?
- Has the deselection process been interrupted by a RESET?
- Has the PLC switched the acknowledgment signals?

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20093 Axis %1 standstill monitoring at fixed-stop end point has been triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The position of the axis has been beyond the zero speed window ever since selection has been completed.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
- Check the mechanical components, e.g. has the stop broken away? Has the part to be clamped given way?
- Position window for zero speed control too small (MD37020 $MA_FIXED_STOP_WINDOW_DEF) (SD43520 $SA_FIXED_STOP_WINDOW). Default is 1 mm in each case.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20094 Axis %1 function has been canceled

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The function has been canceled. The possible reasons for this are:
- The torque can no longer be provided because a pulse disable has occurred, .
- The PLC has removed the acknowledgments.
The system variable $VA_FXS_INFO contains additional information regarding why the function was canceled.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Check whether
- there is a pulse disable from the infeed/regenerative-feedback unit or from the PLC?
- the acknowledgment bits have been deleted by the PLC even though NCK has not requested deselection?

Read out the system variable $VA_FXS_INFO, and then interpret the additional information.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20095 Axis %1 illegal torque, current torque %2

**Parameters:** %1 = Axis name, spindle number
%2 = Current holding torque when brake test selected

**Explanation:** The current holding torque, when brake test selected, cannot be attained with the present parameterization of the brake test.

**Reaction:** Alarm display.

**Remedy:** Check the parameterization for the brake test function check:
- The torque for the counterweight in the drive machine data p1532 should be nearly the same as the current holding torque. The current holding torque is displayed in the alarm text.
- The torque set for the brake test MD36966 $MA_SAFE_BRAKETEST_TORQUE must be greater than the current holding torque.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20096 Axis %1 brake test canceled, additional information %2

**Parameters:** %1 = Axis name, spindle number
%2 = Error information based on $VA_FXS_INFO

**Explanation:** The brake test has detected a problem. The additional information provides more details on the cause of the alarm. The explanation can be found in the $VA_FXS_INFO system variable documentation.
Additional information:
0: No additional information available.
1: Axis type is not a PLC or command axis.
2: Programmed end position reached.
3: Cancel using NC RESET (key reset).
4: Monitoring window exited.
5: Torque reduction rejected by drive.
6: PLC has canceled enables.
7: SINAMICS parameter p2003 is zero, or telegram without torque data.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Note the supplementary conditions of the brake test, see additional info.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20097 Axis %1 incorrect travel direction brake test

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Due to the selected travel direction, the brake test for the current load torque is performed with an incorrect torque.

**Reaction:** Alarm display.

**Remedy:**
- Perform the brake test for the other travel direction
- Adjust drive parameter p1532 better to the current weight ratio. The alarm will occur only if the current torque deviates from drive parameter p1532 by more than 7.5% of MD36966 $MA_SAFE_BRAKETEST_TORQUE when the brake is released.
- Activate the automatic determination of the load torque at the beginning of the brake test via MD36968 $MA_SAFE_BRAKETEST_CONTROL, bit 0 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20120 Axis %1: too many compensation relations

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Interpolatory compensation with tables. For each axis, the maximum number of compensation relationships defined may be no more than the number of axes in the system. In this alarm, the interpolatory compensation in the axis is switched off automatically.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check table parameters $AN_CEC_OUTPUT_AXIS and correct and/or switch off one or more tables (SD41300 $SN_CEC_TABLE_ENABLE).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20121 Axis %1: Configuration error in compensation table %2

**Parameters:** %1 = Axis name, spindle number
%2 = Compensation table

**Explanation:** Interpolatory compensation with tables. The settings for the specified table are not allowed. $AN_CEC_MAX >= $AN_CEC_MIN and $AN_CEC_STEP != 0 apply to system variables. This table is switched off automatically.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check and correct the characteristic data in the compensation table. If the error cannot be found, the alarm can be suppressed by switching off the table ($SN_CEC_TABLE_ENABLE) or switching off compensation in the axis ($MA_CEC_ENABLE).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20122 Compensation table %1: invalid axis assignment

**Parameters:** %1 = Compensation table

**Explanation:** Interpolatory compensation with tables. Assignment of the input or output axes in the given table is not allowed. $AN_CEC_INPUT_AXIS and $AN_CEC_OUTPUT_AXIS != 0 apply to system variables, and both must refer to valid axes. This table is automatically switched off.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check and correct the axis assignment in the compensation table. If the error cannot be found, the alarm can be suppressed by switching off the table ($SN_CEC_TABLE_ENABLE) or switching off compensation in the axis ($MA_CEC_ENABLE).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20123 Axis %1: different output assignment of multiplied tables

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Interpolatory compensation with tables. The two tables whose outputs are to be multiplied together have different output axes assigned to them. The compensation in this axis is automatically switched off.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check and correct the characteristic data in the compensation table ($AN_CEC_OUTPUT_AXIS and $AN_CEC_MULT_BY_TABLE).
If the error cannot be found, the alarm can be suppressed by switching off the compensation in the axis ($MA_CEC_ENABLE) or the tables, ($SN_CEC_TABLE_ENABLE).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20124 Axis %1: sum of compensation values too large

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The sum of the compensation values from all tables assigned to the axis had exceeded the limit value MD32720 $MA_CEC_MAX_SUM and had to be limited. Contour errors could have occurred as a result.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check characteristic data of the compensation tables assigned to the axis.
Check characteristic curves in the tables ($AN_CEC).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20125 Axis %1: change of compensation value is too rapid

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The compensation value has changed more rapidly than has been allowed for in MD32730 $MA_CEC_MAX_VELO. It had to be limited temporarily. The missing section is repeated later but contour errors might have occurred.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check characteristic data of the compensation tables assigned to the axis.
Check characteristic curves in the tables ($AN_CEC). Possibly one of the input axes has moved more rapidly than provided for.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20130 [Channel %1: ] Contour tunnel monitoring

**Parameters:** %1 = Channel number

**Explanation:** The tool tip has exited the tunnel placed around the desired contour, i.e. the distance between tool tip and desired contour was greater than specified in the MD21050 $MC_CONTOUR_TUNNEL_TOL.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Check the following points in turn:
1. Is the machine in working order? That is, has the alarm been tripped by a sluggish axis, tool breakage or collision?
2. If the machine is in working order, reduce the velocity or improve the controller setting.
3. Possibly increase the size of the tunnel and monitor errors via analog output in order to ascertain the cause.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 20138 [Channel %1: ] Block %2 motion synchronous action %3 command axis %4 cannot be traversed

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** The axis that should be traversed out of a synchronized action is not available
The following causes are possible:
- The axis is being or will be traversed by the NC program.
  This motion can also be made indirectly by means of continuous-path mode or an active frame.
- The axis can be actively assigned on account of a function (e.g. programming of the servo-parameter set).
- A superimposed motion is active for the axis.
- The axis is active as a following axis of a coupling.
- An interpolatory compensation, such as temperature compensation, is active for the axis.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20139 [Channel %1: ] Block %2 motion synchronous action: %3 invalid marker

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** Setting or deleting of a marker in the motion-synchronous action is not possible.
Possible causes:
SETM(): Maximum number of markers exceeded; marker has already been set.
CLEARM(): Specified marker is not within permissible value range.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** SETM(): use marker in valid value range; do not set the marker again.
CLEARM(): use marker in valid value range.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20140 [Channel %1: ] Traversing of command axis %2 see NC alarm %3 parameter %4

**Parameters:** %1 = Channel number
%2 = Axis
%3 = NC alarm
%4 = Additional parameter

**Explanation:** An NC alarm was detected for a command axis, which is to be traversed from a synchronized action. This alarm is output in the 3rd parameter as an HMI alarm number. Parameter 4 may provide additional information.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** See help information for the additional alarms.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20141 [Channel %1: ] Block %2 motion synchronous action: %3 axis %4 has illegal axis type

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** The requested command is not permissible in the current axis status for the command axis or spindle. This alarm occurs with command axes (POS, MOV), spindle commands from motion synchronous actions (M3/M4/M5, SPOS), coupled motion (TRAILON, TRAILOF) and lead value coupling (LEADON, LEADOF).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** First stop the axis or deactivate the coupling, then select a new status.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20142 [Channel %1: ] Block %2 motion synchronous action: %3: command axis %4: rotation of axis container already enabled

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** The synchronized action instruction is not allowed on a spindle enabled for the axis container rotation. The alarm only occurs if the spindle is handed to another NCU.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Initiate the synchronized action instruction before the axis container rotation enable or after the end of the rotation (depending on the application).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20143 [Channel %1: ] Block %2 motion synchronous action: %3 command axis %4 cannot be started as it is controlled by the PLC

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name

**Explanation:** An attempt has been made to start a command axis by means of a block-related or modal synchronous action. This start is not possible as the axis is controlled by the PLC.

**Reaction:** Alarm display.

**Remedy:** End control of the axis by the PLC and therefore return it to the channel or start the command axis with a static synchronous action.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20144 [Channel %1: ] Block %2 motion synchronous action: %3 system variable cannot be accessed

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** When using system variables, it is assumed that a read/write operation can access the required data successfully. In accesses to encoder actual values or digital I/Os, the result depends on the availability of the corresponding hardware components. If an access within synchronized actions does not return a valid value, alarm 20144 is output. Outside synchronized actions, such a read/write access causes block execution to be interrupted until the result is available. Block execution is subsequently continued.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Before reading/writing system variables, ensure that it is possible to access, for example, the required hardware components.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20145 [Channel %1: ] Block %2 motion synchronous action: %3 arithmetic error

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** In calculating an arithmetic expression for a motion synchronous action, an overflow has occurred (e.g. division by zero).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the incorrect expression.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20146 [Channel %1: ] Block %2 motion synchronous action: %3 nesting depth exceeded

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** For calculating arithmetic expressions in motion synchronous blocks, an operand stack with a fixed set size is used. With very complex expressions, this stack can overflow.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the incorrect expression.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20147 [Channel %1: ] Block %2 motion synchronous action: %3 command %4 not executable

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Program command

**Explanation:** One of the commands in the synchronized action block cannot be executed, e.g. it is not possible to perform a Reset for the specific synchronized action.
Measurement level 2
- Embargo version does not allow measurement from a synchronized action
- The MEASA command was programmed in a synchronized action
- Measurement is already active
- Programming error (see alarm 21701)

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the synchronized action.
Measurement level 2
Execute the measurement task from a part program first, in order to improve the error diagnostics. Do not include the measurement in the synchronized action until the first error-free run has been performed .

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20148 [Channel %1: ] Block %2 motion synchronous action: %3 internal error %4

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Error code

**Explanation:** An internal error has occurred during processing of a synchronous action. The error code is for diagnostics purposes. Please make a note and contact the manufacturer.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the synchronized action.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20149 [Channel %1: ] Block %2 motion-synchronous action: %3 Index %4 is illegal

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Index

**Explanation:** An invalid index was used to access a variable in the motion-synchronized action. The invalid index is also displayed.
Example: ... DO $R[$AC_MARKER[1]] = 100
The error occurs if the value of marker 1 is greater than the maximum permissible R-parameter number.
PROFIBUS/PROFINET I/O:
An invalid slot / I/O area index was used while reading/writing data.
Cause:
1.: Slot / I/O area index >= max. number of available slots / I/O areas.
2.: Slot / I/O area index references a slot / I/O area that has not been configured.
3.: Slot / I/O area index references a slot / I/O area that has not been released for system variables.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Use a valid index.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20150 [Channel %1: ] Tool management: PLC terminates interrupted command

**Parameters:** %1 = Channel number

**Explanation:** Indication that the PLC has terminated an interrupted command (with alarm output) from the tool management - tool change.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20160 [Channel %1: ] Tool management: PLC can terminate only incorrectly canceled commands

**Parameters:** %1 = Channel number

**Explanation:** Note that the PLC wanted to interrupt an active command from the tool management (tool change), or that there is no active command to cancel.
The NCK rejects for the following reasons:
- Channel status is "active". Cancel is not allowed,
- Channel status is "reset". Nothing can be canceled.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** This alarm is for information only.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20170 [Channel %1: ] Machine data $AC_FIFO invalid

**Parameters:** %1 = Channel number

**Explanation:** The structure of the FIFO variable $AC_FIFO1 - $AC_FIFO10 specified by the machine data MD28260 $MC_NUM_AC_FIFO, MD28262 $MC_START_AC_FIFO, MD28264 $MC_LEN_AC_FIFO and MD28266 $MC_MODE_AC_FIFO cannot be stored in the R parameter field defined in MD28050 $MC_MM_NUM_R_PARAM.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
Increase the number of R-parameters or reduce the number of FIFO elements.
Set the MD as follows: MD28050 $MC_MM_NUM_R_PARAM = MD28262 $MC_START_AC_FIFO + MD28260 $MC_NUM_AC_FIFO * (MD28264 $MC_LEN_AC_FIFO + 6)

**Programm continuation:** Switch control OFF - ON.

## 20200 [Channel %1: ] Invalid spindle number %2 with tool fine compensation

**Parameters:** %1 = Channel number target channel
%2 = Spindle number

**Explanation:** There is no spindle/axis assignment in the target channel for the spindle specified in the PUTFTOC command.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify program in channel that writes the tool fine compensation.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20201 [Channel %1: ] Spindle %2 no tool assigned

**Parameters:** %1 = Channel number
%2 = Spindle number

**Explanation:** In order to make allowance for the fine tool compensation for the tool currently in the spindle, a spindle/tool assignment must be active. This is not presently the case for the programmed spindle in the target channel of fine tool compensation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** 1. Modify the part program (write the tool fine compensation).
2. Establish spindle/tool assignment by programming:
- TMON (tool monitoring)
- GWPSON (tool selection)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20203 [Channel %1: ] No active tool

**Parameters:** %1 = Channel number

**Explanation:** A tool fine compensation has been written for the active tool of channel %1 with PUTFTOC. No tool is active in this channel. Therefore, the compensation cannot be assigned.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20204 [Channel %1: ] PUTFTOC command not allowed with FTOCOF

**Parameters:** %1 = Channel number

**Explanation:** A tool fine compensation has been written for channel %1 with PUTFTOC. The tool fine compensation is not active in this channel. FTOCON must be active in the target channel of the PUTFTOC command.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the program in the machining channel: Select FTOCON so that the channel is ready to receive the PUTFTOC command.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20205 [Channel %1: ] Block %2 motion synchronous action: %3 invalid spindle number %4

**Parameters:** %1 = Channel number target channel
%2 = Block number, line number
%3 = Synact ID
%4 = Spindle number

**Explanation:** There is no spindle/axis assignment in the target channel for the specified spindle.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20210 [Channel %1: ] Block %3 spindle %2 wrong values for centerless grinding

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Block number, label

**Explanation:** It was not possible to calculate a tool diameter (no speed specified for the spindle) for centerless grinding because it was not allowed by the input positions. The old S value still applies.

**Reaction:** Alarm display.

**Remedy:** - Modify program
- Select new traversing positions for centerless axes
- or suppress computation by G00.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20211 [Channel %1: ] Block %3 spindle %2 support point beyond range limits

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Block number, label

**Explanation:** The support point calculated for centerless grinding is beyond the range limits.
Machine data:
Modify MD21518 $MC_TRACLG_CONTACT_UPPER_LIMIT
Modify MD21520 $MC_TRACLG_CONTACT_LOWER_LIMIT

**Reaction:** Alarm display.

**Remedy:** - Check centerless axis positions and machine data.
- Modify program.
- Select new traversing positions for centerless axes
- or suppress computation by G00.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20295 [Channel %1: ] Block %2 Override of the current orientation is not possible: Error code %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Error code

**Explanation:** In the specified block, the override of the orientation leads to an invalid tool orientation or is not defined. The current offset vector leads to the current orientation of this block becoming a zero vector (vector with length 0) or the current direction vector of the rotation is not defined.

Possible error codes are:

1: Offset vector $AC_OFF_O[i] makes the current orientation a zero vector.

2: Offset vector $AC_OFF_R[i] makes the current rotation of the orientation a zero vector (only occurs with 6-axis kinematics).

3: An angle of rotation was specified for the current orientation with $AC_OFF_O_ANGLE, although the associated rotation vector $AC_OFF_O_DIR[i] is not defined.

4: An angle of rotation was programmed for the current rotation of the orientation with $AC_OFF_R_ANGLE, although the associated rotation vector $AC_OFF_R_DIR[i] is not defined.

**Reaction:** Alarm display.

**Remedy:** NC program change (overlaid orientation in synchronized actions).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20300 [Channel %1: ] Axis %2 orientation not possible

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** On traversing the displayed (virtual) orientation axis, a tool orientation is to be set

for which the kinematics of this machine are not possible.

**Reaction:** Alarm display.

**Remedy:** Cancel the JOG movement and specify another (possible) change of orientation.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20301 [Channel %1: ] overlaid orientation not possible

**Parameters:** %1 = Channel number

**Explanation:** Overlaid orientation cannot be set on these machine kinematics.

The overlaid orientation specified by one or more of the system variables

$AC_OFF_O[i]

$AC_OFF_R[i]

$AC_OFF_LEAD

$AC_OFF_TILT

$AC_OFF_THETA

$AC_OFF_O_ANGLE

$AC_OFF_R_ANGLE

cannot be set with these machine kinematics.

The alarm can be suppressed by bit 9 of MD21096: $MC_OFF_ORI_MODE. In this case, the orientation cannot be overlaid.

**Reaction:** Alarm display.

**Remedy:** NC program change (overlaid orientation in synchronized actions).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 20302 [Channel %1: ] Axis %2 cannot be traversed

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

**Explanation:** The displayed axis cannot be traversed as a machine axis because JOG Retract mode has been selected in JOG mode.

**Reaction:** Alarm display.

**Remedy:** Deselect JOG Retract with RESET

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 20304 [Channel %1: ] Axis %2 cannot be traversed as a geometry axis

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The displayed axis cannot be traversed as a geometry axis. The geometry axis is part of a retraction motion in JOG Retract mode. The requested motion of the geometry axis would lead to a violation of the permitted retraction direction.

**Reaction:** Alarm display.

**Remedy:** Deselect JOG Retract with RESET

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20306 [Channel %1: ] Cartesian manual traverse not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** Cartesian manual traverse is not possible in JOG Retract mode.

**Reaction:** Alarm display.

**Remedy:** Deselect JOG Retract with RESET

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20308 [Channel %1: ] Manual traverse in the SZS coodinate system is not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** Manual traverse in the SZS coodinate system is not possible in JOG Retract mode.

**Reaction:** Alarm display.

**Remedy:** Deselect JOG Retract with RESET

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 20310 [Channel %1: ] Axis %2 traverse to the specified position is not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The displayed axis cannot be traversed to the entered position in JOG Retract mode.
It is limited to the interrupt position when JOG Retract was selected.

**Reaction:** Alarm display.

**Remedy:** Traverse within the permitted positions

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 21550 [Channel %1: ] Axis %2 Travel from hardware limit switch not possible. Reason: %3

**Parameters:** %1 = Channel number
%2 = Axis name
%3 = Cause

**Explanation:** It has been tried to retract a following axis of an axis coupling or an output axis of a transformation through the master axis or input axis of a transformation. This is not permitted in the current situation.
Possible reasons:
1 No permissible direction of retraction
2 Coupling not synchronous
3 Retraction not permitted for the active coupling
4 Reserved
5 Retraction not permitted for the active transformation

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Remedy for error cause:
1 Define another travel direction
2 Deactivate the coupling and travel the axis/axes separately
3 Deactivate the coupling and travel the axis/axes separately
4 Reserved
5 Deactivate the transformation and travel the axis/axes separately

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 21600 Monitoring for ESR active

**Explanation:** -

**Reaction:** NC not ready.
Alarm display.
All alarm responses are delayed by one IPO cycle.

**Remedy:** The display can be suppressed with MD 11410 $MN_SUPPRESS_ALARM_MASK Bit 16 = 1

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 21610 [Channel %1: ] Axis %2 encoder %3 frequency exceeded

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = String (encoder number)

**Explanation:** The maximum permissible frequency of the currently active encoder (axis-specific interface signal DB31, ... DBX1.5 / 1.6 (position measuring system 1/2)) in the axis-specific MD36300 $MA_ENC_FREQ_LIMIT [n] (n ... encoder number, 1 or 2) has been exceeded. The reference of the actual value to the mechanical slide position may have been lost.
The alarm can be reprogrammed in MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Check MD36300 $MA_ENC_FREQ_LIMIT [n] and NC/PLC interface signal DB31, ... DBX1.5 / 1.6 (position measuring system 1/2).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 21611 [Channel %1: ] NC-controlled Extended Stop/Retract triggered

**Parameters:** %1 = Channel number

**Explanation:** "NC-controlled Extended Stop/Retract" triggered.

**Reaction:** The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
All channel-specific alarm reactions are delayed with this alarm, alarm display.

**Remedy:** Reset

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21612 [Channel %1: ] Axis %2: enable reset, cause %3

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Cause of the alarm

**Explanation:** Causes of alarm:
0: The cause of the alarm cannot be precisely determined.
1: The interface signal DB31, ... DBX2.1 (Servo enable) is missing
2: The interface signal DB31, ... DBX21.7 (Pulse enable) is missing
3: Drive signal DB31, ... DBX93.7 (Impulses enabled) is not set
4: Drive signal DB31, ... DBX93.5 (Drive ready) is not set
5: Drive signal DB31, ... DBX92.4 (Autonomous drive) does not follow the NC setpoints
One of the motion-enabling signals (e.g. "Servo enable", "Pulse enable", parking/encoder selection (only for axes) or drive-specific enables has been reset for the displayed axis. The alarm can be reported with positioning axes, spindles and for axes from the geometry grouping.
The axes entered in the channel-specific MD array MD20050 $MC_AXCONF_GEOAX_ASSIGN_TAB are regarded as axes belonging to the geometry grouping. Servo enable must exist for all available geometry axes, regardless of whether or not they are currently in motion.
Occurs in connection with SAFETY function: If a test stop is performed with linked axes, the alarm is issued if a motion command from the ELG grouping is pending during the test stop of the following axis.

**Reaction:** The NC switches to follow-up mode.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department.
Check the interface signals DB31, ... DBX2.1 (Servo enable), DB31, ... DBX21.7 (Pulse enable), check the drive signals DB31, ... DBX93.7 (Pulses enabled), DB31, ... DBX93.5 (Drive ready) for example with the PLC status display in the DIAGNOSTICS operating area. Check the encoder selection (for axes) as well as other signals enabling motion according to the drive type used.
When the terminal enables of the drive have failed, trace back the wiring or hardware function (for example relay function) or proceed as stated in the relevant drive documentation.
With SAFETY: With active actual-value linkage, output of the error message on the slave axis can be prevented by increasing MD36060 $MA_STANDSTILL_VELO_TOL (default value is 5 mm).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21614 [Channel %1: ] Axis %2 hardware limit switch %3

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = String (+, - or +/-)

**Explanation:** The signal DB31, ... DBX12.1 / 12.0 (Hardware limit switch plus/minus) has been set at the NC/PLC interface.

**Reaction:** NC Start disable in this channel.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department.

1. With axes that have already been referenced, the software limit switch 1 or 2 should respond before the hardware limit switch is reached. Check MD36110 $MA_POS_LIMIT_PLUS, MD36100 $MA_POS_LIMIT_MINUS, MD36130 $MA_POS_LIMIT_PLUS2 and MD36120 $MA_POS_LIMIT_MINUS2 and the NC/PLC interface signal for the selection DB31, ... DBX12.3 / 12.2 (1st/2nd software limit switch plus/minus) and correct, if necessary (PLC user program).

2. If the axis has not yet been referenced, it is possible to depart from the hardware limit switch in the opposite direction in JOG mode.

3. Check the PLC user program and the connection from the switch to the PLC input module, provided the axis has not reached the hardware limit switch at all.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21616 [Channel %1: ] Block %2 overlaid motion active at transformation switchover

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The overlaid motion in the BCS changes its significance because of the transformation change and can therefore lead to undesired axis movements.

**Reaction:** Local alarm reaction.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Take out the overlaid movement.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 21617 [Channel %1: ] Block %2 transformation does not allow to traverse the pole

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The preset curve passes through the pole or a forbidden area of the transformation.

**Reaction:** Local alarm reaction.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Modify the part program (if the alarm has occurred in AUTO mode).

To escape from the alarm position, transformation must be deselected (it is not enough to try a RESET if the transformation remains active when RESET is applied).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21618 [Channel %1: ] As from block %2 transformation active: overlaid motion too great

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** The share of overlaid motion on the transformation-related axes is so high that the path movement planned by the preparation no longer sufficiently corresponds to the actual ratio for the interpolation. Strategy of singularities, monitoring of working range limitation and dynamic Look Ahead are possibly no longer correct.

**Reaction:** Alarm display.

**Remedy:** With overlaid motion, keep a sufficiently large path safety distance with regard to poles and working range limitations.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21619 [Channel %1: ] Block %2 transformation active: motion not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machine kinematics do not allow the specified motion.
Transformation-dependent error causes may be:
With TRANSMIT: There is a circular area around the pole, where positioning is not possible. This area exists because the tool reference point cannot be traversed into the pole.
The area is defined by the following factors:
- Machine data (MD249.. $MC_TRANSMIT_BASE_TOOL_...)
- Active tool length compensation (see $TC_DP..).
Whether the tool length compensation is included in the calculation depends on the selected working plane (see G17,..). The machine stops at the edge of the area where positioning is not possible.
For TRAINT: An attempt was made to activate a TRAINT transformation with Y(WCS)<>0. (The Y axis must be set to WCS=0 when calling TRAINT).

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify the part program. Change the incorrectly specified tool length compensation.
Note that RESET alone is not enough if transformation also remains active beyond RESET.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21620 [Channel %1: ] Axis %2 Emergency braking ramp activated

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** An axial emergency braking ramp was activated for the specified axis/spindle
The following causes are possible for the activation of the emergency braking ramp:
Alarm 26052: Path velocity for auxiliary function output too high
Alarm 1012 : System error with ID 550006 550006
Alarm 1016 : System error with ID 550003, 550005 and 550010
With master/slave coupling, MD30132 $MA_IS_VIRTUAL_AX (axis is virtual axis) has been set.
Braking request with priority 13 may have been requested by the OEM application.

**Reaction:** NC Start disable in this channel.
Local alarm reaction.
The NC switches to follow-up mode.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Remove or reset the cause of the alarm.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21621 [Channel %1: ] Block %2 The constant transformation axis %3 has moved.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Channel axis identifier

**Explanation:** An axis whose position must remain constant for the transformation in the current block has moved.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change part program if alarm has occurred in AUTO mode.
The alarm is cancelled with RESET. If the transformation is retained beyond RESET, the constant axis goes into the transformation with its new position. If that is not wanted, the transformation must be deselected, and the axis position changed in this state. The transformation can then be reactivated.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21650 [Channel %1: ] Axis %2 overlaid motion not allowed

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** An overlaid motion was requested for the axis, however, this is not allowed due to the MD32074 $MA_FRAME_OR_CORRPOS_NOTALLOWED.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Deselect the overlaid motion or change MD32074 $MA_FRAME_OR_CORRPOS_NOTALLOWED.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21660 [Channel %1: ] Block %2 axis %3 conflict between SYNACT: $AA_OFF and CORROF

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name

**Explanation:** When deselecting the position offset ($AA_OFF) via the part program command CORROF (<axis>, "AA_OFF") an active synchronized action is detected that immediately sets $AA_OFF for the axis (DO_$AA_OFF [<axis>] =<value>). Deselection is executed and $AA_OFF not set again.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 21675 [Channel %1: ] Block %2 impermissible motion on change of tool direction and $AA_TOFF active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If an offset is active in tool direction via $AA_TOFF[i] there must not be a geometry axis movement in a block in which the tool orientation is changed abruptly.
Abrupt changes of the tool orientation, whereby a movement of the geometry axes can be programmed simultaneously, can, for example, occur during a plane change, tool change, or activation and deactivation of an orientable tool carrier.

**Reaction:** Correction block is reorganized.
Local alarm reaction.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Modify part program
- Program TOFFOF()

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 21700 [Channel %1: ] Block %3 axis %2 touch probe already deflected, edge polarity not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number

**Explanation:** The probe programmed under the keyword MEAS or MEAW is already deflected and has switched. For a further measuring operation, the probe signal must first be canceled (quiescent state of the probe).
The axis display is of no significance at present but an axis-specific evaluation has been planned for later stages of development.
Note:
If the MEAS or MEAW command is used in conjunction with a simulation system or a control system with simulated axes, then MD13231 $MN_MEAS_PROBE_OFFSET must be checked in the event of an alarm.
The value in this machine data moves the MEAS switching position and must be less than the length of the programmed measuring distance.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Verify the starting position of the measuring operation or check the probe signals in the PLC interface DB10 DBX107.0 / 107.1 (Probe actuated key 1/key 2). Are the cables and connectors in good order?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21701 [Channel %1: ] Block %3 axis %2 measurement not possible

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number

**Explanation:** Measurement level 2 (MEASA, MEAWA, MEAC).
There is an error in the programmed measurement task.
Possible causes:
- Invalid measurement mode
- Invalid probe
- Invalid encoder
- Invalid number of measurement signal edges
- Identical measurement signal edges are only programmable in mode 2
- Invalid FIFO number
- Mismatch between the number of FIFOs programmed and the number of probes used in the measurement task.

Further causes:
A measurement task is already active (e.g. from a synchronized action).

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the measurement tasks.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21702 [Channel %1: ] Block %3 axis %2 measurement canceled

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number

**Explanation:** The measurement block has ended (the programmed end position of the axis has been reached) but the activated touch probe has not yet responded.
Measurement level 2 (MEAWA, MEASA, MEAC)
Measured values cannot be converted to the workpiece coordinate system. The measured values of the GEO axes programmed in the measurement task are only available in the machine coordinate system.
Causes:
Not all GEO axes were programmed in the measurement task. At least one measured value is therefore missing for conversion back into the workpiece coordinate system.
Further causes:
The measurement tasks programmed for all GEO axes are not identical.
When making measurements without handshake, two probes must be available in drive parameters p0680 index 0 and 1.

**Reaction:** Alarm display.

**Remedy:** Check the traversing movement in the measurement block.
- Is it necessary in all cases for the activated probe to have switched up to the specified axis position?
- Are the probe, cable, cable distributor, terminal connections in good order?
- Is the probe correctly wired and configured on the hardware side (e.g. drive parameters p0488 and p0489)?
Either program all GEO axes explicitly or program the traversing movement with the POS[axis] command.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21703 [Channel %1: ] Block %3 axis %2 touch probe not deflected, illegal edge polarity

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number

**Explanation:** The selected probe is not (!) deflected and therefore cannot record any measured value from the deflected to the non-deflected state.
Measurement level 2 (MEAWA, MEASA, MEAC)
The degree of deflection of the probe at the start of the measurement task is identical to the first programmed measurement signal edge. The test is only performed in mode 2.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check probe
- Check start positioning for measuring
- Check program

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21740 Output value at analog output no. %1 has been limited

**Parameters:** %1 = No. of output

**Explanation:** The value range of the analog output n is limited by MD10330 $MN_FASTIO_ANA_OUTPUT_WEIGHT[n].

**Reaction:** Alarm display.

**Remedy:** With $A_OUTA[..] = x no greater values can be programmed than permitted in the respective machine data.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21750 Error during output of cam switching signals via timer

**Explanation:** The signal output activated by the MD10480 $MN_SW_CAM_TIMER_FASTOUT_MASK via the hardware timer (independent of the clock grid) did not work. Cause: interpolation cycle is greater than 15 ms.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Shorten interpolation cycle (if at all possible).

**Programm continuation:** Switch control OFF - ON.

## 21751 Limit velocity %2 deg/min on modulo axis %1 has been exceeded (incorrect cam output)

**Parameters:** %1 = Axis, spindle
%2 = Limit velocity

**Explanation:** Reliable cam output on the modulo axis can no longer be assured.
This is because:
The velocity of the axis exceeds the permissible velocity range
Reliable calculation of the cam output on the modulo axis
can only be assured below the limit speed

**Reaction:** Alarm display.

**Remedy:** - Reduce the traversing speed of the axis
- Alarm can be suppressed with SUPPRESS_ALARM_MASK_2 bit 15

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21752 Axis %1 minimum cam width cam %3 undershot at curr. velocity %2

**Parameters:** %1 = Axis, spindle
%2 = Limit velocity
%3 = Cam number

**Explanation:** The width of the cam signal undershoots the time t=50µs and as a result can no longer be output.
This is because:
The cam signal width of t=50µs must not be undershot.
A configured cam width and reliable time results in
a limit velocity for the cam (v=s/t). If the limit velocity is exceeded,
cam signals will be lost.

**Reaction:** Alarm display.

**Remedy:** - Reduce the traversing speed of the axis
- Increase the cam width
- Alarm can be suppressed with SUPPRESS_ALARM_MASK_2 bit 15

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21760 [Channel %1: ] Block %2 motion synchronous action: %3 too many auxiliary functions programmed

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The number of programmed auxiliary functions has exceeded the maximum permissible amount. This alarm can occur in conjunction with motion synchronous actions: The maximum number of auxiliary functions must not be exceeded in motion block and motion synchronous actions.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 21800 [Channel %1: ] Workpiece setpoint %2 reached

**Parameters:** %1 = Channel number
%2 = Workpiece setpoint

**Explanation:** This alarm is activated via MD27880 $MC_PART_COUNTER, bit 1: The number of counted workpieces ($AC_ACTUAL_PARTS or $AC_SPECIAL_PARTS) is equal or already greater than the programmed value for the number of required workpieces ($AC_REQUIRED_PARTS). At the same time, the channel VDI signal "Workpiece setpoint reached" is output. The value for the number of counted workpieces ($AC_ACTUAL_PARTS) is reset, while the value of $AC_SPECIAL_PARTS is retained.
Note:
The setpoint/actual comparisons of the workpieces are only made after an NC start
under the condition that $AC_REQUIRED_PARTS > 0. If $AC_REQUIRED_PARTS
has a negative value, all workpiece counts activated through MD27880 $MC_PART_COUNTER are frozen at the values they have reached,
and the nominal/actual comparison is discontinued.

**Reaction:** NC not ready.
Interface signals are set.
Alarm display.

**Remedy:** No program interrupt. Delete alarm display.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 21900 [Channel %1: ] Block %2 CALCFIR calculation not possible for axis %3, Cause: %4.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Identification of cause

**Explanation:** CALCFIR calculation is not possible for FIR filters.

Cause:

1: No jerk filter activated in MD32400 $MA_AX_JERK_ENABLE.

2: No jerk filter of the type FIR parameterized in MD32402 $MA_AX_JERK_MODE for the filter chain selected with MD32404 $MA_CALCFIR_SELECT.

3: No jerk filter of the type FIR with Hamming window parametrized in MD32409 $MA_AX_JERK_FIR_WINDOW for the filter chain selected with MD32404 $MA_CALCFIR_SELECT.

4: MD32404 $MA_CALCFIR_SELECT does not affect the same filter chain or the same mode in the channel axes.

5: MD32405 $MA_CALCFIR_FREQ does not lie within the range of 10 to 100 Hz for a dynamic mode.

6: MD32431 $MAX_AX_JERK does not lie within the range of 5 to 500 m/s³ (or 1.8 bis 180 1/s³ for rotary axes in Advanced Mode) for a dynamic mode.

7: Values cannot be calculated

8: Adjustment of filter delay time not possible because the phase filter in MD32890 $MA_DESVAL_DELAY_ENABLE is not activated.

9: Adjustment of filter amplitude not possible because t CALCFIR settings differ too much.

**Reaction:** Alarm display.

Interface signals are set.

Interpreter stop

**Remedy:** Remedies for causes:

1: Activate jerk filter: MD32400 $MA_AX_JERK_ENABLE = TRUE

2: Select FIR low pass type 5 in MD32402 $MA_AX_JERK_MODE

3: Select Hamming window: MD32409 $MA_AX_JERK_FIR_WINDOW = 1

4: Select identical filter chain in all channel axes, see MD32404 $MA_CALCFIR_SELECT

5: Select MD32405 $MA_CALCFIR_FREQ in the permissible range from 10 to 100 Hz, or deactivate CALCFIR calculation (MD32405 $MA_CALCFIR_FREQ = 0 Hz)

6: Select MD32431 $MA_MAX_AX_JERK in the permissible range from 5 to 500 m/s³ (or 1.8 to 180 1/s³ for rotary axes in Advanced Mode) or deactivate CALCFIR calculation (MD32405 $MA_CALCFIR_FREQ = 0 Hz)

7: Please inform the authorized personnel/service department

8: Activate phase filter: MD32890 $MA_DESVAL_DELAY_ENABLE = TRUE

9: Decrease MD32405 $MA_CALCFIR_FREQ or increase MD32406 $MA_CALCFIR_TOL.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22000 [Channel %1: ] Block %2 Spindle %3 Gear stage change in %4 not possible

**Parameters:** %1 = Channel number

%2 = Block number, label

%3 = Spindle number

%4 = Gear stage

**Explanation:** A gear stage change for the spindle will not be possible, if:

- thread cutting (G33, G34, G35) is active
- the spindle is active as master or slave spindle in a coupling
- the spindle is being positioned

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** The gear stage is to be set prior to the corresponding machining step.

If it is necessary, however, to change the gear stage within one of the above mentioned functions, this function must be switched off for the time of the gear stage change. Thread cutting is deselected with G1; synchronous spindle coupling is switched off with COUPOF; the spindle positioning operation is exited with M3, M4 or M5.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22001 [Channel %1: ] Block %2 Axis %3: Braking time %6 [s] longer than Stop D time. Reason: %5.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Reason | Braking time[s]

**Explanation:** The current axis dynamic response and/or parameterized Stop D time are not sufficient to come to a standstill on time when a Stop D is triggered.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the "|" character.
Parameter 5 = Reason, possible values:
1: MD32300 $MA_MAX_AX_ACCEL too low.
2: MD32431 $MA_MAX_AX_JERK too low.
3: Excessive acceleration reduction activated with ACC or subsequent to FXST.
4: Excessive jerk reduction programmed with JERKLIMA.
Parameter 6 = Braking time [s]
The displayed time is the expected braking time determined for the current type of movement or the dynamic response setting of the axis.

**Reaction:** Alarm display.

**Remedy:** For 'NC-based' SI monitoring:
Increase MD36953 $MA_SAFE_STOP_SWITCH_TIME_D.
For 'drive-based' SI monitoring:
Increase Stop D time in the drive (p9553).
Increase MD32300 $MA_MAX_AX_ACCEL and MD32431 $MA_MAX_AX_JERK.
Increase programmed acceleration (ACC) or jerk (JERKLIMA).
Correct torque and acceleration reduction subsequently to FXST.
Alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 13.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22002 [Channel %1: ] Spindle %2: Braking time %6 [s] longer than Stop D time with gear stage %3. Reason %5

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Gear stage
%4 = Reason | Braking time[s]

**Explanation:** The dynamic response values configured for the spindle and/or the parameterized Stop D time are not sufficient to come to a standstill on time when a Stop D is triggered.
Parameter 3 contains the gear stage whose braking time from the configured dynamic response values overshoots the Stop D time the most.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the "|" character:
Parameter 5 = Reason, possible values:
10: Dynamic response for speed control: MD35130 $MA_GEAR_STEP_MAX_VELO_LIMIT, MD35200 $MA_GEAR_STEP_SPEEDCTRL_ACCEL
11: Dynamic response for position control: MD35135 $MA_GEAR_STEP_PC_MAX_VELO_LIMIT, MD35210 $MA_GEAR_STEP_POSCTRL_ACCEL. Excessive acceleration reduction programmed subsequent to FXST.
21: Dynamic response for tapping with G331, G332: MD35135 $MA_GEAR_STEP_PC_MAX_VELO_LIMIT, MD35212 $MA_GEAR_STEP_POSCTRL_ACCEL2
Parameter 6 = Braking time [s]
The displayed time is the expected braking time determined for the current dynamic response values of the spindle.

**Reaction:** Alarm display.

**Remedy:** For 'NC-based' SI monitoring:
Increase MD36953 $MA_SAFE_STOP_SWITCH_TIME_D or reduce the braking time by changing the spindle's dynamic response configuration.
For 'drive-based' SI monitoring:
Increase Stop D time in the drive (p9553).
Reduce the braking time by changing the spindle's dynamic response configuration.
The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 13.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22005 [Channel %1: ] Block %2 motion synchronous action %3 spindle %4 selected gear stage not installed

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Spindle number

**Explanation:** The first gear stage data block is active. The required gear stage is not installed in the 1st gear stage data block. The number of installed gear stages is configured in MD35090 $MA_NUM_GEAR_STEPS.
Examples for the occurrence of the alarm with 3 gear stages installed (MD35090 $MA_NUM_GEAR_STEPS = 3):
* ...DO M44 or DO M45 was programmed in synchronized action for the spindle concerned.
* ...DO M70 was programmed and MD35014 $MA_GEAR_STEP_USED_IN_AXISMODE was larger than 3.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program: Only those valid gear stages can be entered which have also been installed according to MD35090 $MA_NUM_GEAR_STEPS.
Limit M70 configuration (MD 35014 $MA_GEAR_STEP_USED_IN_AXISMODE) to MD35090 $MA_NUM_GEAR_STEPS.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22006 [Channel %1 ] Block %2 Motion-synchronous action: %3 Spindle %4 gear stage change not possible

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Spindle number

**Explanation:** A gear stage change for the spindle will not be possible, if:
- thread cutting (G33, G34, G35) is active
- the spindle is active as master or slave spindle in a coupling
- the spindle is being positioned

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** The gear stage is to be set prior to the corresponding machining step.
If it is necessary, however, to change the gear stage within one of the above mentioned functions, this function must be switched off for the time of the gear stage change. Thread cutting is deselected with G1; synchronous spindle coupling is switched off with COUPOF; the spindle positioning operation is exited with M3, M4 or M5.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22010 [Channel %1: ] Block %3 spindle %2 actual gear stage differs from requested gear stage

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Block number, label

**Explanation:** The requested gear stage change has been concluded. The actual gear stage reported by the PLC as being engaged is not the same as the required gear stage called for by the NC. Note: Wherever possible, the requested gear stage should always be engaged.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Correct the PLC program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22011 [Channel %1: ] Block %3 spindle %2 change to programmed gear stage not possible

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Block number, label

**Explanation:** With the 'DryRun', 'ProgramTest' and 'SearchRunByProgTest' functions deselected, it is not possible in the REPOS module to carry out a gear stage change to a previously programmed gear stage. This is the case, if the spindle is in the deselection block not active in speed control mode, as a slave axis or in a transformation. Execution of a gear stage change is avoided if the above mentioned functions are deselected by resetting bit 2 of MD35035 $MA_SPIND_FUNCTION_MASK.

**Reaction:** Alarm display.

**Remedy:** Change deselection block or block search target block to speed control mode (M3, M4, M5, SBCOF). Set bit 2 of MD35035 $MA_SPIND_FUNCTION_MASK to 0.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22012 [Channel %1: ] Block %2 leading spindle %3 is in simulation.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Leading spindle number

**Explanation:** When coupling, no synchronism can be achieved if the lead spindle/axis is in simulation mode and the following spindle/axis is not.

**Reaction:** Alarm display.

**Remedy:** Switch the following spindle/axis to simulation mode or do not simulate the lead spindle/axis (MD30130$MA_CTRLOUT_TYPE). If the differing settings have been selected on purpose, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 21 = 1 or with CP programming by setting CPMALARM[FAx] bit 3 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22013 [Channel %1: ] Block %2 dependent spindle %3 is in simulation.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of following spindle

**Explanation:** When coupling, no synchronism can be achieved if the following spindle/axis is in simulation mode and the lead spindle/axis is not.

**Reaction:** Alarm display.

**Remedy:** Switch the leading spindle/axis to simulation mode or do not simulate the following spindle/axis (MD30130 $MA_CTRLOUT_TYPE). If the differing settings have been selected on purpose, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 21 = 1 or with CP programming by setting CPMALARM[FAx] bit 4 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22014 [Channel %1: ] Block %2. The dynamics of leading spindle %3 and dependent spindle %4 is too variably

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Leading spindle number
%4 = Number of following spindle

**Explanation:** If the spindles / axes differ strongly in their dynamic behavior during coupling, synchronism cannot be achieved. The dynamics are dependent on many settings: default feedforward control, parameter block data, first of all the servo gain factor, symmetrizing time, etc., feedforward control mode and feedforward setting parameter, FIPO mode, jerk filter and dynamic filter settings, DSC on/off. Among these are the following machine data: MD32620 $MA_FFW_MODE, MD32610 $MA_VELO_FFW_WEIGHT, MD33000 $MA_FIPO_TYPE, VEL_FFW_TIME, MD32810 $MA_EQUIV_SPEEDCTRL_TIME, MD32200 $MA_POSCTRL_GAIN, MD32410 $MA_AX_JERK_TIME, MD32644 $MA_STIFFNESS_DELAY_TIME, MD37600 $MA_PROFIBUS_ACTVAL_LEAD_TIME, MD37602 $MA_PROFIBUS_OUTVAL_DELAY_TIME, MD10082 $MN_CTRLOUT_LEAD_TIME

**Reaction:** Alarm display.

**Remedy:** Use spindles/axes with identical dynamic responses. If the differing settings have been selected on purpose, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 21 = 1 or with CP programming by setting CPMALARM[FAx] bit 5 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22015 [Channel %1: ] Block %2 following spindle %3 No dynamic response for supplementary motion

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of following spindle

**Explanation:** The differential motion of the following spindle cannot be executed due to a lack of available velocity. The coupling consumes the entire available dynamic response. The following spindle is already rotating at maximum speed. In the part program a deadlock might occur. The alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 26 = 1 or with CP programming by setting CPMALARM[FAx] bit 6 = 1.

**Reaction:** Alarm display.

**Remedy:** Reduce the speed of the master spindle

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22016 [Channel %1: ] Block %2 following spindle %3 in the range of reduced acceleration capability

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Number of following spindle

**Explanation:** The following spindle is driven with position control. Additional motion components of the following spindle should not leave the linear range of the motor used. If they do, deviations may occur in the contour and servo alarms could even be output. Monitoring is based on the configuration in MD35220 $MA_ACCEL_REDUCTION_SPEED_POINT. If the situation is being managed by the user, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK bit 25 = 1 or with CP programming by setting CPMALARM[FAx] bit 7 = 1.

**Reaction:** Alarm display.

**Remedy:** Use coupling type VV and safeguard SPCOF for master and following spindle.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22018 [Channel %1: ] Block %2 following axis/spindle %3 time monitoring: 'Synchronism fine' not reached

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following axis/spindle number

**Explanation:** After reaching the setpoint-side synchronism, the time until reaching the actual value-side synchronism is fine monitored.
The tolerance is not reached within the time window defined in MD37240 $MA_COUP_SYNC_DELAY_TIME[0]:
MD37210 $MA_COUPLE_POS_TOL_FINE and MD37230 $MA_COUPLE_VELO_TOL_FINE

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
The interrelation between MD37240 $MA_COUP_SYNC_DELAY_TIME[0] and MD37210 $MA_COUPLE_POS_TOL_FINE or MD37230 $MA_COUPLE_VELO_TOL_FINE must be adapted to the mechanical conditions.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22019 [Channel %1: ] Block %2 following axis/spindle %3 time monitoring: 'Synchronism coarse' not reached

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following axis/spindle number

**Explanation:** After reaching the setpoint-side synchronism, the time until reaching the actual value-side synchronism is coarsely monitored.
The tolerance is not reached within the time window defined in MD37240 $MA_COUP_SYNC_DELAY_TIME[1]:
MD37200 $MA_COUPLE_POS_TOL_COARSE or MD37220 $MA_COUPLE_VELO_TOL_COARSE

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
The interrelation between MD37240 $MA_COUP_SYNC_DELAY_TIME[1] and MD37200 $MA_COUPLE_POS_TOL_COARSE or MD37220 $MA_COUPLE_VELO_TOL_COARSE must be adapted to the mechanical conditions.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22020 [Channel %1: ] Block %3 spindle %2 gear step change position not reached

**Parameters:** %1 = Channel number
%2 = Spindle number
%3 = Block number, label

**Explanation:** Through the configuration of MD35010 $MA_GEAR_STEP_CHANGE_ENABLE[AXn] = 2, the spindle is traversed to the position stored in MD35012 $MA_GEAR_STEP_CHANGE_POSITION[AXn] before the actual gear step change. The required gear step change position has not been reached.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct sequence in the PLC.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22022 [Channel %1: ] Block %2 spindle %3 gear stage %4 is expected for axis mode.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle
%4 = Gear stage

**Explanation:** The gear stage required for axis mode has not been installed.
A gear stage has been configured in MD35014 $MA_GEAR_STEP_USED_IN_AXISMODE, in which the spindle is to be in axis mode. This gear stage is checked whenever the spindle is switched into axis mode. The configured gear stage is compared with the gear stage output by the PLC (NC/PLC interface signal DB31, ... DBX16.0. - .2 (Actual gear stage A through C)).
This alarm will be output if the gear stages are not the same.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Program M70 before the switch to axis mode. The gear stage configured in MD35014 $MA_GEAR_STEP_USED_IN_AXISMODE is then automatically loaded.
No gear stage change is required if the configured gear stage is aleady active. M40 remains active beyond the gear stage change.
Consider MD20094 $MC_SPIND_RIGID_TAPPING_M_NR.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22024 [Channel %1: ] Block %2 Spindle %3 tapping: PLC signal 'invert M3/M4' changed after %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle
%4 = Value

**Explanation:** When loading a G331 block it was detected that the NC/PLC interface signal DB31, ... DBX17.6 (invert M3/M4) had changed during part program execution. An alarm was output to prevent a tool break. The current value of the NC/PLC interface signal is displayed as parameter 4.

**Reaction:** Channel not ready.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** A change in the NC/PLC interface signal DB31, ... DBX17.6 (invert M3/M4) during part program execution should be avoided.
If MD35035 SPIND_FUNCTION_MASK bit 22 is set, the NC/PLC interface signal DB31, ... DBX17.6 (invert M3/M4) is then no longer evaluated during tapping with G331, G332. The alarm is no longer output. Notice! Setting bit 22 means a change in function.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22025 [Channel %1: ] Block %2 Following axis/spindle %3 synchronism (2): Fine tolerance overshot

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following axis/spindle number

**Explanation:** Synchronism is monitored once the 'FINE' block-change criterion has been met. The 'fine' threshold value defined with MD37212 $MA_COUPLE_POS_TOL_FINE_2 has been exceeded by the synchronism difference on the actual value side. The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 12 = 1 or with CP programming by setting CPMALARM[FAx] bit 8 = 1.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
The following axis/spindle was not able to follow the leading axis(axes)/spindle(s).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22026 [Channel %1: ] Block %2 Following axis/spindle %3 synchronism(2): Coarse tolerance overshot

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following axis/spindle number

**Explanation:** Synchronism is monitored once the 'COARSE' block-change criterion has been met. The 'coarse' threshold value defined with MMD37202 $MA_COUPLE_POS_TOL_COARSE_2 has been exceeded by the synchronism difference on the actual value side. The alarm can be suppressed with MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 12 = 1 or with CP programming by setting CPMALARM[FAx] bit 9 = 1.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
The following axis/spindle was not able to follow the leading axis(axes)/spindle(s).
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22030 [Channel %1: ] Block %2 following spindle %3 Impermissible programming

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Spindle
**Explanation:** With synchronous spindle-VV-coupling an additional motion for the following spindle can only be programmed with M3, M4, M5 and S... The paths created by specified positions cannot be maintained safely for a velocity coupling, especially if a position control is missing. If dimensional accuracy or reproducibility are not important, the alarm can be suppressed with MD11410 $MN_SUPPRESS_ALARM_MASK Bit27 = 1.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Use synchronous spindle-DV-coupling or program direction of rotation and speed.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22033 [Channel %1: ] Block %2 Axis/spindle %3 'Correct synchronism' diagnostics %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis/spindle number
%4 = Diagnostics
**Explanation:** The following situation occurred during 'Correct synchronism':
- Diagnostics 1: An existing override motion is terminated on key reset.
- Diagnostics 2: The override motion has been deleted.
- Diagnostics 3: Writing of override value not allowed. Synchronism override is deleted.
- Diagnostics 4: Override motion is stopped temporarily (e.g. G74 reference point approach)
- Diagnostics 5: Delay of override motion: acceleration capacity used up by other motions.
- Diagnostics 6: Delay of override motion: velocity used up by other motions.
- Diagnostics 7: Delay of override motion: the maximum speed is limited to 0. System variable $AC_SMAXVELO_INFO[n] shows the reason for this.
- Diagnostics 8: Delay of override motion: the maximum acceleration capacity is limited to 0. $AC_SMAXACC_INFO[n] shows the reason for this.

MD11411 $MN_ENABLE_ALARM_MASK activates this alarm:
- Bit 9 = 1 for diagnostics 1 to 6
- Bit 12 = 1 for diagnostics 7 to 8

**Reaction:** Alarm display.
**Remedy:** Deactivate the alarm with MD 11411 $MN_ENABLE_ALARM_MASK Bit9 = 0 or Bit12 = 0.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22035 [Channel %1: ] Block %2 following axis/spindle %3 unable to determine the offset value (reason %4).

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Following axis/spindle number
%4 = Reason

**Explanation:** The determination of the offset value ($AA_COUP_CORR[Sn]) intended by the NC/PLC signal DB31, ... DBX31.6 (correct synchronism) cannot be executed. The offset value cannot be calculated properly. The reasons for this may be:
- Reason 1: The following axis is not configured as a spindle.
- Reason 2: The coupling has more than one active leading axis.
- Reason 3: The leading axis is not configured as a spindle.
- Reason 4: The coupling factor (the quotient from CPLNUM and CPLDEN) is neither 1 nor -1.
- Reason 5: CPLSETVAL = "cmdvel".
- Reason 6: An independent motion component (NC/PLC interface signal DB31, ... DBX98.4(overlaid motion) = 1) of the following spindle is active.
- Reason 7: There is no following spindle synchronism on the setpoint side.
- Reason 8: The synchronism on the setpoint side has decreased again.
- Reason 9: The following or leading spindle is a link axis (NCU_LINK).

**Reaction:** Alarm display.

**Remedy:** The following remedies are available for the indicated reasons:
- Reasons 1 to 5: The coupling has to be reconfigured / reprogrammed.
- Reasons 6 and 7: Wait until NC/PLC interface signals DB31, ... DBX99.4 (Synchronization running) = 0 and DB31, ... DBX98.4 (Overlaid motion) = 0 before setting NC/PLC DB31, ... DBX31.6 (Correct synchronism) .
- Reason 8: Wait until the following axle / spindle can follow the leading values before setting NC/PLC interface signal DB31, ... DBX31.6 (Correct synchronism).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22036 [Channel %1: ] Block %2 Axis/spindle %3 Synchronism override not possible (reason %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis/spindle number
%4 = Reason

**Explanation:** The synchronism override intended by setting the VDI interface signal DB31..,DBX31.6 'Correct synchronism' or writing variable $AA_COUP_CORR[Sn] cannot currently be considered. The reasons may be:
- Reason 1: Reference point approach or zero mark synchronization for spindles is active.
- Reason 2: Deletion of synchronism override is active.
- Reason 3: Writing is not allowed.

**Reaction:** Alarm display.

**Remedy:** Wait until the conditions for override value processing are available again prior to setting VDI interface signal DB31..,DBX31.6 'Correct synchronism' or writing variable $AA_COUP_CORR[Sn]:
- Reason 1: Reference point approach / zero mark synchronization completed.
- Reason 2: Deletion of synchronism override completed.
- Reason 3: Writing allowed.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22037 [Channel %1: ] Block %2 Axis/spindle %3 'Correct synchronism' is being ignored

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis/spindle number

**Explanation:** VDI interface signal DB31..,DBX31.6 'Correct synchronism' is being ignored, because VDI interface signal DB31..,DBX31.7 'Delete synchronism override' has been set.

**Reaction:** Alarm display.

**Remedy:** Reset the two VDI interface signals DB31..,DBX31.7 'Delete synchronism override' and DB31..,DBX31.6 'Correct synchronism', before the latter signal can be set again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22038 [Channel %1: ] Block %2 Axis/Spindle %3 'Delete synchronism override' is being ignored

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis/spindle number

**Explanation:** VDI interface signal DB31..,DBX31.7 'Correct synchronism' is being ignored, because VDI interface signal DB31..,DBX31.6 'Delete synchronism override' has been set.

**Reaction:** Alarm display.

**Remedy:** Reset the two VDI interface signals DB31..,DBX31.6 'Correct synchronism' and DB31..,DBX31.7 'Delete synchronism override', before the latter signal can be set again.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22040 [Channel %1: ] Block %3 spindle %2 is not referenced with zero marker

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** The current position is not referenced with the measuring system position although reference is made to it.

**Reaction:** Alarm display.

**Remedy:** Correct the NC part program. Create the zero mark synchronization by positioning, by rotation (at least 1 revolution) in speed control mode or with the G74 command before switching on the alarm generating function.
You can suppress the alarm in the cyclic check with position control already enabled for following and leading spindle(s) by means of MD11410 $MN_SUPPRESS_ALARM_MASK bit21 = 1 or by CP programming with CPMALARM[FAx] bit10 = 1 (in which FAx = following spindle).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22050 [Channel %1: ] Block %3 spindle %2 no transition from speed control mode to position control mode

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** - An oriented spindle stop (SPOS/SPOSA) has been programmed or the position control of the spindle was switched on with SPCON but no spindle encoder has been defined.
- When switching on the position control, the spindle speed is greater than the limiting speed of the measuring system.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Spindle without attached encoder: Any NC language elements requiring the encoder signals must not be used.
Spindle with attached encoder: Enter the number of spindle encoders used in the MD30200 $MA_NUM_ENCS.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22051 [Channel %1: ] Block %3 spindle %2 reference mark not found

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** When referencing, the spindle turned through a greater distance than given in the axis-specific MD34060 $MA_REFP_MAX_MARKER_DIST, without receiving a reference mark signal. The check is performed for spindle positioning with SPOS or SPOSA when the spindle has not previously run with speed control (S=...).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Check and correct the MD34060 $MA_REFP_MAX_MARKER_DIST. The value entered states the distance in [mm] or [degrees] between 2 zero markers.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22052 [Channel %1: ] Block %3 spindle %2 no standstill on block change

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** The displayed spindle has been programmed as spindle or as axis even though a positioning operation is still running from the previous block (with SPOSA ... spindle positioning beyond block limits).
Example:
N100 SPOSA [2] = 100
:
N125 S2 = 1000 M2 = 04 ; Error, if spindle S2 from block N100 is still running!

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Before programming the spindle/axis again using the SPOSA instruction, a WAITS command should be activated in order to wait for the programmed spindle position.
Example:
N100 SPOSA [2] = 100
:
N125 WAITS (2)
N126 S2 = 1000 M2 = 04

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22053 [Channel %1: ] Block %3 spindle %2 reference mode not supported

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** In the case of SPOS/SPOSA with an absolute encoder, only the referencing mode MD34200 $MA_ENC_REFP_MODE = 2 is supported! SPOS/SPOSA does not support MD34200 $MA_ENC_REFP_MODE = 6 at all!

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change the setting of MD34200 $MA_ENC_REFP_MODE or change to JOG+REF and then reference.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22054 [Channel %1: ] Block %3 spindle %2 improper punching signal

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** If the punching signal is irregular between the punching strokes, this alarm is generated according to a machine data.

**Reaction:** Alarm display.

**Remedy:** This alarm indicates that the punching hydraulics are in poor condition. Check the condition of the punching hydraulics.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22055 [Channel %1: ] Block %3 spindle %2 configured positioning speed is too high

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** The current position is not referenced with the measuring system position although reference is made to it.

**Reaction:** Alarm display.

**Remedy:** Correct the NC part program. Create the zero mark synchronization by positioning, by rotation (at least 1 revolution) in speed control mode or with the G74 command before enabling the alarm-generating function.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22057 [Channel %1: ] Block %2 for following spindle %3 coupling as leading spindle/axis already existing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A coupling has been switched on in which the following spindle/axis has already been active as leading spindle/axis in another coupling. Chained couplings cannot be processed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check in the part program whether the following spindle/axis is already active as leading spindle/axis in another coupling.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22058 [Channel %1: ] Block %2 for leading spindle %3 coupling as following spindle/axis already existing

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number

**Explanation:** A coupling has been switched on in which the leading spindle/axis has already been active as following spindle/axis in another coupling. Chained couplings cannot be processed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check in the part program whether the leading spindle/axis is already active as following spindle/axis in another coupling.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22062 [Channel %1: ] Axis %2 reference point approach: zero marker search velocity (MD) is not reached

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The configured zero marker search velocity is not reached.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Check the active spindle speed limitations.
Configure a lower zero marker search velocity MD34040 $MA_REFP_VELO_SEARCH_MARKER.
Check the tolerance range for the actual velocity MD35150 $MA_SPIND_DES_VELO_TOL.
Set a different referencing mode MD34200 $MA_ENC_REFP_MODE = 7.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22064 [Channel %1: ] Axis %2 reference point approach: zero marker search velocity (MD) is too high

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The configured zero marker search velocity is too high. The encoder limit frequency is exceeded for the active measuring system.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Configure a lower zero marker search velocity MD34040 $MA_REFP_VELO_SEARCH_MARKER.
Check the configuration of the encoder frequency MD36300 $MA_ENC_FREQ_LIMIT and MD36302 $MA_ENC_FREQ_LIMIT_LOW.
Set a different referencing mode MD34200 $MA_ENC_REFP_MODE=7.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22065 [Channel %1: ] Tool management: Tool motion is not possible as tool %2 is not in magazine %4.

**Parameters:** %1 = Channel number
%2 = String (identifier)
%3 = -Not used-
%4 = Magazine no.

**Explanation:** The desired tool motion command - triggered from the HMI or PLC - is not possible. The specified tool is not contained in the specified magazine. NCK cannot contain tools that are not assigned to a magazine. With this kind of tool, no operations (motion, change) can be performed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** You have the following possibilities of eliminating the error:
Ensure that the specified tool is contained in the desired magazine.
Select another tool to be changed.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22066 [Channel %1: ] Tool management: Tool change is not possible as tool %2 is not in magazine %4.

**Parameters:** %1 = Channel number
%2 = String (identifier)
%3 = -Not used-
%4 = Magazine no.

**Explanation:** The desired tool change is not possible. The specified tool is not contained in the specified magazine. NCK cannot contain tools that are not assigned to a magazine. With this kind of tool, no operations (motion, change) can be performed.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
- Ensure that the specified tool is contained in the desired magazine.
- Program another tool that is to be changed.
- Check whether the settings in MD20110 $MC_RESET_MODE_MASK, MC20112 $MC_START_MODE_MASK and the associated MD20122 $MC_TOOL_RESET_NAME match the current definition data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22067 [Channel %1: ] Tool management: tool change not possible since there is no tool available in tool group %2

**Parameters:** %1 = Channel number
%2 = String (identifier)

**Explanation:** The desired tool change is not possible. The specified tool group does not contain a tool which is ready for use and could be used for tool change. It is possible that all of the tools in question have been set to the "Disabled" state by the tool monitoring function.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** - Ensure that the specified tool group contains a tool that is ready for use when the tool change is requested.
- For example, replace disabled tools or enable a disabled tool manually.
- Check whether the tool data are correctly defined. Have all intended tools in the group been defined with the specified identifier and loaded?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22068 [Channel %1: ] Block %2 tool management: no tool available in tool group %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String (identifier)

**Explanation:** The specified tool group does not contain a replacement tool which is ready for use and could be used for tool change. It is possible that all the tools in question have been set to the 'Disabled' state by the tool monitoring function. The alarm can occur for example in conjunction with alarm 14710 (error on INIT block generation). In this case the NCK attempts, e.g., to replace the disabled tool located on the spindle with an available replacement tool, which however does not exist in this error case.
With this conflict, the user must, for example, remove the tool located on the spindle by issuing a spindle movement command (e.g. using an HMI operation).

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Ensure that the specified tool group contains a tool that is ready for use when the tool change is requested.
- Replace, for example, disabled tools or enable a disabled tool manually.
- If an alarm occurs on programming TCA, check whether the duplo number been programmed >0?
- Check whether the tool data are correctly defined. Have all intended tools in the group been defined with the specified identifier or loaded?

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 22069 [Channel %1: ] Block %2 tool management: No tool available in tool group %3, program %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = String (identifier)
%4 = Program name

**Explanation:** The specified tool group does not contain a tool which is ready for use and could be used for tool change. It is possible that all of the tools in question have been set to the 'Disabled' state by the tool monitoring function. Parameter %4 = program name facilitates the identification of the program containing the programming command (tool selection) that caused the error. This can be a subprogram or cycle, etc., which can no longer be identified from the display. If the parameter is not specified, it is the currently displayed program.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** - Ensure that the specified tool group contains a tool that is ready for use when tool change is requested.
- This can be achieved, for example, by replacing disabled tools, or
- by releasing a disabled tool manually.
- Check whether the tool data are correctly defined. Have all intended tools in the group been defined with the specified identifier and loaded?

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 22070 [TO unit %1: ] Please change tool %2 into magazine. Repeat data backup

**Parameters:** %1 = TO unit
%2 = T number of tool

**Explanation:** The alarm can only occur when the tool management function is active in the NCK. (TOOLMAN = tool management) A data backup of the tool/magazine data has been started. During the backup, the system detected that tools are still located in the buffer magazine (= spindle, gripper, ...). During the backup, these tools will lose the information which defines the magazine and location to which they are allocated.
It is therefore practical -assuming that the data are to be stored exactly as before - to ensure that all tools have been deposited in the magazine before the data backup!
If this is not the case, some magazine locations will have the "reserved" status when the data are loaded again. This "reserved" status must then be reset manually.
For tools with fixed location coding, the loss of the information allocating their location in the magazine has the same effect as a general empty location search when they are returned to the magazine.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Ensure that there are no tools in the buffer magazine before making the data backup. Repeat the data backup after removing the tools from the buffer magazine.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22071 [TO unit %1: ] Tool %2 is active, but not in the magazine area under consideration

**Parameters:** %1 = TO unit
%2 = Tool identifier
%3 = -Not used-

**Explanation:** The alarm can only occur when the tool management function is active in the NCK. Either the language command SETTA has been programmed or the corresponding operator action has been carried out via HMI, PLC, .... The alarm can also be triggered automatically by the NCK in the wear grouping function. It is detected that more than one tool from the tool group (tools with the same name/identifier) has the status "active".

The specified tool is either

from a non-considered magazine,

from a non-considered wear grouping,

or from a non-active wear grouping

in a buffer location (is neither magazine nor wear grouping).

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** The alarm is intended for information purposes. If only one tool in a group can be active at a time for technological reasons or for reasons of display, the "active" status must be canceled for the tool causing the error.

Otherwise, the alarm can be ignored or even suppressed via the MD11410 $MN_SUPPRESS_ALARM_MASK.

Typical reasons of display are present, if the operator works with the function 'definite D numbers', which can be displayed on Siemens HMI in a definite form only, if exactly one tool from a tool group has the status 'active'.

Before machining can be started or before the SETTA (or corresponding HMI operation, ...) language command is used, all tools of the magazine should have the status "not active".

One option to achieve this is programming SETTIA (or corresponding HMI operation, ...).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22100 [Channel %1: ] Block %3 spindle %2 chuck speed exceeded

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = Block number, label

**Explanation:** The actual spindle speed is higher than the maximum speed configured in MD35100 $MA_SPIND_VELO_LIMIT plus a tolerance of 10 percent (fixed setting).

The alarm should not occur after correct optimization of the drive actuator and gear configuration.

This alarm can be reconfigured with MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready to operate) to 'BAG not ready'.

Note: Reconfiguring affects all alarms with alarm response 'Chan not ready'.

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Check the setup and optimization data of the drive actuator in accordance with the Installation and Start-up Guide and make corrections.

Increase the tolerance window in MD35150 $MA_SPIND_DES_VELO_TOL.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 22200 [Channel %1: ] Block %3 Spindle %2 axis stopped during tapping

**Parameters:** %1 = Channel number

%2 = Axis name, spindle number

%3 = Block number, label

**Explanation:** When tapping with compensating chuck (G63) the drilling axis was stopped via the NC/PLC interface and the spindle continues to rotate. The thread and possibly also the tap were damaged as a result.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Provide an interlock in the PLC user program so that no axis stop can be initiated when tapping is active. If the tapping operation is to be terminated under critical machine conditions, the spindle and the axis should be stopped simultaneously if at all possible. Slight differences are then accommodated by the compensating chuck.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22250 [Channel %1: ] Block %3 Spindle %2 axis stopped during thread cutting

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Block number, label

**Explanation:** The thread cutting axis has been stopped while a thread block was active.
The stop can be caused by VDI signals that cause the feed to be interrupted.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check the axis-specific/spindle-specific stop DB31, ... DBX4.3 (Spindle stop).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22270 [Channel %1: ] Block %2 thread cutting: Maximum speed axis %3 exceeded %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Velocity

**Explanation:** Thread cutting with G33, G34, G35: The thread axis (pitch axis) velocity calculated exceeds the maximum permissible axis velocity MD32000 $MA_MAX_AX_VELO. The calculated axis velocity is displayed.
The velocity of the thread axis is dependent upon:
- The current spindle speed
- The programmed thread pitch
- The programmed thread pitch change and thread length (G34, G35)
- The spindle override (path and individual axis overrides are ineffective)

**Reaction:** Alarm display.

**Remedy:** Reduce the spindle speed or thread pitch (thread pitch change).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22271 [Channel %1: ] Block %2 thread cutting: Maximum speed axis %3 exceeded %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Velocity

**Explanation:** Thread cutting with G33, G34, G35: The thread axis (pitch axis) velocity calculated exceeds the maximum permissible axis velocity MD32000 $MA_MAX_AX_VELO. The calculated axis velocity is displayed.
The velocity of the thread axis is dependent upon:
- The current spindle speed
- The programmed thread pitch
- The programmed thread pitch change and thread length (G34, G35)
- The spindle override (path and individual axis overrides are ineffective)

**Reaction:** Alarm display.

**Remedy:** Reduce the spindle speed or thread pitch (thread pitch change).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22272 [channel %1: ] block %2 axis %3 thread cutting: block length %4 too short for predefined thread pitch

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name
%4 = Block length

**Explanation:** Thread cutting with G33, G34, G35: Block length too short for predefined thread pitch. Block length is displayed.

**Reaction:** Alarm display.

**Remedy:** Reduce thread pitch (thread pitch change).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22275 [Channel %1: ] Block %2 zero velocity of thread axis at position %3 reached

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Position

**Explanation:** An axis standstill was reached at the specified position during thread cutting with G35 due to the linear decrease in the thread pitch. The standstill position of the thread axis depends on:
- Programmed thread pitch decrease
- Thread length

**Reaction:** Alarm display.

**Remedy:** Change at least one of the above factors.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22280 [Channel %1: ] In block %2: Prog. acceleration path too short %3, %4 required

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Prog. acceleration path
%4 = Required acceleration path

**Explanation:** In order to stay within the programmed acceleration path, the acceleration caused an overload on the thread axis. In order to accelerate the axis with the programmed dynamic response, the length of the acceleration path must be at least as large as the value in parameter %4.
The alarm is of the technological type and is output whenever bit 2 in MD11411 $MN_ENABLE_ALARM_MASK is enabled. The HMI softkey 'Technology support' sets and clears this bit in the MD.

**Reaction:** Alarm display.

**Remedy:** Modify part program or reset MD11411 $MN_ENABLE_ALARM_MASK bit 2.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22282 [Channel %1: ] In block %2: Prog. thread block too short to comply with the dynamic limit values %3, %4 is required

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Smoothing length that can be taken from the programmed thread block
%4 = Smoothing length required for dynamic response adjustment with compliance with the limit values

**Explanation:** If programming requires a dynamic response adjustment from one thread element to the next thread element, a check is made to see if the path length is long enough to comply with the dynamic limit values. Only a part of the programmed path length can be taken for this smoothing because the programmed target speed of the thread block for the required thread geometry (thread pitch, spindle speed) has to be reached and output. The dynamic limit values are exceeded for the dynamic response adjustment to the required thread geometry.
The alarm is only output if it is not suppressed by bit 25 of MD11415 $MN_SUPPRESS_ALARM_MASK_2.

**Reaction:** Alarm display.

**Remedy:** 1. Change part program and lengthen the path of thread block %2 or the next block.
There is a danger of collision as a result of path lengthening, especially for female threads. This must be checked.
2. Lengthen the smoothing length of the thread block with DITRB = -1.
3. Set MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 25.
4. Set setting data SD42010 $SC_THREAD_RAMP_DISP[2] = 0.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22290 [Channel %1: ] Spindle operation for transformed spindle/axis %2 not possible (reason: error code %3).

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Error code

**Explanation:** It is impermissible to start a spindle as long as it is being used by a transformation. Reason: spindle usage in a transformation requires axis operation, which must not be exited.
This alarm may have the following reasons:
- Error code 1 : M3, M4 or M5 per synchronized action;
- Error code 2 : M41 through M45 per synchronized action;
- Error code 3 : SPOS, M19 per synchronized action;
- Error code 11 : DB31, ... DBX30.0 (Spindle stop);
- Error code 12 : DB31, ... DBX30.1 (Spindle start clockwise rotation);
- Error code 13 : DB31, ... DBX30.2 (Spindle start counterclockwise rotation;
- Error code 14 : DB31, ... DBX30.4 (Spindle positioning).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Resolve the conflict, for example by deactivating transformation prior to spindle start.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22291 [Channel %1: ] Block %2 motion synchronous action %3 spindle mode is not possible for transformed spindle/axis %4

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID
%4 = Axis name, spindle number

**Explanation:** It is impermissible to start a spindle as long as it is being used by a transformation. Reason: spindle usage in a transformation requires axis operation, which must not be exited.
This alarm may have the following reasons:
- Error code 1 : M3, M4 or M5 per synchronized action;
- Error code 2 : M41 through M45 per synchronized action;
- Error code 3 : SPOS, M19 per synchronized action;
- Error code 11 : DB31, ... DBX30.0 (Spindle stop);
- Error code 12 : DB31, ... DBX30.1 (Spindle start clockwise rotation);
- Error code 13 : DB31, ... DBX30.2 (Spindle start counterclockwise rotation;
- Error code 14 : DB31, ... DBX30.4 (Spindle positioning).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Resolve the conflict, for example by deactivating transformation prior to spindle start.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22292 [Channel %1: ] Changeover of the operating mode of the axis/spindle %2 using PI service not possible, Cause %3

**Parameters:** %1 = Channel number
%2 = Axis/spindle
%3 = Cause

**Explanation:** It is not possible to change over the operating mode of the axis/spindle.
Cause:
1: The required axis/spindle is not known in the channel.
2: The required axis/spindle is not available in the channel.
3: The required axis/spindle is defined as virtual axis.
4: The required axis is not defined as spindle. Therefore, it is not possible to change over the operating mode of the axis.
5: The required axis/spindle is a permanently assigned PLC axis/spindle.
6: The required axis/spindle is an active slave axis/spindle.
7: Spindle operation is not possible for transformed spindle/axis.
8: The required axis/spindle is not available as command axis.

**Reaction:** Alarm display.

**Remedy:** 1: Please select the PI service again.
2: Please select the PI service again.
3: Reset MD 30132 IS_VIRTUAL_AX.
4: When required, configure axis as spindle.
5: Axis/spindle enabled by the PLC.
6: Deactivate coupling of the slave axis/spindle.
7: Deactivate transformation.
8: Wait until the axis is again available.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22295 [Channel %1: ] Spindle %2 DBB30 function not possible (cause: error code %3)

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Error code

**Explanation:** The function request by PLC via DBB30 interface could not be executed. The cause is specified by the error code.
Error codes:
- Error code 1 : internal use
- Error code 2 : internal use
- Error code 3 : internal use
- Error code 4 : internal use
- Error code 5 : Switchover to command axis not possible
- Error code 6 : Switchover to PLC axis not possible
- Error code 20 : internal use
- Error code 21 : internal use
- Error code 22 : internal use
- Error code 23 : MD 30132 IS_VIRTUAL_AX has been set
- Error code 50 : internal use
- Error code 51 : internal use
- Error code 70 : internal use

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remedy conflict.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22296 [Channel %1: ] Spindle %2 Error on gear stage change (cause: error code %3)

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Error code

**Explanation:** An error occurred during gear stage change. The cause is specified by the error code.
Error codes:
- Error code 1 : internal use
- Error code 2 : internal use
- Error code 3 : internal use
- Error code 4 : internal use
- Error code 5 : Switchover to command axis not possible
- Error code 6 : Switchover to PLC axis not possible
- Error code 20 : internal use
- Error code 21 : internal use
- Error code 22 : internal use
- Error code 23 : MD 30132 IS_VIRTUAL_AX has been set
- Error code 50 : internal use
- Error code 51 : internal use
- Error code 70 : internal use

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remedy conflict.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22297 [Channel %1: ] Spindle %2 FC18 function not possible (cause: error code %3)

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = Error code

**Explanation:** The function request by PLC via FC18 interface could not be executed. The cause is specified by the error code.
Error codes:
- Error code 1 : internal use
- Error code 2 : internal use
- Error code 3 : internal use
- Error code 4 : internal use
- Error code 5 : Switchover to command axis not possible
- Error code 6 : Switchover to PLC axis not possible
- Error code 20 : internal use
- Error code 21 : internal use
- Error code 22 : internal use
- Error code 23 : MD 30132 IS_VIRTUAL_AX has been set
- Error code 50 : internal use
- Error code 51 : internal use
- Error code 70 : internal use

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remedy conflict.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22320 [Channel %1: ] Block %2 motion synchronous action: %3 PUTFTOCF command could not be transferred

**Parameters:** %1 = Channel number
%2 = Block number, line number
%3 = Synact ID

**Explanation:** The cyclic transfer of the PUTFTOCF data block (fine tool compensation) could not be performed because the transfer area is already occupied.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the part program, in particular with regard to the other channels. Is a data block being transferred by another channel?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22321 [Channel %1: ] Axis %2 PRESET not allowed during traverse motion

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A preset command was sent from the HMI or PLC while an axis was traveling in JOG mode.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Wait until the axis is stationary.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 22322 [Channel %1: ] Axis %2 PRESET: illegal value

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The entered Preset value is too large (number format overflow).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Use smaller, permissible preset values.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22324 [Channel %1: ] Block %2 Axis %3 PRESETON or PRESETONS not permitted (cause: %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis name, spindle number
%4 = Index describing the problem that occured in more detail

**Explanation:** A problem has occurred when programming PRESETON or PRESETONS. This problem is described in more detail using the "Index" parameter:
Index == 1: In MD30460 $MA_BASE_FUNCTION_MASK the PRESETON or PRESETONS function is deactivated.
Index == 2: For PRESETONS, the axis is monitored for collision. Actual value setting is not permitted.
Index == 3: PRESETON/PRESETONS is not permissible for synchronous GANTRY axes.
Index == 4: In speed control mode, PRESETON/PRESETONS is not permissible before terminating the traversing movement.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Apply the programming permitted.
Please notify the authorized personnel/service.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 22326 PRESETONS not possible on safety axis %1

**Parameters:** %1 = Axis number

**Explanation:** PRESETONS(...) cannot be used for axes, for which a safety function is activated, which requires an absolute reference.
PRESETONS was permitted in MD30460 $MA_BASE_FUNCTION_MASK.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Remedy conflict.

**Programm continuation:** Switch control OFF - ON.

## 22400 [Channel %1: ] Option 'contour handwheel' not set

**Parameters:** %1 = Channel number

**Explanation:** The function 'contour handwheel' was activated without the neccesary option.
If the alarm occurs
- on selection of the contour handwheel via the PLC, then the contour handwheel has to be deselected in order to continue with the program
- on account of programming FD=0, then the program can be corrected and continued with the compensation block and NCSTART.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department.
- Set option
- Cancel the activation of the function 'contour handwheel'
- Modify part program.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25000 Axis %1 hardware fault of active encoder

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The signals of the currently active actual position value encoder (NC/PLC interface signal DB31, ... DBX1.5 = 1 (Position measuring system 1) or DB31, ... DBX1.6 = 1 (Position measuring system 2)) are missing, do not have the same phase, or exhibit grounding/short-circuit.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).
For PROFIdrive only:
MD36310 $MA_ENC_ZERO_MONITORING >100 replaces the existing PowerOn alarm by the Reset alarm 25010.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Check measuring circuit connectors for correct contacting. Check encoder signals and replace the encoder if faults are found.
Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING[n] to 100 (n = encoder number: 1,2).

**Programm continuation:** Switch control OFF - ON.

## 25001 Axis %1 hardware fault of passive encoder

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The signals from the currently inactive actual position value encoder are missing, or they are not of the same phase, or they exhibit grounding/short-circuit.
For PROFIdrive only:
MD36310 $MA_ENC_ZERO_MONITORING >100 replaces the existing PowerOn alarm by the Reset alarm 25011.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check that correct contacts are established for the measuring circuit connectors. Check encoder signals and replace the encoder if faults are found. Switch off monitoring with the corresponding interface signal DB31, ... DBX1.5 / 1.6 = 0 (position measuring system 1/2 ).
The fault cause remains until the next power on
Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING[n] to 100 (n = encoder number: 1, 2).

**Programm continuation:** Switch control OFF - ON.

## 25010 Axis %1 pollution of measuring system

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The encoder used for position control sends a contamination signal (only in measuring systems with contamination signal).
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).
For PROFIdrive only:
MD36310 $MA_ENC_ZERO_MONITORING >100 returns the existing Reset alarm instead of the Power-on alarm 25000.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Check the measuring system in accordance with the instructions given by the measuring device manufacturer.
Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING[n] to 100 (n = encoder number: 1,2).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25011 Axis %1 pollution of passive encoder

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The encoder not used for position control sends a contamination signal (only in measuring systems with contamination signal).
For PROFIdrive only:
MD36310 $MA_ENC_ZERO_MONITORING >100 returns the existing Reset alarm instead of the Power-on alarm 25001.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Check the measuring system in accordance with the instructions given by the measuring device manufacturer.
Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING[n] to 100 (n = encoder number: 1,2).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 25020 Axis %1 zero mark monitoring of active encoder

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For PROFIdrive:
The position encoder pulses between 2 zero mark pulses are counted, and the plausibility is assessed (The functionality and possibly the parameterization of the plausibility check is done on the drive side. Please refer to the relevant drive documentation for details.), and reported in a PROFIdrive message frame (encoder interface) to the control, which then issues the present alarm.
The alarm can be reprogrammed in MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.

The differences can result from transmission errors, disturbances, encoder hardware faults or from the evaluation electronics in the encoder used for position control. The actual value branch must therefore be checked:

1. Transmission path: Check the actual-value connectors for correct contacting, encoder cable for continuity, and also check for short-circuits and grounding (loose contact?).

2. Encoder pulses: Is the encoder power supply within the tolerance limits?

3. Evaluation electronics: Replace or reconfigure the drive or encoder module used.

4. Check MD34220 $MA_ENC_ABS_TURNS_MODULO and Sinamics drive parameter P0979 subindex 5 (or 15,25). They have to be the same for correct handling of the encoder data.

Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING [n] to 0 or 100 (n = encoder number: 1, 2).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25021 Axis %1 zero mark monitoring of passive encoder

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Monitoring relates to the encoder that is not used by the position control. (NC-PLC interface signal DB31, ... DBX1.5 = 0 (Position measuring system 1) or DB31, ... DBX1.6 = 0 (Position measuring system 2))

More detailed explanations are similar to those for alarm 25020.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. The differences can result from transmission errors, disturbances, encoder hardware faults or from the evaluation electronics in the encoder not used for position control. The actual value branch must therefore be checked:

1. Transmission path: Check the actual-value connectors for correct contacting, encoder cable for continuity, and also check for short-circuits and grounding (loose contact?).

2. Encoder pulses: Is the encoder power supply within the tolerance limits?

3. Evaluation electronics: Replace or reconfigure the drive or encoder module used.

4. Check MD34220 $MA_ENC_ABS_TURNS_MODULO and Sinamics drive parameter P0979 subindex 5 (or 15,25). Both have to be the same for correct handling of the encoder data.

Monitoring can be switched off by setting MD36310 $MA_ENC_ZERO_MONITORING[n] to 0 or 100 (n = encoder number: 1, 2).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25022 Axis %1 encoder %2 warning %3

**Parameters:** %1 = Axis name, spindle number

%2 = Encoder number

%3 = Error fine coding

**Explanation:** This alarm only occurs with absolute encoders:

Warning notice of missing absolute encoder adjustment, that is if MD34210 $MA_ENC_REFP_STATE equals 0. In this case, fine error code 0 is returned.

**Reaction:** Alarm display.

**Remedy:** Verify encoder adjustment (machine reference ) or readjust encoder.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25030 Axis %1 actual velocity alarm limit

**Parameters:** %1 = Axis name, spindle number

**Explanation:** If the axis has at least one active encoder, then the actual speed of the axis is cyclically checked in the IPO cycle. If there are no errors, the actual velocity can never become greater than specified in the axis-specific MD36200 $MA_AX_VELO_LIMIT (threshold for velocity monitoring). This threshold value in [mm/min, rev/min] is input by an amount that is about 5 to 10% greater than that which can occur at maximum traversing velocity. Drive errors can result in the velocity being exceeded and the alarm is then triggered.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.

- Check the speed setpoint cable (bus cable).

- Check the actual values and direction of position control.

- Change the position control direction if the axis rotates uncontrollably -> axis-specific MD32110 $MA_ENC_FEEDBACK_POL [n] = < -1, 0, 1 >.

- Increase the monitoring limit value in MD 36200 $MA_AX_VELO_LIMIT.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25031 Axis %1 actual velocity warning limit

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The present velocity actual value is more than 80% of the limit value defined in the machine data.

(Internal test criterion activated by MD36690 $MA_AXIS_DIAGNOSIS, bit0)

**Reaction:** Alarm display.

**Remedy:** -

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25040 Axis %1 standstill monitoring

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The NC monitors to ensure that the position is held at zero speed. Monitoring is started after a time that can be set for a specific axis in the MD36040 $MA_STANDSTILL_DELAY_TIME after interpolation has ended. A constant check is made to determine whether the axis remains within the tolerance range given in MD36030 $MA_STANDSTILL_POS_TOL.

The following cases are possible:

1. The NC/PLC interface signal DB31, ... DBX2.1 (Servo enable) is zero because the axis has jammed mechanically. Due to mechanical influences (e.g. high machining pressure), the axis is pushed outside the permissible position tolerance.

2. With closed position control loop (without jamming) - NC/PLC interface signal DB31, ... DBX2.1 (Servo enable) is "1" - the axis is pushed away from its position by mechanical forces with a small gain in the position control loop.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
- Check MD36040 $MA_STANDSTILL_DELAY_TIME and MD36030 $MA_STANDSTILL_POS_TOL; increase if necessary. The value must be greater than the machine data "Exact stop - coarse" (MD36000 $MA_STOP_LIMIT_COARSE).
- Estimate machining forces and reduce if necessary by setting a lower feed or a higher rotational speed.
- Increase clamping pressure.
- Increase the gain in the position control loop by improved optimization (Kv factor MD32200 $MA_POSCTRL_GAIN).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25042 Axis %1 standstill monitoring during torque/force limitation

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The defined end position was not reached within the time specified in the machine data.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:**
- If the drive torque (FXST) was set too low with the result that the force of the motor was not sufficient to reach the end position -> increase FXST.
- If the machined part is slowly deformed, there may be a delay in reaching the end position -> increase MD36042 $MA_FOC_STANDSTILL_DELAY_TIME.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25050 Axis %1 contour monitoring

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The NCK calculates for each interpolation point (setpoint) of an axis the actual value that should result based on an internal model. If this calculated actual value and the true machine actual value differ by a larger amount than given in the MD36400 $MA_CONTOUR_TOL, then the program is canceled and the alarm message is issued.
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
- Check whether the tolerance value set in MD36400 $MA_CONTOUR_TOL is too small.
- Check optimization of the position controller (Kv factor in the MD32200 $MA_POSCTRL_GAIN) to establish whether the axis follows the given setpoint without overshooting. Otherwise, the speed controller optimization must be improved or the Kv servo gain factor must be reduced.
- Improvement of speed controller optimization
- Check the mechanics (smooth running, inertial masses).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25060 Axis %1 speed setpoint limitation

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The speed setpoint has exceeded its upper limit for a longer period than allowed.

The maximum speed setpoint is limited to a certain percentage by the axis-specific MD36210 $MA_CTRLOUT_LIMIT. The input value of 100% corresponds to the rated speed of the motor and hence the rapid traverse velocity.

For SINAMICS: Drive parameter p1082 also has a limiting effect.

If the values are exceeded for a short time, then this is tolerated provided they do not last longer than allowed for in the axis-specific MD36220 $MA_CTRLOUT_LIMIT_TIME. The setpoint is limited during this time to the maximum value that has been set in (MD36210 $MA_CTRLOUT_LIMIT).

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. This alarm should not occur if the drive controller has been set correctly and the machining conditions are those that normally prevail.

- Check actual values: Local sluggishness of the carriage, speed dip by torque surge due to contact with workpiece/tool, travel against fixed obstacle, etc.

- Check direction of position control: Does the axis continue to rotate without control?

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25070 Axis %1 drift value too large

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Only with analog drives!

The permissible maximum value of drift (internal, integrated drift value of automatic drift compensation) was exceeded during the last compensation operation. The permissible maximum value is defined in the axis-specific MD36710 $MA_DRIFT_LIMIT. The drift value itself is not limited.

Automatic drift compensation: MD36700 $MA_DRIFT_ENABLE=1

The difference between actual and setpoint position (drift) is checked cyclically in the IPO cycle when the axes are at zero speed. The difference is automatically compensated to zero by slowly integrating an internal drift value.

Drift compensation by hand: MD36700 $MA_DRIFT_ENABLE=0

A static offset can be added to the speed setpoint in the MD36720 $MA_DRIFT_VALUE. This is not included in the drift monitoring because it acts like a voltage work offset.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Adjust the drift compensation with the automatic drift compensation switched off at the drive until the position lag is approximately zero. Then reactivate the automatic drift compensation in order to balance out the dynamic drift changes (effects of heating up).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25080 Axis %1 positioning monitoring

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For blocks in which "exact stop" is effective, the axis must have reached the exact stop window after the positioning time given in the axis-specific MD36020 $MA_POSITIONING_TIME.

Exact stop coarse: MD36000 $MA_STOP_LIMIT_COARSE

Exact stop fine: MD36010 $MA_STOP_LIMIT_FINE

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Check whether the exact stop limits (coarse and fine) correspond to the dynamic possibilities of the axis, otherwise increase them, if necessary in connection with the positioning time set in MD36020 $MA_POSITIONING_TIME.
Check speed controller/position controller optimization; select highest possible gain.
Check setting of Kv factor (MD32200 $MA_POSCTRL_GAIN) and increase, if required.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25100 Axis %1 measuring system switchover not possible

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The prerequisites are not satisfied for the required encoder switchover:
1. The newly selected encoder must be in the active state: (DB31, ... DBX1.5 / 1.6 = 1 (Position measuring system 1/2).
2. The actual value difference between the two encoders is greater than the value in the axis-specific MD36500 $MA_ENC_CHANGE_TOL ("Maximum tolerance for actual position value switchover").
Activation of the measuring system concerned takes place in accordance with the NC/PLC interface signals DB31, ... DBX1.5 (Position measuring system 1) and DB31, ... DBX1.6 (Position measuring system 2), i.e. the position control is now operated with this measuring system. The other measuring system is switched over to follow-up mode. If both interface signals are set to "1", then only the 1st measuring system is active; if both interface signals are set to "0", the axis is parked.
Changeover takes place as soon as the interface signals have changed, even if the axis is in motion.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. When referencing the active actual position value encoder, the actual value system of the inactive encoder is set to the same reference point value as soon as phase 3 has been concluded. A later positional difference between the two actual value systems can have occurred only as the result of an encoder defect or a mechanical displacement between the encoders.
- Check the encoder signals, actual value cable, connectors.
- Check the mechanical fastenings (displacement of the measuring head, mechanical twisting possible).
- Increase the axis-specific MD 36500 $MA_ENC_CHANGE_TOL.
Program continuation is not possible. The program must be canceled with "RESET", then program execution can be reinitiated with NC START, if necessary at the interruption point after "Block search with/without calculation".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 25105 Axis %1 measuring systems differ considerably

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The two measuring systems differ considerably, i.e. the cyclically monitored actual value difference between the two measuring systems is greater than the associated tolerance value set in the machine data MD36510 $MA_ENC_DIFF_TOL. This can only occur when both measuring systems are active (MD30200 $MA_NUM_ENCS = 2) and referenced. The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Inform the authorized personnel/service department.
Check the machine data for active and selected encoders.
Check the machine data for the tolerance of the encoders (MD36510 $MA_ENC_DIFF_TOL).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25110 Axis %1 selected encoder not available

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The selected encoder does not correspond to the maximum number of encoders in the axis-specific MD30200 $MA_NUM_ENCS, i.e. the 2nd encoder does not exist.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Enter the number of actual value encoders used for this axis in the MD30200 $MA_NUM_ENCS ("Number of encoders").
Input value 0: Axis without encoder -> e.g. spindle
Input value 1: Axis with encoder -> default setting
Input value 2: Axis with 2 encoders -> e.g. direct and indirect measuring system

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 25200 Axis %1 requested set of parameters invalid

**Parameters:** %1 = Axis name, spindle number

**Explanation:** A new parameter set has been requested for the positioning control. The number of this parameter set is beyond the permissible limit.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please inform the authorized personnel/service department. Check the axis-specific/spindle-specific interface signals DB31, ... DBX9.0 - .2 (Select parameter set servo A, B, C).
One parameter set includes the following machine data:
- MD31050 $MA_DRIVE_AX_RATIO_DENOM [n]
- MD31060 $MA_DRIVE_AX_RATIO_NUMERA [n]
- MD32200 $MA_POSCTRL_GAIN [n]
- MD32452 $MA_BACKLASH_FACTOR [n]
- MD32610 $MA_VELO_FFW_WEIGHT [n]
- MD32800 $MA_EQUIV_CURRCTRL_TIME [n]
- MD32810 $MA_EQUIV_SPEEDCTRL_TIME [n]
- MD32910 $MA_DYN_MATCH_TIME [n]
- MD36012 $MA_STOP_LIMIT_FACTOR [n]
- MD36200 $MA_AX_VELO_LIMIT [n]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 25201 Axis %1 drive fault

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For PROFIdrive:

The drive signals a serious fault which prevents the drive from being ready. The exact cause of the fault can be found by evaluating the output drive alarms (It may be necessary to activate these diagnostic alarms by parameterizing the MDs MD13070 $MN_DRIVE_FUNCTION_MASK, MD13140 $MN_PROFIBUS_ALARM_ACCESS etc):

Alarms 380500 and 380501 (or the corresponding alarm numbers implemented on the HMI side).

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Evaluation of the drive alarms.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 25202 Axis %1 waiting for drive

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Drive group error (self-clearing).

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** For PROFIdrive only:

Wait for the drive. This alarm reveals similar problems to alarm 25201 (see that alarm). It is continuously active during power-up if the drive does not communicate (e.g. if the PROFIBUS connector has fallen out). Otherwise, the alarm is active only briefly and is replaced by alarm 25201 after an internal timeout in the event of a permanent problem.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 25220 Axis %1 gear ratio changed with ESR enabled

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Because a change in the gear ratio has an effect on the retraction path traveled by the drive, no changes may be made to the gear ratio during the following periods of time:

- Between the last programming of the retraction path with ESRR and the ESR enable
- As from ESR enable

The following machine data define the gear ratios of an axis

MD31050 $MA_DRIVE_AX_RATIO_DENOM

MD31060 $MA_DRIVE_AX_RATIO_NUMERA

MD31064 $MA_DRIVE_AX_RATIO2_DENOM

MD31066 $MA_DRIVE_AX_RATIO2_NUMERA

The gear ratio must not be changed during the periods of time described above, e.g. by changing the parameter set.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** If ESR enable is missing:
- Change the gear ratio before programming the retraction path with ESRR
or
- Reprogram the retraction path with ESRR after changing the gear ratio
Then re-enable ESR.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26000 Axis %1 clamping monitoring

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The clamped axis has been pushed out of its setpoint position. The permissible difference is defined in the axis-specific MD36050 $MA_CLAMP_POS_TOL.
Clamping an axis is activated with the axis-specific interface signal DB31, ... DBX2.3 (Clamping process active).
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Determine the position deviation to the setpoint position and, depending on the results, either increase the permissible tolerance in the MD or mechanically improve the clamping (e.g. increase clamping pressure).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26001 Axis %1 parameterization error: friction compensation

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The parameterization of the adaptation characteristic in the quadrant error compensation is not allowed because acceleration value 2 (MD32560 $MA_FRICT_COMP_ACCEL2 is not between acceleration value 1 (MD32550 $MA_FRICT_COMP_ACCEL1) and acceleration value 3 (MD32570 $MA_FRICT_COMP_ACCEL3).
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
Check the setting parameters of the quadrant error compensation (friction compensation), if necessary switch off the compensation with MD32500 $MA_FRICT_COMP_ENABLE.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26002 Axis %1 encoder %2 parameterization error: number of encoder pulses

**Parameters:** %1 = Axis name, spindle number
%2 = Encoder number

**Explanation:** 1. Rotary measuring system (MD31000 $MA_ENC_IS_LINEAR[]==FALSE)

The number of encoder marks set in MD31020 $MA_ENC_RESOL[] does not correspond to the value in the drive machine data (PROFIdrive: p979) or one of the two values is zero.

2. Absolute measuring system with EnDat interface (MD30240 $MA_ENC_TYPE[]==4)

On absolute encoders, the resolution of the incremental and absolute tracks supplied by the drive is also checked for consistency.

For PROFIdrive drives:

Compare drive parameter p979 (and possibly other internal drive, manufacture-specific parameters stated in the relevant drive documentation) or compare images in NC-MDs $MA_ENC_RESOL, $MA_ENC_PULSE_MULT, $MA_ENC_ABS_TURNS_MODULO etc.

Conditions leading to triggering the alarm are:

* Number of encoder pulses in the drive!= $MA_ENC_RESOL

* PROFIdrive interface standardization/high resolution in p979 not permitted (permitted pushing factor 0...30 bits)

* With absolute encoders: Interface formats in p979 for absolute and incremental information does not fit together (i.e. the absolute position in XIST2 is supplied in too coarse resolution for a complete position reconstruction)

* In the case of rotary absolute encoders behind the gears (and active traversing range extension in accordance with $MA_ENC_ABS_BUFFERING): Absolute position format (in Gx_XIST2) is not complete/sufficient for position reconstruction via PowerOff in accordance with the following condition: $MA_ENC_RESOL*$MA_ENC_PULSE_MULT* $MA_ENC_ABS_TURNS_MODULO must not be smaller than 2**32. A remedy against alarm triggering in the latter case may be to increase $MA_ENC_PULSE_MULT (or the associated drive-side parameterization e.g. p418/419 with SINAMICS) or (when the necessary conditions prevail) by deactivating the traversing range extension - see $MA_ENC_ABS_BUFFERING

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.

Adjust machine data.

For absolute encoders, possibly pending drive alarms indicating encoder problems should be evaluated.

**Programm continuation:** Switch control OFF - ON.

## 26003 Axis %1 parameterization error: lead screw pitch

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The pitch of the ballscrew/trapezoidal leadscrew set in the axis-specific MD31030 $MA_LEADSCREW_PITCH is zero.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Determine the leadscrew pitch (specify the machine manufacturer or pitch measurement with spindle cover removed) and enter it in the MD31030: $MA_LEADSCREW_PITCH (mostly 10 or 5 mm/rev.).

**Programm continuation:** Switch control OFF - ON.

## 26004 Axis %1 encoder %2 parameterization error: grid point distance with linear encoders

**Parameters:** %1 = Axis name, spindle number

%2 = Encoder number

**Explanation:** The scale division of the linear scale set in the axis-specific MD31010 $MA_ENC_GRID_POINT_DIST is zero or differs from the corresponding drive parameters. For a better understanding of the interrelations see the explanations for alarm 26002, which refer to rotatory encoders.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.

Enter the encoder grid point distance according to the data given by the machine (or measuring device) manufacturer in the MD31010 $MA_ENC_GRID_POINT_DIST.

**Programm continuation:** Switch control OFF - ON.

## 26005 Axis %1 parameterization error: output rating

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For analog drives:

The output evaluation of the analog speed setpoint set in the MD32250 $MA_RATED_OUTVAL or in MD 32260 $MA_RATED_VELO is zero.

The effective output evaluation of the speed setpoint interface is zero:

a. MD32260 $MA_RATED_VELO is zero although a standardizing reference value needs to be defined on account of the setting MD32250 $MA_RATED_OUTVAL>0

b. The corresponding drive-side standardizing parameter is zero, invalid or unreadable/unavailable although an automatic interface scaling adjustment has been selected on account of MD32250 $MA_RATED_OUTVAL=0.

The drive parameter defining the standard is not determined by PROFIdrive, but is specific to the manufacturer (see the relevant drive documentation: For SINAMICS: p2000).

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. The nominal output voltage in [%] of the maximum setpoint value (10 V) is entered in the MD32250 $MA_RATED_OUTVAL, at which the rated motor speed in [degrees/s] is to be reached (MD32260 $MA_RATED_VELO).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26006 Axis %1 encoder %2 encoder type/output type %3 not possible

**Parameters:** %1 = Axis name, spindle number

%2 = Encoder number

%3 = Encoder type/output type

**Explanation:** Not every encoder type or output type can be used with every control or drive variant.
Permissible settings:
MD30240 $MA_ENC_TYPE
= 0 Simulation
= 1 Raw signal incremental encoder (PROFIdrive)
= 4 Absolute encoder (all drive-side absolute encoders supported by PROFIdrive)
MD30130 $MA_CTRLOUT_TYPE
= 0 Simulation
= 1 Standard (PROFIdrive drives)
The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department.
Check machine data MD30240 $MA_ENC_TYPE and/or MD30130 $MA_CTRLOUT_TYPE and make the necessary corrections.

**Programm continuation:** Switch control OFF - ON.

## 26007 Axis %1 QEC: invalid coarse increment

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The course increment for QEC must be within the range 1 <= course increment <= maximum value of MD18342 $MN_MM_QEC_MAX_POINTS (currently 1025), because a greater number of values would exceed the available memory space.

**Reaction:** Alarm display.

**Remedy:** Modify the system variable $AA_QEC_COARSE_STEPS accordingly.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26008 Axis %1 QEC: invalid fine increment

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The fine increment for quadrant error compensation $AA_QEC_FINE_STEPS must be in the range 1 <= fine increment <= 16 because this value has an influence on the computation time of the QEC.

**Reaction:** Alarm display.

**Remedy:** Modify the system variable $AA_QEC_FINE_STEPS accordingly.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26009 Axis %1 QEC: memory overflow

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The product of the data $AA_QEC_COARSE_STEPS+1 and $AA_QEC_FINE_STEPS must not exceed the maximum number of the characteristic curve points (MD38010 $MA_MM_QEC_MAX_POINTS). With a direction-dependent characteristic, this criterion applies to 2 * ($AA_QEC_COARSE_STEPS+1) * $AA_QEC_FINE_STEPS!

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Either increase MD38010 $MA_MM_QEC_MAX_POINTS or reduce $AA_QEC_COARSE_STEPS and/or $AA_QEC_FINE_STEPS.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26010 Axis %1 QEC: invalid acceleration characteristic

**Parameters:** %1 = Axis name, spindle number

**Explanation:** $AA_QEC_ACCEL_1/2/3: The acceleration characteristic is divided into three areas. In each area there is a different quantization of the acceleration steps. The defaults should be changed only if compensation is inadequate in these acceleration areas.

The defaults are as follows:

- $AA_QEC_ACCEL_1 with approx. 2% of maximum acceleration ($AA_QEC_ACCEL_3),
- $AA_QEC_ACCEL_2 with approx. 60% of maximum acceleration ($AA_QEC_ACCEL_3),
- $AA_QEC_ACCEL_3 with maximum acceleration (MD32300 $MA_MAX_AX_ACCEL).

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Enter the values correctly:

0 < $AA_QEC_ACCEL_1 < $AA_QEC_ACCEL_2 < $AA_QEC_ACCEL_3.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26011 Axis %1 QEC: invalid measuring periods

**Parameters:** %1 = Axis name, spindle number

**Explanation:** $AA_QEC_MEAS_TIME_1/2/3: measuring time to determine the error criterion.

The measuring period begins when the criterion for activating the compensation value has been satisfied (the desired velocity changes the sign). The end is defined by the machine data values. In general, different measuring times are required for the three characteristic ranges. The presettings should be changed only if a problem occurs. The three data apply in each case for the three corresponding acceleration ranges.

1. $AA_QEC_MEAS_TIME_1 specifies the measuring time (for determining the error criterion) for accelerations in the range between 0 and $AA_QEC_ACCEL_1.

2. $AA_QEC_MEAS_TIME_2 specifies the measuring time in the range from $AA_QEC_ACCEL_1 to $AA_QEC_ACCEL_2.

3. $AA_QEC_MEAS_TIME_3 specifies the measuring time in the range from $AA_QEC_ACCEL_2 to $AA_QEC_ACCEL_3 and beyond.

**Reaction:** Alarm display.

**Remedy:** Please inform the authorized personnel/service department. Enter the values correctly: 0 < $AA_QEC_MEAS_TIME_1 < $AA_QEC_MEAS_TIME_2 < $AA_QEC_MEAS_TIME_3.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26012 Axis %1 QEC: feed forward control not active

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The error criterion for determining the quadrant error necessitates a correctly set feedforward control.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Alarm display.

Channel not ready.

**Remedy:** Switch on feedforward control and set it correctly.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26014 Axis %1 machine data %2 invalid value

**Parameters:** %1 = Axis name, spindle number

%2 = String: MD identifier

**Explanation:** Machine data includes a value that is not valid.
**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Repeat entry with correct value and then Power On.
**Programm continuation:** Switch control OFF - ON.

## 26015 Axis %1 machine data %2[%3] invalid value

**Parameters:** %1 = Axis name, spindle number
%2 = String: MD identifier
%3 = Index: MD array index
**Explanation:** Machine data includes a value that is not valid.
**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Repeat entry with correct value and then Power On.
**Programm continuation:** Switch control OFF - ON.

## 26016 Axis %1 machine data %2 invalid value

**Parameters:** %1 = Axis name, spindle number
%2 = String: MD identifier
**Explanation:** Machine data includes a value that is not valid.
**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Repeat entry with correct value and then Reset.
**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26017 Axis %1 machine data %2[%3] invalid value

**Parameters:** %1 = Axis name, spindle number
%2 = String: MD identifier
%3 = Index: MD array
**Explanation:** Machine data includes a value that is not valid.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Repeat entry with correct value and then Reset.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26018 Axis %1 setpoint output drive %2 used more than once

**Parameters:** %1 = Axis name, spindle number
%2 = Drive number

**Explanation:** The same setpoint assignment has been allocated more than once.
MD30110 $MA_CTRLOUT_MODULE_NR contains the same value for different axes.
PROFIdrive: The stated MDs contain the same values for different axes, or different entries in MD13050 $MN_DRIVE_LOGIC_ADDRESS contain the same values.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Inform the authorized personnel/service department.
Avoid dual assignment of the setpoint by correcting MD30110 $MA_CTRLOUT_MODULE_NR. Also check the selected bus type of MD30100 $MA_CTRLOUT_SEGMENT_NR.

**Programm continuation:** Switch control OFF - ON.

## 26019 Axis %1 encoder %2 measurement not possible with this controller module

**Parameters:** %1 = NC axis number
%2 = Encoder number

**Explanation:** If the MD MD13100 $MN_DRIVE_DIAGNOSIS[8] contains a value not equal to zero, then the control has found at least one control module which does not support measuring. Measuring was programmed from the part program for the associated axis.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** You have the following possibilities of eliminating the error.
- Modify the measuring motion so that the axis concerned does not have to travel. Ensure that you do not program this axis in the measuring block. It is no longer possible to query the measured value for this axis.
- Replace the control module with one that supports the measurement. See MD13100 $MN_DRIVE_DIAGNOSIS[8].

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26020 Axis %1 encoder %2 hardware fault %3 during encoder initialization

**Parameters:** %1 = Axis name, spindle number
%2 = Encoder number
%3 = Error fine coding

**Explanation:** Error during initialization or access of encoder.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Rectify hardware error, replace encoder if necessary.

**Programm continuation:** Switch control OFF - ON.

## 26022 Axis %1 encoder %2 measurement with simulated encoder not possible

**Parameters:** %1 = NC axis number
%2 = Encoder number

**Explanation:** Alarm occurs on the control when a measurement was made without the encoder hardware (simulated encoder).

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Inform the authorized personnel/service department.
- If possible, modify the measuring motion so that the axis concerned does not have to travel; do not program this axis in the MEAS block again. You can no longer query a measured value for this axis.
- Ensure that measurement is not made with simulated encoders (MD30240 $MA_ENC_TYPE).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26024 Axis %1 machine data %2 value changed

**Parameters:** %1 = Axis name, spindle number
%2 = String: MD identifier

**Explanation:** The machine data contains an invalid value and therefore has been changed by the software.

**Reaction:** Alarm display.

**Remedy:** Check the machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26025 Axis %1 machine data %2[%3] value changed

**Parameters:** %1 = Axis name, spindle number
%2 = String: MD identifier
%3 = Index: MD array index

**Explanation:** The machine data contains an invalid value. It was therefore changed by the software internally to a valid value.

**Reaction:** Alarm display.

**Remedy:** Check the machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26026 Axis %1 SINAMICS drive parameter P2038 value is not allowed.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For SINAMICS drives only:
The interface mode, which is set via drive parameter P2038, has not been set to SIMODRIVE 611 universal.
The alarm can be disabled by MD13070 $MN_DRIVE_FUNCTION_MASK - bit15.
However, the following must be noted:
- The device-specific assignment of the bits in the control and status words may be different.
- The drive data sets can be created at will, and need not be subdivided into groups of 8. (For details see also SINAMICS Commissioning Manual). So the parameters of motors 2-4 may be incorrectly assigned.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Set P2038 = 1 or
- Set P0922 = 100...199 or
- Set bit 15 of MD13070 $MN_DRIVE_FUNCTION_MASK (note the boundary conditions, see above)
and execute a Power ON in each case.

**Programm continuation:** Switch control OFF - ON.

## 26027 Axis %1 Stiffness mode Splines is not available (%2)

**Parameters:** %1 = Axis name, spindle number
%2 = Fine ID

**Explanation:** The Stiffness mode Splines is not available.
Fine coding:
Bit 0 - SINAMICS function block is not present (see P0108)
Bit 1 - $MN_DRIVE_TELEGRAMM_TYPE, set telegram that supports splines functionality (e.g. telegram 136)
Bit 2 - Set $MA_VELO_FFW_WEIGHT = 100%
Bit 3 - Set $MA_FIPO_TYPE = 2
Bit 4 - Set $MA_FFW_MODE = 3 or 4
Bit 5 - Set $MN_POSCTRL_SYSCLOCK_TIME_RATIO = 1

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Set $MA_SPLINES_CONTROL_CONFIG=0, or note and implement fine error code.

**Programm continuation:** Switch control OFF - ON.

## 26028 Machine data %1[%2] value not permissible

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array index

**Explanation:** Machine data includes a value that is not valid.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Repeat entry with correct value and then Power On.

**Programm continuation:** Switch control OFF - ON.

## 26029 Machine data %1[%2] value not permissible

**Parameters:** %1 = String: MD identifier
%2 = Index: MD array index

**Explanation:** Machine data includes a value that is not valid.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Repeat entry with the correct value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26030 Axis %1 encoder %2 absolute position lost

**Parameters:** %1 = Axis name, spindle number
%2 = Encoder number

**Explanation:** The absolute position of the absolute encoder has become invalid because
- on changing parameter block, a changed gear stage ratio was identified between encoder and processing or
- the encoder has been replaced (the absolute encoder's serial number was changed, see MD34230 $MA_ENC_SERIAL_NUMBER, and drive-specific parameters).
- of an internal number format limitation in MD34090 $MA_REFP_MOVE_DIST_CORR. Remedy: reduce MD10210 $MN_INT_INCR_PER_DEG or MD10200 $MN_INT_INCR_PER_MM.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Please inform the authorized personnel/service department. Rereferencing/resynchronization of the absolute encoder; attach absolute encoder on the load side and configure correctly (e.g. MD 31040 $MA_ENC_IS_DIRECT).

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 26031 Axis %1 configuration error master-slave

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The alarm is output when the same machine axis has been configured as a master and a slave axis. Each of the axes in the master/slave link can be operated either as master or slave.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check machine data for all linked axes and correct if necessary:
- MD 37250 $MA_MS_ASSIGN_MASTER_SPEED_CMD
- MD 37252 $MA_MS_ASSIGN_MASTER_TORQUE_CTR.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26032 [Channel %1: ] Axis %2 master-slave not configured

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** The master-slave coupling could not be activated because of incomplete configuration.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the current configuration of the master-slave coupling.
The configuration can be modified via the MASLDEF instruction or the machine data MD37250 $MA_MS_ASSIGN_MASTER_SPEED_CMD and MD37252 $MA_MS_ASSIGN_MASTER_TORQUE_CTR.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26040 Axis %1 encoder parameterization MD %2[%3] has been adjusted.

**Parameters:** %1 = Axis number
%2 = MD identifier
%3 = Machine data index

**Explanation:** The parameterization of the encoder in P979 read out from the drive and displayed in the MD does not match the NCK parameterization. The corresponding NCK-MD has been adapted.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Power on required. This alarm only occurs when the NC-MD is set unequal to the drive parameter.

**Programm continuation:** Switch control OFF - ON.

## 26050 Axis %1 parameter set change from %2 to %3 not possible

**Parameters:** %1 = Axis name, spindle number
%2 = Index: current parameter block
%3 = Index: new parameter block

**Explanation:** The parameter block change cannot be performed without jumps. This is due to the content of the parameter block to be switched on, e.g. different load gear factors.

**Reaction:** The NC switches to follow-up mode.
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Even with different load gear ratio settings, a parameter block change can be carried out via MD31060 $MA_DRIVE_AX_RATIO_NUMERA and MD31050 $MA_DRIVE_AX_RATIO_DENOM without an alarm under the following constraints: Constraints:
1. No position control is active, e.g. in follow-up mode or with spindle in speed-controlled mode.
2. For position control with the direct encoder.
3. For position control with the indirect encoder (the calculated load position difference must not exceed the value in MD36500 $MA_ENC_CHANGE_TOL).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26051 [Channel %1: ] In block %2 unanticipated stop crossed in continuous path mode

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The path interpolation did not stop, as required, at the end of the block, but only decelerates to a standstill in the next block. This error situation occurs if the stop at the end of the block was not planned by the path interpolation or was not detected early enough. One possible cause is that the PLC changed the spindle speed when MD35500 $MA_SPIND_ON_SPEED_AT_IPO_START > 0, and the machine has to wait until the spindle has returned to the setpoint range. Another possible cause is that a synchronized action needs to be finished before path interpolation continues. The alarm is only output if MD11400 $MN_TRACE_SELECT = 'H400'. The alarm output is normally suppressed. - MD11400 $MN_TRACE_SELECT has SIEMENS password protection.

**Reaction:** Alarm display.

**Remedy:** MD35500 $MA_SPIND_ON_SPEED_AT_IPO_START = 1. Program G09 before the alarm output in the block to allow the path interpolation to stop as planned.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26052 [Channel %1: ] In block %2: path velocity too high for auxiliary function output (%3)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Fine coding

**Explanation:** This alarm usually occurs in a block with auxiliary function output during a movement. In this case, the wait for acknowledgment of the auxiliary function was longer than planned.
The alarm also occurs if internal control inconsistencies cause continuous path mode (G64, G641, ...) to be blocked unexpectedly.
The path interpolation stops abruptly at the end of the block indicated in the message (regenerative stop). Alarm 21620 is often triggered as a follow-up alarm. If not, the path continues after the block change.

**Reaction:** Alarm display.

**Remedy:** - The time calculated for the auxiliary function output during the movement comes from the PLC in most systems. Otherwise, MD10110 $MN_PLC_CYCLE_TIME_AVERAGE is used for this purpose.
- The alarm can basically be avoided by programming in the block G09 indicated in the message. This stops the path interpolation briefly at the end of the block.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26053 [Channel %1: ] Block %2 interpolation problem in Look Ahead (module %3, identifier %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Module identifier
%4 = Error code

**Explanation:** Synchronism between interpolation and preparation is incorrect.

**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Please contact Siemens.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26054 [Channel %1: ] Block %2 interpolation warning in Look Ahead (module %3, problem %4)

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Module identifier
%4 = Error code

**Explanation:** The computer performance is inadequate to create a smooth path velocity profile. This can lead to drops in velocity.

**Reaction:** Local alarm reaction.
Alarm display.
Warning display.

**Remedy:** Change parameterization. Increase interpolation cycle.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26070 [Channel %1: ] Axis %2 cannot be controlled by the PLC, max. number exceeded

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** An attempt was made to define more axes than allowed as PLC-controlled axes.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Check the option 'Number of PLC-controlled axes' and correct if necessary or reduce the number of requests for PLC-controlled axes.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26072 [Channel %1: ] Axis %2 cannot be controlled by the PLC

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number

**Explanation:** Axis cannot be made a PLC-controlled axis. For the time being, the axis cannot be controlled at any state from the PLC.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Use Release or Waitp to make the axis a neutral one.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26074 [Channel %1: ] Switching off PLC control of axis %2 not allowed in the current state

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** The PLC can return the control rights for an axis to program processing only, if the axis is in READY state.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reset VDI interface signal "PLC controls axis", then activate "Axial reset" and repeat process.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26075 [Channel %1: ] Block %2 Axis %3 not available for the NC program, as exclusively controlled by the PLC

**Parameters:** %1 = Channel
%2 = Block number, label
%3 = Axis, spindle

**Explanation:** The axis is exclusively controlled by the PLC. Therefore, the axis is not available for the NC program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Have the axis not exclusively controlled by the PLC, but only temporarily. Change MD30460 $MA_BASE_FUNCTION_MASK, bit 4.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26076 [Channel %1: ] Block %2 Axis %3 not available for NC program, firmly assigned PLC axis

**Parameters:** %1 = Channel
%2 = Block number, label
%3 = Axis, spindle

**Explanation:** The axis is a firmly assigned PLC axis. The axis is therefore not available for the NC program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Do not define axis as a firmly assigned PLC axis. Change of MD30460 $MA_BASE_FUNCTION_MASK bit5.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26077 [Channel %1: ] Axis %2 not available for the NC program, as exclusively controlled by the PLC

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** The axis is exclusively controlled by the PLC. Therefore, the axis is not available for the NC program.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Have the axis not exclusively controlled by the PLC, but only temporarily. Change MD30460 $MA_BASE_FUNCTION_MASK, bit 4.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26078 [Channel %1: ] Axis %2 not available for NC program, firmly assigned PLC axis

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** The axis is a firmly assigned PLC axis. The axis is therefore not available for the NC program.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Do not define axis as a firmly assigned PLC axis. Change of MD30460 $MA_BASE_FUNCTION_MASK bit5.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26080 [Channel %1: ] Retraction position of axis %2 not programmed or invalid

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** No retraction position has been programmed for the axis trigger time or the position became invalid.

**Reaction:** Alarm display.

**Remedy:** Preset value by means of POLFA(Axis,Type,Pos), with type = 1 (absolut) or type = 2 (incremental); type = 0 specifies the position as invalid.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26081 [Channel %1: ] Axis trigger of axis %2 was activated, but axis is not PLC-controlled

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** The axis trigger for single axis was initiated. However, the axis is not PLC-controlled at the trigger time (therefore no single axis) or the position became invalid.

**Reaction:** Alarm display.

**Remedy:** Preset axis PLC-controlled (declare single axis).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26082 [Channel %1: ] ESR for PLC-controlled axis %2 has been triggered

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** An axial ESR has been triggered for an individual axis (PLC-controlled axis):
The display can be suppressed by MD11410 $MN_SUPPRESS_ALARM_MASK bit28 = 1.

**Reaction:** Alarm display.

**Remedy:** The individual axis is in axial stop after the ESR movement.
If an axial reset is performed for the individual axis, the alarm will be deleted
and the individual axis can be traversed again.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.
The individual axis is in axial stop after the ESR movement.
If an axial reset is performed for the individual axis, the alarm will be deleted
and the individual axis can be traversed again.

## 26100 Axis %1 drive %2 sign of life missing

**Parameters:** %1 = Axis name, spindle number
%2 = Drive number

**Explanation:** Special case: The output of drive number=0 indicates that a computing timeout occurred on the IPO level (see also alarm 4240)

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Restart drive, check drive software.

**Programm continuation:** Switch control OFF - ON.

## 26101 Axis %1 drive %2 communication failure

**Parameters:** %1 = Axis name, spindle number
%2 = Drive number

**Explanation:** For PROFIdrive only:
The drive is not communicating.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check the bus configuration.
- Check the interface (connector removed, option module inactive, etc.).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26102 Axis %1 drive %2 sign of life missing

**Parameters:** %1 = Axis name, spindle number
%2 = Drive number

**Explanation:** For PROFIdrive only:
The sign-of-life cell is no longer being updated by the drive.

**Reaction:** Mode group not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Axes of this channel must be re-referenced.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check the cycle settings (recommendation: e.g. MD10062 $MN_POSCTRL_CYCLE_DELAY = 0.0)
- Increase the cycle time if necessary.
- Power-up the drive again.
- Check drive software.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26105 Drive of axis %1 not found

**Parameters:** %1 = Axis name, spindle number

**Explanation:** For PROFIdrive only:

The drive configured for the specified axis could not be found. For example, a PROFIBUS slave was configured on the NC but is not contained in the PROFIBUS/PROFINET configuration.

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Possible causes:

- MD30130 $MA_CTRLOUT_TYPE not equal to 0 as a result of an oversight; the drive should actually be simulated (= 0).
- MD30110 $MA_CTRLOUT_MODULE_NR entered incorrectly, i.e. the logical drive numbers were exchanged and an invalid value is stored for this drive in MD13050 $MN_DRIVE_LOGIC_ADDRESS (see 3.) or a drive number which does not exist on the bus was entered (check the number for slaves, for example).
- MD13050 $MN_DRIVE_LOGIC_ADDRESS contains values which were not configured on PROFIBUS/PROFINET or different addresses of the input and output slots of the drives were selected in the PROFIBUS/PROFINET configuration.

**Programm continuation:** Switch control OFF - ON.

## 26106 Encoder %2 of axis %1 not found

**Parameters:** %1 = Axis name, spindle number

%2 = Encoder number

**Explanation:** For PROFIdrive only:

The encoder configured for the specified axis could not be found. For example, a PROFIBUS slave was configured on the NC but it is not contained in the PROFIBUS/PROFINET configuration or defective hardware was reported for it.

**Reaction:** Mode group not ready.

The NC switches to follow-up mode.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Possible causes:

- MD 30240 $MA_ENC_TYPE not equal to 0 as a result of an oversight; the encoder should actually be simulated (= 0).
- MD 30220 $MA_ENC_MODULE_NR entered incorrectly, i.e. the logical drive numbers were transposed and an invalid value is stored for this drive in MD 13050 $MN_DRIVE_LOGIC_ADDRESS (see next paragraph), or a drive number which does not exist on the bus was entered (check the number for slaves, for example).
- MD 13050 $MN_DRIVE_LOGIC_ADDRESS contains values which were not configured on the PROFIBUS/PROFINET or different addresses were selected for the input and output slots of the drive in the PROFIBUS/PROFINET configuration.
- A fatal encoder error was detected during the selection of the encoder (encoder defective, removed), so that park status cannot be left (in such a case, this alarm is triggered instead of alarm 25000/25001 - please refer to them for other possible causes of the error).

**Programm continuation:** Switch control OFF - ON.

## 26110 Independent drive stop/retract triggered

**Explanation:** For SINAMICS only:
Informational alarm: At least in one axis, a "drive-autonomous shutdown or retraction" was triggered.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Deselect drive-autonomous stop or retration. acknowledge alarm with reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26120 [Channel %1: ] Axis %2 $AA_ESR_ENABLE = 1 but axis should be set to NEUTRAL

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** One axis with ESR configuration and $AA_ESR_ENABLE[axis] = 1 should be set to NEUTRAL.
However, neutral axes (apart from single axes) cannot execute an ESR.

**Reaction:** Alarm display.

**Remedy:** Set $AA_ESR_ENABLE[axis] = 0 before setting axis to NEUTRAL.
Alarm can be suppressed via MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 6 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26121 [Channel %1: ] Axis %2 is NEUTRAL and $AA_ESR_ENABLE = 1 should be set

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** $AA_ESR_ENABLE[axis] = 1 should not be set to neutral axes (apart from single axes).
Neutral axes (apart from single axes) cannot execute an ESR.

**Reaction:** Alarm display.

**Remedy:** Do not apply $AA_ESR_ENABLE[axis] = 1 to neutral axes (apart from single axes).
Alarm can be suppressed via MD11415 $MN_SUPPRESS_ALARM_MASK_2 bit 6 = 1.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26122 [Channel %1: ] Axis %2, $AA_ESR_ENABLE = 1, axis exchange not executed in this state

**Parameters:** %1 = Channel
%2 = Axis, spindle

**Explanation:** With $AA_ESR_ENABLE[axis] = 1 axis exchange not permitted.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Set $AA_ESR_ENABLE[axis] = 0 before axis exchange.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
Set $AA_ESR_ENABLE[axis] = 0

## 26126 [channel %1: ] block %2 axis %3: ESRR or ESRS could not be executed, error code %4

**Parameters:** %1 = Channel
%2 = Block number, label
%3 = Axis, spindle
%4 = Error code

**Explanation:** Writing the data of the part program commands ESRR or ESRS could not be executed.
Error code:
1: The indicated axis is not assigned to any axis.
2: One or more ESR parameters in SINAMICS are not available.
3: Writing of one or more ESR parameters in SINAMICS was prevented.

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** Error code:
1: Check the assignment of the NC axes to the drives.
2: One or more ESR parameters in SINAMICS are not available.
Check the assignment of the NC axes to the drives.
Programming of ESRR or ESRS is possible only for SINAMICS as from V4.4.
The function module "drive-autonomous stop and retract" in SINAMICS not active.
3: Writing one or more ESR parameters in SINAMICS was prevented.
Activate the output of additional information alarms through MD11411 $MN_ENABLE_ALARM_MASK, bit 1 = 1.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
Writing of the data of the part program commands ESRR or ESRS was refused.
Check programming
Acknowledge alarm with reset

## 26201 [Channel %1: ] Block %2: The ROOT chain element was not found.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The kinematic chain element with the name specified in MD16800 $MN_ROOT_KIN_ELEM_NAME was not found.
This error does not occur if kinematic chain elements have not been defined, i.e. if all system variables $NK_NAME[n] are empty.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the content of machine data MD16800 $MN_ROOT_KIN_ELEM_NAME so that it refers to an existing, kinematic chain element, or adapt the name of a kinematic chain element to the content of the specified machine data.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26202 [Channel %1: ] Block %2: The names of the kinematic chain links $NK_NAME[%3] and $NK_NAME[%4] are the same

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of 1st chain element
%4 = Index of 2nd chain element

**Explanation:** There are (at least) two kinematic chain links with the same name. The names of the kinematic chain links must be clear and identifiable.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the names of the kinematic chain links involved

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26204 [Channel %1: ] Block %2: The chain element %3 referred to in $NK_NEXT[%4] is already contained in the chain

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the next chain link
%4 = Index of the chain element

**Explanation:** In one chain link, the next link of the chain is indicated as a chain link already in existence in the chain. This allows you to define a not permitted closed chain.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Define the kinematic chain in such a way that no closed chain results.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26208 [Channel %1: ] Block %2: Chain element %3, referred to in $NK_NEXT[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the next chain link
%4 = Index of chain link

**Explanation:** The chain link indicated as the next link in a kinematic chain was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate in $NK_NEXT[...] the name of an existing chain link.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26210 [Channel %1: ] Block %2: Chain element %3, referred to in $NK_PARALLEL[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the next, parallel chain element
%4 = Index of chain link

**Explanation:** The specified parallel chain element was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** In $NK_PARALLEL[...], specify the name of an existing chain element.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26211 [Channel %1: ] Block %2: $NK_SWITCH_INDEX[%3] is too large.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of the chain element

**Explanation:** The content of $NK_SWITCH_INDEX of a chain element of type "SWITCH" must be greater than or equal to -1 and less than the content of machine data MD18882 $MN_MM_MAXNUM_KIN_SWITCHES.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Enter a permissible value in $NK_SWITCH_INDEX.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26216 [Channel %1: ] Block %2: The axis direction in chain element %3 has not been defined.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Fine offset value

**Explanation:** The chain element describes an axis, the direction of which is defined by the value included in $NK_OFF_DIR and $NK_OFF_DIR_FINE. The definition is valid only if the value of the sum vector and the value of the basic vector $NK_OFF_DIR are higher than 1.0e-6.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Enter valid vectors in $NK_OFF_DIR and/or $NK_OFF_DIR_FINE, or change the type of the chain element.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26218 [Channel %1: ] Block %2: Invalid name in %3[%4]

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the system variable
%4 = Index of the system variable

**Explanation:** A system variable of type STRING contains an invalid name.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Use a permissible name.
The permissible names can be found in the documentation of the system variables involved.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26220 [Channel %1: ] Block %2: unknown element type in $NK_TYPE[%3]

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of the system variable

**Explanation:** The system variable $NK_TYPE contains an impermissible element type.
The following types are permissible (no distinction between upper and lower case):
"OFFSET"
"AXIS_LIN"
"AXIS_ROT"
"ROT_CONST"
"SWITCH"
This alarm also occurs when the element type of the kinematic chain elements and the axis type of a machine axis entered in $NK_NAME do not correspond.
Example: $NK_TYPE[...] contains the type "AXIS_LIN" and $NK_AXIS the string "C1", where C1 is the machine axis identifier of a rotary axis.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Use a permissible type.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26222 [Channel %1: ] Block %2: The names of the protection areas $NP_PROT_NAME[%3] and $NP_PROT_NAME[%4] are the same

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of 1st protection area
%4 = Index of 2nd protection area

**Explanation:** Two protection areas were assigned the same name. The names of the protection areas must be clear and identifiable.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Rename one of the protection areas involved.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26224 [Channel %1: ] Block %2: The names of the protection area elements $NP_NAME[%3] and $NP_NAME[%4] are the same

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of 1st protection area element
%4 = Index of 2nd protection area element

**Explanation:** Two protection area elements were assigned the same name. The names of the protection area elements must be clear and identifiable.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Rename one of the protection area elements involved.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26225** **[Channel %1: ] Block %2: Invalid protection area type in $NP_PROT_TYPE[%4] of the protection area $NP_PROT_NAME[%4] = %3.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of protection area
%4 = Index of protection area

**Explanation:** An invalid protection area type was entered.
Only the following protection area types are permitted:
"MACHINE"
"TOOL"

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate valid protection area type.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26226** **[Channel %1: ] Block %2: Invalid protection area element type in $NP_TYPE[%3] of the protection area element $NP_NAME[%4] = %3.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of protection area element
%4 = Index of protection area element

**Explanation:** An invalid type of protection area element was entered.
Only the following types of element are permitted:
"FRAME"
"BOX"
"SPHERE"
"CYLINDER"
"FILE"

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate valid protection area type.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26227** **[Channel %1: ] Block %2: The CAD file stated in $NP_FILENAME[%4] = %3 was not found.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of protection area element
%4 = File name

**Explanation:** A CAD file specified in a protection area element of the type "FILE" was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct the name in $NP_FILENAME or load the CAD file of this name into the control.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26228 [Channel %1: ] Block %2: The protection area element %3, referred to in $NP_1ST_PROT[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of next protection area element
%4 = Index of protection area

**Explanation:** The protection area element indicated first in a protection area was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate in $NP_1ST_PROT[...] the name of an existing protection area element.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26229 [Channel %1: ] Block %2: The tool protection area element $NP_NAME[%5] = %3 referred to in $NP_1ST_PROT[%6] is of an invalid type

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Protection area element name
%4 = Index of the protection area element | Index of the tool protection area

**Explanation:** If an explicitly specified protection area element is referred to in a tool protection area with $NP_1ST_PROT, it must be of the type "FRAME".
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Index of the protection area element
- 6 = Index of the tool protection area

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Delete the entry in $NP_1ST_PROT if no additional frame is required, or enter $NP_TYPE = "FRAME" in the protection area element referred to.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26230 [Channel %1: ] Block %2: The protection area element %3, referred to in $NP_NEXT[%4] / $NP_NEXTP[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of next protection area element
%4 = Index of protection area

**Explanation:** The protection area element indicated next in a protection area was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate in $NP_NEXT[...] the name of an existing protection area element.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26232** **[Channel %1: ] Block %2: Maximum number of %3 protection area elements exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of next protection area element

**Explanation:** The maximum number of permitted protection area elements has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Reduce number of protection areas or protection area elements.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26233** **[Channel %1: ] Block %2: The maximum permissible number of tool protection area elements has been exceeded.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum permissible number of protection area elements reserved for the tool has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Increase the number of protection area elements reserved for the tool (MD18893 $MN_MM_MAXNUM_3D_T_PROT_ELEM) or reduce the complexity of the tool descriptions.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26234** **[Channel %1: ] Block %2: The protection area $NP_PROT_NAME[%3] does not contain any protection area elements**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of protection area

**Explanation:** A protection area must contain at least one protection area element.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change definition of protection area or delete protection area.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26235** **[Channel %1: ] Block %2: Impermissible reference to a follow-up element of a tool protection area element %3[%4]**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Protection area element name
%4 = Index of the tool protection area element

**Explanation:** A tool protection area must not refer to more than one explicitly specified protection area element of the "FRAME" type. Further references in such an element to follow-up elements in $NP_ADD, $NP_NEXT or $NP_NEXTP are impermissible.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Delete all entries in $NP_ADD, $NP_NEXT or $NP_NEXTP in the explicitly specified tool protection area element.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26236 [Channel %1: ] Block %2: The protection area element %3, referred to in $NP_NEXT[%4] / $NP_NEXTP[%4], is already contained in the definition chain

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of protection area element
%4 = Index of protection area element

**Explanation:** A closed definition chain was found, i.e. a protection area element contains the protection area of which it is a part.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change definition of protection area or delete protection area.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26237 [Channel %1: ] Block %2: $NP_CHAIN_ELEM[%4] = %3 refers to a chain element of type SWITCH.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the chain element
%4 = Index of protection area

**Explanation:** The component $NP_CHAIN_ELEM of the specified protection area refers to a chain element of type "SWITCH". Protection areas must not be attached to chain elements of this type.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Attach the protection area to another element in the kinematic chain. For example, an additional element of the type OFFSET with zero length can be inserted before the chain element of the type SWITCH.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26238 [Channel %1: ] Block %2: The protection area %3, referred to in $NP_ADD[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the protection area to be added
%4 = Index of protection area

**Explanation:** The protection area to be added to the current protection area element was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate in $NP_ADD[...] the name of an existing protection area element, define a protection area with the name indicated or delete entry.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26239 [Channel %1: ] Block %2: The type of protection area %3, which is referred to in $NP_ADD[%4], differs from the type of the basic protection area.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the protection area to be added
%4 = Index of protection area

**Explanation:** The type of the protection area to be added to the current protection area element and the type of the basic protection area are not identical

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change the type of the protection area to be added or the type of the basic protection area ($NP_PROT_TYPE) such that both types are identical.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26240 [Channel %1: ] Block %2: The protection area %3, which is referred to in $NP_ADD[%4], is linked to the kinematic chain.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Name of protection area element
%4 = Index of protection area element

**Explanation:** Protection areas added to an existing protection area via $NP_ADD[...], must not be linked to the kinematic chain, e.g. $NP_CHAIN_ELEM[...] must be empty.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Enter in $NP_ADD[...] a protection area not linked with the kinematic chain or delete the reference to a kinematic chain in the protection area to be added or delete the entry in $NP_ADD[...].

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26244 [Channel %1: ] Block %2: The protection area %3, referred to in $NP_ADD[%4], is already contained in the definition chain

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of protection area
%4 = Index of protection area element

**Explanation:** A closed definition chain was found, i.e. a protection area element contains the protection area of which it is a part.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Change definition of the protection area or delete protection area.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26246 [Channel %1: ] Block %2: Parameter $NP_PARA[%3,%4] is invalid

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of protection area element
%4 = Index of parameters

**Explanation:** An invalid parameter value for defining a protection area element was indicated.
Parameter values must be positive.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate valid parameter value.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26248 [Channel %1: ] Block %2: The contents (%4) of parameter $NP_BIT_NO[%3] are invalid

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of parameters
%4 = Programmed bit index

**Explanation:** Invalid bit index indicated for the switchover of a preactivated protection area between the states activated / deactivated.
The lowest permissible bit index is -1, the highest permissible bit index is equal to the content of 18897 $MN_MM_MAXNUM_3D_INTERFACE_IN minus 1.
As the maximum permissible value of MD $MN_MM_MAXNUM_3D_INTERFACE_IN is equal to 64 , the maximum possible bit index is equal to 63.
Bit index -1 means that no interface bit was assigned to the protection area.
Values between 0 and 63 indicate the index of the interface bit through which the activation state of the protection area is switched over.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Specify valid index.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26250 [Channel %1: ] Block %2: The contents (%4) of parameter $NP_USAGE[%3] are invalid

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Index of parameters
%4 = Programmed usage identifier

**Explanation:** An invalid value was entered for the parameter $NP_USAGE.
Only the following values are permissible:
"C" or "c" (only use protection area element to avoid collisions)
"V" or "v" (only use protection area element for visualization)
"A" or "a" (use protection area element for avoiding collisions and visualization)

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Specify valid index.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26252 [Channel %1: ] Block %2: No name was entered in $NP_COLL_PAIR[%3, %4].

**Parameters:** %1 = Channel number
%2 = Block number
%3 = 1st index
%4 = 2nd index

**Explanation:** Only one name was entered in the collision pair $NP_COLL_PAIR[n, 0] - $NP_COLL_PAIR[n, 1].
If one element of a collision pair contains a name, then the other element must also contain a name. The alarm refers to the missing element.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Delete the existing entry or add the missing entry

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26253 [Channel %1: ] Block %2: The protection area name in $NP_COLL_PAIR[%5, %6] = '%3' was not found.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of protection area
%4 = 1st index of the collision pair | 2nd index of the collision pair

**Explanation:** The stated protection area, to which the entry in $NP_COLL_PAIR[n, m] refers, was not found.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = 1st index of the collision pair
- 6 = 2nd index of the collision pair

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Enter the name of an existing protection area.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26254 [Channel %1: ] Block %2: Two identical names were entered in the collision pair $NP_COLL_PAIR[%3, 0] - $NP_COLL_PAIR[%3, 1].

**Parameters:** %1 = Channel number
%2 = Block number
%3 = 1st index

**Explanation:** Two identical names were entered in the collision pair $NP_COLL_PAIR[n, 0] - $NP_COLL_PAIR[n, 1]. The two names must refer to different protection areas.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Enter two different protection area names.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26255** **[Channel %1: ] Block %2: The protection area was entered in collision pair element $NP_COLL_PAIR[%3, %4] that is not anchored to a kinem. chain element.**

**Parameters:** %1 = Channel number
%2 = Block number
%3 = 1st index
%4 = 2nd index

**Explanation:** In the collision pair element specified, a protection area was specified that is not anchored to a kinematic chain element, which is part of the kinematic description of the machine. It is only possible to monitor protection areas for possible collision, whose position in space is known.
Protection areas which are not themselves anchored to a kinematic chain element can be added to other protection areas (with $NP_ADD[..]), and then, if necessary, monitored for collision together with these areas.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Delete the entry in $NP_COLL_PAIR or define the protection area component $NP_CHAIN_ELEM.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26260** **[Channel %1: ] Block %2: Collision of the two protection areas %3 and %4**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of 1st protection area
%4 = Name of 2nd protection area

**Explanation:** The two protection areas named collide in the indicated block, i.e. the distance between the two protection areas is smaller than the value defined by MD10619 $MN_COLLISION_TOLERANCE.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Change NC program or definition of the protection areas involved.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26261** **[Channel %1: ] The two protection areas %2 and %3 collide**

**Parameters:** %1 = Channel number
%2 = Name of 1st protection area
%3 = Name of 2nd protection area

**Explanation:** The two stated protection areas collide.

**Reaction:** Interpreter stop
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Change NC program or definition of the protection areas involved.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26262** **[Channel %1: ] Not enough memory space during collision test of the two protection areas %2 and %3. Currently available memory space: %4KB.**

**Parameters:** %1 = Channel number
%2 = Name of 1st protection area
%3 = Name of 2nd protection area
%4 = Currently available memory

**Explanation:** The collision check of two protection areas requires temporary internal memory space, the size of which depends on the number of elements contained in the protection areas, the spacing of the protection areas, and the number of machine axes.
The size of the available memory space can be changed in MD18896 $MN_MM_MAXNUM_3D_COLLISION.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Change NC program or definition of the protection areas involved.
Adjust MD18896 $MN_MM_MAXNUM_3D_COLLISION.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26263 [Channel %1: ] Block %2: Not enough memory space for determining the distance between two protection areas. Currently available memory space: %3KB.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Currently available memory

**Explanation:** The determination of the distance between two protection areas with the function PROTDFCT requires temporary internal memory space, the size of which depends on the number of elements contained in the protection areas, and their positions relative to each other.
The size of the available memory space can be changed in MD18896 $MN_MM_MAXNUM_3D_COLLISION.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Change NC program or definition of the protection areas involved.
Adjust MD18896 $MN_MM_MAXNUM_3D_COLLISION.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26264 [Channel %1: ] Block %2: The protection area with the name %3 was not found.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Name of protection area

**Explanation:** One protection area with the name indicated was not found (e.g. during function call PROTA).

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Indicate the name of an existing protection area or define the protection area with the name indicated.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26265 [Channel %1: ] Block %2: Collision of the two protection areas %3 and %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of 1st protection area
%4 = Name of 2nd protection area

**Explanation:** The two protection areas named collide in the indicated block, i.e. the distance between the two protection areas is smaller than the value defined by MD10619 $MN_COLLISION_TOLERANCE.

**Reaction:** Alarm display.
NC Stop on alarm.

**Remedy:** Change NC program or definition of the protection areas involved.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26266 [Channel %1: ] Block %2: The protection area with the name %3 was programmed several times.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Name of protection area

**Explanation:** The name of a protection area was programmed several times (e.g, during the function call PROTA).

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Indicate each required name of a protection area only once.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26267 [channel %1: ] block %2: error %3 when calling WORKPIECE or FIXTURE process.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Error code

**Explanation:** When calling the WORKPIECE or FIXTURE process, an error has incurred. The error cause is described in detail by the error code:
1: No memory space available to store tool protection area / workholder protection area.
2: The name of the specified kinematic chain could not be found.
3: The name of the specified kinematic chain link could not be found.
4: An invalid frame name was given (only identifiers of programmable frames are permitted).
5: The specified protection area type cannot be interpreted by the NCK.
6: Impermissible name of the workpiece protection area. Workpiece protection areas must start with __WORKP.
7: No protection area definition found with the specified name.
8: The name of the workholder protection area was not given.
9: Impermissible name of the workholder protection area. Workholder protection areas must start with __FIXTURE.
10: Indication of the protection area type missing.
11: Less than three parameters were given for the protection area of the "Box" type.
12: Less than two parameters were given for the protection area of the "CYLINDER" type.
n: Invalid parameter(s) (the exact meaning of the possible error code must still be defined / extended).

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Eliminate error cause specified in error code.
Set bit NO_ERROR in fifth call parameter to surpress alarm output.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26268 [Channel %1: ] Block %2: The protection area %3 has not been assigned an interface bit

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Name of protection area

**Explanation:** An attempt was made to activate a protection area, to which no interface bit is assigned, with the status "P" (PLC controlled). Protection areas with this status can only be activated if, in $NP_BIT_NO[..], an interface bit was defined that can be used to toggle the monitoring status of the protection area between the two states, activated (monitored) and deactivated (not monitored).

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Assign an interface bit to the protection area or select another activation mode (active / inactive).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26269 [Channel %1: ] Block %2 Error %3 on calling the COLLPAIR function.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Error code

**Explanation:** An error occurred when the function "COLLPAIR" was called. The cause of the error is more closely defined by the error parameter.
-1 Either less than 2 parameters (strings) were entered or at least one of the two strings is the zero string.
-2 The protection area entered in the first parameter was not found.
-3 The protection area entered in the second parameter was not found.
-4 Neither of the two protection areas entered were found.
-5 Both of the two protection areas entered were found, but not in a pair.
6 Machine modeling is not possible. Machine modeling requires that both kinematic chains and protection areas can be defined.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Call function with valid parameters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26270 [Channel %1: ] Block %2: Invalid activation parameter during the PROTA function call

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** The activation parameter of the PROTA function contains an invalid value.
Only the following values are permitted:
"A" or "a" (= activated)
"I" or "i" (= inactivated)
"P" or "p" (= preactivated)
"R" or "r" (= take over activation state from protection area definitions)

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Indicate a valid activation parameter ("A", "a", "I", "i", "P", "p" , "R", "r").

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26272 [Channel %1: ] Block %2: The contents (%3) of parameter $NP_INIT_STAT[%4] are invalid

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Programmed state
%4 = Index of parameters

**Explanation:** An invalid activation state was indicated for a protection area.
Only the following values are permitted:
"A" or "a" (= activated)
"I" or "i" (= inactivated)
"P" or "p" (= preactivated)

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Indicate a valid activation parameter ("A", "a", "I", "i", "P", "p").

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26275 [Channel %1: ] : Collision of the two protection areas %3 and %4

**Parameters:** %1 = Channel number
%2 = Name of 1st protection area
%3 = Name of 2nd protection area

**Explanation:** All axles were stopped due to risk of collision.

**Reaction:** Alarm display.

**Remedy:** Move axes out of the danger zone.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26276 [Channel %1: ] Block %2: Chain element %3, referred to in $NP_CHAIN_ELEM[%4], was not found

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the chain element
%4 = Index of protection area

**Explanation:** The kinematic chain element referred to in the protection area definition ($NP_CHAIN_ELEM[...]) was not found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Indicate in $NP_CHAIN_ELEM[...] the name of an existing chain element or define a chain element with the name indicated.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26278 [Channel %1: ] Block %2: The axis name %3 contained in $NK_AXIS[%4] is unknown or invalid

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis or frame name
%4 = Index of the chain element

**Explanation:** An unknown or invalid name was entered in the element of a kinematic chain in the component $NK_AXIS[...].
The name entered must be a machine axis identifier.
The alarm also occurs if the name entered in $NK_AXIS[...] exists, but the named element is not of the type defined in $NK_TYPE[...].
Example: $NK_TYPE[...] contains type "AXIS_ROT" and $NK_AXIS[...] the machine axis identifier of a linear axis, e.g. "X1".

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Enter a valid name in $NK_AXIS[...] (machine axis identifier).
Enter the type of element in $NK_TYPE[...] that is referred to by the content of $NK_AXIS.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26280 [Channel %1: ] Axis %2 risk of collision %3 %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = 1st protection area
%4 = 2nd protection area

**Explanation:** The indicated axis was stopped due to the risk of collision.

**Reaction:** Alarm display.

**Remedy:** In JOG mode: Retract axis from danger zone.
In automatic mode: Determine reason for the risk of collision and eliminate. Possible reasons: wrong NC program, too large handwheel overrides, axis couplings and vice-versa impairing of two channels.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26281 [Channel %1: ] Axis %2 risk of collision %3 %4

**Parameters:** %1 = Channel number
%2 = Axis name, spindle number
%3 = 1st protection area
%4 = 2nd protection area

**Explanation:** The stated axis was stopped due to the risk of collision. The programmed path may have been left because it was not possible to stop in time on the path (exceptional situation).

**Reaction:** Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm at block end.

**Remedy:** In JOG mode: Retract axis from danger zone.
In automatic mode: Determine reason for the risk of collision and eliminate. Possible reasons: wrong NC program, too large handwheel overrides, axis couplings and vice-versa impairing of two channels.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
The stated axis was stopped due to the risk of collision. The programmed path may have been left because it was not possible to stop in time on the path (exceptional situation).

## 26282 [Channel %1: ] Block %2: Invalid definition of the protection areas or the kinematic chains.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** There are no valid definitions of the protection areas and / or the kinematic chain.
This alarm only occurs if an error occurred the last time the procedure PROTA was called, and its cause has not been eliminated.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** Protection areas and kinematic chain must be defined without errors.
This is achieved by calling the procedure PROTA and closing it without errors.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26284 [Channel %1: ] Block %2: The call of the function / procedure %3 is only permissible if the function 'Collision monitoring' is present.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Funktionsname

**Explanation:** The function or procedure stated in the alarm text (e.g. PROTA or PROTD) can only be called if the function "Collision avoidance" is present.

**Reaction:** Correction block is reorganized.
Alarm display.
NC Stop on alarm.

**Remedy:** The function "Collision avoidance" must be activated. For this, the MD18890 $MN_MM_MAXNUM_3D_PROT_AREAS must contain a value greater than zero.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26285 [Channel %1: ] Block %2: emergency stop due to collision %3 %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = 1st protection area
%4 = 2nd protection area

**Explanation:** All axes were stopped via emergency stop due to a collision

**Reaction:** NC Start disable in this channel.
Local alarm reaction.
The NC switches to follow-up mode.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** In Jog mode: move axis out of the collision.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26286 [Channel %1: ] Block %2 risk of collision preactivated protection areas %3 and %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of 1st protection area
%4 = Name of 2nd protection area

**Explanation:** A collision was detected involving at least one preactivated protection area.
Such a collision can occur if the interface signal assigned to a preactivated protection area has been activated. In other words, if a preactivated protection area has become an active protection area.
Either a preactivated and a (static) active protection area can be involved in the collision, or two preactivated protection areas can be involved. The names of the protection areas are output in the alarm test.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reset activating interface signals.
Redefine protection areas.
Retract

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26287** **[Channel %1: ] Block %2: The maximum number of %3 protection areas has been exceeded by %4.**

**Parameters:** %1 = Channel number
%2 = Block number
%3 = The maximum permissible number of protection areas
%4 = Additional number

**Explanation:** The maximum permissible number of protection areas has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The permissible number of protection areas is determined by option data OD19830 $ON_COLLISION_MASK.
Install corresponding option.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26288** **[Channel %1: ] Block %2: Maximum number of %3 protection area elements has been exceeded by %4.**

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Maximum permissible number of protection area elements
%4 = Additional number

**Explanation:** The maximum permissible number of protection area elements has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The permissible number of protection area elements is determined by option data OD19830 $ON_COLLISION_MASK.
Retrofit the corresponding option.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26289** **[Channel %1: ] Block %2: The maximum number %3 of 3D collision pairs has been exceeded by %4.**

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Maximum permissible number of 3D collision pairs
%4 = Additional number

**Explanation:** The maximum permissible number of 3D collision pairs has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The permissible number of 3D collision pairs is determined by option data OD19830 $ON_COLLISION_MASK.
Install the corresponding option.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

**26290** **[Channel %1: ] Block %2: CAD file $NP_FILENAME[%5] = %3: Maximum number of %6 protection area facets has been exceeded.**

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Index of the protection area element | free protection area facets

**Explanation:** The maximum permissible number of protection area facets has been exceeded.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Index of the protection area element
- 6 = Free protection area facets

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Increase the permitted number of protection area facets (MD18895 $MN_MM_MAXNUM_3D_FACETS) or reduce the number of defined facets in the CAD files.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26291 [Channel %1: ] Block %2: Maximum number of %3 protection area facets for internal protection areas was exceeded.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Maximum number of internal protection area facets

**Explanation:** The maximum number of internal protection area facets was exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Increase the number of permissible internal protection area facets (MD18894 $MN_MM_MAXNUM_3D_FACETS_INTERN).

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26292 [Channel %1: ] Block %2: Maximum number of %6 input points exceeded in the CAD file $NP_FILENAME[%5] = %3.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Index of the protection area element | maximum number of input points

**Explanation:** The maximum permissible number of input points has been exceeded.
Note:
Parameter 4 contains the descriptions of parameters 5 and 6 separated by the character "|".
- 5 = Index of the protection area element
- 6 = Maximum number of input points

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Increase the number of permitted protection area facets (MD18895 $MN_MM_MAXNUM_3D_FACETS) or reduce the number of defined facets in the CAD file.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26293 [Channel %1: ] Block %2: CAD file %3 could not be written.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name

**Explanation:** An internally created CAD file could not be written to the file system.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Increase the memory capacity for the NC file system.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26294 [Channel %1: ] Block %2: CAD file $NP_FILENAME[%4] = %3 is not a valid VRML file

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Index of protection area element
**Explanation:** The CAD file does not contain valid VRML data.
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Check the format of the input CAD/VRML data.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26295 Protection area %1 was only roughly approximated.

**Parameters:** %1 = Name of protection area
**Explanation:** An automatic protection area could only be defined approximately on account of a lack of memory space.
**Reaction:** Interface signals are set.
Alarm display.
**Remedy:** Increase the number of permissible internal protection area facets (MD18894 $MN_MM_MAXNUM_3D_FACETS_INTERN).
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26296 [Channel %1: ] Block %2: CAD file $NP_FILENAME[%4] = %3 is not a valid STL file

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Index of protection area element
**Explanation:** The CAD file does not contain any valid STL data
**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.
**Remedy:** Check the format of the CAD/STL file.
**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26297 [Channel %1: ] Block %2: CAD file $NP_FILENAME[%4] = %3 is not a valid NPP file

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = Index of protection area element
**Explanation:** The CAD file does not contain any valid NPP data

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check the format of the NPP file.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26298 [channel %1: ] block %2: The Include file %4 which was to be read in the CAD file %3 could not be found.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = File name
%4 = File name

**Explanation:** The Include file which was to be read in the specified CAD file could not be found.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Check name and path details of the Include file.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26299 [Channel %1: ] Block %2 Parameterization error %6 for edge %5 of tool '%3'.

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Name of the protection area of the tool
%4 = D number of tool edge | Error number

**Explanation:** Definition of the tool is incorrect. The cause of the error is defined more closely by the following error number:
- 1. The cutting edge position is invalid. Valid range is [0...9].
- 2. The cutting direction is invalid, Valid range is [0...4].
- 3. The DPV parameter $TC_DPV is invalid, Valid range is [0...6].
- 4. The holder angle ($TC_DP10) together with the clearance angle ($TC_DP24) do not define any valid cutting edge of a turning tool. The sum $TC_DP10 + $TC_DP24 must be less than 180 degrees so that the insert angle is greater than zero.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** Correct input parameters.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26300 Loss of sign-of-life of the external collision avoidance.

**Explanation:** The configured timeout (MD16904 $MN_COLLISION_EXT_TIMEOUT) for communication with the external collision avoidance has expired.

**Reaction:** NC Stop on alarm.
Alarm display.
Interface signals are set.
NC not ready.

**Remedy:** Check external system for errors, if necessary lengthen timeout.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 26301 [Channel %1: ] Block %2: The maximum number %3 of 3D protection area facets has been exceeded by %4.

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Maximum permissible number of protection area facets
%4 = Additional number

**Explanation:** The maximum permissible number of protection area facets has been exceeded.

**Reaction:** Correction block is reorganized.
Interface signals are set.
Alarm display.

**Remedy:** The permissible number of protection area facets is determined by option data OD19830 $ON_COLLISION_MASK.
Retrofit corresponding option.

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 26302 External collision avoidance: Waiting for connection.

**Explanation:** An external collision avoidance was configured. NCK is waiting for the system to connect.

**Reaction:** Alarm display.
Interface signals are set.

**Remedy:** External system start, check connection if necessary.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26303 Collision avoidance: Calculation not completed in time. Function code: %1

**Parameters:** %1 = Function code

**Explanation:** The collision check is active, but individual calculations could not be completed in time.
As a result, braking on the programmed path may not be possible if there is a risk of collision.
In this case, an axial quick stop will be initiated.

**Reaction:** Alarm display.

**Remedy:** Check and adjust the configuration of the control.
Suppress alarm with MD11415 $MN_SUPPRESS_ALARM_MASK_2 Bit 29

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26304 Risk of collision cannot be ruled out.

**Explanation:** The collision check could not be completed.
Therefore, the risk of a collision cannot be ruled out.
An axial quick stop will be initiated with alarm 26285.

**Reaction:** Alarm display.

**Remedy:** Check and adapt the configuration of the control.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26305 Conflict of functions in collision avoidance.

**Explanation:** The Protect MyMachine /Open and Protect MyMachine /3D Primitives/STL functions cannot be enabled at the same time.
Exception: if MD18953 $MN_MM_COLL_PREV_CHECK_ACTIVE=false is set.

**Reaction:** NC Stop on alarm.
Alarm display.
Interface signals are set.
Channel not ready.
NC not ready.
**Remedy:** Disable one of the PMM functions.
Or set MD18953 $MN_MM_COLL_PREV_CHECK_ACTIVE=false.
**Programm continuation:** Switch control OFF - ON.

## 26350 External collision avoidance: System deactivated.

**Explanation:** The external system has been deactivated. There is no collision protection!
**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** Activate external system.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26351 External collision avoidance: Initializing.

**Explanation:** The external system has been connected but is not yet ready.
**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** Waiting. Checking whether external system is signaling errors.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26352 External collision avoidance: Measuring mode.

**Explanation:** The external system is in measuring mode.
**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** For details, see the external system output.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26353 External collision avoidance: Error on inactive tool %1. Error code %2.

**Parameters:** %1 = Tool number
%2 = Error code
**Explanation:** The external system is signaling an error on an inactive tool.
**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** Check external system and rectify reported error.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26354 External collision avoidance: A motion is being slowed down or stopped (%1, %2, %3, %4).

**Parameters:** %1 = Error code
%2 = Error code
%3 = Error code
%4 = Error code
**Explanation:** A motion is being slowed down or stopped.

**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** For details, see the external system output.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26355 External collision avoidance: System is signaling a warning (%1, %2, %3, %4).

**Parameters:** %1 = Error code
%2 = Error code
%3 = Error code
%4 = Error code
**Explanation:** External system is signaling a warning.
**Reaction:** Alarm display.
Interface signals are set.
**Remedy:** For details, see the external system output.
**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 26370 External collision avoidance: Stop due to collision (%1, %2).

**Parameters:** %1 = Error code
%2 = Error code
**Explanation:** External system reports a collision.
**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.
**Remedy:** For details, see the external system output.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26371 External collision avoidance: Stop (error on active tool %1, error code %2).

**Parameters:** %1 = Tool number
%2 = Error code
**Explanation:** The external system is signaling an error on the active tool.
**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.
**Remedy:** Check external system and rectify reported error.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26372 External collision avoidance: Communication error (OPC UA, error code %1).

**Parameters:** %1 = Error code
**Explanation:** An error has occurred in the communication between the external system and the OPC UA Server.
**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.
**Remedy:** For details, see the external system output.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26373 External collision avoidance: Log error (%1, %2).

**Parameters:** %1 = Error code
%2 = Error code

**Explanation:** An error has occurred in the communication between the external system and the NCK.

**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.

**Remedy:** For details, see the external system output.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26374 External collision avoidance: System is signaling an error (%1, %2, %3, %4).

**Parameters:** %1 = Error code
%2 = Error code
%3 = Error code
%4 = Error code

**Explanation:** The external system is signaling an error.

**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.

**Remedy:** Check the external system error output / log files for details.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 26375 External collision avoidance: Stop due to collision (%1, %2).

**Parameters:** %1 = Error code
%2 = Error code

**Explanation:** The external system reports a collision.

**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.

**Remedy:** For details, see the external system output.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26376 External collision avoidance: System is signaling an error (%1, %2, %3, %4).

**Parameters:** %1 = Error code
%2 = Error code
%3 = Error code
%4 = Error code

**Explanation:** The external system is signaling an error.

**Reaction:** Alarm display.
NC Start disable in this channel.
NC Stop on alarm.
Interface signals are set.

**Remedy:** Check the external system error output / log files for details.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 26380 [Channel %1: ] Block %2: Incorrect AFIS configuration for axis %3 identifier %4

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Axis
%4 = Error code

**Explanation:** Automatic filter switching (AFIS) is active, but with an incorrect configuration for an axis.
1: The axis is configured as AFIS axis, but no jerk filter is activated by MD32400 $MA_AX_JERK_ENABLE. The jerk filter must always be active for AFIS axes.
2: The axis is configured with only one filter chain (e.g. MD32402 $MA_AX_JERK_MODE=0x). Two filter chains must always be configured for AFIS axes.

**Reaction:** Alarm display.
Interface signals are set.
Interpreter stop

**Remedy:** 1: Activate the jerk filter for the axis with MD32400 $MA_AX_JERK_ENABLE.
2: a: Parameterize two filter chains for the axis with MD32402 $MA_AX_JERK_MODE
b: Deactivate AFIS for the axis: MD32332 $MA_AFIS_ENABLE = FALSE

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27000 Axis %1 is not safely referenced

**Parameters:** %1 = Axis name, spindle number

**Explanation:** There are two reasons for this alarm:
- the machine position has not yet been acknowledged by the user,
- the machine position has not yet been verified through follow-up referencing.

Even if the axis is already referenced, there is no confirmation that referencing has supplied the correct result. For example, wrong results can occur if the axis was moved after the control was switched off, with the result that the standstill position saved prior to switching off is no longer correct. To make sure that this does not happen, the user must acknowledge the displayed actual position after the first referencing process.

When the user enable has first been set, follow-up referencing must be carried out each time the control is booted (with absolute encoders, this follow-up referencing is executed automatically). This procedure is carried out to verify the standstill position saved prior to switching off of the control.

Via the MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL (MD>=3), the alarm display can be set in such a way that the group alarm 27100 is displayed for all SI axes.

**Reaction:** Alarm display.
SGA "Axis safely referenced" is not set. SE will be switched off, if the actual safety position has not yet been confirmed by a user agreement. If the user agreement has been set, SE will remain active. The safe cams are calculated and output. However, their significance is limited as referencing has not been confirmed.

**Remedy:** Traverse the axis to a known position, change to operating mode "Referencing" and press softkey "Agreement". Check the positions displayed in the agreement screen on the machine. If they match the expected or known position, confirm this by using the toggle key. If the user agreement has already been set, reference the axis again.

The user agreement can be changed only via keyswitch position 3 or after password entry.

WARNING:

If the axis is not referenced safely and the user agreement is not available, the following will apply:
- the safe cams are not yet safe
- the safe end positions are not yet active.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27001 Axis %1 error in a monitoring channel, code %2, values: NCK %3, drive %4

**Parameters:**
%1 = Axis name, spindle number
%2 = Additional info cross-comparison index
%3 = NCK comparison value extension
%4 = Additional info comparison value drive

**Explanation:** A mutual comparison of the state of the safety-related monitoring functions is made cyclically between the two monitoring channels (NCK and drive). The comparison is performed separately for each NCK/drive combination.

In each monitoring cycle (MD10091 $MN_INFO_SAFETY_CYCLE_TIME), one criterion from a comparison list is compared between NCK and drive. In the next monitoring cycle, the next criterion is compared, etc. Once the complete comparison list has been processed, processing of the comparisons starts again. The resulting total comparison time for processing the list is displayed in MD10092 $MN_INFO_CROSSCHECK_CYCLE_TIME (factor x MD10091 $MN_INFO_SAFETY_CYCLE_TIME - the factor may differ in the various software versions).

The alarm "Fault in a monitoring channel" is output if the mutual comparison of the two monitoring channels finds a difference between input data or monitoring results. One of the monitors is no longer functioning reliably.

The cross-check index output in the alarm text is also named the STOP F code. The STOP F code where the NCK found the first cross-check error is also output in alarm 27001.

The STOP F code of the drive (belonging to alarm C01711) can be found on the diagnostic display or in parameter r9795. If there is a difference over multiple comparison steps, a number of STOP F code values can be displayed at these points one after the other).

There are fault profiles that can be detected by several comparisons in the comparison list, i.e. the displayed STOP F code value does not always provide clear information about the error cause. The relevant procedure is explained with the individual error codes:

- 0 No error found in this channel; following alarm to drive alarm C01711.
- 1 Result list 1: Difference in SBH, SG, SBR or SE result, e.g. due to inconsistent activation of the monitoring channels. For further information, see drive parameters r9710[0], r9710[1].
- 2 Result list 2: Difference in SN, n_x result. For further information, see drive parameters r9711[0], r9711[1].
- 3 Actual value difference greater than setting in MD36942 $MA_SAFE_POS_TOL.
- 4 Not assigned.
- 5 Function enables MD36901 $MA_SAFE_FUNCTION_ENABLE.
- 6 Velocity limit MD36931 $MA_SAFE_VELO_LIMIT[0].
- 7 Velocity limit MD36931 $MA_SAFE_VELO_LIMIT[1].
- 8 Velocity limit MD36931$MA_SAFE_VELO_LIMIT[2].
- 9 Velocity limit MD36931$MA_SAFE_VELO_LIMIT[3].
- 10 Tolerance for safe operating stop MD36930 $MA_SAFE_STANDSTILL_TOL.
- 11 Limit position MD36934 $MA_SAFE_POS_LIMIT_PLUS[0].
- 12 Limit position MD36935 $MA_SAFE_POS_LIMIT_MINUS[0].
- 13 Limit position MD36934 $MA_SAFE_POS_LIMIT_PLUS[1].
- 14 Limit position MD36935 $MA_SAFE_POS_LIMIT_MINUS[1].
- 15 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[0] + MD36940 $MA_SAFE_CAM_TOL.
- 16 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[0].
- 17 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[0] + MD36940 $MA_SAFE_CAM_TOL.
- 18 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[0].
- 19 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[1] + MD36940 $MA_SAFE_CAM_TOL.
- 20 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[1].
- 21 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[1] + MD36940 $MA_SAFE_CAM_TOL.
- 22 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[1].
- 23 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[2] + MD36940 $MA_SAFE_CAM_TOL.
- 24 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[2].
- 25 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[2] + MD36940 $MA_SAFE_CAM_TOL.
- 26 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[2].
- 27 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[3] + MD36940 $MA_SAFE_CAM_TOL.
- 28 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[3].
- 29 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[3] + MD36940 $MA_SAFE_CAM_TOL.
- 30 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[3].
- 31 Actual position tolerance MD36942 $MA_SAFE_POS_TOL. MD36949 $MA_SAFE_SLIP_VELO_TOL for active actual value synchronization (slip)
- 32 Ref. position tolerance MD36944 $MA_SAFE_REFP_POS_TOL.
- 33 Delay SG[x] -> SG[y] MD36951 $MA_SAFE_VELO_SWITCH_DELAY.
- 34 Delay cross-check MD36950 $MA_SAFE_MODE_SWITCH_TIME.

- 35 Delay pulse disable Stop B MD36956 $MA_SAFE_PULSE_DISABLE_DELAY.
- 36 Delay pulse disable test stop MD36957 $MA_SAFE_PULSE_DIS_CHECK_TIME
- 37 Delay Stop C -> SBH MD36952 $MA_SAFE_STOP_SWITCH_TIME_C.
- 38 Delay Stop D -> SBH MD36953 $MA_SAFE_STOP_SWITCH_TIME_D.
- 39 Delay Stop E -> SBH MD36954 $MA_SAFE_STOP_SWITCH_TIME_E.
- 40 Stop reaction when SG exceeded MD36961 $MA_SAFE_VELO_STOP_MODE.
- 41 Stop reaction when SE exceeded MD36962 $MA_SAFE_POS_STOP_MODE.
- 42 Standstill speed MD36960 $MA_SAFE_STANDSTILL_VELO_TOL.
- 43 Memory test, stop reaction.
- 44 Actual position value + SG[0] MD36931 $MA_SAFE_VELO_LIMIT[0].
- 45 Actual position value - SG[0] MD36931 $MA_SAFE_VELO_LIMIT[0].
- 46 Actual position value + SG[1] MD36931 $MA_SAFE_VELO_LIMIT[1].
- 47 Actual position value - SG[1] MD36931 $MA_SAFE_VELO_LIMIT[1].
- 48 Actual position value + SG[2] MD36931 $MA_SAFE_VELO_LIMIT[2].
- 49 Actual position value - SG[2] MD36931 $MA_SAFE_VELO_LIMIT[2].
- 50 Actual position value + SG[3] MD36931 $MA_SAFE_VELO_LIMIT[3].
- 51 Actual position value - SG[3] MD36931 $MA_SAFE_VELO_LIMIT[3].
- 52 Standstill position + tolerance MD36930 $MA_SAFE_STANDSTILL_TOL.
- 53 Standstill position - tolerance MD36930 $MA_SAFE_STANDSTILL_TOL.
- 54 Actual position value + n_x + tolerance MD36946 $MA_SAFE_VELO_X + MD36942 $MA_SAFE_POS_TOL.
- 55 Actual position value + n_x MD36946 $MA_SAFE_VELO_X.
- 56 Actual position value - n_x  MD36946 $MA_SAFE_VELO_X.
- 57 Actual position value - n_x - tolerance MD36946 $MA_SAFE_VELO_X - MD36942 $MA_SAFE_POS_TOL
- 58 Active external standstill request.
- 59 SG override factor 1 MD36932 $MA_SAFE_VELO_OVR_FACTOR[0].
- 60 SG override factor 2 MD36932 $MA_SAFE_VELO_OVR_FACTOR[1].
- 61 SG override factor 3 MD36932 $MA_SAFE_VELO_OVR_FACTOR[2].
- 62 SG override factor 4 MD36932 $MA_SAFE_VELO_OVR_FACTOR[3].
- 63 SG override factor 5 MD36932 $MA_SAFE_VELO_OVR_FACTOR[4].
- 64 SG override factor 6 MD36932 $MA_SAFE_VELO_OVR_FACTOR[5].
- 65 SG override factor 7 MD36932 $MA_SAFE_VELO_OVR_FACTOR[6].
- 66 SG override factor 8 MD36932 $MA_SAFE_VELO_OVR_FACTOR[7].
- 67 SG override factor 9 MD36932 $MA_SAFE_VELO_OVR_FACTOR[8].
- 68 SG override factor 10 MD36932 $MA_SAFE_VELO_OVR_FACTOR[9].
- 69 SG override factor 11 MD36932 $MA_SAFE_VELO_OVR_FACTOR[10].
- 70 SG override factor 12 MD36932 $MA_SAFE_VELO_OVR_FACTOR[11].
- 71 SG override factor 13 MD36932 $MA_SAFE_VELO_OVR_FACTOR[12].
- 72 SG override factor 14 MD36932 $MA_SAFE_VELO_OVR_FACTOR[13].
- 73 SG override factor 15 MD36932 $MA_SAFE_VELO_OVR_FACTOR[14].
- 74 SG override factor 16 MD36932 $MA_SAFE_VELO_OVR_FACTOR[15].
- 75 Velocity limit n<nx MD36946 $MA_SAFE_VELO_X  or velocity hysteresis n<nx MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
- 76 Stop reaction SG1 MD36963 $MA_SAFE_VELO_STOP_REACTION[0].
- 77 Stop reaction SG2 MD36963 $MA_SAFE_VELO_STOP_REACTION[1].
- 78 Stop reaction SG3 MD36963 $MA_SAFE_VELO_STOP_REACTION[2].
- 79 Stop reaction SG4 MD36963 $MA_SAFE_VELO_STOP_REACTION[3].
- 80 Modulo value for safe cam MD36905 $MA_SAFE_MODULO_RANGE.
- 81 Actual velocity tolerance MD36948 $MA_SAFE_STOP_VELO_TOL.
- 82 SG override factor SGE 0...15 = active SGE position. -1 = SG override inactive (neither SG2 nor SG4 active, or function is not selected in MD36901 $MA_SAFE_FUNCTION_ENABLE).
- 83 Acceptance test time different MD36958 $MA_SAFE_ACCEPTANCE_TST_TIMEOUT.
- 84 Delay time Stop F -> Stop B MD36955 $MA_SAFE_STOP_SWITCH_TIME_F.
- 85 Delay time pulse disable bus failure MD10089 $MN_SAFE_PULSE_DIS_TIME_BUSFAIL.

- 86 Single encoder system MD36914 $MA_SAFE_SINGLE_ENC.
- 87 Encoder assignment MD36912 $MA_SAFE_ENC_INPUT_NR.
- 88 Cam enable MD36903 $MA_SAFE_CAM_ENABLE.
- 89 Encoder limit frequency MD36926 $MA_SAFE_ENC_FREQ_LIMIT.
- 90 Cam SGA outside MD36940 $MA_SAFE_CAM_TOL different
- 91 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[4] + MD36940 $MA_SAFE_CAM_TOL.
- 92 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[4].
- 93 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[4] + MD36940 $MA_SAFE_CAM_TOL.
- 94 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[4].
- 95 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[5] + MD36940 $MA_SAFE_CAM_TOL.
- 96 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[5].
- 97 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[5] + MD36940 $MA_SAFE_CAM_TOL.
- 98 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[5].
- 99 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[6] + MD36940 $MA_SAFE_CAM_TOL.
- 100 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[6].
- 101 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[6] + MD36940 $MA_SAFE_CAM_TOL.
- 102 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[6].
- 103 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[7] + MD36940 $MA_SAFE_CAM_TOL.
- 104 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[7].
- 105 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[7] + MD36940 $MA_SAFE_CAM_TOL.
- 106 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[7].
- 107 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[8] + MD36940 $MA_SAFE_CAM_TOL.
- 108 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[8].
- 109 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[8] + MD36940 $MA_SAFE_CAM_TOL.
- 110 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[8].
- 111 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[9] + MD36940 $MA_SAFE_CAM_TOL.
- 112 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[9].
- 113 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[9] + MD36940 $MA_SAFE_CAM_TOL.
- 114 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[9].
- 115 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[10] + MD36940 $MA_SAFE_CAM_TOL.
- 116 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[10].
- 117 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[10] + MD36940 $MA_SAFE_CAM_TOL.
- 118 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[10].
- 119 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[11] + MD36940 $MA_SAFE_CAM_TOL.
- 120 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[11].
- 121 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[11] + MD36940 $MA_SAFE_CAM_TOL.
- 122 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[11].
- 123 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[12] + MD36940 $MA_SAFE_CAM_TOL.
- 124 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[12].
- 125 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[12] + MD36940 $MA_SAFE_CAM_TOL.
- 126 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[12].
- 127 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[13] + MD36940 $MA_SAFE_CAM_TOL.
- 128 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[13].
- 129 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[13] + MD36940 $MA_SAFE_CAM_TOL.
- 130 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[13].
- 131 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[14] + MD36940 $MA_SAFE_CAM_TOL.
- 132 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[14].
- 133 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[14] + MD36940 $MA_SAFE_CAM_TOL.
- 134 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[14].
- 135 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[15] + MD36940 $MA_SAFE_CAM_TOL.
- 136 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[15].
- 137 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[15] + MD36940 $MA_SAFE_CAM_TOL.

- 138 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[15].
- 139 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[16] + MD36940 $MA_SAFE_CAM_TOL.
- 140 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[16].
- 141 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[16] + MD36940 $MA_SAFE_CAM_TOL.
- 142 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[16].
- 143 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[17] + MD36940 $MA_SAFE_CAM_TOL.
- 144 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[17].
- 145 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[17] + MD36940 $MA_SAFE_CAM_TOL.
- 146 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[17].
- 147 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[18] + MD36940 $MA_SAFE_CAM_TOL.
- 148 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[18].
- 149 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[18] + MD36940 $MA_SAFE_CAM_TOL.
- 150 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[18].
- 151 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[19] + MD36940 $MA_SAFE_CAM_TOL.
- 152 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[19].
- 153 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[19] + MD36940 $MA_SAFE_CAM_TOL.
- 154 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[19].
- 155 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[20] + MD36940 $MA_SAFE_CAM_TOL.
- 156 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[20].
- 157 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[20] + MD36940 $MA_SAFE_CAM_TOL.
- 158 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[20].
- 159 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[21] + MD36940 $MA_SAFE_CAM_TOL.
- 160 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[21].
- 161 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[21] + MD36940 $MA_SAFE_CAM_TOL.
- 162 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[21].
- 163 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[22] + MD36940 $MA_SAFE_CAM_TOL.
- 164 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[22].
- 165 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[22] + MD36940 $MA_SAFE_CAM_TOL.
- 166 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[22].
- 167 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[23] + MD36940 $MA_SAFE_CAM_TOL.
- 168 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[23].
- 169 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[23] + MD36940 $MA_SAFE_CAM_TOL.
- 170 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[23].
- 171 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[24] + MD36940 $MA_SAFE_CAM_TOL.
- 172 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[24].
- 173 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[24] + MD36940 $MA_SAFE_CAM_TOL.
- 174 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[24].
- 175 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[25] + MD36940 $MA_SAFE_CAM_TOL.
- 176 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[25].
- 177 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[25] + MD36940 $MA_SAFE_CAM_TOL.
- 178 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[25].
- 179 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[26] + MD36940 $MA_SAFE_CAM_TOL.
- 180 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[26].
- 181 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[26] + MD36940 $MA_SAFE_CAM_TOL.
- 182 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[26].
- 183 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[27] + MD36940 $MA_SAFE_CAM_TOL.
- 184 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[27].
- 185 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[27] + MD36940 $MA_SAFE_CAM_TOL.
- 186 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[27].
- 187 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[28] + MD36940 $MA_SAFE_CAM_TOL.
- 188 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[28].
- 189 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[28] + MD36940 $MA_SAFE_CAM_TOL.

- 190 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[28].
- 191 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[29] + MD36940 $MA_SAFE_CAM_TOL.
- 192 Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[29].
- 193 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[29] + MD36940 $MA_SAFE_CAM_TOL.
- 194 Cam position MD36937 $MA_SAFE_CAM_POS_MINUS[29].
- 195 Cam track assignment SN1 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[0].
- 196 Cam track assignment SN2 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[1].
- 197 Cam track assignment SN3 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[2].
- 198 Cam track assignment SN4 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[3].
- 199 Cam track assignment SN5 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[4].
- 200 Cam track assignment SN6 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[5].
- 201 Cam track assignment SN7 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[6].
- 202 Cam track assignment SN8 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[7].
- 203 Cam track assignment SN9 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[8].
- 204 Cam track assignment SN10 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[9].
- 205 Cam track assignment SN11 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[10].
- 206 Cam track assignment SN12 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[11].
- 207 Cam track assignment SN13 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[12].
- 208 Cam track assignment SN14 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[13].
- 209 Cam track assignment SN15 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[14].
- 210 Cam track assignment SN16 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[15].
- 211 Cam track assignment SN17 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[16].
- 212 Cam track assignment SN18 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[17].
- 213 Cam track assignment SN19 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[18].
- 214 Cam track assignment SN20 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[19].
- 215 Cam track assignment SN21 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[20].
- 216 Cam track assignment SN22 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[21].
- 217 Cam track assignment SN23 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[22].
- 218 Cam track assignment SN24 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[23].
- 219 Cam track assignment SN25 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[24].
- 220 Cam track assignment SN26 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[25].
- 221 Cam track assignment SN27 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[26].
- 222 Cam track assignment SN28 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[27].
- 223 Cam track assignment SN29 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[28].
- 224 Cam track assignment SN30 MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[29].
- 225 Result list 3: Inconsistent results for "Safe cam track" of cams SN1..6.
- 226 Result list 4: Inconsistent results for "Safe cam track" of cams SN7..12.
- 227 Result list 5: Inconsistent results for "Safe cam track" of cams SN13..18.
- 228 Result list 6: Inconsistent results for "Safe cam track" of cams SN19..24.
- 229 Result list 7: Inconsistent results for "Safe cam track" of cams SN25.. 30.
- 230 Filter time constant n<nx MD36945 $MA_SAFE_VELO_X_FILTER_TIME.
- 231 Velocity hysteresis n<nx MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
- 232 Safe smoothed actual velocity.
- 233 Actual velocity nx: MD36946 $MA_SAFE_VELO_X.
- 234 Actual velocity nx - tolerance: MD36946 $MA_SAFE_VELO_X - MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
- 235 Actual velocity -nx + tolerance: -MD36946 $MA_SAFE_VELO_X + MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
- 236 Actual velocity -nx: -MD36946 $MA_SAFE_VELO_X.
- 237 SGA "n<nx" different outside MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
- 238 Not assigned.
- 239 Not assigned.
- 240 Not assigned.
- 241 Not assigned.

- 242 Not assigned.
- 243 Not assigned.
- 244 Not assigned.
- 245 Not assigned.
- 246 Not assigned.
- 247 Not assigned.
- 248 Not assigned.
- 249 Not assigned.
- 250 Not assigned.
- 251 Not assigned.
- 252 Not assigned.
- 253 Not assigned.
- 254 Not assigned.
- 255 Not assigned.
- 256 Result list 1: Difference in SBH, SG, SBR, or SE result, e.g. due to inconsistent activation of the monitoring channels. For additional information, see drive parameters r9710[0], r9710[1].
- 257 Not assigned.
- 258 Not assigned.
- 259 Not assigned.
- 260 Not assigned.
- 261 Not assigned.
- 262 Not assigned.
- 263 Not assigned.
- 264 Not assigned.
- 265 Result list 1: Difference in SBH, SG, SBR, or SE result, e.g. due to inconsistent activation of the monitoring channels. For additional information, see drive parameters r9710[0], r9710[1].
- 266 Changeover speed to safe operating stop MD37920 $MA_SAFE_STANDSTILL_VELO_LIMIT.
- 267 Delay time for switch to safe operating stop MD37922 $MA_SAFE_STANDSTILL_DELAY.
- 1000 Control timer expired: If one channel informs another of an SGE change, this control timer is used to check whether the update timer in the other channel has expired.
- 1002 User agreement inconsistent: Data for user agreement inconsistent in the two monitoring channels after 4 seconds.

  The following values are displayed in the alarm text:

  %3 State of the NCK user enable.

  %4 State of the drive user enable.
- 1003 Reference tolerance MD36944 $MA_SAFE_REFP_POS_TOL exceeded.
- 1004 Plausibility error in user enable.
- 1005 Pulses already disabled on test stop selection.
- 1009 Pulses not disabled after test stop time MD36957 $MA_SAFE_PULSE_DIS_CHECK_TIME.
- 1011 NCK/drive acceptance test states are inconsistent.
- 1013 NCK user enable from PLC SRAM and NCK user enable from NCK machine data are inconsistent.
- 1014 NCK axis number from PLC SRAM and NCK axis number from startup are inconsistent.
- 1020 Communication disrupted between NCK monitoring channel and drive monitoring channel.
- 1023 Error during efficiency test in Sensor Module.
- 1024 NCK standstill position from PLC SRAM and NCK standstill position from the NCK machine data are inconsistent.
- 1025 Plausibility error in park selection: Encoder reporting parking without user request.
- 1026 Plausibility error in cam synchronization between NCK and PLC ("Safe cam track" function).

**Reaction:** NC Start disable in this channel.

Alarm display.

A Stop F was triggered.

If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Find the difference between the monitoring channels. Error code shows the cause of the alarm.

It may be the case that safety-relevant machine data is no longer consistent (reload if so) or

that the safety-relevant inputs do not have the same level (check).

If an error of this nature cannot be found, an error may have occurred in the CPU (a memory cell may have "tipped over", for example). This error may be temporary (remove with power-on) or permanent (replace hardware if the error is displayed again after power-on).

Error codes for STOP F:

0: No errors in this channel. Look for the cause in the other channel.

1: Result list 1. Inconsistent control of the functions via the SGEs; analyze precise error coding in SINAMICS r9710[0], r9710[1].

2: Result list 2. Check cam tolerance, analyze precise error coding in SINAMICS r9711[0], r9711[1].

3: Actual position value. Incorrect encoder evaluation (check MDs). Standstill position not stored consistently.

4: No cross check.

5: Function enables. Enter MDs consistently.

6: Limit value for SG1. Enter MDs consistently.

7: Limit value for SG2. Enter MDs consistently.

8: Limit value for SG3. Enter MDs consistently.

9: Limit value for SG4. Enter MDs consistently.

10: Standstill tolerance. Enter MDs consistently.

11: Upper limit value SE1. Enter MDs consistently.

12: Lower limit value SE1. Enter MDs consistently.

13: Upper limit value SE2. Enter MDs consistently.

14: Lower limit value SE2. Enter MDs consistently.

15: Safe cam 1+ (+tolerance). Enter MDs consistently.

16: Safe cam 1+. Enter MDs consistently.

17: Safe cam 1- (+tolerance). Enter MDs consistently.

18: Safe cam 1-. Enter MDs consistently.

19: Safe cam 2+ (+tolerance). Enter MDs consistently.

20: Safe cam 2+. Enter MDs consistently.

21: Safe cam 2- (+tolerance). Enter MDs consistently.

22: Safe cam 2-. Enter MDs consistently.

23: Safe cam 3+ (+tolerance). Enter MDs consistently.

24: Safe cam 3+. Enter MDs consistently.

25: Safe cam 3- (+tolerance). Enter MDs consistently.

26: Safe cam 3-. Enter MDs consistently.

27: Safe cam 4+ (+tolerance). Enter MDs consistently.

28: Safe cam 4+. Enter MDs consistently.

29: Safe cam 4- (+tolerance). Enter MDs consistently.

30: Safe cam 4-. Enter MDs consistently.

31: Position tolerance. Enter MDs consistently.

32: Reference position tolerance. Enter MDs consistently.

33: Time velocity changeover. Enter MDs consistently.

34: Tolerance time SGE changeover. Enter MDs consistently.

35: Delay time pulse disable. Enter MDs consistently.

36: Time for checking pulse disable. Enter MDs consistently.

37: Transition time STOP C to SBH. Enter MDs consistently.

38: Transition time STOP D to SBH. Enter MDs consistently.

39: Transition time STOP E to SBH. Enter MDs consistently.

40: Stop reaction to SG. Enter MDs consistently.

41: Stop reaction to SE. Enter MDs consistently.

42: Creep speed pulse disable. Enter MDs consistently.

43: Memory test stop reaction.

44: Actual position value + limit value SG1.

45: Actual position value - limit value SG1.
46: Actual position value + limit value SG2.
47: Actual position value - limit value SG2.
48: Actual position value + limit value SG3.
49: Actual position value - limit value SG3.
50: Actual position value + limit value SG4.
51: Actual position value - limit value SG4.
52: Standstill position + tolerance.
53: Standstill position - tolerance.
54: Actual position value "+ nx" + tolerance.
55: Actual position value "+ nx".
56: Actual position value "- nx".
57: Actual position value "- nx" + tolerance.
58: Current stop request.
59: SG override factor 1. Enter MDs consistently.
60: SG override factor 2. Enter MDs consistently.
61: SG override factor 3. Enter MDs consistently.
62: SG override factor 4. Enter MDs consistently.
63: SG override factor 5. Enter MDs consistently.
64: SG override factor 6. Enter MDs consistently.
65: SG override factor 7. Enter MDs consistently.
66: SG override factor 8. Enter MDs consistently.
67: SG override factor 9. Enter MDs consistently.
68: SG override factor 10. Enter MDs consistently.
69: SG override factor 11. Enter MDs consistently.
70: SG override factor 12. Enter MDs consistently.
71: SG override factor 13. Enter MDs consistently.
72: SG override factor 14. Enter MDs consistently.
73: SG override factor 15. Enter MDs consistently.
74: SG override factor 16. Enter MDs consistently.
75: Velocity limit n<nx or velocity hysteresis. Enter MDs consistently.
76: Stop reaction with SG1. Enter MDs consistently.
77: Stop reaction with SG2. Enter MDs consistently.
78: Stop reaction with SG3. Enter MDs consistently.
79: Stop reaction with SG4. Enter MDs consistently.
80: Modulo value for safe cams. Enter MDs consistently.
81: Velocity tolerance for safe acceleration monitoring. Enter MDs consistently.
82: SG override factor SGEs. Control SGEs consistently.
83: Acceptance test duration. Enter MDs consistently.
84: Stop F -> Stop B delay time. Enter MDs consistently.
85: Bus failure pulse disable delay time. Enter MDs consistently.
86: Make MD36914 $MA_SAFE_SINGLE_ENC and drive parameter p9526 consistent.
87: Make MD36912 $MA_SAFE_ENC_INPUT_NR and p9526 consistent.
88: Make MD36903 $MA_SAFE_CAM_ENABLE and drive parameter p9503 consistent.
89: Encoder limit frequency. Enter MDs consistently.
90: Check cam positions, MD36940 $MA_SAFE_CAM_TOL.
91: Safe cam 5+ (+ tolerance). Enter MDs consistently.
92: Safe cam 5+. Enter MDs consistently.
93: Safe cam 5- (+ tolerance). Enter MDs consistently.
94: Safe cam 5-. Enter MDs consistently.
95: Safe cam 6+ (+ tolerance). Enter MDs consistently.
96: Safe cam 6+. Enter MDs consistently.

97: Safe cam 6- (+ tolerance). Enter MDs consistently.
98: Safe cam 6-. Enter MDs consistently.
99: Safe cam 7+ (+ tolerance). Enter MDs consistently.
100: Safe cam 7+. Enter MDs consistently.
101: Safe cam 7- (+ tolerance). Enter MDs consistently.
102: Safe cam 7-. Enter MDs consistently.
103: Safe cam 8+ (+ tolerance). Enter MDs consistently.
104: Safe cam 8+. Enter MDs consistently.
105: Safe cam 8- (+ tolerance). Enter MDs consistently.
106: Safe cam 8-. Enter MDs consistently.
107: Safe cam 9+ (+ tolerance). Enter MDs consistently.
108: Safe cam 9+. Enter MDs consistently.
109: Safe cam 9- (+ tolerance). Enter MDs consistently.
110: Safe cam 9-. Enter MDs consistently.
111: Safe cam 10+ (+ tolerance). Enter MDs consistently.
112: Safe cam 10+. Enter MDs consistently.
113: Safe cam 10- (+ tolerance). Enter MDs consistently.
114: Safe cam 10-. Enter MDs consistently.
115: Safe cam 11+ (+ tolerance). Enter MDs consistently.
116: Safe cam 11+. Enter MDs consistently.
117: Safe cam 11- (+ tolerance). Enter MDs consistently.
118: Safe cam 11-. Enter MDs consistently.
119: Safe cam 12+ (+ tolerance). Enter MDs consistently.
120: Safe cam 12+. Enter MDs consistently.
121: Safe cam 12- (+ tolerance). Enter MDs consistently.
122: Safe cam 12-. Enter MDs consistently.
123: Safe cam 13+ (+ tolerance). Enter MDs consistently.
124: Safe cam 13+. Enter MDs consistently.
125: Safe cam 13- (+ tolerance). Enter MDs consistently.
126: Safe cam 13-. Enter MDs consistently.
127: Safe cam 14+ (+ tolerance). Enter MDs consistently.
128: Safe cam 14+. Enter MDs consistently.
129: Safe cam 14- (+ tolerance). Enter MDs consistently.
130: Safe cam 14-. Enter MDs consistently.
131: Safe cam 15+ (+ tolerance). Enter MDs consistently.
132: Safe cam 15+. Enter MDs consistently.
133: Safe cam 15- (+ tolerance). Enter MDs consistently.
134: Safe cam 15-. Enter MDs consistently.
135: Safe cam 16+ (+ tolerance). Enter MDs consistently.
136: Safe cam 16+. Enter MDs consistently.
137: Safe cam 16- (+ tolerance). Enter MDs consistently.
138: Safe cam 16-. Enter MDs consistently.
139: Safe cam 17+ (+ tolerance). Enter MDs consistently.
140: Safe cam 17+. Enter MDs consistently.
141: Safe cam 17- (+ tolerance). Enter MDs consistently.
142: Safe cam 17-. Enter MDs consistently.
143: Safe cam 18+ (+ tolerance). Enter MDs consistently.
144: Safe cam 18+. Enter MDs consistently.
145: Safe cam 18- (+ tolerance). Enter MDs consistently.
146: Safe cam 18-. Enter MDs consistently.
147: Safe cam 19+ (+ tolerance). Enter MDs consistently.
148: Safe cam 19+. Enter MDs consistently.

149: Safe cam 19- (+ tolerance). Enter MDs consistently.
150: Safe cam 19-. Enter MDs consistently.
151: Safe cam 20+ (+ tolerance). Enter MDs consistently.
152: Safe cam 20+. Enter MDs consistently.
153: Safe cam 20- (+ tolerance). Enter MDs consistently.
154: Safe cam 20-. Enter MDs consistently.
155: Safe cam 21+ (+ tolerance). Enter MDs consistently.
156: Safe cam 21+. Enter MDs consistently.
157: Safe cam 21- (+ tolerance). Enter MDs consistently.
158: Safe cam 21-. Enter MDs consistently.
159: Safe cam 22+ (+ tolerance). Enter MDs consistently.
160: Safe cam 22+. Enter MDs consistently.
161: Safe cam 22- (+ tolerance). Enter MDs consistently.
162: Safe cam 22-. Enter MDs consistently.
163: Safe cam 23+ (+ tolerance). Enter MDs consistently.
164: Safe cam 23+. Enter MDs consistently.
165: Safe cam 23- (+ tolerance). Enter MDs consistently.
166: Safe cam 23-. Enter MDs consistently.
167: Safe cam 24+ (+ tolerance). Enter MDs consistently.
168: Safe cam 24+. Enter MDs consistently.
169: Safe cam 24- (+ tolerance). Enter MDs consistently.
170: Safe cam 24-. Enter MDs consistently.
171: Safe cam 25+ (+ tolerance). Enter MDs consistently.
172: Safe cam 25+. Enter MDs consistently.
173: Safe cam 25- (+ tolerance). Enter MDs consistently.
174: Safe cam 25-. Enter MDs consistently.
175: Safe cam 26+ (+ tolerance). Enter MDs consistently.
176: Safe cam 26+. Enter MDs consistently.
177: Safe cam 26- (+ tolerance). Enter MDs consistently.
178: Safe cam 26-. Enter MDs consistently.
179: Safe cam 27+ (+ tolerance). Enter MDs consistently.
180: Safe cam 27+. Enter MDs consistently.
181: Safe cam 27- (+ tolerance). Enter MDs consistently.
182: Safe cam 27-. Enter MDs consistently.
183: Safe cam 28+ (+ tolerance). Enter MDs consistently.
184: Safe cam 28+. Enter MDs consistently.
185: Safe cam 28- (+ tolerance). Enter MDs consistently.
186: Safe cam 28-. Enter MDs consistently.
187: Safe cam 29+ (+ tolerance). Enter MDs consistently.
188: Safe cam 29+. Enter MDs consistently.
189: Safe cam 29- (+ tolerance). Enter MDs consistently.
190: Safe cam 29-. Enter MDs consistently.
191: Safe cam 30+ (+ tolerance). Enter MDs consistently.
192: Safe cam 30+. Enter MDs consistently.
193: Safe cam 30- (+ tolerance). Enter MDs consistently.
194: Safe cam 30-. Enter MDs consistently.
195: Cam track assignment SN1. Enter MDs consistently and check cam enable and parameterization.
196: Cam track assignment SN2. Enter MDs consistently and check cam enable and parameterization.
197: Cam track assignment SN3. Enter MDs consistently and check cam enable and parameterization.
198: Cam track assignment SN4. Enter MDs consistently and check cam enable and parameterization.
199: Cam track assignment SN5. Enter MDs consistently and check cam enable and parameterization.
200: Cam track assignment SN6. Enter MDs consistently and check cam enable and parameterization.

201: Cam track assignment SN7. Enter MDs consistently and check cam enable and parameterization.
202: Cam track assignment SN8. Enter MDs consistently and check cam enable and parameterization.
203: Cam track assignment SN9. Enter MDs consistently and check cam enable and parameterization.
204: Cam track assignment SN10. Enter MDs consistently and check cam enable and parameterization.
205: Cam track assignment SN11. Enter MDs consistently and check cam enable and parameterization.
206: Cam track assignment SN12. Enter MDs consistently and check cam enable and parameterization.
207: Cam track assignment SN13. Enter MDs consistently and check cam enable and parameterization.
208: Cam track assignment SN14. Enter MDs consistently and check cam enable and parameterization.
209: Cam track assignment SN15. Enter MDs consistently and check cam enable and parameterization.
210: Cam track assignment SN16. Enter MDs consistently and check cam enable and parameterization.
211: Cam track assignment SN17. Enter MDs consistently and check cam enable and parameterization.
212: Cam track assignment SN18. Enter MDs consistently and check cam enable and parameterization.
213: Cam track assignment SN19. Enter MDs consistently and check cam enable and parameterization.
214: Cam track assignment SN20. Enter MDs consistently and check cam enable and parameterization.
215: Cam track assignment SN21. Enter MDs consistently and check cam enable and parameterization.
216: Cam track assignment SN22. Enter MDs consistently and check cam enable and parameterization.
217: Cam track assignment SN23. Enter MDs consistently and check cam enable and parameterization.
218: Cam track assignment SN24. Enter MDs consistently and check cam enable and parameterization.
219: Cam track assignment SN25. Enter MDs consistently and check cam enable and parameterization.
220: Cam track assignment SN26. Enter MDs consistently and check cam enable and parameterization.
221: Cam track assignment SN27. Enter MDs consistently and check cam enable and parameterization.
222: Cam track assignment SN28. Enter MDs consistently and check cam enable and parameterization.
223: Cam track assignment SN29. Enter MDs consistently and check cam enable and parameterization.
224: Cam track assignment SN30. Enter MDs consistently and check cam enable and parameterization.
225: Result list 3. Check cam tolerances, evaluate precise error coding in drive r9735[0,1].
226: Result list 4. Check cam tolerances, evaluate precise error coding in drive r9736[0,1].
227: Result list 5. Check cam tolerances, evaluate precise error coding in drive r9737[0,1].
228: Result list 6. Check cam tolerances, evaluate precise error coding in drive r9738[0,1].
229: Result list 7. Check cam tolerances, evaluate precise error coding in drive r9739[0,1].
230: Make MD36945 $MA_SAFE_VELO_X_FILTER_TIME and drive parameter p9545 consistent.
231: Make MD36947 $MA_SAFE_VELO_X_HYSTERESIS and drive parameter p9547 consistent.
232: Increase MD36947 $MA_SAFE_VELO_X_HYSTERESIS, Increase setting of MD36945 $MA_SAFE_VELO_X_FILTER_TIME.
233: Check MD36946 $MA_SAFE_VELO_X, MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
234: Check MD36946 $MA_SAFE_VELO_X, MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
235: Check MD36946 $MA_SAFE_VELO_X, MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
236: Check MD36946 $MA_SAFE_VELO_X, MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
237: Check MD36946 $MA_SAFE_VELO_X, MD36947 $MA_SAFE_VELO_X_HYSTERESIS.
238 Not assigned.
239 Not assigned.
240 Not assigned.
241 Not assigned.
242 Not assigned.
243 Not assigned.
244 Not assigned.
245 Not assigned.
246 Not assigned.
247 Not assigned.
248 Not assigned.
249 Not assigned.
250 Not assigned.
251 Not assigned.
252 Not assigned.

253 Not assigned.
254 Not assigned.
255 Not assigned.
256 Result list 1: Inconsistent activation of the functions via the SGEs, evaluate precise error coding in SINAMICS r9710[0], r9710[1].
257 Not assigned.
258 Not assigned.
259 Not assigned.
260 Not assigned.
261 Not assigned.
262 Not assigned.
263 Not assigned.
264 Not assigned.
265 Result list 1: Inconsistent activation of the functions via the SGEs, evaluate precise error coding in SINAMICS r9710[0], r9710[1].
266 Check MD37920 $MA_SAFE_STANDSTILL_VELO_LIMIT.
267 Check MD37922 $MA_SAFE_STANDSTILL_DELAY.
1000: Control timer expired. Too many switching operations on the SGEs (e.g. due to contact problems, loose contact).
1002: User agreement timer expired.
1003: Reference tolerance violated. Compare the reference position with the current safe actual position.
1004: Plausibility of user agreement is violated.
1005: Pulses already disabled during test stop selection. Test stop selection with missing pulse enable, error in the wiring of the SGE "Pulses have been deleted".
1009: Trigger a subsequent stop after test stop. Check the wiring. Check the SGE configuration via MD36976 $MA_SAFE_PULSE_STATUS_INPUT. Check the time level for test stop.
1011: Acceptance test timer expired.
1013: Restore data consistency with power-on.
1014: Restore data consistency with power-on..
1020: Cyclic communication between NCK and drive no longer functioning.
1023: Check Sensor Module.
1024: Restore data consistency with power-on.
1025: Plausibility violation in park selection. Check encoder hardware and communication with encoder.
1026: Check communication between PLC and drive and between PLC and NCK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
If STOP B was triggered, a power OFF/ON of the control will be required.

## 27002 Axis %1 test stop is running

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Proper functioning of the switch-off signal path is just being tested by setting of the SGE "Test stop selection".

**Reaction:** Alarm display.

**Remedy:** The message serves only for user information.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.
The alarm will disappear automatically after expiry of the delay time - defined in MD36957 $MA_SAFE_PULSE_DIS_CHECK_TIME - and after removal of SGE "Test stop selection", if the control recognizes pulse suppression, i.e. the test has been completed successfully. An unsuccessful test can be recognized by alarm 27001 with error code 1005 or by alarm 27024.

## 27003 Checksum error found: %1 %2

**Parameters:** %1 = Note on code section or table
%2 = Table number

**Explanation:** Checksum error in safety-relevant code or safety-relevant data. The safe monitoring functions (Safety Integrated) in the NCK could be affected.

**Reaction:** Alarm display.

**Remedy:** Continue to work very carefully. Power OFF/ON of the control required. If this error occurs again, contact your service personnel.

**Programm continuation:** Switch control OFF - ON.

## 27004 Axis %1 difference safe input %2, NCK %3, drive %4

**Parameters:** %1 = Axis name, spindle number
%2 = Monitoring input
%3 = Interface identifier NCK input
%4 = Interface identifier drive input

**Explanation:** A difference has been found at the specified safe input. The state of the specified input signal differed in the two monitoring channels NCK and drive for the duration set in MD36950 $MA_SAFE_MODE_SWITCH_TIME.
Monitoring affected:
SS/SV = Difference in SGE "Deselection of safe operating stop/Safe velocity"
SS = Difference in SGE "Safe operating stop"
SV = Difference in SGEs "Selection safe velocity"
SP = Difference in SGE "Selection safe limit positions"
SVOVR = Difference in SGEs "Selection SG correction"
Interface identifier NCK input (SPL interface):
<io> = Parameterised SPL interface ($A_OUTSI, $A_INSE)
<bit> = Bit number in SPL interface (1...192)
<value> = Value of NCK SGE (0,1)
Interface identifier drive input:
DBX<byte><bit>=<value >
<byte> = Byte number in axis-specific DB (22, 23, 32, 33)
<bit> = Bit number in byte (0...7)
<value> = Value of drive SGE (0,1)
This alarm can be masked by setting MD10096 $MN_SAFE_DIAGNOSIS_MASK, bit 0 = 0.

**Reaction:** Alarm display.

**Remedy:** Check settings for safe input signals (SPL parameterization, PLC DB parameters).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27005 Axis %1 error in data cross check: static actual value difference

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Via the data cross check between NCK and drive monitoring channel, a difference in actual values was detected, which is greater than the maximum tolerance defined in MD36942 $MA_SAFE_POS_TOL. This can be checked by means of the safe position values for the two monitoring channels displayed in the service menu.
The alarm is displayed only, if monitoring with absolute reference (SE/SN) has been enabled for the specified axis and if the user enable has been set. The alarm is cleared, as soon as the user enable is deleted or the actual value difference between the two monitoring channels falls again below the maximum permissible difference.

**Reaction:** Alarm display.

**Remedy:** If the alarm is present statically, the user enable must be deleted. When the control is then rebooted, the machine can be brought to the safe state again and operation resumed by a new referencing process and setting of the user enable. Prior to setting the user enable, the actual position of the axis displayed in the "User enable" screen must be compared with the current machine position. This is obligatory to ensure the proper functioning of the safe limit positions (SE) and safe cams (SN).
A change of the user acknowledgment is only possible with key switch position 3 or after input of a password.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27007 Axis %1 acceptance test mode is active

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Via the operator panel, an SI acceptance test has been started for example with the acceptance test wizard. The acceptance test mode is activated via the NCK and drive for the time of this acceptance test. In the acceptance test mode, SI PowerOn alarms can be acknowledged with the Reset key.

**Reaction:** Alarm display.

**Remedy:** Deselect the acceptance test, for example with the acceptance test wizard or wait until completed (acceptance test time can be parameterized via MD36958 $MA_SAFE_ACCEPTANCE_TST_TIMEOUT).

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27008 Axis %1 SW limit switch deactivated

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Via the HMI, the SI acceptance test Safe limit position has been started, for example with the acceptance test wizard. For these acceptance tests, the single-channel software limit switches are deactivated for the axis/spindle, in order to assure that the safe limit positions can be approached.

**Reaction:** Alarm display.

Deactivation of the single-channel software limit switch for the displayed axis/spindle.

**Remedy:** Deselect the acceptance test, for example with the acceptance test wizard, or wait until completed.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27010 Axis %1 tolerance for safe standstill exceeded

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The axis has moved too far away from the setpoint position. It is further away than allowed in MD36930 $MA_SAFE_STANDSTILL_TOL.

The alarm can be reprogrammed in the MD11412 $MN_ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

Channel not ready.

Stop axis with STOP B. As soon as the actual speed value is lower than defined in MD36960 $MA_SAFE_STANDSTILL_VELO_TOL, but at the latest after the time set in MD36956 $MA_SAFE_PULSE_DISABLE_DELAY has elapsed, the pulses will be disabled (STOP A).

**Remedy:** Check the tolerance of zero speed monitoring: does the value match the precision and control dynamics of the axis? If not, increase tolerance. If yes, check the machine for any damage and rectify it.

**Programm continuation:** Switch control OFF - ON.

## 27011 Axis %1 safe velocity exceeded

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The axis has moved too quickly and faster than allowed in MD36931 $MA_SAFE_VELO_LIMIT.

If the function "Correction safe velocity" is enabled in MD36901 $MA_SAFE_FUNCTION_ENABLE, the active correction value from MD36932 $MA_SAFE_VELO_OVR_FACTOR[0...15] for the permissible velocity must be considered for SG2 and SG4.

Special case:

With active SBH/SG and a 1-encoder system, the velocity that corresponds to an encoder limit frequency has been exceeded.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Axis stop with STOP A, C, D or E, depending on the configuration in MD36961 $MA_SAFE_VELO_STOP_MODE or MD36963 $MA_SAFE_VELO_STOP_REACTION.

**Remedy:** If no obvious operator error occurred: Check the input value of the MD; check SGEs: Is the correct safe velocity selected?

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27012 Axis %1 safe end position exceeded

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The axis has exceeded the limit position entered in MD36934 $MA_SAFE_POS_LIMIT_PLUS or MD36935 $MA_SAFE_POS_LIMIT_MINUS.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Stop the axis with STOP C,D or E, depending on the configuration in MD36962 $MA_SAFE_POS_STOP_MODE.

**Remedy:** If no obvious operator error occurred: Check the input value of the machine data and check the SGEs: Has the correct one of 2 limit positions been selected?
The alarm will persist as long as the axis is beyond the limit position. To be able to move it again, either
- push the axis manually,
- switch to another limit position pair so that the axis is in the permitted range again,
- cancel the user enable and trigger a PO reset. The alarm "Axis is not safely referenced" appears and the limit switch monitoring functions are deactivated. Move the machine back so that it is in the permitted range again. Then give the user enable again.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
Remove the user agreement for this axis. Then press the RESET key causing the program to be canceled and the alarm to be deleted. Traverse the axis in JOG mode to the valid traversing range. After fault correction of the NC program and an axis position check, the user agreement can be set again and the program can be restarted.

## 27013 Axis %1 Safe monitoring for acceleration exceeded

**Parameters:** %1 = Axis name, spindle number

**Explanation:** After the initiation of STOP B or C, the velocity exceeded the tolerance value entered in MD36948 $MA_SAFE_STOP_VELO_TOL.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.
Pulse interlock by triggering a STOP A.

**Remedy:** Check MD36948 $MA_SAFE_STOP_VELO_TOL. Check the braking behavior of the affected drive.

**Programm continuation:** Switch control OFF - ON.

## 27020 Axis %1 stop E triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** This alarm is output with alarms 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" (if these are configured in MD36961 $MA_SAFE_VELO_STOP_MODE, MD36963 $MA_SAFE_VELO_STOP_REACTION or MD36962 $MA_SAFE_POS_STOP_MODE) or alarm 27090 after occurrence of a SPL data cross-check error.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a LIFTFAST ASUB and internal activation of the safe operational stop (SBH) after expiry of the time set in MD36954 $MA_SAFE_STOP_SWITCH_TIME_E.

**Remedy:** Eliminate causes of the alarms 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" or 27090 "Error in data cross-check NCK-PLC" (see description of these alarms).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27021 Axis %1 stop D triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** This alarm is output together with alarms 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" (if these are configured in MD36961 $MA_SAFE_VELO_STOP_MODE, MD36963 $MA_SAFE_VELO_STOP_REACTION or MD36962 $MA_SAFE_POS_STOP_MODE) or alarm 27090 after occurrence of an SPL data cross-check error.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a "Deceleration on the path" and internal activation of the safe operational stop (SBH) after expiry of the time set in MD36953 $MA_SAFE_STOP_SWITCH_TIME_D.

**Remedy:** Eliminate causes of the alarms 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" or 27090 "Error in data cross-check NCK-PLC" (see description of these alarms).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27022 Axis %1 stop C triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** This alarm is output together with alarms 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" (when configured as such in MD36961 $MA_SAFE_VELO_STOP_MODE, MD36963$MA_SAFE_VELO_STOP_REACTION or MD36962 $MA_SAFE_POS_STOP_MODE).

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of "Deceleration on the current limit / OFF3 ramp" and internal activation of the safe operating stop (SBH) after expiry of the time set in MD36952 $MA_SAFE_STOP_SWITCH_TIME_C.

**Remedy:** Eliminate causes of alarm 27011 "Safe velocity exceeded" or 27012 "Safe limit position exceeded" (see description of these alarms).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27023 Axis %1 stop B triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** This alarm is output together with alarm 27010 "Tolerance for safe operating stop exceeded" or after alarm 27001 "Defect in a monitoring channel" or 2710x "Difference in function ..."..
The alarm can be reprogrammed in MD11412 ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.
Triggering of a "Deceleration on the current limit / OFF3 ramp" and activation of the timer for a switchover after STOP A (see MD36956 $MA_SAFE_PULSE_DISABLE_DELAY).

**Remedy:** Eliminate causes of alarm 27010 "Tolerance for safe standstill exceeded" or 27001 "Defect in a monitoring channel" or 2710x "Difference in function ..." (see description of these alarms).

**Programm continuation:** Switch control OFF - ON.

## 27024 Axis %1 stop A triggered

**Parameters:** %1 = Axis name, spindle number

**Explanation:** This alarm follows an
- alarm 27011 "Safe velocity exceeded" (when configured as such in MD36961 $MA_SAFE_VELO_STOP_MODE, MD36963 $MA_SAFE_VELO_STOP_REACTION),
- alarm 27013 "Safe monitoring for acceleration exceeded",
- alarm 27023 "Stop B triggered",
- unsuccessful test stop.

The alarm can be reprogrammed in the MD11412 ALARM_REACTION_CHAN_NOREADY (channel not ready).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.
Trigger a "Pulse suppression".

**Remedy:** Eliminate causes of
- alarm 27011 "Save velocity exceeded",
- alarm 27013 "Safe monitoring for acceleration exceeded",
- alarm 27023 "Stop B triggered",
- unsuccessful test stop

(see description of these alarms).

**Programm continuation:** Switch control OFF - ON.

## 27032 Axis %1 checksum error of safe monitoring. Confirmation and acceptance test required.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The relevant MDs for parameterization of the axis-specific safety functionality are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum, this means that an MD has either been changed without authorization or is faulty.

In the setup phase (SPL setup mode active), instead of the axis-specific checksum single alarms (27032, 27035, and 27060), the axis-specific group alarm 27132 is displayed. In MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL, the alarm display can be reduced still further so that only one alarm is displayed for all axes (global group alarm 27135).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check MDs. Have the checksum recalculated. Re-accept safety functions (motion monitoring).

**Programm continuation:** Switch control OFF - ON.

## 27033 Axis %1 parameterisation of MD %2[%3] invalid, error code %4

**Parameters:** %1 = Axis name, spindle number
%2 = MD name
%3 = MD array index for MD name
%4 = Error code, reference to the cause (see alarm description)

**Explanation:** The parameterization of the specified machine data is incorrect. An additional indication is the array index of the machine data. If the machine data is a single machine data item, a zero is specified as the array index. This alarm occurs in accordance with the displayed error code in the following connections:

1: Conversion of the specified MD to the internal calculation format causes an overflow.

2: Error in parameterization of the input/output assignments for the SGEs/SGAs.

3: One of the activated cam positions lies outside the actual value modulo range.

4: The function "actual value synchronization 2-encoder system" (slip) has been selected for a 1-encoder system.

5: The function "actual value synchronization 2-encoder system" (slip) has been selected at the same time as a function with an absolute reference (SE/SN).

6: A safety function has been enabled in MD36901 $MA_SAFE_FUNCTION_ENABLE although the safety functions SBH/SG have not been enabled.

7: An axis-specific SGE/SGA has been parameterized on the SPL interface (segment number = 4) and the function enable for the external stops (MD36901 $MA_SAFE_FUNCTION_ENABLE, bit 6) is missing.

8: The cam synchronization has been activated via bit 7 in MD36901 $MA_SAFE_FUNCTION_ENABLE without enabling the cams via bits 8...15.

12: A zero has been entered in MD36917 $MA_SAFE_ENC_GRID_POINT_DIST.

13: A zero has been entered in MD36918 $MA_SAFE_ENC_RESOL.

14: The parameterized cam modulo range MD36905 $MA_SAFE_MODULO_RANGE is not an integer multiple of 360 degrees.

15: An axis-specific SGE/SGA has been parameterized on the SPL interface (segment number = 4) and SGE "Deselection ext. stop A" (assigned via MD36977 $MA_SAFE_EXT_STOP_INPUT[0]) has been parameterized inverted (bit 31 = 1) or SGE "Deselection ext. stop A" has not been parameterized on the SPL interface $A_OUTSI.

16: MD10097 $MN_SAFE_SPL_STOP_MODE has been parameterized on value 4 (stop E) although the external stop E has not been enabled on all axes with SI function enables (MD36901 $MA_SAFE_FUNCTION_ENABLE not equal to 0).

17: In MD36907 $MA_SAFE_DRIVE_PS_ADDRESS, an invalid value has been parameterized or the same address has been assigned to multiple axes.

18: The internal preassignment of MD36919 $MA_SAFE_ENC_PULSE_SHIFT from the drive parameterization was not possible because values would have to be set outside the permissible range. Adjust the encoder parameterization in the drive.

19: MD36932 $MA_SAFE_VELO_OVR_FACTOR has been parameterized with decimal places.

20: The value entered in MD36934 $MA_SAFE_POS_LIMIT_PLUS and MD36935 $MA_SAFE_POS_LIMIT_MINUS have been swapped. The upper limit is less than or equal to the lower limit.

21: In MD30300 $MA_IS_ROT_AX and MD36902 $MA_SAFE_IS_ROT_AX, various settings have been made.

22: The parameterized cam modulo range MD36905 $MA_SAFE_MODULO_RANGE and the modulo range in MD30330 $MA_MODULO_RANGE are not divisible by one another with an integer result.

-23: Testing of the brake mechanism was enabled without enabling safe operation for this axis in MD36901 $MA_SAFE_FUNCTION_ENABLE or enabling the link to the drive-autonomous safety functions in MD37950 $MA_SAFE_INFO_ENABLE. Testing of the brake mechanism is only permissible with safety functions in this axis.

24: MD36961 $MA_SAFE_VELO_STOP_MODE or MD36963 $MA_SAFE_VELO_STOP_REACTION has been parameterized with an impermissible value.

25: Alarms 27000/F01797 are to be suppressed during parking (MD36965 $MA_SAFE_PARK_ALARM_SUPPRESS!=0). For this, SGA "Axis safely referenced" must be parameterized in MD36987 $MA_SAFE_REFP_STATUS_OUTPUT.

26: The logical base address configured in Step 7 and addressed in MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS do not match, or the slot addressed in this way has the wrong length.

27: Cam position MD36936 $MA_SAFE_CAM_POS_PLUS[n] or MD36937 $MA_SAFE_CAM_POS_MINUS[n] is parameterized too near to the modulo limit.

28: In MD36901 $MA_SAFE_FUNCTION_ENABLE, "Safe cams" are enabled in bits 8...15, while in MD36903 $MA_SAFE_CAM_ENABLE the function "Safe cam track" is enabled.

29: Minus cam position MD36937 $MA_SAFE_CAM_POS_MINUS[n] is greater than the plus cam position MD36936 $MA_SAFE_CAM_POS_PLUS[n]. This is not allowed for the function "Safe cam track."

30: The distance between 2 cams on one cam track (MD36937 $MA_SAFE_CAM_POS_MINUS[n] and MD36936 $MA_SAFE_CAM_POS_PLUS[m]) is too small. ("Safe cam track" function)

31: The cam length, that is the distance between plus cam position (MD36936 $MA_SAFE_CAM_POS_PLUS[n]) and minus cam position (MD36937 $MA_SAFE_CAM_POS_MINUS[n]), is too small.("Safe cam track" function)

32: For at least 2 cams enabled in MD36903 $MA_SAFE_CAM_ENABLE, identical values are entered in MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[n]. ("Safe cam track" function)

33: The value parameterized in MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[n] for a cam enabled in MD36903 $MA_SAFE_CAM_ENABLE is invalid. ("Safe cam track" function)

34: More than 15 cams have been assigned to one cam track in MD36938 $MA_SAFE_CAM_TRACK_ASSIGN[n]. ("Safe cam track" function)

35: Cam modulo functionality has been selected in MD36905 $MA_SAFE_MODULO_RANGE, although this is not supported for the "Safe cam track" function.

36: The parameterized monitoring cycle time MD10091 $MN_INFO_SAFETY_CYCLE_TIME does not match the monitoring cycle time parameterized in the drive monitoring channel (p9500).

37: The velocity hysteresis n<nx in MD36947 $MA_SAFE_VELO_X_HYSTERESIS is greater than 3/4 of the velocity limit n<nx in MD36946 $MA_SAFE_VELO_X.

38: The velocity hysteresis n<nx in MD36947 $MA_SAFE_VELO_X_HYSTERESIS is less than or equal to 0.

39: The velocity tolerance n<nx in MD36947 $MA_SAFE_VELO_X_HYSTERESIS is less than the slip tolerance in MD36949 $MA_SAFE_SLIP_VELO_TOL.

40: An axis-specific SGE/SGA addresses the SPL interface outside of the scope enabled by the relevant option.

41: The total encoder resolution (combination of coarse and fine resolution in MD36918 $MA_SAFE_ENC_RESOL and MD36919 $MA_SAFE_ENC_PULSE_SHIFT) is invalid or exceeds the supported actual value format.

42: Simultaneous enable of NC-controlled brake test and drive-integrated brake test is not permitted.

43: For an axis with safety functions, no PROFIdrive drive has been parameterized in MD30100 $MA_CTRLOUT_SEGMENT_NR for the setpoint/actual value channel assignment. Enable SIC/SCC link (MD37950 $MA_SAFE_INFO_ENABLE) or reset the NC-controlled brake test enable (MD37000 $MA_FIXED_STOP_MODE).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check and change the specified MD. Allow the checksum to be recalculated. Re-accept safety functions.

**Programm continuation:** Switch control OFF - ON.

## 27034 Parameterization of MD %1[%2] invalid.

**Parameters:** %1 = MD name
%2 = MD array index for MD name

**Explanation:** The parameterization of the specified machine data is incorrect. This alarm occurs in the following contexts:
- An invalid value has been set for MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL.
- An invalid value has been set for MD13343 $MN_SAFE_RDP_CONNECTION_NR.
- An invalid value has been set for MD13333 $MN_SAFE_SDP_CONNECTION_NR.
- An invalid value has been set for MD13307 $MN_PROFISAFE_IPO_RESERVE.
- The logical basic addresses parameterized in MD13372 $MN_SAFE_PS_DRIVE_LOGIC_ADDR and enabled via MD37950 $MA_SAFE_INFO_ENABLE,bit1 exceed the maximum possible number of slots.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check and correct the specified machine data.

**Programm continuation:** Switch control OFF - ON.

## 27035 Axis %1 new hardware component, confirmation and functional test required.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The IDs for the corresponding hardware components (encoder, motor module) read out by the drive do not match the NCK parameterization.

In the setup phase (SPL setup mode active), instead of the axis-specific checksum single alarms (27032, 27035, and 27060), the axis-specific group alarm 27132 is displayed. In MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL, the alarm display can be reduced still further so that only one alarm is displayed for all axes (global group alarm 27135).

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** If the alarm occurs during setup, proceed as follows:

- Confirm the checksumMD36998 $MA_SAFE_ACT_CHECKSUM[1] (keyswitch position 3 or password has to be entered). Resume setup.

If the alarm occurs after an encoder module or a DRIVE-CLiQ motor has been replaced, proceed as follows:

- In the Diagnostics operating area, confirm the hardware checksum in MD36998 $MA_SAFE_ACT_CHECKSUM[1] with the softkey (keyswitch position 3 or password has to be entered).

- Readjust the actual value encoder.

- Check SI actual value acquisition: velocities, traversing direction, absolute position (set user agreement if necessary).

- Record the new checksum value in MD36998 $MA_SAFE_ACT_CHECKSUM[1] and the last entry in the change history in MD36993 $MA_SAFE_CONFIG_CHANGE_DATE[0].

- Record the hardware and software version data for the new component.

**Programm continuation:** Switch control OFF - ON.

## 27036 Axis %1 encoder parameterization MD %2[%3] has been adjusted.

**Parameters:** %1 = Axis name, spindle number

%2 = MD name

%3 = MD array index for MD name

**Explanation:** Encoder parameterization of the encoder read out by the drive for the SI monitoring functions does not match NCK parameterization in the displayed MD. The relevant NCK MD has been adjusted.

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

In addition, a Stop F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024.

Alarm 27001 with error code 0 can be avoided by alarm reduction (MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** Continue with setup, correct checksum

**Programm continuation:** Switch control OFF - ON.

## 27037 Axis %1 and %2 with the same PROFIsafe address %3.

**Parameters:** %1 = Axis name, spindle number

%2 = Axis name, spindle number

%3 = PROFIsafe address

**Explanation:** The PROFIsafe addresses of these two axes read out by the drive are identical.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Set the correct PROFIsafe addresses of the drives.

**Programm continuation:** Switch control OFF - ON.

## 27038 Axis %1 value %2 in drive parameter %3 violates the limits of NCK MD %4.

**Parameters:** %1 = Axis name, spindle number
%2 = Value in drive parameter
%3 = Drive parameter number, for example parameter 979.
%4 = NCK machine data name.

**Explanation:** A SINAMICS drive delivers values in a parameter that violates the permissible value range for an NCK machine data or internal limits. If several drive parameters are listed, there is a problem with the combination of these drive parameters. In this case, the result of the link is displayed as the value.
The following causes are possible:
r469: Resolution of the absolute position for linear absolute encoders invalid or the ratio between the grid division and measurement step not binary.
r470: Incorrect number of valid bits of the redundant coarse position value.
r471: Incorrect number of fine resolution bits of the redundant coarse position value.
r472: Incorrect number of relevant bits of the redundant coarse position value or 0".
r470/471/472: shift factor for coarse position bits in the finely resolved actual value result in an illegal value (parameter values do not match).
r473: Invalid number of non safety-relevant measurement steps in the POS1 position value.
r474: A bit unknown to the NCK is set. At this location, the alarm output can be suppressed using MD10096 $MN_SAFE_DIAGNOSIS_MASK, bit 3 = 1.
r475: Incorrect number of the most significant bit of the redundant coarse position.
r979: Error in the encoder format according to PROFIdrive
r9527: Invalid encoder type

**Reaction:** Alarm display.

**Remedy:** Investigate as to why an incorrect value has been entered in the specified drive parameter(s) (e.g. for internal software errors in the drive, refer to the drive documentation).

**Programm continuation:** Switch control OFF - ON.

## 27039 Axis %1 parameterization MD %2[%3] changed, confirmation and functional test required.

**Parameters:** %1 = Axis name, spindle number
%2 = MD name
%3 = MD array index for MD name

**Explanation:** The parameterization read out by the drive for the SI monitoring functions does not match the NCK parameterization in the displayed MD. The relevant NCK MD has been adjusted.
The following relation exists between the NCK MDs and the drive parameters:
- MD36969 $MA_SAFE_BRAKETEST_TORQUE_NORM corresponds to p2003

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Continue with setup, correct checksum.
- If MD36969 $MA_SAFE_BRAKETEST_TORQUE_NORM is displayed:
The change to p2003 must be taken into account in the parameterization of MD36969 $MA_SAFE_BRAKETEST_TORQUE. The holding torque to be parameterized for the brake test must be reset.
MD36969 $MA_SAFE_BRAKETEST_TORQUE = desired test torque of the brake / p2003 * 100.
Then an acceptance test of the functioning of the brake test must be made.

**Programm continuation:** Switch control OFF - ON.

## 27040 Axis %1 waiting for motor module.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Alarm on ramp-up as long as the motor module is not yet ready for SI.
Communication to the motor module is not yet active on ramp-up, the safety functions are not yet available.
The alarm indication can be set in MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL so that only one alarm is displayed for all axes.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** The alarm will remain present during ramp-up if the drive does not communicate. Otherwise the alarm will only be displayed briefly and then deleted automatically.
Possible causes for the continual presence of this alarm:
- The safe motion monitoring is only activated in MD36901 $MA_SAFE_FUNCTION_ENABLE, but not in the corresponding parameter of the assigned drive (p9501).
- The axis -> drive assignment in MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS or p0978 is incorrect.
- PROFIBUS connector has fallen out.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27050 Axis %1 SI communication failure.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Communication with the drive for Safety Integrated motion monitoring is additionally monitored.
This monitoring has found an error.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
In addition, a STOP F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024. Alarm 27001 with error code 0 can be avoided by alarm reduction(MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** Check the connections between NCK and drive.
Check the configuration of the PROFIBUS telegram (e.g. SI slot configured).
Check the assignment of the NCK SI axis to the SI slot (MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS).
Check for assignment of the telegram configuration for the slave OM
Check for compliance with the EMC requirements

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27060 Axis %1 Drive assignment checksum error. Confirmation and acceptance test required!

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The axis-specific MDs $MA_SAFE_... and MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum, this means that an MD has either been changed without authorization or is faulty.

In the setup phase (SPL setup mode active), instead of the axis-specific checksum single alarms (27032, 27035, and 27060), the axis-specific group alarm 27132 is displayed. In MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL, the alarm display can be reduced still further so that only one alarm is displayed for all axes (global group alarm 27135).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data, have the checksum recalculated and confirm. Re-accept the safety functions (connections NCK axis - drive/encoder).

**Programm continuation:** Switch control OFF - ON.

## 27070 Checksum error parameterization SPL and SPL interfaces. Confirmation and acceptance test required!

**Explanation:** The NCK-MDs for parameterizing the SPL I/O and SPL functionality (including $MN_PROFISAFE..., MD133xx/134xx $MN_SAFE_SDP/RDP...) are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum. This means that an MD has either been changed without authorization or is faulty.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data, have the checksum recalculated and confirm. Re-accept the safety functions (PROFIsafe, FSEND/FRECV).

**Programm continuation:** Switch control OFF - ON.

## 27071 Checksum error safe PLC parameterization. Confirmation and acceptance test required!

**Explanation:** The NCK MDs MD13312 $MN_SAFE_SPL_USER_DATA are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum, this means that an MD has either been changed without authorization or is faulty.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data, have the checksum recalculated and confirm. Re-accept the safety functions

**Programm continuation:** Switch control OFF - ON.

## 27072 Checksum error enable safe communication. Confirmation and acceptance test required!

**Explanation:** The NCK-MDs for enabling the SPL connection (including MD13302/13303 $MN_PROFISAFE_IN/OUT_ENABLE_MASK, MD13330/13340 $MN_SAFE_RDP/SDP_ENABLE_MASK) are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum. This means that an MD has either been changed without authorization or is faulty.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data, have the checksum recalculated and confirm. Re-accept the safety functions (PROFIsafe, FSEND/FRECV).

**Programm continuation:** Switch control OFF - ON.

## 27073 Checksum error S7 PROFIsafe configuration. Confirmation and acceptance test required!

**Explanation:** The F parameters required for PROFIsafe communication are protected by a checksum. The alarm indicates that the current checksum no longer corresponds to the stored checksum, this means that an MD has either been changed without authorization or is faulty.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the PROFIsafe configuration on the S7 side. Have the checksum recalculated. Re-accept safety functions (PROFIsafe I/Os).

**Programm continuation:** Switch control OFF - ON.

## 27090 Error in data cross check NCK-PLC, %1[%2], NCK: %3; %4<ALSI>

**Parameters:** %1 = Name of system variable in which the error was detected
%2 = System variable array index extension
%3 = NCK comparison value extension
%4 = Cross-check array index extension

**Explanation:** Differences in the compared data have been found in a cyclic data cross-check between NCK and PLC. Parameter %1 indicates the incorrect system variable ($A_INSI, $A_OUTSI, $A_INSE, $A_OUTSE, or $A_MARKERSI) with array index %2.

Special cases:

- Display "Error in NCK-PLC data cross-check, $MN_PREVENT_SYNACT_LOCK[0], ..." means that the SPL setup status has been set differently in the NCK and PLC.
- Display "Error in NCK-PLC data cross-check, $MN_SAFE_SPL_STOP_MODE[0], ..." means that the SPL stop reaction (Stop D or E) has been set differently in the NCK and PLC.
- Display "Error in NCK-PLC data cross-check, $MN_SAFE_SPL_USER_DATA[n], ..." means that different user data have been set in NCK and PLC.
- Display "Error in NCK-PLC data cross-check, TIMEOUT[0], NCK: 0" means that the communication between NCK and PLC is generally disturbed and that a data cross-check can no longer be performed.
- Display "Error in NCK-PLC data cross-check, $A_FSDP_ERR_REAC[n], $A_FRDP_SUBS[n], $A_FRDP_ERR_REAC[n]..." means that different system variables have been specified in NCK and PLC.

With alarm parameter %4, a specific alarm message can be configured on the HMI for all listed system variables:

- 0: Error SPL commissioning status ($MN_PREVENT_SYNACT_LOCK[0,1] - DB18 DBX36.0)
- 0: Error SPL stop reaction ($MN_SAFE_SPL_STOP_MODE - DB18 DBX36.1).
- 0: Error SPL user data ($MN_SAFE_SPL_USER_DATA - DB18 DBD256,260,264,268)
- 0: Error FSENDDP error reaction ($A_FSDP_ERR_REAC[n] - DB18 DBW190, DBW210, DBW220, DBW448, DBW458 ... DBW568)
- 0: Error FRECVDP error reaction ($A_FRDP_ERR_REAC[n] - DB18 DBW222, DBW234, DBW246, DBW580, DBW592 ... DBW724)
- 0: Error FRECVDP replacement values ($A_FRDP_SUBS[n] - DB18 DBW220, DBW232, DBW244, DBW578, DBW590 ... DBW722)
- 1.... 64: Error in system variable $A_INSE[1...64]
- 65...128: Error in system variable $A_OUTSE[1...64]
- 129...192: Error in system variable $A_INSI[1...64]
- 193...256: Error in system variable $A_OUTSI[1...64]
- 257...320: Error in system variable $A_MARKERSI[1...64]
- 321...448: Error in system variable $A_INSE[65...192]
- 449...576: Error in system variable $A_OUTSE[65...192]
- 577...704: Error in system variable $A_INSI[65...192]
- 705...832: Error in system variable $A_OUTSI[65...192]
- 833...960: Error in system variable $A_MARKERSI[65...192]

In order to parameterize alarm 27090, file ALSI_xx.com must be incorporated in the data management and declared in the HMI with an entry in MBDDE.INI in section[IndexTextFiles] ALSI=f:\dh\mb.dir\alsi_. The machine manufacturer can redefine this file to incorporate additional texts in the alarm that are useful for its system. If the file is redefined, the newly created file must be declared in the system with an entry in MBDDE.INI.

The display of alarm 27090 can be modified via MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL: MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL = 2 : Alarm 27090 will now only be displayed for the first data difference found.

**Reaction:** Alarm display.

Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality, as soon as the SPL setup phase (MD11500 $MN_PREVENT_SYNACT_LOCK[0,1] unequal to 0) is completed.

**Remedy:** Analyze the value displayed and evaluate DB18: SPL_DELTA on the PLC side.

Find the difference between the monitoring channels. Possible causes:

- Incorrect wiring
- Incorrect SPL
- Incorrect assignment of the axis-specific SGEs to internal interface $A_OUTSI
- Incorrect assignment of the axis-specific SGAs to internal interface $A_INSI
- Incorrect assignment of the SPL SGEs to external interface $A_INSE
- Incorrect assignment of the SPL SGAs to external interface $A_OUTSE
- Different SPL setup status set in NCK and PLC
- Different SPL stop reaction set in NCK and PLC

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27091 Error in data cross check NCK-PLC, stop of %1

**Parameters:** %1 = Extension indicating the monitoring channel that triggered the stop

**Explanation:** The monitoring channel specified in the alarm text (NCK or PLC) has triggered a stop D or E (depending on the parameterization in MD10097 $MN_SAFE_SPL_STOP_MODE). The alarm 27090 provides further information about the cause of the stop D/E.

**Reaction:** Alarm display.

Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality, as soon as the SPL setup phase (MD11500 $MN_PREVENT_SYNACT_LOCK[0,1] unequal to 0) is completed.

**Remedy:** Evaluate the alarm parameters of alarm 27090 and amend the SPL, or check the internal SPL interfaces to the safety monitoring channels in the NCK and drive.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27092 Communication broken off during NCK PLC data cross check, error detected by %1

**Parameters:** %1 = Extension indicating the monitoring channel that detected the error

**Explanation:** The delay time (1s) for communication monitoring was exceeded in the monitoring channel specified in the alarm text (NCK or PLC). The other monitoring channel did not send a new data packet within this time.

**Reaction:** Alarm display.

A timer of 5 secs is started, after the expiry of which

- the external NCK SPL outputs are deleted
- the PLC changes to stop.

**Remedy:** Check the system components (the PLC must have the correct version of FB15 and DB18).

**Programm continuation:** Switch control OFF - ON.

## 27093 Checksum error NCK-SPL, %1, %2, %3

**Parameters:** %1 = Extension indicating the type of error

%2 = Extension indicating the reference variable

%3 = Extension indicating the actual variable

**Explanation:** A checksum error has occurred in the NCK SPL. The file /_N_CST_DIR/_N_SAFE_SPF has subsequently been modified. The safe programmable logic (SPL) in the NCK may have been corrupted.

Parameter %1 provides more information about the nature of the modification:

- FILE_LENGTH: The file length has changed.
- FILE_CONTENT: The file content has changed.
- FILE_PROTECTED: Exiting the SPL setup phase has restricted access rights to the file, and these have been violated.

The following information is also displayed in the the alarm text:

- the value calculated as reference (file length, checksum of file content) (%2)
- the actual cyclically calculated value (%3).

**Reaction:** Alarm display.

**Remedy:** Check the file and the time of the last modification to the file. Reload the original file and start the monitoring system again with a PowerOn.

**Programm continuation:** Switch control OFF - ON.

## 27095 %1 SPL protection not activated

**Parameters:** %1 = Name of the component on which the protection is not activated (NCK or PLC)

**Explanation:** The protection features are not activated for the SPL. The setup phase of the SPL is not yet complete. No stop reaction (Stop D or E) was initiated on an error in data cross-comparison between NCK and PLC.

**Reaction:** Alarm display.

**Remedy:** - Remedy for NCK: Activate the protection features with MD11500 $MN_PREVENT_SYNACT_LOCK[0,1]. The number range of the synchronized action IDs used in the SPL must be entered in this MD.

- Remedy for PLC: Activate the protection features by setting the appropriate data bit in DB18.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27096 SPL start not allowed

**Explanation:** To start the SPL in the protected state (MD11500 $MN_PREVENT_SYNACT_LOCK[0,1] not equal 0), the Safety Integrated functionality must first be activated for at least one axis (via MD36901 $MA_SAFE_FUNCTION_ENABLE) and operated with an active drive. Moreover, at least one SGE/SGA of this axis must have been parameterized for an SPL interface. If these conditions are not met, it is only possible to operate SPL in the setup state.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Channel not ready.

**Remedy:** Deactivation of the SPL protection in MD11500 $MN_PREVENT_SYNACT_LOCK[0,1]
or
- Setup of the axis-specific Safety Integrated functionality and
- Parameterization of at least one SGE/SGA for a SPL interface and
- Activation of the associated drive object

**Programm continuation:** Switch control OFF - ON.

## 27097 SPL start not executed

**Explanation:** SPL start not executed after the time set in MD13310 $MN_SAFE_SPL_START_TIMEOUT elapsed.
This alarm can be masked with MD10096 $MN_SAFE_DIAGNOSIS_MASK, bit 1 = 1.

**Reaction:** Alarm display.

**Remedy:** Find the cause of the failure of the SPL to start. Possible causes may be:
- There is an NC or drive error (e.g. after encoder replacement, EMERGENCY STOP, PROFIsafe alarms)
- There is a syntax error in the SPL
- Safety Integrated alarm present (e.g. "Safe limit position overrun")
- Name or path of SPL for PROG_EVENT Start written incorrectly; make sure upper and lower cases are used correctly
- Simultaneous start of an ASUB and PROG_EVENT, parameterization MD 11602 $MN_ASUP_START_MASK (stop causes e.g. read-in disable)
- Problems when calling FB4/FC9

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27098 SPL commissioning phase terminated

**Explanation:** The SPL setup phase has just been terminated by changing MD11500 $MN_PREVENT_SYNACT_LOCK. After the next Power ON, file /_N_CST_DIR/_N_SAFE_SPF is subject to the monitoring mechanisms defined for the SPL (access protection, checksum calculation). Changes to the SPL can only be made in the unprotected mode.

**Reaction:** Alarm display.

**Remedy:** Perform a control Power ON. Check and document any changes to the logic in the SPL by means of an acceptance test.

**Programm continuation:** Switch control OFF - ON.

## 27099 Double assignment in SPL assignment MD %1[%2] - MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** Different applications have double assigned SPL inputs ($A_INSE) in the displayed machine data.
These could be:
- PROFIsafe communication
- F_DP communication
Possible machine data involved:
- MD10388 $MN_PROFISAFE_IN_ASSIGN
- MD13346 $MN_SAFE_RDP_ASSIGN

**Reaction:** Alarm display.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27100 At least one axis is not safely referenced

**Explanation:** There are two reasons for this alarm:
- the machine position of at least one of the axes monitored with SI has not yet been acknowledged by the user, or
- the machine position of at least one of the axes monitored with SI has not yet been verified through follow-up referencing.

Even if the axis is already referenced, there is no confirmation that referencing has supplied the correct result. For example, wrong results can occur if the axis was moved after the control was switched off, with the result that the standstill position saved prior to switching off is no longer correct. To make sure that this does not happen, the user must acknowledge the displayed actual position after the first referencing process.

When the user enable has first been set, follow-up referencing must be carried out each time the control is booted (with absolute encoders, this follow-up referencing is executed automatically). This procedure is carried out to verify the standstill position saved prior to switching off of the control.

Via the MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL (MD>=3), the alarm display can be set in such a way that an alarm is given for each axis individually which has not been safely referenced.

**Reaction:** Alarm display.

SGA "Axis safely referenced" is not set. SE will be switched off, if the actual safety position has not yet been confirmed by a user agreement. If the user agreement has been set, SE will remain active. The safe cams are calculated and output. However, their significance is limited as referencing has not been confirmed.

**Remedy:** Move all SI axes to known positions and change to "Referencing" mode. Check the positions on the machine displayed in the user confirmation field and set "User confirmation" via the selection/toggle key. If the user confirmation for the axes has already been set, reference the axes again.

Changing the user confirmation will be possible only in key switch position 3 or after password entry

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27101 Axis %1 difference in function safe operational stop, NCK: %2 drive: %3

**Parameters:** %1 = Axis name, spindle number
%2 = Monitoring status safe operating stop
%3 = Monitoring status safe operating stop

**Explanation:** During cross-check of result list 1, a difference was found between the NCK and drive monitoring channels in the status of safe operating stop monitoring.

Safe operating stop: Bit 0,1 in result list 1

Displayed monitoring status (NCK/drive (%2/%3)):
- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.

Alarm display.

A Stop F was triggered.

If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe inputs have switched to the same status in both monitoring channels within the permissible time tolerance.

For further diagnostics, the drive parameters r9710[0], r9710[1] and the servo trace signals "Result list 1 NCK" and "Result list 1 drive" can be used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27102 Axis %1 difference in function safe velocity %2, NCK: %3 drive: %4

**Parameters:** %1 = Axis name, spindle number

%2 = SG level for which the difference was determined

%3 = Monitoring status safe velocity

%4 = Monitoring status safe velocity

**Explanation:** During cross-check of result list 1, a difference was found between the NCK and drive monitoring channels in the status of safe velocity monitoring.

- Safe velocity 1: Bit 6, 7 in result list 1
- Safe velocity 2: Bit 8, 9 in result list 1
- Safe velocity 3: Bit 10, 11 in result list 1
- Safe velocity 4: Bit 12, 13 in result list 1

Displayed monitoring status (NCK/drive (%3/%4)):

- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.

Alarm display.

A Stop F was triggered.

If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe inputs have switched to the same status in both monitoring channels within the permissible time tolerance.

For further diagnostics, the drive parameters r9710[0], r9710[1] and the servo trace signals "Result list 1 NCK" and "Result list 1 drive" can be used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27103 Axis %1 difference in function safe limit position %2, NCK: %3 drive: %4

**Parameters:** %1 = Axis name, spindle number

%2 = Number of safe limit position

%3 = Monitoring status safe limit position

%4 = Monitoring status safe limit position

**Explanation:** During cross-check of result list 1, a difference was found between the NCK and drive monitoring channels in the status of safe limit position monitoring.

- Safe limit position 1: Bit 2, 3 in result list 1
- Safe limit position 2: Bit 4, 5 in result list 1

Displayed monitoring status (NCK/drive (%3/%4)):

- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.
Alarm display.
A Stop F was triggered.
If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe inputs have switched to the same status in both monitoring channels within the permissible time tolerance.
For further diagnostics, the drive parameters r9710[0], r9710[1] and the servo trace signals "Result list 1 NCK" and "Result list 1 drive" can be used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27104 Axis %1 difference in function safe cam plus %2, NCK: %3 drive: %4

**Parameters:** %1 = Axis name, spindle number
%2 = Cam number
%3 = Monitoring status safe cam plus
%4 = Monitoring status safe cam plus

**Explanation:** During cross-check of result list 2 ("Safe cams" function) and result list 3/4/5/6/7 ("Safe cam track" function), the status of safe cam plus monitoring was found to be different in the NCK and drive monitoring channels.

The following applies to the "Safe cams" function:

- Safe cam 1+: bit 0, 1 in result list 2
- Safe cam 2+: bit 4, 5 in result list 2
- Safe cam 3+: bit 8, 9 in result list 2
- Safe cam 4+: bit 12,13 in result list 2

The following applies to the "Safe cam track" function: (each of the result lists 3-7 contains 6 cam results)

- Safe cam 1+: bit 0, 1 in result list 3
- Safe cam 2+: bit 4, 5 in result list 3
- Safe cam 3+: bit 8, 9 in result list 3
- Safe cam 4+: bit 12,13 in result list 3
- Safe cam 5+: bit 16,17 in result list 3
- Safe cam 6+: bit 20,21 in result list 3
- Safe cam 7+: bit 0, 1 in result list 4
- Safe cam 8+: bit 4, 5 in result list 4
- Safe cam 9+: bit 8, 9 in result list 4
- Safe cam 10+: bit 12,13 in result list 4
- Safe cam 11+: bit 16,17 in result list 4
- Safe cam 12+: bit 20,21 in result list 4
- Safe cam 13+: bit 0, 1 in result list 5
- Safe cam 14+: bit 4, 5 in result list 5
- Safe cam 15+: bit 8, 9 in result list 5
- Safe cam 16+: bit 12,13 in result list 5
- Safe cam 17+: bit 16,17 in result list 5
- Safe cam 18+: bit 20,21 in result list 5
- Safe cam 19+: bit 0, 1 in result list 6
- Safe cam 20+: bit 4, 5 in result list 6
- Safe cam 21+: bit 8, 9 in result list 6
- Safe cam 22+: bit 12,13 in result list 6
- Safe cam 23+: bit 16,17 in result list 6
- Safe cam 24+: bit 20,21 in result list 6
- Safe cam 25+: bit 0, 1 in result list 7
- Safe cam 26+: bit 4, 5 in result list 7
- Safe cam 27+: bit 8, 9 in result list 7
- Safe cam 28+: bit 12,13 in result list 7
- Safe cam 29+: bit 16,17 in result list 7
- Safe cam 30+: bit 20,21 in result list 7

Displayed monitoring status (NCK/drive (%3/%4)):

- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.

Alarm display.

A Stop F was triggered.

If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe actual values are the same in both monitoring channels.

The drive parameters r9711[0,1] (diagnostics result list 2 [NCK, drive]) and r9735[0,1] / r9736[0,1] / r9737[0,1] / r9738[0,1] / r9739[0,1] (diagnostics result list 3/4/5/6/7 [NCK, drive]) can be used for further diagnostics.

A diagnostics is also possible using the servo trace signals "Result list 2/3/4/5/6/7 NCK" and "Result list 2/3/4/5/6/7 drive".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27105 Axis %1 difference in function safe cam minus %2, NCK: %3 drive: %4

**Parameters:**
%1 = Axis name, spindle number
%2 = Cam number
%3 = Monitoring status safe cam minus
%4 = Monitoring status safe cam minus

**Explanation:**
During cross-check of result list 2 ("Safe cams" function) and result list 3/4/5/6/7 ("Safe cam track" function), the status of safe cam minus monitoring was found to be different in the NCK and drive monitoring channels.
The following applies to the "Safe cams" function:
- Safe cam 1-: bit 2, 3 in result list 2
- Safe cam 2-: bit 6, 7 in result list 2
- Safe cam 3-: bit 10, 11 in result list 2
- Safe cam 4-: bit 14, 15 in result list 2

The following applies to the "Safe cam track" function: (each of result lists 3-7 contains 6 cam results)
- Safe cam 1-: bit 2, 3 in result list 3
- Safe cam 2-: bit 6, 7 in result list 3
- Safe cam 3-: bit 10,11 in result list 3
- Safe cam 4-: bit 14,15 in result list 3
- Safe cam 5-: bit 18,19 in result list 3
- Safe cam 6-: bit 22,23 in result list 3
- Safe cam 7-: bit 2, 3 in result list 4
- Safe cam 8-: bit 6, 7 in result list 4
- Safe cam 9-: bit 10,11 in result list 4
- Safe cam 10-: bit 14,15 in result list 4
- Safe cam 11-: bit 18,19 in result list 4
- Safe cam 12-: bit 22,23 in result list 4
- Safe cam 13-: bit 2, 3 in result list 5
- Safe cam 14-: bit 6, 7 in result list 5
- Safe cam 15-: bit 10,11 in result list 5
- Safe cam 16-: bit 14,15 in result list 5
- Safe cam 17-: bit 18,19 in result list 5
- Safe cam 18-: bit 22,23 in result list 5
- Safe cam 19-: bit 2, 3 in result list 6
- Safe cam 20-: bit 6, 7 in result list 6
- Safe cam 21-: bit 10,11 in result list 6
- Safe cam 22-: bit 14,15 in result list 6
- Safe cam 23-: bit 18,19 in result list 6
- Safe cam 24-: bit 22,23 in result list 6
- Safe cam 25-: bit 2, 3 in result list 7
- Safe cam 26-: bit 6, 7 in result list 7
- Safe cam 27-: bit 10,11 in result list 7
- Safe cam 28-: bit 14,15 in result list 7
- Safe cam 29-: bit 18,19 in result list 7
- Safe cam 30-: bit 22,23 in result list 7

Displayed monitoring status (NCK/drive (%3/%4)):
- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.
Alarm display.
A Stop F was triggered.
If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe actual values are the same in both monitoring channels.
The drive parameters r9711[0,1] (diagnostics result list 2 [NCK, drive]) and r9735[0,1] / r9736[0,1] / r9737[0,1] / r9738[0,1] / r9739[0,1] (diagnostics result list 3/4/5/6/7 [NCK, drive]) can be used for further diagnostics.
A diagnostics is also possible using the servo trace signals "Result list 2/3/4/5/6/7 NCK" and "Result list 2/3/4/5/6/7 drive".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27106 Axis %1 difference in function safe velocity nx, NCK: %2 drive: %3

**Parameters:** %1 = Axis name, spindle number
%2 = Monitoring status safe velocity nx
%3 = Monitoring status safe velocity nx

**Explanation:** During cross-check of result list 2, a difference was found between the NCK and drive monitoring channels in the status of safe velocity nx monitoring.
- Safe velocity nx+: Bit 16, 17 in result list 2
- Safe velocity nx-: Bit 18, 19 in result list 2
Displayed monitoring status (NCK/drive (%2/%3)):
- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.
Alarm display.
A Stop F was triggered.
If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe actual values in both monitoring channels are the same.
For further diagnostics the drive parameters r9711[0,1] and the servo trace signals "Result list 2 NCK" and "Result list 2 drive" can be used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27107 Axis %1 difference in function cam modulo monitoring, NCK: %2 drive: %3

**Parameters:** %1 = Axis name, spindle number
%2 = Monitoring status safe cam modulo range
%3 = Monitoring status safe cam modulo range

**Explanation:** During cross-check of result list 2, a difference was found between the NCK and drive monitoring channels in the status of cam modulo range monitoring.
Safe cam modulo range: Bit 20, 21 in result list 2
Displayed monitoring status (NCK/drive (%2/%3)):
- OFF = Monitoring is inactive in this monitoring channel
- OK = Monitoring is active in this monitoring channel, limit values are not violated
- L+ = Monitoring is active in this monitoring channel, upper limit exceeded
- L- = Monitoring is active in this monitoring channel, lower limit exceeded

**Reaction:** NC Start disable in this channel.
Alarm display.
A Stop F was triggered.
If safe monitoring was active, STOP B was also triggered automatically. In this case, a power OFF/ON of the control will be required.

**Remedy:** Check whether the safe actual values in both monitoring channels are the same.
For further diagnostics the drive parameters r9711[0,1] and the servo trace signals "Result list 2 NCK" and "Result list 2 drive" can be used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27110 Axis %1 fault during data transmission index %2.

**Parameters:** %1 = Axis name, spindle number
%2 = Index in data cross-check.

**Explanation:** Faulty communication between NCK and drive caused that data cross-check of data and indicated index could not be executed three times in a row.

**Reaction:** Alarm display.
In addition, a Stop F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024.
Alarm 27001 with error code 0 can be avoided by alarm reduction (MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** Check the connections between NCK and drive
Check the configuration of the PROFIBUS telegram (e.g. SI slot configured)
Check the assignment NCK-SI axis to SI slot (MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS)
Check the assignment of the telegram configuration for the slave OM
Verify compliance with the EMC guidelines
Replace the hardware.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27111 Axis %1 fault during encoder evaluation of the safe actual value.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The redundantly determined safe actual value does not match the fine resolution actual value of the same encoder.

**Reaction:** Alarm display.
In addition, a Stop F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024.
Alarm 27001 with error code 0 can be avoided by alarm reduction (MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** Check encoder mounting
Check encoder parameterization
Check the NCK-MDs MD36916 $MA_SAFE_ENC_IS_LINEAR, MD36917 $MA_SAFE_ENC_GRID_POINT_DIST, MD36918 $MA_SAFE_ENC_RESOL, and the drive parameter field r0979
With the DRIVE-CLiQ encoder, additionally check the NCK-MDs MD36924 $MA_SAFE_ENC_NUM_BITS, MD36929 $MA_SAFE_ENC_CONF, and drive parameter r047x
With the DRIVE-CLiQ linear encoder, additionally check the NCK-MDs MD36909 $MA_SAFE_ENC_MEAS_STEPS_RESOL, MD36913 $MA_SAFE_ENC_MEAS_STEPS_POS1, and drive parameter r0469/r0473
Verify compliance with the EMC guidelines
Replace the hardware

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27112 Axis %1 CRC error of the safe actual value.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** An error has been detected on verifying data consistency of the safe actual value (CRC).
Possible causes for the persistence of the alarm:
- The NCK monitoring channel for safe motion monitoring is not communicating with the monitoring channel of the assigned drive, but with that of another axis.
- Error in the encoder parameterization
- Incorrect encoder evaluation type
- Faults in communication between NCK and drive

**Reaction:** Alarm display.
In addition, a Stop F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024.
Alarm 27001 with error code 0 can be avoided by alarm reduction (MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** Check the correctness of the assignment of the drive in the hardware configuration, MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS, and p0978.
Check encoder mounting
Check encoder parameterization
Check the NCK-MDs MD36916 $MA_SAFE_ENC_IS_LINEAR, MD36917 $MA_SAFE_ENC_GRID_POINT_DIST, MD36918 $MA_SAFE_ENC_RESOL, and the drive parameter field r0979
With the DRIVE-CLiQ encoder, additionally check the NCK-MDs MD36924 $MA_SAFE_ENC_NUM_BITS, MD36929 $MA_SAFE_ENC_CONF, and the drive parameter r047x
With the DRIVE-CLiQ linear encoder, additionally check the NCK-MDs MD36909 $MA_SAFE_ENC_MEAS_STEPS_RESOL, MD36913 $MA_SAFE_ENC_MEAS_STEPS_POS1 and drive parameters r0469/r0473
Check whether the encoder evaluation has been replaced (SMI, SMC, SME)
Check whether the encoder evaluation type has been replaced (SMx, DRIVE-CLiQ encoder)
Check the encoder identifier in MD36928 $MA_SAFE_ENC_IDENT
Verify compliance with the EMC guidelines.
Replace the hardware.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27113 Axis %1 hardware encoder error of the safe actual value.

**Parameters:** %1 = Axis name, spindle number

**Explanation:** Encoder evaluation outputs a hardware fault.
The following reasons are possible:
- Dirt in the optical encoder evaluation
- Signal transfer problems
- Missing encoder serial number after replacing an encoder (concerns encoders with serial number, built-in motors, or third-party motors)

**Reaction:** Alarm display.
In addition, a Stop F is triggered that may cause follow-up alarm 27001 with error code 0 as well as alarms 27023 and 27024.
Alarm 27001 with error code 0 can be avoided by alarm reduction (MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL higher or equal to 1).

**Remedy:** After adjusting the encoder, initiate transfer of the serial number (applies to absolute encoders only)
Verify compliance with the EMC guidelines
Replace the encoder hardware

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27124 Stop A triggered at least in 1 axis

**Explanation:** This is an informational alarm indicating that Stop A has been triggered in at least 1 axis and Power On is required for alarm acknowledgment.
This alarm occurs if the alarm priority function was activated in MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL.

**Reaction:** Interface signals are set.
Alarm display.
Trigger a "Pulse suppression" for the affected axis.

**Remedy:** Find the error cause by means of further alarm messages.

**Programm continuation:** Switch control OFF - ON.

## 27132 Axis %1 checksum group error safe monitors. Confirmation and acceptance test required!

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The relevant MDs for parameterizing the axis-specific safety functionality are protected by a checksum. The alarm indicates that at least one axis-specific checksum no longer matches the stored checksum, which means that an item of data has either been changed without authorization or is defective.
This alarm is displayed during the setup phase (SPL setup mode active) as an axis-specific group alarm for checksum alarms 27032, 27035, and 27060. In MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL, the alarm display can be reduced still further so that only one alarm is displayed for all axes (global group alarm 27135).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check MDs. Have checksums recalculated. Check hardware components and drive assignments, repeat acceptance of safety functions (motion monitors).

**Programm continuation:** Switch control OFF - ON.

## 27135 Checksum group error safe monitors on at least one axis. Confirmation and acceptance test required!

**Explanation:** The relevant MDs for parameterizing the axis-specific safety functionality are protected by a checksum. The alarm indicates that on at least one axis at least one axis-specific checksum no longer matches the stored checksum, which means that an item of data has either been changed without authorization or is defective.
This alarm is displayed during the setup phase (SPL setup mode active) as a global group alarm for the axis-specific checksum alarm 27132. This alarm reduction is parameterized in MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL (100s digit set).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check MDs. Have checksums recalculated and confirm. Check hardware components and drive assignments, repeat acceptance of safety functions (motion monitors).

**Programm continuation:** Switch control OFF - ON.

## 27140 Waiting for motor module of at least one axis.

**Explanation:** Alarm during startup as long as the motor module of at least one axis is not yet ready for SI.

Communication with the motor module during startup has not yet been activated; the safety functions of at least one axis are not yet available.

In MD10094 $MN_SAFE_ALARM_SUPPRESS_LEVEL (MD<3), the alarm display can be set to display for each axis individually whether communication has been activated.

The alarm persistently occurs during startup if at least one drive is not communicating. Otherwise, the alarm only briefly appears and is cleared automatically.

Possible causes of the persistent occurrence of the alarm:

- The safe motion monitoring functions are only activated in MD36901 $MA_SAFE_FUNCTION_ENABLE, but not in the corresponding parameter of the associated drive (p9501).

- The assignment axis -> drive in MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS or p0978 is incorrect.

- PROFIBUS connector fallen out.

**Reaction:** Interface signals are set.

Alarm display.

**Remedy:** Check the correctness of parameter p9501 or the assignment of the drives in MD36906 $MA_SAFE_CTRLOUT_MODULE_NR, MD 10393 $MN_SAFE_DRIVE_LOGIC_ADDRESS, p0978.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27200 PROFIsafe: cycle time %1 [ms] too long

**Parameters:** %1 = Parameterized cycle time

**Explanation:** The PROFIsafe communication cycle time resulting from MD10098 $MN_PROFISAFE_IPO_TIME_RATIO and MD10071 $MN_IPO_CYCLE_TIME exceeds the permissible limit value (25 ms).

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Adapt cycle time via MD10098 $MN_PROFISAFE_IPO_TIME_RATIO or correct the reduction of the IPO cycle.

**Programm continuation:** Switch control OFF - ON.

## 27201 PROFIsafe: MD %1[%2]: bus segment %3 error

**Parameters:** %1 = MD name

%2 = MD array index

%3 = Parameterized bus segment

**Explanation:** An incorrect bus segment was entered in the specified machine data. The value must be 5.

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Correct specified MD.

**Programm continuation:** Switch control OFF - ON.

## 27202 PROFIsafe: MD %1[%2]: address %3 error

**Parameters:** %1 = MD name
%2 = MD array index
%3 = Parameterized PROFIsafe address

**Explanation:** The PROFIsafe address parameterized in the stated MD is incorrect. The value must be greater than 0.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct specified MD.

**Programm continuation:** Switch control OFF - ON.

## 27203 PROFIsafe: MD %1[%2]: SPL assignment error

**Parameters:** %1 = MD name
%2 = MD array index

**Explanation:** The SPL interface in the displayed MD is incorrect. Possible causes:
- Bit values greater than those defined for the SPL interface (bit value > maximum bit value)
- Number of bits greater than number of bits per slot (upper bit value - lower bit value > 32)
- Number of bits too large for this PROFIsafe module (upper bit value - lower bit value + 1 > 8)
- No SPL assignment parameterized (both bit values equal to zero)
- Incorrect SPL assignment (bit value equal to zero)

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct specified MD.

**Programm continuation:** Switch control OFF - ON.

## 27204 PROFIsafe: double assignment MD %1[%2] - MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** A duplicate assignment has been parameterized illegally in the specified machine data:
Multiple inputs of PROFIsafe modules parameterized on the same $A_INSE. MDs affected:
- MD10388 $MN_PROFISAFE_IN_ASSIGN
Multiple $A_OUTSE parameterized on the same output of a PROFIsafe module. MDs affected:
- MD13301 $MN_PROFISAFE_OUT_FILTER
Multiple substitute values of passive SPL connections parameterized on the same $A_INSE. MDs affected:
- MD10388 $MN_PROFISAFE_IN_ASSIGN

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27205 PROFIsafe: number of signals in MD %1 [%2] <> MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** The parameterized number or the signals used must be the same in both machine data.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27206 PROFIsafe: MD %1[%2] maximum number of F user data (%3 bits) exceeded.

**Parameters:** %1 = MD name
%2 = MD array index for MD name
%3 = Maximum F user data bits.

**Explanation:** The parameterized data indicated in the machine data are outside the F user data range of the F module.
Note
When machine data MD10386/10387 $MN_PROFISAFE_IN/OUT_ADDRESS is displayed, the sub slot address parameterized in it will exceed the F user data range of the F module.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct specified MD.

**Programm continuation:** Switch control OFF - ON.

## 27207 PROFIsafe: MD %1[%2] max. sub slot number: %3 exceeded

**Parameters:** %1 = MD name
%2 = MD array index for MD name
%3 = Max. number of sub slots

**Explanation:** The sub slot parameterized in the indicated machine data exceeds the max. permissible number of sub slots per PROFIsafe module.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Reduce the number of sub slots by changing the splitting of F user data of the PROFIsafe module.

**Programm continuation:** Switch control OFF - ON.

## 27208 PROFIsafe: MD %1[%2]: max. sub-slot address %3 exceeded.

**Parameters:** %1 = MD name
%2 = MD array index
%3 = Maximum sub-slot address.

**Explanation:** A sub-slot address was entered in the MD that is too high. The entered value must not exceed the displayed maximum sub-slot address.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct specified MD.

**Programm continuation:** Switch control OFF - ON.

## 27220 PROFIsafe: Number of NCK F modules (%1) <> Number of S7 F modules (%2)

**Parameters:** %1 = Number of parameterized NCK F modules
%2 = Number of parameterized S7 F modules

**Explanation:** The number of F modules parameterized via the NCK machine data MD10386/10387 $MN_PROFISAFE_IN/OUT_ADDRESS is:
- Greater than the number of PROFIBUS slaves in the S7 PROFIBUS configuration
- Smaller than the number of F modules in the S7 PROFIBUS configuration
- Greater than the number of F modules in the S7 PROFIBUS configuration

If the specified number of S7-F modules = 0, none of the configured F modules configured in the S7 PROFIBUS configuration were found.

In most cases, the reason for this alarm is an error in the parameterization of the PROFIsafe master address.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the F parameterization in MD10386/10387 $MN_PROFISAFE_IN/OUT_ADDRESS.
Check the F configuration in the S7 PROFIBUS configuration.
Check the parameterized PROFIsafe master address in MD10385 $MN_PROFISAFE_MASTER_ADDRESS and in the S7 PROFIBUS configuration.

**Programm continuation:** Switch control OFF - ON.

## 27221 PROFIsafe: NCK F module MD %1[%2] unknown

**Parameters:** %1 = MD name
%2 = MD array index

**Explanation:** The F module parameterized in the specified machine data is unknown under this PROFIsafe address in the S7 PROFIBUS configuration.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the PROFIsafe addresses in the NCK MD and S7 PROFIBUS configuration.

**Programm continuation:** Switch control OFF - ON.

## 27222 PROFIsafe: S7 F module PROFIsafe address %1 unknown

**Parameters:** %1 = PROFIsafe address

**Explanation:** The F module with the specified PROFIsafe address has not been parameterized as an F module in the NCK MD.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the S7 PROFIBUS configuration. Enter the module in the NCK MD.

**Programm continuation:** Switch control OFF - ON.

## 27223 PROFIsafe: NCK F module MD %1[%2] is not a %3 module

**Parameters:** %1 = MD name
%2 = MD array index
%3 = Module type

**Explanation:** The F module parameterized in the specified NCK MD has not been entered as an input/output module in the S7 PROFIBUS configuration.
Displayed incorrect module type (%3):
- INPUT: NCK F parameterization expects INPUT module
- OUTPUT: NCK F parameterization expects OUTPUT module
- IN/OUT: NCK F parameterization expects INPUT or OUTPUT module

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the module in the S7 PROFIBUS configuration.

**Programm continuation:** Switch control OFF - ON.

## 27224 PROFIsafe: F module MD %1[%2] - MD %3[%4]: double assignment of PROFIsafe address

**Parameters:** %1 = MD name 1
%2 = MD array index 1
%3 = MD name 2
%4 = MD array index 2

**Explanation:** In the NCK MD or in the S7 F parameters, the same PROFIsafe address has been parameterized for the F modules parameterized in the specified machine data. Therefore, no clear communication link is possible between F master and F slave.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check and correct the S7 F parameterization and NCK MD.

**Programm continuation:** Switch control OFF - ON.

## 27225 PROFIsafe: slave %1, configuration error %2

**Parameters:** %1 = PROFIBUS slave address
%2 = Configuration error

**Explanation:** An error occurred during evaluation of the S7 PROFIBUS configuration for the specified slave. This configuration error is further specified in alarm parameter %2:
- PRM header: The PRM telegram for this slave could not be interpreted unequivocally.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check and correct the S7 PROFIBUS configuration.

**Programm continuation:** Switch control OFF - ON.

## 27240 PROFIsafe: PLC not running up, info: %1

**Parameters:** %1 = Current information from the PROFIsafe ramp-up NCK-PLC

**Explanation:** No PROFIsafe configuration is available to the NCK after the time set in MD10120 $MN_PLC_RUNNINGUP_TIMEOUT.
The current status of the PROFIsafe startup NCK PLC is displayed in the alarm text.
- 0 = Configuration not available; interface with the NCK is not supported by FB15.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Increase MD10120 $MN_PLC_RUNNINGUP_TIMEOUT
- Check the PLC operating status.
- Check the PLC operating system software version.
- Delete the F parameterization in the NCK MD.

**Programm continuation:** Switch control OFF - ON.

## 27241 PROFIsafe: different version, NCK: %1, PLC: %2, (%3)

**Parameters:** %1 = Interface version of the NCK
%2 = Interface version of the PLC
%3 = Internal identifier of interface

**Explanation:** The NCK and PLC components have different implementations of a required interface. The F communication cannot be initialized.
The alarm text contains the following information:
- version of the interface on the NCK side (%1)
- version of the interface on the PLC side (%2)
- internal identifier of the interface (%3)

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check the PLC operating system and NCK software versions.
- Upgrade the PLC operating system.
- Delete the NCK F parameterization.

**Programm continuation:** Switch control OFF - ON.

## 27242 PROFIsafe: F module %1, %2 faulty; error code %3, %4

**Parameters:** %1 = PROFIsafe address
%2 = Incorrect F parameter
%3 = Error information
%4 = Error information

**Explanation:** An error was detected during the evaluation of the F parameters.
%2 = CRC1: CRC specified by F parameters faulty.
%2 = F_WD_Timeout: The monitoring time parameterized in Step 7 is too short for the PROFIsafe cycle time set in MD $MN_PROFISAFE_IPO_TIME_RATIO.
%2 = F_Data_Len: The defined length of the message frame is incorrect.
%2 = F_CRC_Seed: The parameterized type of CRC calculation is not supported.
%2 = CRC2_Len: The length of the CRC message frame is incorrect.
%2 = PS_Version: Error in parameterized PROFIsafe profile version
%2 = Param: Error in internal parameter structure
%2 = Unknown(x): Error code of PLC
%3 = Further information about the incorrect parameters
%4 = Further information about the incorrect parameters

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Depending on the cause of error stated in alarm parameter %2, the following remedy is necessary:
%2 = CRC1: PLC overall reset, reload the S7 F configuration.
%2 = F_WD_Timeout: Reparameterize the PROFIsafe cycle time or F monitoring time.
%2 = F_Data_Len: Change configuration of the module. Reload the S7 F configuration.
%2 = F_CRC_Seed: Change configuration of the module. Reload the S7 F configuration.
%2 = CRC2_Len: Change configuration of the module. Reload the S7 F configuration.
%2 = PS_Version: Change configuration of the module. Reload the S7 F configuration.
%2 = Param: PLC overall reset, reload the S7 F configuration.
%2 = Unknown: PLC overall reset, reload the S7 F configuration.

**Programm continuation:** Switch control OFF - ON.

## 27250 PROFIsafe: configuration in DP M changed; error code %1 - %2

**Parameters:** %1 = NCK project number
%2 = Current PLC project number

**Explanation:** The DP master shows a modified S7 PROFIBUS configuration. Error-free operation can no longer be guaranteed.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Communication with F slaves is finished.
A STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) is triggered on all axes with safety functionality.

**Remedy:** Restart the PLC/NCK.

**Programm continuation:** Switch control OFF - ON.

## 27251 PROFIsafe: F module %1, %2 reports error %3

**Parameters:** %1 = PROFIsafe address or name
%2 = Reporting component (master/slave)
%3 = Error code

**Explanation:** Communication is faulty between the F master and the stated F module.
In %2, the component is indicated that revealed the error:
- Master: Error was revealed in the F master.
- Slave : Error was revealed in the F slave.

If the alarm was revealed in the "F slave," the following error codes (%3) are possible:
- CN: An error was revealed in the telegram sequence
- CRC: A CRC error was revealed
- TO: The parameterized commmunication timeout was exceeded or the PROFIsafe address was set incorrectly
- LBF: Communication error, telegram mirroring

If the alarm was revealed in the "F master," the following error identifiers (%3) are possible:
- CN: An error was revealed in the telegram sequence
- CRC: A CRC error was revealed
- TO: The parameterized communication timeout was exceeded
- EA: F slave transmits empty telegrams
- TF: Timer overflow

All the error codes stated can be displayed combined, depending on the fault profile.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality. Failsafe values are activated for the stated module.

**Remedy:** Check the I/O bus. Restart F slave modules. Restart the NCK/PLC.
Check the parameterized logical basic addresses (note direct and indirect addressing) for other uses in other parts of the PLC configuration.
Other possibilities for diagnostics:
- Prevent execution of the user program
- General reset of PLC and load basic program from the toolbox

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27252 PROFIsafe: slave/device %1, bus %2, sign-of-life error

**Parameters:** %1 = Slave/device identifier
%2 = Bus to which the slave/device is connected.

**Explanation:** The specified DP slave or the PN device no longer communicates with the master/controller.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.
Stop of the PROFIsafe drivers affected. Stopped PROFIsafe driver of F modules of type F-DI or F-DIO output failsafe values (0) toward the SPL as F useful data.

**Remedy:** Check the DP/PN wiring. Restart F modules. Restart the NCK/PLC.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27253 PROFIsafe: communication fault F master component %1, error %2

**Parameters:** %1 = Error component
%2 = Error code

**Explanation:** The F master signals that communication between the NCK and PLC is no longer working.
In %1, the incorrect component is stated:
- PLC: The PLC no longer executes the OB40 request.
- PLC-DPM: DP master is no longer in OPERATE status.

The error code stated in %2 provides further information about the cause:
- 1,2,4: PLC processing of the OB40 not finished.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.
Stop of the PROFIsafe drivers affected. Stopped PROFIsafe driver of F modules of type F-DI or F-DIO output failsafe values (0) toward the SPL as F useful data.

**Remedy:** Extend the PROFIsafe cycle time via MD10098 $MN_PROFISAFE_IPO_TIME_RATIO.

**Programm continuation:** Switch control OFF - ON.

## 27254 PROFIsafe: F module %1, error on channel %2; %3<ALSI>

**Parameters:** %1 = PROFIsafe address or name
%2 = Channel type, channel number
%3 = System variable array index extension

**Explanation:** The F module signals that an error occurred in the interface of the specified channel.
This alarm is only triggered for ET200S F modules.
The channel type (input or output channel) is indicated by the abbreviations IN and OUT in %2.
A specific alarm message can be programmed for each of the system variables on the HMI via parameter %3:
- 1....64: Error in system variables $A_INSE[1...64]
- 65...128: Error in system variables $A_OUTSE[1...64]
- 321...448: Error in system variables $A_INSE[65...192]
- 449...576: Error in system variables $A_OUTSE[65...192]
- -1: Error in an input or output channel for which there is no SPL assignment

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.

**Remedy:** Check wiring. Wiring OK: replace F module.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27255 PROFIsafe: F module %1, general error

**Parameters:** %1 = PROFIsafe address or name

**Explanation:** The specified PROFIsafe module signals an error. A more exact specification of the error's cause cannot be made without further assistance.
This alarm is triggered for all types of PROFIsafe slaves.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.

**Remedy:** Check wiring.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27256 PROFIsafe: Current cycle time %1 [ms]> parameterized cycle time

**Parameters:** %1 = Current PROFIsafe communication cycle time

**Explanation:** The current PROFIsafe communication cycle time is greater than the value set via MD10098 $MN_PROFISAFE_IPO_TIME_RATIO. The parameterized PROFIsafe communication cycle time is continually exceeded on the PLC side.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.

**Remedy:** Adapt cycle time via MD10098 $MN_PROFISAFE_IPO_TIME_RATIO.
At least the value displayed in the alarm text must be set.
The set cycle time affects the runtime load of the PLC module. This also has to be taken into consideration when making the setting.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27257 PROFIsafe: %1 %2 reports system error %3 (%4)

**Parameters:** %1 = Type of communication
%2 = PROFIsafe address or name of the F module
%3 = Error code
%4 = Component

**Explanation:** A system error has been detected in the PROFIsafe communication. Depending on the error, the relevant PROFIsafe driver or the entire PROFIsafe communication will be stopped.
For the communication type (%1), the following displays are possible:
- F module
- SPL
One of the following F components (%2) may be affected:
- PROFIsafe address or name of the affected F module (with communication type = F module)
- "-" (with communication type SPL)
One of the following error causes is possible (see error code %3):
- SF: Asynchronous error state (StateFault)
- SP: No update of the SPL input/output data (SPL I/O communications)
The error codes stated may also be displayed combined, depending on the fault profile.
One of the following components (%4) may be affected:
- NCK
- PLC

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) triggered on all axes with safety functionality.
Stop of the affected PROFIsafe drivers. Stopped PROFIsafe drivers of F modules of type F-DI or F-DIO output failsafe values (0) as F user data to the SPL.

**Remedy:** Power OFF/ON of the control. If the error occurs again, inform the service department.

**Programm continuation:** Switch control OFF - ON.

## 27299 PROFIsafe: Diagnostics %1 %2 %3 %4

**Parameters:** %1 = Error code 1
%2 = Error code 2
%3 = Error code 3
%4 = Error code 4

**Explanation:** Error in PROFIsafe configuration.
The alarm text states the component (PLC or NCK) that detected the error.
**Reaction:** Alarm display.
**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 27300 F_DP: Cycle time %1 [ms] is too long

**Parameters:** %1 = Parameterized cycle time
**Explanation:** The F_DP communication cycle time resulting from MD13320 $MN_SAFE_SRDP_IPO_TIME_RATIO and MD10071 $MN_IPO_CYCLE_TIME exceeds the permissible limit value of 250ms.
**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Correct cycle time via MD13320 $MN_SAFE_SRDP_IPO_TIME_RATIO and/or MD10071 $MN_IPO_CYCLE_TIME
**Programm continuation:** Switch control OFF - ON.

## 27301 F_DP: MD %1[%2]: SPL interface faulty

**Parameters:** %1 = MD name
%2 = MD array index
**Explanation:** The SPL interface in the displayed MD is incorrect: Possible causes:
- Bit values greater than those defined for the SPL interface (bit value > maximum bit value)
- Number of bits too large (upper bit value - lower bit value > 16)
- No SPL assignment parameterized (both bit values equal to zero)
- Incorrect SPL assignment (bit value equals zero)

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Correct specified MD.
**Programm continuation:** Switch control OFF - ON.

## 27302 F_DP: Double assignment MD %1[%2] - MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** An invalid double assignment has been parameterized in the stated MD:
SPL inputs ($A_INSE) are multiply occupied by F_DP communication. Relevant MD:
- MD13346 $MN_SAFE_RDP_ASSIGN:
F user data of an F_SENDDP are multiply occupied by sub-slots. Relevant MD:
- MD13337 $MN_SAFE_SDP_FILTER
Logical base addresses are multiply occupied by different SPL connections. Relevant MD:
- MD13334 $MN_SAFE_SDP_LADDR, MD13344 $MN_SAFE_RDP_LADDR
Connection numbers are multiply occupied by different SPL connections. Relevant MD:
- MD13333 $MN_SAFE_SDP_CONNECTION_NR, MD13343 $MN_SAFE_RDP_CONNECTION_NR
Parameter DP_DP_ID is multiply occupied by different SPL connections. Relevant MD:
- MD13331 $MN_SAFE_SDP_ID, MD13341 $MN_SAFE_RDP_ID

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27303 F_DP: Number of signals in MD %1 [%2] <> MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** Different numbers of F user data signals have been parameterized in machine data MD13336/13346 $MN_SAFE_SDP/RDP_ASSIGN, MD13337/13347 $MN_SAFE_SDP/RDP_FILTER.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27305 F_DP: Parameter MD %1 [%2] <> MD %3[%4]

**Parameters:** %1 = MD name 1
%2 = MD array index for MD name 1
%3 = MD name 2
%4 = MD array index for MD name 2

**Explanation:** An SPL connection has been parameterized with multiple SPL interfaces (sub-slots), in which different values have been entered in the F_DP communication parameters or the SPL connection number (%1 and %3).
Note:
SPL interfaces (sub-slots) of an SPL connection are characterized by equal values for:
- F_DP communication parameter
- SPL connection number
The following NCK machine data may be affected:
- MD13334/13344 $MN_SAFE_SDP/RDP_LADDR or
- MD13335/13345 $MN_SAFE_SDP/RDP_TIMEOUT or
- MD13333/13343 $MN_SAFE_SDP/RDP_CONNECTION_NR
- MD13338/13348 $MN_SAFE_SDP/RDP_ERR_REAC
- MD13349 $MN_SAFE_RDP_SUBS

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the stated MD.

**Programm continuation:** Switch control OFF - ON.

## 27306 F_DP: Maximum number of active SPL connections (%1) exceeded for %2.

**Parameters:** %1 = Maximum possible number of SPL connections
%2 = Type of communication

**Explanation:** More than the permissible number of SPL connections, marked by different identifiers (MD13331/13341 $MN_SAFE_SDP/RDP_ID), have been parameterized in the active parameter data sets for the specified communication type (F_SENDDP/FRECVDP).

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the identifiers of the active SPL connections or deactivate SPL connections (MD13330/13340 $MN_SAFE_SDP/RDP_ENABLE_MASK).
Set option for expanded number of connections.

**Programm continuation:** Switch control OFF - ON.

## 27350 F_DP: %1 communication, connection %2 reports error %3

**Parameters:** %1 = Type of communication
%2 = Name or DP_DP_ID of the communication relationship
%3 = Error code

**Explanation:** The F_DP communication with the external communication partner is faulty, and the programmed error response is $A_FSDP_/FRDP_ERR_REAC = 0 or 1.
The following displays are possible for the communication type (%1):
- F_SENDDP
- F_RECVDP
The name or the DP_DP_ID (identifier) of the SPL connection is displayed as the connection (%2).
One of the following causes of the error is possible (see error code %3).
- SN: An error has been detected in the telegram sequence.
- CRC: A CRC error has been detected.
- TO: The parameterized communication timeout was exceeded.
All the error codes stated may also be displayed combined, depending on the fault profile.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
1. F_SENDDP/F_RECVDP: system variable $A_FSDP/FRDP_ERROR = TRUE
2. F_SENDDP/F_RECVDP: system variable $A_FSDP/FRDP_DIAG <> 0
3. F_RECVDP: system variable $A_FRDP_ACK_REQ = TRUE
4. F_RECVDP: Output of the substitute values defined in system variable $A_FRDP_SUBS
5. An alarm and Stop D/E are also triggered with the programmed error reaction $A_FSDP_/FRDP_ERR_REAC = 0

**Remedy:** Check the PROFIBUS communication and the communication partner.
Check the parameterized logical basic addresses (note direct and indirect addressing) for other uses in other parts of the PLC configuration.
Other possibilities for diagnostics:
- Prevent execution of the user program
- General reset of PLC and load basic program from the toolbox
Note:
A user acknowledgment via DB18.FRDP_ACK_REI only acknowledges F_DP communication. The alarm is still displayed and must be acknowledged separately via NC RESET.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27351 F_DP: %1 communication, connection %2 reports error %3

**Parameters:** %1 = Type of communication
%2 = Name or DP_DP_ID of the SPL connection
%3 = Error code

**Explanation:** The F_DP communication with the external communication partner is faulty, and the programmed error reaction is $A_FSDP_/FRDP_ERR_REAC = 2 (alarm, display only).
The following displays are possible for the communication type (%1):
- F_SENDDP
- F_RECVDP
The name or the DP_DP_ID (identifier) of the F_DP communication link is displayed as the connection (%2).
One of the following causes of the error is possible (see error code %3).
- SN: An error has been detected in the telegram sequence.
- CRC: A CRC error has been detected.
- TO: The parameterized communication timeout was exceeded.
All the error codes stated may also be displayed combined, depending on the fault profile.

**Reaction:** Alarm display.
1. F_SENDDP/F_RECVDP: system variable $A_FSDP/FRDP_ERROR = TRUE
2. F_SENDDP/F_RECVDP: system variable $A_FSDP/FRDP_DIAG <> 0
3. F_RECVDP: system variable $A_FRDP_ACK_REQ = TRUE
4. F_RECVDP: Output of the substitute values defined in system variable $A_FRDP_SUBS

**Remedy:** Check the PROFIBUS communication and the communication partner
Check the parameterized logical basic addresses (note direct and indirect addressing) for other uses in other parts of the PLC configuration.
Other possibilities for diagnostics:
- Prevent execution of the user program
- General reset of PLC and load basic program from the toolbox
User acknowledgment via DB18.FRDP_ACK_REI or NC-RESET

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27352 F_DP: Communication error %1, error %2

**Parameters:** %1 = Error component (NCK/PLC)
%2 = Error code

**Explanation:** Communication between the NCK and PLC is no longer working.
Faulty component on which the communication error occurred (%1):
- PLC: The PLC was not able to process the OB40 request for F_DP communication within the maximum monitoring time of 500ms.
The following cause of error is possible (see error code %2):
- <> 0: PLC execution of OB40 not completed.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.
Processing stop of F_DP communication is triggered.
Stopped SPL connections of type F_RECVDP output failsafe values (0) towards SPL as F useful data.

**Remedy:** Check and, if necessary, increase the F_DP cycle time.

**Programm continuation:** Switch control OFF - ON.

## 27353 F_DP: Current cycle time %1 [ms] > parameterized cycle time

**Parameters:** %1 = Current F_DP communication cycle time

**Explanation:** The current F_DP communication cycle time is greater than the value set via MD13320 $MN_SAFE_SRDP_IPO_TIME_RATIO. The parameterized communication cycle time is continually exceeded on the PLC side.

**Reaction:** Mode group not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Trigger a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.

**Remedy:** Adapt cycle time via MD13320 $MN_SAFE_SRDP_IPO_TIME_RATIO.
At least the value displayed in the alarm text must be set.
The set cycle time affects the runtime load of the PLC module. This also has to be taken into consideration when making the setting.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27354 F_DP: %1 communication, connection %2 reports SFC%3 error %4

**Parameters:** %1 = Type of communication
%2 = Name or DP_DP_ID of the communication relationship
%3 = SFC block number
%4 = Error code

**Explanation:** The F_DP communication with the external communication partner is faulty. The PLC reports an error when trying to access via the parameterized interface.
The following displays are possible for the communication type (%1):
- F_SENDDP
- F_RECVDP
The name or the identifier (DP_DP_ID) of the F_DP communication link is displayed as the connection (%2).
The PLC block (%3) that detected an error and the cause of error based on the error code (%4) are also displayed.
This alarm can be masked with MD10096 $MN_SAFE_DIAGNOSIS_MASK, bit 2 = 1.

**Reaction:** Alarm display.

**Remedy:** Check the PROFIBUS communication and the communication partner
Check the parameterized, logical basic address in MD13334/13344 $MN_SAFE_SDP/RDP_LADDR.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 27355 F_DP: %1 communication, connection %2 reports system error %3 (%4)

**Parameters:** %1 = Type of communication
%2 = Name or DP_DP_ID of the SPL connection
%3 = Error code
%4 = Component

**Explanation:** A system error was detected during F_DP communication. Depending on the error, the relevant SPL connection or the entire F_DP communication will be stopped.
The following displays are possible for the communication type (%1)
- F_SENDDP
- F_RECVDP
- SPL
The following displays are possible as the connection (%2):
- Name or DP_DP_ID (identifier) of the SPL connection ( for communication type = F_SENDDP or F_RECVDP)
- "-" ( for communication type = SPL)
One of the following causes of error is possible (see error code %3):
- SF: asynchronous error state (StateFault)
- LS: sign-of-life monitoring (LifeSign)
- TD: discrepancies in the F telegram data (TelegramDiscrepancy)
- OD: discrepancies in the output data (OutputdateDiscrepancy)
  - with communication type = F_SENDDP: $A_FSDP_ERR_REAC - DB18 DBW190, DBW210, DBW220, DBW448, DBW458 ... DBW568
  - with communication type = F_RECVDP: $A_FRDP_SUBS - DB18 DBW220, DBW232, DBW244, DBW578, DBW590 ... DBW722
    $A_FRDP_ERR_REAC - DB18 DBW222, DBW234, DBW246, DBW580, DBW592 ... DBW724
- SP: no update of the SPL input/output data (SPL I/O-communication)
The error codes stated may also be displayed combined, depending on the fault profile.
The affected component (%4) is also displayed in the alarm text:
- NCK
- PLC
- system variable (when error code = OD)

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Triggering of a STOP D/E (settable via MD10097 $MN_SAFE_SPL_STOP_MODE) on all axes with safety functionality.
Stopped SPL connections of type F_RECVDP output failsafe values (0) as F user data.

**Remedy:** Power OFF/ON of the control. If the error occurs again, inform the service department.

**Programm continuation:** Switch control OFF - ON.

## 27801 Safety operating mode inconsistent: MD %1 = %2; PLC configuration = %3

**Parameters:** %1 = $MN_SAFE_MODE
%2 = Value from $MN_SAFE_MODE
%3 = Value of the PLC configuration

**Explanation:** The value in the MD13370 $MN_SAFE_MODE does not match the value of the PLC configuration.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Align the safety operating modes by making a change in the MD13370 $MN_SAFE_MODE or the PLC configuration.
If -1 is displayed for the value of the PLC configuration, the following applies: the safety operating mode defined in the PLC configuration is not permitted. The PLC configuration must be changed.

**Programm continuation:** Switch control OFF - ON.

## 27810 Axis %1 Safety operating mode inconsistent: $MN_SAFE_MODE = %2; MD: %3 = %4

**Parameters:** %1 = Axis name, spindle number
%2 = Machine data value
%3 = MD name
%4 = Machine data value

**Explanation:** The safety operating mode parameterized with MD13370 $MN_SAFE_MODE does not match the safety enables parameterized with the displayed machine data.
This alarm occurs in the following contexts:
- For the safety operating mode "SINUMERIK Safety Integrated plus (F-PLC)", safety enables are set in MD36901 $MA_SAFE_FUNCTION_ENABLE.
- For the safety operating mode "SINUMERIK Safety Integrated (SPL)", safety enables are set in MD37950 $MA_SAFE_INFO_ENABLE, however mixed operation (SIC/SCC in ncSI-mode) is not allowed.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Prevention of cyclic SIC/SCC or PROFIsafe communication between the NCK and drive.

**Remedy:** Align safety operating mode for all NC axes.

**Programm continuation:** Switch control OFF - ON.

## 27811 Axis %1 Parameterizing error: MD %2 [%3] invalid

**Parameters:** %1 = Axis name, spindle number
%2 = MD name
%3 = MD array index for MD name

**Explanation:** The parameterization of the displayed machine data is incorrect.
This alarm occurs in the following contexts:
- During evaluation of the SIC/SCC telegram number in MD13376 $MN_SAFE_INFO_TELEGRAM_TYPE or in drive parameter p60122, an invalid SIC/SCC telegram number was found (not equal to 701).
- The check of the logical base addresses from MD13374 $MN_SAFE_INFO_DRIVE_LOGIC_ADDR has indicated that a slot with this address does not exist, or the SIC/SCC telegram has an incorrect length and "SIC/SCC" communication cannot be enabled.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Prevention of cyclic PROFIsafe communication between PLC and drive.
Prevention of cyclic SIC/SCC communication between the NCK and drive.

**Remedy:** Parameterize a valid SIC/SCC telegram number (701).
Configure or parameterize with valid logical basis addresses for the SIC/SCC slots or PROFIsafe slots.

**Programm continuation:** Switch control OFF - ON.

## 27812 Axes %1 and %2 parameterized with the same SIC/SCC address %3.

**Parameters:** %1 = Axis name, spindle number
%2 = Axis name, spindle number
%3 = Logical base address SIC/SCC

**Explanation:** The same base address for communication with a drive was selected for the specified axes. This is not permissible.

**Reaction:** Mode group not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Correct the drive assignment for the two specified axes.
Different logical base addresses must be selected for assignment to the specified axes via MD37954 $MA_SAFE_INFO_MODULE_NR and MD13374 $MN_SAFE_INFO_DRIVE_LOGIC_ADDR.

**Programm continuation:** Switch control OFF - ON.

## 27813 F logic option not set

**Explanation:** The option for F logic MD19500 $ON_SAFE_PLC_LOGIC is not available.
The safety operating mode "SINUMERIK Safety Integrated plus (F-PLC)" is set in the MD13370 $MN_SAFE_MODE.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
Prevention of cyclic PROFIsafe communication between PLC and drive.
Prevention of cyclic SIC/SCC communication between the NCK and drive.

**Remedy:** Align option data and safety operating mode.

**Programm continuation:** Switch control OFF - ON.

## 27830 Axis %1 Control not ready for the drive-integrated safe brake test

**Parameters:** %1 = Axis name, spindle number

**Explanation:** The motion control rejects the request for the drive-integrated "safe brake test" via the VDI interface.

Possible causes:

- When the brake test was selected via the VDI, the interpolator or the axis had not stopped, therefore the axis in motion or exact stop was not (no longer) given.
- A new brake test was requested, but the previous brake test had not yet finished in the control.
- Another axis was in motion in the channel.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically if the conditions in the motion control for performing the drive-integrated "safe brake test" are fulfilled, or the request for the drive-integrated "safe brake test" is withdrawn.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27900 PROFIBUS DP: SI fault on axis %1, code %2, value %3, time %4.

**Parameters:** %1 = Axis name, spindle number

%2 = Fault code of the drive (r9747).

%3 = Fault value of the drive (r9749)

%4 = Fault time of drive (r9748).

**Explanation:** The drive signals SI fault %2 with the further information %3 at instant %4.

**Reaction:** Alarm display.

**Remedy:** See drive documentation for fault codes/fault values.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 27910 PROFIBUS DP: SI fault on axis %1, code %2, value %3, time %4.

**Parameters:** %1 = Axis name, spindle number

%2 = Fault code of the drive (r9747).

%3 = Fault value of the drive (r9749)

%4 = Fault time of drive (r9748).

**Explanation:** The drive signals SI fault %2 with the further information %3 at instant %4.

**Reaction:** NC Start disable in this channel.

Alarm display.

A start of the part program is prevented by an SI fault reported by the drive.

The SI fault requires a safe acknowledgment.

**Remedy:** See drive documentation for fault codes/fault values.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 28000 NCU link connection to all other NCUs of the link network has been canceled

**Explanation:** All NCUs in the NCU link network exchange data cyclically (sign-of-life). If this alarm occurs, sign-of-life signals have not been received from any other NCUs on the NCU network. This fault in the link can have various causes:

- Defective hardware.
- The machine data which configure the NCU link are not the same on all NCUs.
- An identical interpolator cycle time has not been selected on all NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the IPO cycle on all the NCUs.
If necessary, check NCU link-specific alarms first.

**Programm continuation:** Switch control OFF - ON.

## 28001 NCU link connection to the NCU %1 of the link network has been canceled

**Parameters:** %1 = NCU number

**Explanation:** All NCUs in the NCU link network exchange data cyclically (sign-of-life). If this alarm occurs, sign-of-life signals have not been received from one other NCU on the NCU network. (see alarm parameters) This fault in the link can have various causes:
- Defective hardware.
- The machine data which configure the NCU link are not identical on all NCUs.
- An identical interpolator cycle time has not been selected on all NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** - Check the IPO cycle on all the NCUs.
- If necessary, check NCU link-specific alarms first.

**Programm continuation:** Switch control OFF - ON.

## 28002 Error on activation of machine data, NCU network-wide machine data were modified by NCU %1

**Parameters:** %1 = NCU number

**Explanation:** During the activation of machine data with NEWCONFIG or during an operator panel RESET, NCU network-wide machine data were modified on another NCU. This alarm can only occur when a link connection is active.

**Reaction:** NC not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Repeat the operator action or, if NEWCONFIG is activated by an NC program, terminate the program with Reset.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 28003 Synchronization of the life cycle in the NCU link failed after %1 attempts.

**Parameters:** %1 = Loop counter

**Explanation:** At a specific point in time during NCK ramp-up, the NCK switches to the cyclic plane; in other words, the IPO and servo tasks start to work. If these points in time deviate too significantly in the NCU link grouping, this alarm 280003 will appear. This delay time can be increased in IPO cycle steps by increasing the machine data LINK_LIFECYCLE_MAX_LOOP.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 28004 NCU link: NCU %1 of the link network is not on the bus

**Parameters:** %1 = NCU number

**Explanation:** Error message of the NCU link module. When the NCU link was powered up, the local NCU (indicated by the alarm) detected that the NCU with the number in the alarm parameter was not on the bus although it should be connected according to the MD settings.
This fault in the link can have various causes:
- Defective hardware.
- The machine data which configure the NCU link are not identical on all NCUs.
- An identical interpolator cycle time has not been selected on all NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the machine data configuration and link hardware.

**Programm continuation:** Switch control OFF - ON.

## 28005 NCU link: NCU %1 of the link network not running synchronously

**Parameters:** %1 = NCU number

**Explanation:** Error message of the NCU link module. When the NCU link was powered up, the local NCU (indicated by the alarm) detected that the NCU with the number in the alarm parameter was not running synchronously.
This fault in the link can have various causes:
- The machine data which configure the NCU link are not identical on all NCUs.
- An identical interpolator cycle time has not been selected on all NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data configuration.

**Programm continuation:** Switch control OFF - ON.

## 28007 NCU link: conflict in configuration data of NCU %1

**Parameters:** %1 = NCU number

**Explanation:** Error message of the NCU link module. When the NCU link was powered up, the local NCU (indicated by the alarm) detected a conflict between its configuration and the configuration of the NCU in the alarm parameter.

Example: MD18782 $MN_MM_LINK_NUM_OF_MODULES defines the number of nodes on the NCU link network. The alarm occurs if this MD has a different setting on different NCUs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data configuration.

**Programm continuation:** Switch control OFF - ON.

## 28008 NCU link: conflict in timer setting of NCU %1

**Parameters:** %1 = NCU number

**Explanation:** Error message of the NCU link module. When the NCU link was powered up, the local NCU (indicated by the alarm) detected a conflict between its timer configuration and the configuration of the NCU in the alarm parameter.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data configuration.

**Programm continuation:** Switch control OFF - ON.

## 28009 NCU link: conflict in bus parameters of NCU %1

**Parameters:** %1 = NCU number

**Explanation:** Error message of the NCU link module. When the NCU link was powered up, the local NCU (indicated by the alarm) detected a conflict between its timer bus configuration and the configuration of the NCU in the alarm parameter.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check machine data configuration.

**Programm continuation:** Switch control OFF - ON.

## 28010 NCU link: the NCU %1 has not received a message %2, %3

**Parameters:** %1 = NCU number
%2 = Reason
%3 = Data block

**Explanation:** Error message of the NCU link module. During operation of the NCU link, a message from the local NCU to the NCU specified in the alarm parameter has failed. A hardware error may have occurred (e.g. sporadic disturbances on the communication line).

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** The message does not fail until several attempts have been made to repeat the communication. The number of repetitions can be increased with MD12550 $MN_LINK_RETRY_CTR.

**Programm continuation:** Switch control OFF - ON.

## 28011 IPO time insufficient for NCU link. Link cycle time: %1

**Parameters:** %1 = Microseconds

**Explanation:** Error message of the NCU link module. All messages must be transmitted within one interpolator cycle. This applies particularly to messages retries. The time was not sufficient! The parameter indicates how many microseconds the NCU link module needs in order to send the message.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Increase the interpolator cycle time, i.e. modify one of the following MDs on all NCUs.
IPO_SYSCLOCK_TIME_RATIO
SYSCLOCK_CYCLE_TIME

**Programm continuation:** Switch control OFF - ON.

## 28012 NCU link: synchronization cycle signal failure %1 times

**Parameters:** %1 = Number of cycles

**Explanation:** Error message of the NCU link module that does not occur at NCU 1. The NCUs are synchronised via their own NCU-link clock line. A large number of successive cycle signals failed to appear. The parameter indicates how many successive cycles have failed.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Check the hardware.

**Programm continuation:** Switch control OFF - ON.

## 28020 NCU link: too many links configured %1

**Parameters:** %1 = Number of link connections

**Explanation:** Unfortunately, the transmission capacity of the NCU link is insufficient for this link configuration.
The link configuration is determined by the following MDs:
- MD18781 $MN_NCU_LINK_CONNECTIONS
- MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB
- MD12701 $MN_AXCT_AXCONF_ASSIGN_TAB1 ... and all further container defs.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Apply fewer link connections. axes that need connecting through links or combine the axes in fewer containers.
Machine data to be changed:
- MD18781 $MN_NCU_LINK_CONNECTIONS
- MD10002 $MN_AXCONF_LOGIC_MACHAX_TAB
- MD12701 $MN_AXCT_AXCONF_ASSIGN_TAB1 ... and all further container def.

**Programm continuation:** Switch control OFF - ON.

## 28022 Axis container %1 was declared differently on the NCUs

**Parameters:** %1 = Axis container name

**Explanation:** An axis container definition must be uniform on all NCUs, with the same values configured.

**Reaction:** NC not ready.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Configure the container locations uniformly on all NCUs. Check machine data MD127..$MN_AXCT_AXCONF_ASSIGN_TAB1...n

**Programm continuation:** Switch control OFF - ON.

## 28030 Serious alarm on NCU %1, axes in follow-up mode

**Parameters:** %1 = NCU number

**Explanation:** All axes are trailing because of a serious alarm on another NCU.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Acknowledge the alarm on the NCU.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 28031 Serious alarm on NCU %1 not yet acknowledged, axes still in follow-up mode

**Parameters:** %1 = NCU number

**Explanation:** A serious alarm was not yet acknowledged on another NCU. Consequently, all the axes continue to trail.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Acknowledge the alarm on the NCU.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 28032 Emergency stop activated on NCU %1, axes in follow-up mode

**Parameters:** %1 = NCU number

**Explanation:** The emergency stop request is active at the PLC-NCK interface on one NCU in the NCU group. Consequently, all axes are following.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Remedy the cause of the emergency stop on the NCU, and acknowledge the emergency stop via the PLC-NCK interface.

**Programm continuation:** Restart part program. Clear alarm with the RESET key in all channels of this mode group. Restart part program.

## 28033 Emergency stop on NCU %1, axes still in follow-up mode

**Parameters:** %1 = NCU number

**Explanation:** The emergency stop request is active at the PLC-NCK interface on one NCU in the NCU group. Consequently, all axes are following.

**Reaction:** NC not ready.
Mode group not ready, also effective for single axes.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Remedy the cause of the emergency stop on the NCU, and acknowledge the emergency stop via the PLC-NCK interface.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 29033 [Channel %1: ] Axis exchange of axis %2 not possible, PLC axis movement not yet completed

**Parameters:** %1 = Channel number
%2 = Axis

**Explanation:** A PLC axis has not yet reached its end position and cannot be returned to a channel or neutralized. This alarm should not occur when PLC data block FC18 is used.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Wait until the axis has reached the end position or terminate the movement with delete distance to go.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

# Cycle alarms

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**61000** **%[[Channel %1: ] Block %2: %]No tool offset active**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** D-correction must be programmed before the cycle call.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61001** **[Channel %1: ] Block %2: Thread pitch incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameter for the thread size or setting for the pitch (contradict each other).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61002** **%[[Channel %1: ] Block %2: %]Type of machining incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Modify VARI parameter.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61003** **%[[Channel %1: ] Block %2: %]No feed programmed in cycle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify feed parameter.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61004** **[Channel %1: ] Block %2: Incorrect configuration of geometry axes**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61005** **[Channel %1: ] Block %2: 3rd geometry axis not available**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With an application on the turning machine with no Y-axis in the G18 plane.

**Remedy:** Check parameter on cycle call.

**61006** **%[[Channel %1: ] Block %2: %]Tool radius too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool radius is too large for machining.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select a smaller tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61007** **[Channel %1: ] Block %2: Tool radius too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool radius is too small for machining.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select a larger tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61008** **[Channel %1: ] Block %2: No tool active**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Alarm triggered by following cycles:

**Remedy:** Select a tool.

## 61009 [Channel %1: ] Block %2: Active tool number = 0

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No tool (T) has been programmed before the cycle call.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program tool (T).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61010 [Channel %1: ] Block %2: Finishing allowance too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Causes of error:
- The finishing allowance for the base is greater than the total depth.
- The finishing allowance at the edge is greater than or equal to the tool diameter.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reduce finishing allowance.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61011 [Channel %1: ] Block %2: Scaling not permissible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A scale factor is active which is illegal for this cycle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify scale factor.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61012 %[[Channel %1: ] Block %2: %]Different scaling in planes

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61013** **[Channel %1: ] Block %2: Basic settings were changed, program cannot be executed**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The basic settings are not compatible with the generated program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check and, if necessary, change the basic settings.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61014** **[Channel %1: ] Block %2: Return plane exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check parameter RTP.

**61015** **[Channel %1: ] Block %2: Contour is not defined**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61016** **[Channel %1: ] Block %2: System frame for cycles missing**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Set machine data 28082 $MC_MM_SYSTEM_FRAME_MASK, Bit 5=1.

**61017** **%[[Channel %1: ] Block %2: %]Function %4 not present in NCK**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61018 [Channel %1: ] Block %2: function %4 not executable with NCK

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61019 %[[Channel %1: ] Block %2: %]Parameter %4 incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Alarm 61019 is output in very many cycles if transfer parameters have been incorrectly programmed.
The alarm text states the name of the incorrect parameter.
Example cycle POCKET3: Parameter _MIDA defined incorrectly.
The specified parameter then has to be checked and changed.
For parameters in which multiple selection options are coded by individual decimal digits, the incorrectly coded digit is also output.
Example: 61019 parameter (S_MVAR: dec4) defined incorrectly
The value of the 4th decimal place (dec4 -> THOUSANDS digit) of the transfer parameter S_MVAR is defined incorrectly

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check and change the value of the parameter or the corresponding position.

Particular notes for individual cycles:

If error message 61019 comes from CYCLE832, then:

61019 parameter S_TOLM: xx is defined incorrectly

1. Parameter S_TOLM lies outside the value range: S_TOLM UNITS digit 0 to 3. TENS digit 0 or 1
2. Parameter S_TOLM>3 and parameter S_OTOL not programmed and setting data SD55220 $SCS_FUNCTION_MASK_MILL_TOL_SET bit0=0

Remedy:

Set parameter S_TOLM in valid range (0..13), or,

Set the compatibility bit in SD55220 bit0=1 with the field technology when CYCLE832 is called (up to SW 2.6).

If the error message comes from CUST_832:

The manufacturer cycle CUST_832 must be upgraded to the latest cycle version.

If the error message comes from CYCLE9960:

01 MD11160 : Inadequate authorization for writing the kinematic chain

10 VCS_Rotary : Compile Cycle VCS_Rotary is not fully set up. GUD variable _E996_ACTIV_STATE not present

11 VCS_Rotary : Compile Cycle VCS_Rotary is not fully set up. Variable $MC_E996_FILE_LOCATION missing

12 VCS_Rotary MD62738 : $MC_E996_FILE_LOCATION incorrectly parameterized

13 VCS_Rotary file : Too many E996m_ files. The number is limited to _E996m_10

14 VCS_Rotary MD62736 : Compensation limit exceeded

15 VCS_Rotary MODULO : RA is a modulo axis. The measuring range includes $MA_MODULO_RANGE_START, $MA_MODULO_RANGE_START must be a measuring position

16 VCS_Rotary MODULO : RA is a modulo axis. The measuring range includes $MA_MODULO_RANGE_START, the angle between the measuring points must be a divisor of $MA_MODULO_RANGE

20 $NT_CNTRL bit7 : With reference head, the vector chain must be open -> $NT_CNTRL bit7=0

21 $SCS_MEA_KIN_MODE[0] DEC2=0 : With reference head, the vector chain must be open.

24 REF HEAD TRAFOTYP : Reference head only with swivel head or mixed kinematics

25 REF HEAD S_KNUM? : Parameter S_KNUM=9000, corresponds to the active work offset S_KNUM=xx 1(G54) ... 99(G599)

26 REF HEAD : No head was measured as a reference head _OVR[105]=0 _OVR[105]=transformation number

27 REF Workoffset : _OVR[104] -> Work offset measured with the reference head does not match the current value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61020 [Channel %1: ] Block %2: Machining not possible with active TRANSMIT/TRACYL

**Parameters:** %1 = Channel number

%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop

NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61021 [Channel %1: ] Block %2: Parameter %4 value too high

**Parameters:** %1 = Channel number

%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** For measuring cycles:
- Correct the parameters displayed on the measuring cycle screen or measuring cycle interface.
-For CYCLE63 and trochoidal milling:
- The angle of contact CMAX must be less than or equal to 80° during roughing

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61022 [Channel %1: ] Block %2: Parameter %4 value too low

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - For CYCLE63 and trochoidal milling:
- The angle of contact CMIN must be greater than 10° during roughing

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61023 [Channel %1: ] Block %2: Parameter %4 value must be unequal to zero

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61024 [Channel %1: ] Block %2: Parameter %4 check value

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If the error message comes from CYCLE9960:
Start/end RA1: Set measuring range is not compatible with the traversing range (machine data 36100 $MA_POS_LIMIT_MINUS) of rotary axis 1.
Start/end RA2: Set measuring range is not compatible with the traversing range (machine data 36100 $MA_POS_LIMIT_MINUS) of rotary axis 2.
The measuring range is always considered in the clockwise direction from the start to the end
Example: Start = 0°, end = -45°, traversing range of the axis -90°..90° => error because the measuring range is interpreted from 0° to 315° and not from -45° to 0°.
Error message is displayed when measuring the kinematics of a grinding machine:
1st measurement: Starting position is "Beta" = 0°, "Beta" <> 0° leads to the error message.
For the 2nd and 3rd measurements, "Beta" has to be rotated further, either in the positive or negative direction. A change in the direction of rotation leads to the error message.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61025 [Channel %1: ] Block %2: Check tool carrier position

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61026 [Channel %1: ] Block %2: Cycle cannot be executed with NC function %4.

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61027 %[[Channel %1: ] Block %2: %]Subroutine %4 does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check CYCLE62 call
- Check whether the subroutines specified on CYCLE62 call exist in the program storage

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61028 [Channel %1: ] Block %2: Contour name %4 too long

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error message in connection with contour call:
- Use shorter contour name
Error message in connection with contour turning:
-String lengths of the paths of the machined part contour or blank contour (if blank contour) or the updated blank contour (if residual machining) too long
-Use shorter directory or contour name
Error message in connection with contour milling:
-String lengths of the paths of the pocket/blank contour or the island contours too long
-Use shorter directory or contour name

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61029 %[[Channel %1: ] Block %2: %]Program name %4 too long

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - use shorter program name

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61030 [Channel %1: ] Block %2: Path not permitted: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61031 [Channel %1: ] Block %2: Path not found: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61032 [Channel %1: ] Block %2: File not found: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61033 [Channel %1: ] Block %2: Incorrect file type: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61034 [Channel %1: ] Block %2: File is full: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61035 [Channel %1: ] Block %2: File in use: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61036 [Channel %1: ] Block %2: NC storage limit reached: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61037 [Channel %1: ] Block %2: No access rights to file: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61038 [Channel %1: ] Block %2: Other file error: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61039 [Channel %1: ] Block %2: Line not available: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61040 [Channel %1: ] Block %2: Line longer than result variable: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61041 [Channel %1: ] Block %2: Line range too large: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61042 [Channel %1: ] Block %2: Program name %4 illegal

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** In the case of multi-channel systems, the main program name must not end with _Cxx (xx stands for figures).
Rename main program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61043 [Channel %1: ] Block %2: Error affecting coordinate conversion (%4)

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** 1: Type not specified
2: Error during tool identification
3: Meas. point 1 not available
4: Meas. point 2 not available
5: Meas. point 3 not available
6: Meas. point 4 not available
7: No reference point available
8: No direction of approach
9: Meas. points are identical
10: Alpha is incorrect
11: Phi is incorrect
12: Incorrect direction of approach
13: Lines do not intersect
14: Planes not available
15: No frame or incorrect frame selected
16: Not enough memory available
17: Internal error

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61044 %[[Channel %1: ] Block %2: %]Illegal character(s) in file name: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Remove illegal character from file name
Permitted characters are: letters, figures, underscore, slash with path name

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61045 [Channel %1: ] Block %2: Job list not found: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The specified job list could not be found.
Check name and contents of job list.
The job list must be in the same workpiece as the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61046 [Channel %1: ] Block %2: Part program not found in job list: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Part program (main program) not found in specified job list in respective channel.
Check name and contents of job list.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61047 [Channel %1: ] Block %2: Label name %4 too long

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - select shorter label name

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61048 [Channel %1: ] Block %2: Multi-channel data not found in job list: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Multi-channel data not found in job list.
Correct job list.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61049 [Channel %1: ] Block %2: 1st spindle not programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program 1st spindle in the screen.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61050 [Channel %1: ] Block %2: Spindle programmed twice

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The same spindle was programmed twice.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Leave 2nd spindle empty or program other spindle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61051 %[[Channel %1: ] Block %2: %]Program name assigned twice

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The same program name was assigned twice.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** When using CYCLE952, the name of the main program must not be the same as the name of the cutting file (PRG) or the name of the updated blank contour (CONR).
When using CYCLE63 and/or CYCLE64, the name of the main program must not be the same as the name of the program to be generated (PRG).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61052 [Channel %1: ] Block %2: Maximum spindle speed for main spindle not entered

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Max. speed for main spindle was not entered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter speed limit in program header or under settings.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61053 [Channel %1: ] Block %2: Maximum spindle speed not entered for counterspindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Maximum speed of counterspindle was not entered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter speed limit in program header or under settings.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61054** **[Channel %1: ] Block %2: Programs started from various job lists: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Programs from various job lists were started simultaneously.
This is illegal. All programs must be assigned to the same job list.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select desired job list again, and start programs afresh.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61055** **[channel %1: ] block %2: magazine location number too low: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The magazine location number entered was too low.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61056** **[channel %1: ] block %2: magazine location number too high: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The magazine location number entered was too high.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61057** **[Channel %1: ] Block %2: magazine location number is no integer: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The magazine location number must be an integer.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61058 %[[channel %1: ] block %2: %]Function %4 not released

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified function is not released.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - CYCLE952: Balance Cutting function must be released via machine data 52218 $MCS_FUNCTION_MASK_TURN, Bit6.
- CYCLE953: Option for the SFT function must be released via machine data 19620 $ON_TECHNO_CYCLES_MASK, Bit1.
- SMTE: Option for the corresponding SMTE expansion must be released via machine data 19620 $ON_TECHNO_CYCLES_MASK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61059 %[[Channel %1: ] Block %2: %]Tool preselection failed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** --

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61060 %[[Channel %1: ] Block %2: %]Function requires tool management

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** --

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61061 %[[Channel %1: ] Block %2: %]Different scaling in the plane and depth

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61062** **%[[Channel %1: ] Block %2: %]Axis position %4incorrectly programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the last programmed axis position

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61063** **%[[Channel %1: ] Block %2: %]Tool at magazine location %4 is not a multitool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A magazine location and a multitool location were programmed. However, there is no multitool at the magazine location.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Only program the magazine location (without multitool location).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61064** **%[[Channel %1: ] Block %2: %]Invalid multitool location: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A multitool location was programmed, at which there is no multitool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program a valid multitool location.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61065** **[Channel %1: ] Block %2: A channel specified in the job list does not exist: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A non-existent channel was specified in the job list.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct job list

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61066** **%[[Channel %1: ] Block %2: %]Cycle %4 requires G code G70 or G71**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Cycle requires G code G70 or G71

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program G70 or G71

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61067** **[Channel %1: ] Block %2:Tool spindle is in spindle mode: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** To activate the turning transformation, the tool spindle must be in axis mode. But it is in spindle mode.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Before activating the turning transformation, put the tool spindle in axis mode (with SPOS or M70).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61068** **[Channel %1: ] Block %2: Cycle requires G code %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An incorrect G code is active when the cycle is called.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Activate the stated G code before calling the cycle. Multiple G codes may be presented for selection.
Example: Cycle requires G code: G70/G71

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61069** **[Channel %1: ] Block %2: Axis not referenced %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A referenced axis is required in the cycle, but an unreferenced axis was detected.
If possible, the axis identifier is stated in the alarm text.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reference axis before calling the cycle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61070 [Channel %1: ] Block %2: Incorrect tool type for 'shank' selection

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For the "shank" selection, the tool must have an acute angle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use "tip" selection.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61071 %[[Channel %1: ] Block %2: %] Option for EES missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When a part program is called via EXTCALL without EES, the contour can only be called via "Contour name" or "Labels".
This means that contour calls via "Subroutine" or "Labels in subroutine" are only possible if EES is active.
Error message from CYCLE996:
The data record can only be stored on external memory if option EES is set.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Program contour call via "Contour name" or "Labels"
- Error message from CYCLE996:
Set the option or do not start the program from external memory.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61072 %[[Channel %1: ] Block %2: %]: Error code %4 on activating the intelligent load adjustment function

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An error occurred when activating an adaptation table for adapting the loading of the machine (language command CADAPTON).
Error message from CYCLE782

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code:
1 : No valid adaptation table parameterized -> the commissioning of the adaptation tables must be checked
2 : Axis name parameter invalid -> check axis
3 : Input variable parameter invalid -> check value
5 : Input value parameter invalid -> check value
99: Internal error

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61073** **%[[Channel %1: ] Block %2: %]: Error code %4 on deactivating the intelligent load adjustment function**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An error occurred when deactivating an adaptation table for adapting the machine loading (language command CADAPTOF).
Error message from CYCLE782

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code:
1 : No valid adaptation table parameterized -> the commissioning of the adaptation tables must be checked
2 : Axis name parameter invalid -> check axis
3 : Input variable parameter invalid -> check value
5 : Input value parameter invalid -> check value
99: Internal error

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61074** **%[[{Channel %1: ] Block %2: %] Number of traversing blocks for spline formation is too low**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The number of traversing blocks for spline formation is too low.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enlarge the program section and thus the number of traversing blocks

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61075** **%[[Channel %1: ] Block %2: %]Cycle %4 does not run in the handling channel.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified cycle does not run in the handling channel.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Execute the program containing the cycle to be called in the machining channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61076** **%[[Channel %1: ] Block %2: %]Cycle %4 does not support interpolated turning.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified cycle does not support interpolated turning.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Disable interpolated turning
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61077 %[[Channel %1: ] Block %2: %]Program does not run in a handling channel

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The program can only be executed in one machining channel.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Execute the program in one machining channel
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61098 [Channel %1: ] Block %2: %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** This alarm is used for various purposes.
Please refer to the alarm text.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Depends on alarm text
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61099 [Channel %1: ] Block %2: Internal cycle error (%4)

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61100 %[[Channel %1: ] Block %2: %]Rotated flat surface cannot be calculated

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The flat surface cannot be calculated with the selected turning angle alpha0 and the specifications abs/inc for X1/Y1.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The corner point X1/Y1 must be specified in a different way, e.g. with incremental values.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61101 %[[Channel %1: ] Block %2: %]Reference point defined incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** With an incremental specification of the depth, either different values have to be selected for the reference point (reference plane) and the retraction plane, or an absolute value must be specified for the depth.
When machining in the "manual machine" area, the following setting data must be checked and adapted to the machining.
SD 55260 $SCS_MAJOG_SAFETY_CLEARANCE (value greater than zero)
SD 55261 $SCS_MAJOG_RELEASE_PLANE

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61102 %[[Channel %1: ] Block %2: %]No spindle direction programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Parameter SDIR (or SDR in CYCLE840) must be programmed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61103 [Channel %1: ] Block %2: Number of holes is zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameter NUM.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61104 [Channel %1: ] Block %2: Contour violation of slots

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Incorrect parameterization of the milling pattern in the parameters which define the position of the slots/elongated holes on the circle and their form.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61105 [Channel %1: ] Block %2: Milling cutter radius too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The diameter of the cutter used is too large for the form to be machined.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Either a tool with a smaller radius has to be used or the contour must be modified.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61106 [Channel %1: ] Block %2: Number of or distance between circular elements

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Incorrect parameterization of NUM or INDA. The layout of the circle elements within a full circle is not possible.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct parameterization.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61107 [Channel %1: ] Block %2: First drilling depth incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify drilling depth.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61108 [Channel %1: ] Block %2: Illegal values for radius and insertion depth parameters

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The radius (_RAD1) and insertion depth (_DP1) parameters for defining the helix path for the depth infeed have been incorrectly specified.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Modify parameter.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61109 %[[Channel %1: ] Block %2: %]Milling direction parameter incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The value of the parameter for the cutting direction _CDIR has been incorrectly defined.
**Remedy:** - Change milling direction.
- During pocket machining (CYCLE63), the selected milling direction must match the milling direction of centering/rough drilling.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61110 [Channel %1: ] Block %2: Finishing allowance at the base is greater than the depth infeed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The finishing allowance at the base has been specified greater than the maximum depth infeed.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Either reduce finishing allowance or increase depth infeed.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61111 [Channel %1: ] Block %2: Infeed width is greater than the tool diameter

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The programmed infeed width is greater than the diameter of the active tool.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Infeed width must be reduced.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61112 [Channel %1: ] Block %2: Tool radius negative

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The radius of the active tool is negative. This is illegal.
**Remedy:** Change the tool radius.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61113** **[Channel %1: ] Block %2: Parameter for corner radius too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The parameter for the corner radius _CRAD has been specified too large.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reduce corner radius

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61114** **[Channel %1: ] Block %2: Machining direction G41/G42 incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machining direction of the cutter radius compensation G41/G42 has been incorrectly selected.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Change machining direction.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61115** **[Channel %1: ] Block %2: Approach or retract mode(straight / circle / plane / space) incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The approach or retract mode to/from the contour has been incorrectly defined.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameter _AS1 or _AS2.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61116** **[Channel %1: ] Block %2: Approach or retract path = 0**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The approach or retract path has been specified with zero.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameter _LP1 or _LP2.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61117** **%[[Channel %1: ] Block %2: %]Active tool radius is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The radius of the active tool is negative or zero.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify radius.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61118** **[Channel %1: ] Block %2: Length or width = 0**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The length or width of the milling area is illegal.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameters _LENG and _WID.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61119** **[Channel %1: ] Block %2: Nominal or core diameter programmed incorrectly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The nominal or core diameter was incorrectly programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check thread geometry.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61120** **[Channel %1: ] Block %2: Thread type inside / outside not defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The thread type (internal/external) was not defined.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The internal/external thread type must be entered.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61121** **[Channel %1: ] Block %2: Number of teeth per cutting edge is missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No value was entered for the number of teeth per cutting edge.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter the number of teeth/cutting edges for the active tool into the tool list.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61122** **[Channel %1: ] Block %2: Safety distance incorrectly defined in plane**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The safety clearance is negative or zero. This is not allowed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Define the safety clearance.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61123** **[Channel %1: ] Block %2: CYCLE72 cannot be simulated**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61124** **[Channel %1: ] Block %2: Infeed width is not programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** With active simulation without tool, a value for the infeed width _MIDA must always be programmed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61125 [Channel %1: ] Block %2: Technology selection parameter incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check technology selection parameter (_TECHNO).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61126 [Channel %1: ] Block %2: Thread length too short

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program lower spindle speed or raise reference point (reference plane).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61127 [Channel %1: ] Block %2: Wrong definition of tapping axis transformation ratio (machine data)

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check machine data 31050 and 31060 in the appropriate gear stage of the drilling axis.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61128 [Channel %1: ] Block %2: Insertion angle = 0 for insertion with oscillation or helix

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameter _STA2.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61129** **[Channel %1: ] Block %2: perpendic. approach and retraction during contour milling only allowed with G40**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61130** **[Channel %1: ] Block %2: positions of parallel axes cannot be compensated. No workpiece reference agreed.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61131** **[Channel %1: ] Block %2: parameter _GEO incorrect, _GEO=%4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61132** **[Channel %1: ] Block %2: Parallel axis parameters incorrect, check values for parallel axis parameters ABS/INK**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61133** **[Channel %1: ] Block %2: 3rd parallel axis parameter incorrect, check axis name or GUD _SCW_N[]**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61134** **[Channel %1: ] Block %2: Rotary axis parameters incorrect, check values for rotary axis parameters ABS/INK**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61135** **[Channel %1: ] Block %2: incorrect parameter sequence for approaching target position: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61136** **[Channel %1: ] Block %2: no 3rd geometry axis agreed in GUD _SCW_N[]**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61137** **[Channel %1: ] Block %2: swiveling and parallel axes cycle are mutually exclusive because of workpiece reference $P_WPFRAME**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61138** **[Channel %1: ] Block %2: parameter %4 incorrectly defined for tool monitoring in cycles**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61139** **[Channel %1: ] Block %2: error in function Tool monitoring in cycles**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61140** **[Channel %1: ] Block %2: Main spindle is not set up correctly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61141 [Channel %1: ] Block %2: C axis of the main spindle is not set up correctly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61142 [Channel %1: ] Block %2: Counterspindle is not set up correctly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61143 [Channel %1: ] Block %2: C axis of the counterspindle is not set up correctly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61144** **[Channel %1: ] Block %2: Tool spindle is not set up correctly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61145** **[Channel %1: ] Block %2: Linear axis of the counterspindle is not set up correctly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61146** **[Channel %1: ] Block %2: B axis is not set up correctly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61147** **[Channel %1: ] Block %2: Transformation not active: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The stated transformation is not active.
You have to activate the transformation before you can use it.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61148 [Channel %1: ] Block %2: Swivel plane with active turning tool not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Swiveling the plane is not possible when a turning tool is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool before you swivel the plane.
The alarm can be suppressed using SD 55410 $SCS_MILL_SWIVEL_ALARM_MASK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61149 [Channel %1: ] Block %2: Positioning a milling tool with active turning tool is not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Milling tools cannot be positioned if a turning tool is active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool, before you call positioning.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61150 [Channel %1: ] Block %2: Tool cannot be aligned - error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Error code:
A: Only new swivel plane permitted, see parameter _ST
B: Angular range >= 360 -> angular range of the B axis >= 360 degrees
C: Rotary axis vector V1 is not equal to 0 1 0 -> rotary axis vector V1 must rotate around Y
See setup of swivel CYCLE800
D: Rotary axis vector V2 -> rotary axis vector V2 must rotate around X (1 0 0) or Z (0 0 1)
See setup of swivel CYCLE800
E: WCS ROT Y > 90 -> active rotation of the Work (WCS) around Y is >90 degrees. -90 to +90 is permitted
F: If geometry axis Y is not available -> SD55221 set Bit 5 = 1
G: Initial setting defines ($TC_CARR37] HUNDREDTHOUSANDS digit -Z or -X) -> SD55221 set Bit 5 = 1
See setup of swivel CYCLE800
H: Align tool, but active plane not G18
I: 1st turning technology (MD52200=1) and no Y axis available -> mirroring not allowed
J: 1st turning technology (MD52200=1) and no Y axis available -> rotation around Y not possible
K: Grinding technology (MD52200=3) and align tool -> SD55221 set Bit 5 = 1
L: Grinding technology (MD52200=3) and align tool -> set MD20186 = 1

## 61151 [Channel %1: ] Block %2: Orientation of tool not possible - error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Causes of error:
1st error code = A -> only additive swivel plane permitted, see parameter _ST

## 61152 [Channel %1: ] Block %2: B axis kinematics (turning technology) either not or incorrectly set up in Start-up of swivel cycle - error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Causes of error:
1st error code = A123 -> B axis not an automatic rotary axis under ShopTurn (123 corresponds to parameter _TCBA)
2nd error code = B123 -> B axis not activated in swivel cycle start-up (kinematics)
(123 corresponds to $TC_CARR37[n], n ... number of the swivel data record)

## 61153 [Channel %1: ] Block %2: No 'Rotary axes direct' swivel mode possible - error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Error code:
A: No tool or no cutting edge (e.g. D1) active
B: Swivel "no" and swivel "direct", swivel plane "additive" not permitted
C: Input value for rotary axis 1 not in the grid of the Hirth tooth system
D: Input value for rotary axis 2 not in the grid of the Hirth tooth system
E: Swivel "direct" programmed in automatic, but swivel cycle not set up ($TC_CARR37 UNITS digit < =2)
F ROT ? G5..: Rotation in settable WO (e.g. G54) active, not permitted
F ROT ? SETFRAME: Rotation in basic reference active, not permitted
F ROT ? CHBFRAME: Rotation in basic active, not permitted
G WPFRAME ?: Swivel mode additive and translations in workpiece reference (WPFRAME) not permitted
H: X0, Y0 or Z0 not equal to 0: Swivel mode additive and translations not permitted before swivel
See parameter S_ST 1st decimal place
I: Turning machine and initial setting -X or -Z not possible in G18
J: Turning machine and initial setting -X or -Z and counterspindle mirrored around Z
K: Turning machine and initial setting -Z and G19 not allowed
Initial setting, see setup of swivel CYCLE800

Note on error codes F, G and H:
If the Work (WCS) is rotated before programming swivel direct, and the swivel plane is rotated and moved additively, alarm 61153 is reported with error codes F, G or H to avoid an impermissible mixing of frame operations and direct machine positions.
Alternatively, the machining program can be reprogrammed with swivel axis for each axis and swivel plane new or additionally,
or with new swivel and swivel plane.

## 61154 %[[Channel %1: ] Block %2: %]Final depth wrongly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Input of end depth possible only absolutely or incrementally

## 61155 [Channel %1: ] Block %2: Unit for plane infeed wrongly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Unit for plane infeed possible only in mm or % of tool diameter

## 61156 [Channel %1: ] Block %2: Depth calculation wrongly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Depth calculation possible only with or without SDIS

## 61157 %[[Channel %1: ] Block %2: %]Reference point wrongly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** - Check reference point in screenform, input only -X, centered or +X
- During calibration of the length of the infeed axis in JOG, two causes can cause this alarm:
  1. The value of the reference workpiece was incorrectly programmed in the parameterization screenform.
  2. The length of the workpiece probe in the infeed axis has been incorrectly entered in the tool data.

## 61158 %[[Channel %1: ] Block %2: %]Machining plane wrongly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check machining plane (G17, G18 or G19) in connection with the parameter _DMODE.

## 61159 [Channel %1: ] Block %2: Machining plane on cycle call differs from the one in the position pattern

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Adjust the machining plane on cycle call to the machining plane in the position pattern.

## 61160 [Channel %1: ] Block %2: Residual material remains stationary, reduce plane infeed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reduce plane infeed or slot width, or use milling cutter with larger diameter

## 61161 [Channel %1: ] Block %2: Centering diameter or tool parameter (diameter, tip angle) are incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** - Diameter of centering with tip angle of active tool not possible
- Entered workpiece diameter, tool diameter or tip angle of tool incorrect
- Diameter of tool only has to be entered if centering is to be on workpiece diameter.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61162 [Channel %1: ] Block %2: Tool parameter diameter or tip angle incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** - The tool parameters diameter or tip angle must be greater than 0
- Tip angle must be less than 180°

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61163 [Channel %1: ] Block %2: Infeed width in the plane too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** --

**61164** **[Channel %1: ] Block %2: Transformation has incorrect type %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The transformation has the incorrect type. Correct the transformation set up.

**61165** **[Channel %1: ] Block %2: Transformation set up incorrectly: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The transformation has been set up incorrectly. Correct the transformation set up.

**61166** **[Channel %1: ] Block %2: Check machine data: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The machine data must be checked. Adapt the setting of the machine data.

**61167** **[Channel %1: ] Block %2: Transformation not set up or not active: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The specified transformation is not set up or not active. Set up or activate the transformation.

**61168** **[Channel %1: ] Block %2: Incorrect machining plane: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The machining plane is incorrect. Program correct machining plane.

**61169** **[Channel %1: ] Block %2: Spindle incorrectly programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An incorrect spindle was programmed.

**Remedy:** Change the spindle selection.

**61170** **[Channel %1: ] Block %2: Incorrect block plane (%4)**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An invalid block plane was used.

**Remedy:** Use a valid block plane.
It is only permissible that the block planes are used in an ascending sequence.

**61171** **[Channel %1: ] Block %2: Block plane used twice (%4)**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The same block plane was used twice.

**Remedy:** Only nest the block planes in an ascending sequence.

**61172** **[Channel %1: ] Block %2: Spindle groups must not be nested**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** You have used spindles in several nested groups.

**Remedy:** Only use one spindle in one group plane with nested groups.

**61173** **[Channel %1: ] Block %2: Supplementary run-in code only possible with spindle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The supplementary run-in code can only be used in one block with spindle.

**Remedy:** Use a block with spindle.

**61174** **[Channel %1: ] Block %2: Not possible to align milling tool with active turning tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not possible to align milling tools with an active turning tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool before you call alignment.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61175** **[Channel %1: ] Block %2: angle of aperture programmed too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The angle of aperture of the text (_DF) in the engraving cycle is too small. This means that the text for engraving does not fit in the specified angle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter a larger angle of aperture.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61176** **[Channel %1: ] Block %2: text length programmed too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The text length (_DF) in the engraving cycle is too short. This means that the text for engraving is longer than the specified text length.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter longer text length

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61177** **[Channel %1: ] Block %2: polar text length > 360 degrees**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the engraving cycle, the polar text length must not exceed 360 degrees.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter shorter text length.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61178** **[Channel %1: ] Block %2: code page not present**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified code page is not supported by the cycle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use code page 1252.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61179** **[Channel %1: ] Block %2: character does not exist, no.: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Character number

**Explanation:** The character entered in the text for engraving cannot be milled.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter another character.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61180** **[Channel %1: ] Block %2: No name assigned to swivel data record**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Although there are several swivel data blocks, no unique names have been assigned.

**Remedy:** A unique name must be assigned to the swivel data block ($TC_CARR34[n]) if machine data 18088 $MN_MM_NUM_TOOL_CARRIER is > 1.

**61181** **[Channel %1: ] Block %2: NCK software version is insufficient for the Swivel function**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Swivelling is not possible with the current NCK software version.

**Remedy:** Upgrade NCK software to NCK 75.00 or higher.

**61182** **[Channel %1: ] Block %2: Name of swivel data record unknown: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The specified name of the swivel data block is unknown.

**Remedy:** Check name of swivel data record $TC_CARR34[n].

**61183** **[Channel %1: ] Block %2: Swivel CYCLE800: Retraction mode parameter lies outside value range: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The value of the retraction mode parameter (_FR) lies outside the valid range.

**Remedy:** Swivel CYCLE800: Check transfer parameter _FR. Value range 0 to 8

**61184** **[Channel %1: ] Block %2: No solution possible with current input angle values**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The surface defined via the input angle cannot be processed with the machine.

**Remedy:** -Check the angles entered for swiveling the machining plane: %4
-Parameter _MODE coding incorrect, e.g. rotation axis-wise YXY

**61185** **[Channel %1: ] Block %2: Invalid angular ranges of rotary axes in swivel data record: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The angular range of the rotary axes is invalid.
Check setup of the swivel CYCLE800.
Parameter $TC_CARR30[n] to $TC_CARR33[n] n number of swivel data record
Example: Rotary axis 1 modulo 360 degrees: -> $TC_CARR30[n]=0 $TC_CARR32[n]=360

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check setup of swivel cycle CYCLE800.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61186** **[Channel %1: ] Block %2: Invalid rotary axis vectors --> Check setup of the swivel cycle CYCLE800.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No or incorrect entry for rotary axis vector V1 or V2.

**Remedy:** Check commissioning of swivel CYCLE800
Check rotary axis vector V1xyz: $TC_CARR7[n], $TC_CARR8[n], $TC_CARR9[n]
Check rotary axis vector V2xyz: $TC_CARR10[n], $TC_CARR11[n], $TC_CARR12[n]
If 2nd rotary axis not available ($TC_CARR35[n]=""), then it is possible that V2xyz=0
n Number of the swivel data set

**61187** **[Channel %1: ] Block %2: Check setup of the swivel cycle CYCLE800. - Error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code: See current cycles software version notes in siemense.txt

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61188 [Channel %1: ] Block %2: No axis name agreed for rotary axis 1 -> Check setup of the swivel cycle CYCLE800.

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No axis name was specified for the rotary axis 1.

**Remedy:** Check setup of swivel CYCLE800.
Axis name of rotary axis 1 see parameter $TC_CARR35[n] n number of swivel data record

## 61189 [Channel %1: ] Block %2: Swivel direct: Invalid rotary axis positions: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Swivel direct: Check input values of rotary axes.

**Remedy:** Swivel mode direct: check the input values of the rotary axes or setup of swivel CYCLE800.
Check angular range of rotary axes in swivel data record n:
Rotary axis 1: $TC_CARR30[n], $TC_CARR32[n]
Rotary axis 2: $TC_CARR31[n], $TC_CARR33[n]
If values are entered in the work offset (WO) of the rotary axes, and machine data MD21186=0:
Value in WO of the rotary axis does not correspond to the angular range, rotary axis 1 or 2
Value in WO of the rotary axis plus input value does not correspond to the angular range, rotary axis 1 or 2
Note: for modulo axes, for swivel direct, the input value is calculated in the modulo range
Example: angular range, rotary axis modulo 0 up to 360: input value =-21, rotary axis moves to 339 degrees

## 61190 [Channel %1: ] Block %2: Unable to retract prior to swiveling -> Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** If tool carrier is active, check setup of swivel CYCLE800. Parameter $TC_CARR37[n] 7th and 8th decimal places
n number of swivel data set
If align turning tool with milling/turning machine (transformation on basic kinematic chain) is active,
check parameter $NT_IDENT[n,0] 7th and 8th decimal places (n = name of transformation)
Error code:
A: Retraction Z not set up
B: Retraction Z XY not set up
C: Retraction in tool direction max. not set up
D: Retraction in tool direction incremental not set up
E: Retraction in tool direction: NC function CALCPOSI reports error
For the CALCPOSI function, the axes must be referenced. Check machine data 20700 $MC_REFP_NC_START_LOCK.
F: Retraction in tool direction: no tool axis available
Missing geometry axis (tool axis) Z with G17, Y with G18 or X with G19
G: Retraction in tool direction max.: negative retraction path
H: Retraction in tool direction incremental: negative retraction path not permitted
I: Retraction setup of swivel CYCLE800 not set up
J: Retraction in tool direction is not permitted, because current Work (WCS) is mirrored
Tool carrier is active
K: Retraction and swivel plane and transformation on basic kinematic chain are active
Retraction with transformation only if align turning tool is active
L: Retraction in tool direction and align tool are only permitted if setting data 42954 $SC_TOOL_ORI_CONST_M=0
Transformation on basic kinematic chain is active
M: Retraction in tool direction and align tool are only permitted if setting data 42956 $SC_TOOL_ORI_CONST_T=0
Transformation on basic kinematic chain is active
N: Retraction in tool direction and swivel plane toward counterspindle are not possible
Turning machine with active tool carrier and initial setting -X (see swivel setup)
O: Retraction in tool direction, align tool with counterspindle is not possible
P: Retraction in tool direction in G18 toward counterspindle is not possible
Q: Retraction in tool direction is not permitted because the current Work (WCS) is mirrored
Align turning tool with milling/turning machine (transformation on basic kinematic chain) active
R: Retraction in tool direction is not possible with align tool
Align turning tool with milling/turning machine (transformation on basic kinematic chain) active

## 61191 [Channel %1: ] Block %2: Multi-axis transformation not set up. Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code:
Number or parameter name of multi-axis transformation

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61192 [Channel %1: ] Block %2: Additional multi-axis transformations not set up. Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Error code:
Number or parameter name of multi-axis transformation
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61193 [Channel %1: ] Block %2: compressor option not set up

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61194 [Channel %1: ] Block %2: spline interpolation option not set up

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61195 [Channel %1: ] Block %2: Aligning a turning tool is only possible with active turning tool

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Aligning turning tools is only possible with one active turning tool.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Change a turning tool, before you call alignment.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61196 [Channel %1: ] Block %2: No swiveling in JOG --> Multi-axis transformations and TCARR activated at the same time

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Multi-axis transformations (TRAORI) and Toolcarrier (TCARR) activated at the same time.

**Remedy:** Deselection of multi-axis transformation with TRAFOOF
or deselection of Toolcarrier (TCARR) with CYCLE800()

## 61197 [Channel %1: ] Block %2: Swiveling - plane not allowed -> Error code %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Error code:

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61198 [Channel %1: ] Block %2: Swiveling with kinematic chain -> Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61199 [Channel %1: ] Block %2: Swiveling - tool not allowed -> Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Error is also output if no swivel data record is active and only tool approach is programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** A CYCLE800 must be called with a valid swivel data record before orientation.
Error code:
A: Orientation of tool and change of swivel data record not allowed

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61200 [Channel %1: ] Block %2: Too many elements in machining block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machining block contains too many elements.

**Remedy:** Check the machining block, delete some elements if required.

## 61201 [Channel %1: ] Block %2: Wrong sequence in machining block

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The sequence of elements in the machining block is invalid.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Sort the sequence in the machining block.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61202 [Channel %1: ] Block %2: No technology cycle

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No technology cycle was programmed in the machining block.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Program a technology block.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61203 [Channel %1: ] Block %2: No position cycle

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No positioning cycle was programmed in the machining block.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Program positioning block.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61204 [Channel %1: ] Block %2: Technology cycle unknown

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The specified technology cycle in the machining block is unknown.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Delete and reprogram the technology block.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61205 [Channel %1: ] Block %2: Position cycle unknown

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The specified positioning cycle in the machining block is unknown.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Delete and reprogram the positioning block.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61206 [Channel %1: ] Block %2: Synchronizing possible only when using a job list

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Synchronizing with a counterspindle step in another channel is possible only if a job list is used.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Create job list and add programs for the individual channels.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61207 [Channel %1: ] Block %2: No counterspindle step found for synchronizing

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No counterspindle step was found in any channel with which this channel could synchronize.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Control program.
Delete step for synchronizing if it is not required.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61208 [Channel %1: ] Block %2: Assign parameters for main spindle chuck in the spindle chuck data

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The parameters for the main spindle chuck in the spindle chuck data are not assigned.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Indicate parameters ZCn, ZSn and ZEn in the screen "Parameters" > "Setting data" > "Spindle chuck data".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61209 [channel %1: ] block %2: counterspindle step programmed in several channels

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Counterspindle step may be programmed in one channel only.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** The step "Counterspindle: synchronizing" must be used in the other channels.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61210 [Channel %1: ] Block %2: Block search element not found

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The element specified for the block search does not exisit.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Repeat block search.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61211 [Channel %1: ] Block %2: Absolute reference missing

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** An incremental indication was made, but the absolute reference is unknown.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Program an absolute position prior to using incremental indications.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61212 %[[Channel %1: ] Block %2: %]Wrong tool type

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The tool type is not suitable for machining.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Select a new tool type.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61213 [Channel %1: ] Block %2: Circle radius too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The programmed circle radius is too small.
**Remedy:** Correct the circle radius, center point or end point.

**61214** **[Channel %1: ] Block %2: No pitch programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No thread/helical pitch has been entered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program a pitch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61215** **[Channel %1: ] Block %2: Unfinished dimension incorrectly programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Check the blank spigot dimensions. The blank spigot must be larger than the production part spigot.

**Remedy:** Check parameters _AP1 and _AP2.

**61216** **%[[Channel %1: ] Block %2: %]Feed/tooth only possible with cutting tools**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Feed per tooth is only possible with milling tools.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** As alternative, set a different feed type.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61217** **[Channel %1: ] Block %2: Cutting speed programmed for tool radius 0**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** To be able to work with cutting speed, the tool radius has to be specified.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter a value for cutting speed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61218** **[Channel %1: ] Block %2: Feed/tooth programmed, but number of tools equals zero**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For feed per tooth, the number of teeth has to be specified.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter the number of teeth on the milling tool in the "Tool list" menu.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61219 [Channel %1: ] Block %2: Tool radius too large

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The tool radius is too large for machining.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Select a suitable tool.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61220 [Channel %1: ] Block %2: Tool radius too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The tool radius is too small for machining.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Select a suitable tool.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61221 [Channel %1: ] Block %2: No tool active

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No tool active.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Select a suitable tool.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61222 [Channel %1: ] Block %2: Plane infeed greater than tool diameter

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The plane infeed must not be greater than the tool diameter.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Reduce plane infeed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61223 [Channel %1: ] Block %2: Approach path too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The approach path must not be less than zero.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter a greater value for the approach path.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61224 [Channel %1: ] Block %2: Retract path too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The retract path must not be less than zero.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter a greater value for the retract path.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61225 [Channel %1: ] Block %2: Swivel data record unknown

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to access a swivel data block which has not been defined.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select another swivel data block or define a new swivel data block.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61226 [Channel %1: ] Block %2: Swivel head cannot be exchanged

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The parameter "Swivel data block" is set to "No". In spite of this, an attempt has been made to change the swivel head.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set the parameter "Swivel data block" in the setup screen "Rotary axes" to "Automatic" or "Manual".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61227 [Channel %1: ] Block %2: Target position cannot be reached: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The target position of the approach motion is outside the software limit switch. This situation may arise from swiveling or coordinate rotations.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If possible, lower retraction plane. Select alternative solution for swiveling (direction +/-) or clamp on workpiece differently.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61228 [Channel %1: ] Block %2: Retraction plane for swiveling with swivel head not reached due to software limit switches

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Retraction plane not reached!

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct retraction plane

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61229 [Channel %1: ] Block %2: The external retraction plane must be greater than the internal retraction plane

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The external retraction plane must be greater than the internal retraction plane.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the retraction planes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61230 [Channel %1: ] Block %2: Tool probe diameter too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool probe has not been calibrated correctly.

**Remedy:** Check the following machine or setting data: 51780 $MNS_J_MEA_T_PROBE_DIAM_RAD[n]

## 61231 [Channel %1: ] Block %2: ShopMill program %4 not executable, as not tested by ShopMill

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Program name

**Explanation:** Before a ShopMill program can be executed, it has to be tested by ShopMill.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** The program first has to be simulated in ShopMill or loaded into the operating mode "Machine auto" by ShopMill.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61232 [Channel %1: ] Block %2: Impossible to load magazine tool

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Only manual tools may be loaded into a swivel head in which only manual tools can be loaded.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Load a manual tool into the swivel head or set the parameter "Tool change" on the setup screenform "Rotary axes" to "Automatic".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61233 [Channel %1: ] Block %2: Thread angle wrongly defined

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The thread angles were specified too large or too small.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Check thread geometry.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61234 [Channel %1: ] Block %2: ShopMill subroutine %4 cannot be executed, as not tested by ShopMill

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Subroutine name
**Explanation:** Before a ShopMill subroutine can be used, it has to be tested by ShopMill.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** The subroutine first has to be simulated in ShopMill or loaded into the ShopMill operating mode "Machine auto".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61235 [Channel %1: ] Block %2: ShopTurn program %4 cannot be executed as not tested by ShopTurn.

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Program name

**Explanation:** Before a ShopTurn program can be executed, it has to be tested by ShopTurn.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** First simulate the program in ShopTurn or load it into the ShopTurn operating mode "Machine auto".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61236 [Channel %1: ] Block %2: ShopTurn subroutine %4 cannot be executed as not tested by ShopTurn.

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Subroutine name
**Explanation:** Before a ShopTurn subroutine can be used, it has to be tested by ShopTurn.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Simulate the subroutine first in ShopTurn or load it into the ShopTurn operating mode "Machine auto".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61237 [Channel %1: ] Block %2: Retraction direction unknown. Withdraw tool manually!

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The tool is in the retraction area and it is unknown in which direction it can be travelled out of it.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Manually retract the tool from the retraction area defined in the program header and restart the program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61238 [Channel %1: ] Block %2: Machining direction unknown!

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The direction of the next machining is unknown.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Please contact the responsible Siemens regional office.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61239 [Channel %1: ] Block %2: Tool change point lies within retraction area!

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool change point has to be far enough outside the retraction area so that no tool extends into the retraction area when the turret is swiveled.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Specify another tool change point.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61240 %[[Channel %1: ] Block %2: %]Wrong feed type

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The feed type is not possible for this machining.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check feed type

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61241 [Channel %1: ] Block %2: Retraction plane not defined for this machining direction

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No retraction plane has been defined for the selected machining direction.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Define the missing retraction plane.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61242 [Channel %1: ] Block %2: Wrong machine direction

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machining direction has been specified incorrectly.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the programmed machining direction.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61243 [Channel %1: ] Block %2: Correct tool change point, tool tip in retraction area!

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool change point must be situated so far outside the retraction area that no tool protrudes into the retraction area on turret swivelling.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Specify another tool change point.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61244 [Channel %1: ] Block %2: Pitch change leads to undefined thread

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The specified pitch change causes a reversal of the thread direction.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Check thread pitch change and thread geometry.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61245 [Channel %1: ] Block %2: Machining plane does not match modal machining plane

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Machining plane does not match modal one.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Check the machining plane.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61246 [Channel %1: ] Block %2: Safety distance too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The safety clearance is too small for machining.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase safety clearance.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61247 [Channel %1: ] Block %2: Blank radius too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The blank radius is too small for machining.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase blank radius.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61248 [Channel %1: ] Block %2: Infeed too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The infeed is too small for machining.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase infeed.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61249 [Channel %1: ] Block %2: Number of edges too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The number of edges is too small.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase number of edges.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61250 [Channel %1: ] Block %2: Width across flats/edge length too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The width across flats/edge length is too small.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase key width/edge length.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61251 [Channel %1: ] Block %2: Width across flats/edge length too large

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The width across flats/edge length is too large.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Decrease key width/edge length.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61252 [Channel %1: ] Block %2: Chamfer/radius too large

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Chamfer/radius is too large.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Decrease chamfer/radius.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61253 [Channel %1: ] Block %2: No finishing allowance programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No finishing allowance has been entered.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Programm a finishing allowance.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61254 [Channel %1: ] Block %2: Error while traveling to fixed stop

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Error on travelling to fixed stop.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** specify another Z1 position for gripping the counterspindle.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61255 [Channel %1: ] Block %2: Error during cut-off: Tool broken?

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Cut-off could not be completed. A tool breakage might have occurred.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Check the tool.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61256 [Channel %1: ] Block %2: Mirroring not allowed at program start. Deselect work offset!

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Mirroring impermissible at program start.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Deselect work offset.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61257 [Channel %1: ] Block %2: incomplete setup of counterspindle

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Setup of the counterspindle is incomplete.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** The following machine and setting data must be set for the counterspindle:
MD 52206 $MCS_AXIS_USAGE
SD 55232 $SCS_SUB_SPINDLE_REL_POS
SD 55550 $SCS_TURN_FIXED_STOP_DIST
SD 55551 $SCS_TURN_FIXED_STOP_FEED
SD 55552 $SCS_TURN_FIXED_STOP_FORCE
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61258 [Channel %1: ] Block %2: Assign parameters for counterspindle chuck in the spindle chuck data

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The parameters for the counterspindle chuck in the spindle chuck data have not been assigned.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Indicate parameters ZCn, ZSn and ZEn in the screen "Parameters" > "Setting data" > "Spindle chuck data".
**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61259** **[Channel %1: ] Block %2: program contains new machining steps from ShopMill %4**

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = ShopMill version

**Explanation:** The program has been created with a ShopMill version that is higher than the existing one.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete the machining step and reprogram machining if required.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61260** **[Channel %1: ] Block %2: program contains new machining steps from ShopTurn %4**

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = ShopTurn version

**Explanation:** The program has been created with a ShopTurn version that is higher than the existing one.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete the machining step and reprogram machining if required.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61261** **[Channel %1: ] Block %2: center offset too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The center offset on center drilling is larger than permissible.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter lower eccentricity ($SCS_DRILL_MID_MAX_ECCENT).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61262** **[Channel %1: ] Block %2: pitch not possible with selected tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The pitch of the tap does not match the programmed pitch.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a tap with the programmed pitch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61263** **[Channel %1: ] Block %2: Chained ShopMill program blocks not permissible in subprogram on pos. pattern**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a subroutine is called from a position pattern, the subroutine itself must not include a position pattern.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reprogram machining.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61264** **[Channel %1: ] Block %2: Chained ShopTurn program blocks not permissible in subprogram on pos. pattern**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** If a subroutine is called from a position pattern, the subroutine itself must not include a position pattern.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reprogram machining.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61265** **[Channel %1: ] Block %2: Too many restrictions, use rectangular pocket**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In face milling a maximum of only 3 sides can be delimited.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use pocket cycle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61266** **[Channel %1: ] Block %2: Illegal machining direction**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In face milling, the delimitations and the direction of machining do not match.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select another direction of machining.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61267** **[Channel %1: ] Block %2: Plane infeed too large, residual corners remain**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In face milling, the plane infeed must not exceed 85%.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select a smaller plane infeed, as otherwise residual corners will be left over.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61268** **[Channel %1: ] Block %2: Illegal machining direction, residual corners are left over.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In face milling, the machining direction does not match the selected delimitations.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The machining direction must be selected to match the delimitations.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61269** **[Channel %1: ] Block %2: External tool diameter too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Incorrect tool definition.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check angle and diameter of the tool used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61270** **%[[Channel %1: ] Block %2: %]Chamfer width too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Chamfer width selected too small.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Increase the chamfer width.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61271** **%[[Channel %1: ] Block %2: %]Chamfer width greater than tool radius**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Chamfer width larger than tool radius.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a larger tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61272** **%[[Channel %1: ] Block %2: %]Insertion depth too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Insertion depth on chamfering too small.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Increase the insertion depth.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61273** **%[[Channel %1: ] Block %2: %]Insertion depth too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Insertion depth on chamfering too large.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Decrease the insertion depth.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61274** **%[[Channel %1: ] Block %2: %]Invalid tool angle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Invalid tool angle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check tool angle

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61275** **[Channel %1: ] Block %2: Target point violates software limit switch!**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Due to a swivel action, the end point is outside the software limit switches.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select another retraction plane or approach a suitable interpolation point.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61276** **[Channel %1: ] Block %2: External tool diameter required for restrictions**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Outer tool diameter required in case of delimitations.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Specify the outer tool diameter.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61277** **[Channel %1: ] Block %2: Tool diameter larger than restriction**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Tool diameter larger than delimitation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a smaller tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61278** **[Channel %1: ] Block %2: If tool angle is larger than 90°, both tool diameters must be equal**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For tool angles larger than 90°, the two tool diameters must be identical.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the tool angle or the tool diameters.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61279** **[Channel %1: ] Block %2: If tool angle equals 90°, both tool diameters must be equal**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For tool angles equal to 90°, the two tool diameters must be identical.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the tool angle or the tool diameters.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61280** **[Channel %1: ] Block %2: %4- Mirroring missing in work offset for counterspindle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The work offset for counterspindle machining does not have Z mirroring.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select Z mirroring for the work offset used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61281** **[Channel %1: ] Block %2: starting point of machining outside retraction planes**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The starting point of machining is outside the retraction planes.
It is derived from the programmed geometry plus the safety distance in the selected machining direction.
The calculated point must lie within the retraction area to ensure safe approach.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adjust the retraction planes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61282** **[Channel %1: ] Block %2: end point of machining outside retraction planes**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The end point of machining is outside the retraction planes.
It is calculated internally (according to the selected machining strategy).

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adjust the retraction planes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61283** **[Channel %1: ] Block %2: direct approach not possible, as tool change required**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** After block search a position is to be reached by direct approach, but a tool change is required before.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** First execute a manual tool change, then restart the block search.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61284** **[Channel %1: ] Block %2: starting point cannot be approached without collision. Pre-position tool manually**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The starting point cannot be approached without collisions.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Preposition the tool manually.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61285** **[Channel %1: ] Block %2: parking position is below return plane XRA.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The parking position is below retraction plane XRA.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Move the parking position above retraction plane XRA.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61286** **[Channel %1: ] Block %2: machining not possible, check tool angle.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Machining not possible with the specified tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a suitable tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61287** **%[[Channel %1: ] Block %2: %]No master spindle active.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No master spindle active.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Activate the master spindle (machine data 20090).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61288** **[Channel %1: ] Block %2: Main spindle not set up**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61289** **[Channel %1: ] Block %2: Counterspindle not set up**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61290** **[Channel %1: ] Block %2:Tool spindle not set up**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61291 [Channel %1: ] Block %2: Linear axis of counterspindle not set up

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61292 [Channel %1: ] Block %2: B axis not set up

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set up the B axis in the machine data 52206 $MCS_AXIS_USAGE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61293 [Channel %1: ] Block %2: Tool %4 has no spindle rotation direction

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select spindle rotation direction in tool list.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61294** **[Channel %1: ] Block %2: Active radius/diameter setting does not match reset setting**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Before starting up the program, set G group 29 (DIAMON, DIAMOF, etc.) to reflect the corresponding reset value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61295** **[Channel %1: ] Block %2: The value of the 'Axis sequence' parameter is illegal**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the "Axis sequence" parameter in the screenform

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61296** **[Channel %1: ] Block %2: Blank programmed incorrectly**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The blank has been programmed incorrectly.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Correct the blank.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61297** **[Channel %1: ] Block %2: Reference for incremental retraction plane missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The retraction plane can only be specified in increments if the blank is entered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program the retraction plane in absolute terms.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61298 [Channel %1: ] Block %2: No work offset entered for main spindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No work offset has been specified for the main spindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Specify a work offset for the main spindle in the program header or under Settings.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61299 [Channel %1: ] Block %2: No work offset entered for counterspindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No work offset has been entered for the counterspindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Specify a work offset for the counterspindle in the program header or under Settings.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61300 [Channel %1: ] Block %2: Probe defective

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61301 [Channel %1: ] Block %2: Probe not switching

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The measuring distance was completely traversed, but no switching signal was generated at the measuring input.

**Remedy:** -Check measuring input
-Check measuring distance
-Probe defective
-If the measuring cycles are used with SinuTrain or an NCU with simulated axes, check the machine data 13231 $MN_MEAS_PROBE_OFFSET.
MD13231 moves the MEAS switching position and must be less than the measuring distance parameterized in the current measuring cycle.

## 61302 [Channel %1: ] Block %2: Probe - collision

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The measuring probe collided with an obstacle when being positioned.

**Remedy:** - Check spigot diameter (may be too small)
- Check measuring distance (may be too long)

## 61303 [Channel %1: ] Block %2: Safety margin exceeded %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The measuring result differs greatly from the specified value.

**Remedy:** Check setpoint value and parameter TSA.

## 61304 [Channel %1: ] Block %2: Allowance

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The difference between actual and setpoint measurements is greater than the upper tolerance limit (screen parameter TUL):
- TUL is the upper tolerance limit of the measurement difference.
- TUL is always related to the material, irrespective of whether external or internal machining is involved.
- The hole/pocket is thus too small and the spigot is too large.
- This means that further material can be removed.
- The measuring cycle parameter TUL corresponds to "upper deviation", the usual term used in mechanical engineering for fits and tolerances.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61305 [Channel %1: ] Block %2: Dimension too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The difference between the actual and setpoint measurement is less than the lower tolerance limit (screen parameter TLL):
- TLL is the lower tolerance limit of the measurement difference.
- TLL is always related to the material, irrespective of whether external or internal machining is involved.
- The hole/pocket is thus too large and the spigot too small.
- This means that too much material has already been removed.
- The measuring cycle parameter TLL corresponds to "lower deviation", the usual term used in mechanical engineering for fits and tolerances.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61306 [Channel %1: ] Block %2: Permissible measuring difference exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check setpoint value and parameter DIF.

## 61307 [Channel %1: ] Block %2: Incorrect measuring variant %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Parameter S_MVAR has an invalid value.
Measure tool:
For milling/turning machines, calibration must be performed using Cycle971 and the permitted tool types.

## 61308 [Channel %1: ] Block %2: Check measuring path

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** For measuring, a traversing path is generated, the size of which can be specified. This describes the maximum distance before and after the expected switching position (workpiece edge).
This value must be greater than 0.
In AUTOMATIC operating mode:
- Check parameter DFA

In the JOG mode:
- Check machine data 51786 $MNS_J_MEA_T_PROBE_MEASURE_DIST, 51752 $MNS_J_MEA_M_DIST_TOOL_LENGTH and 51753 $MNS_J_MEA_M_DIST_TOOL_RADIUS.

## 61309 [Channel %1: ] Block %2: Check probe type

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Measurement of workpiece:
Check tool type of measuring probe in the tool management.
When measuring workpiece milling, tool types 710, 712, 713 or 714 should preferably be used. But a type 1xy can also be used.
Type 710 is permitted for workpiece measurement in all measuring cycles. Types 712, 713 and 714 are intended for special measuring tasks.
When measuring workpiece turning, tool type 580 should preferably be used. However, a type 1xy can also be used, but only if setting data $SC_TOOL_LENGTH_TYPE=2 is set.
Measurement of tool:
- For measuring tool milling, no permissible tool probe type is entered in SD54633 $SNS_MEA_TP_TYPE[S_PRNUM-1] or SD54648 $SNS_MEA_TPW_TYPE[S_PRNUM-1]. For probe type "Disk"
  the permissible working plane G17...G19 must be checked.
- "Cube" is the only tool probe type permitted on milling/turning machines:
  SD54633 $SNS_MEA_TP_TYPE=0 and SD54648 $SNS_MEA_TPW_TYPE=0

## 61310 [Channel %1: ] Block %2: Scale factor is active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Scale factor = scaling is active.

**Remedy:** Switch off the active scale factor in the program. Measuring is not possible with an active scale factor.

**61311** **[Channel[Channel %1: ] Block %2: No D number is active**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No tool offset for the measuring probe (for workpiece measurement) or no tool offset for the active tool (for tool measurement) is selected.

**Remedy:** Select a cutting edge number D of the tool.

**61312** **[Channel %1: ] Block %2: Check measuring cycle number**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** The measuring cycle called is impermissible for the current technology.

**61313** **[Channel %1: ] Block %2: Check probe number**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameter S_PRNUM.
Measure workpiece: Parameter S_PRNUM 1 to 40
Measure tool: Parameter S_PRNUM 1 to 6

**61314** **[Channel %1: ] Block %2: Check selected tool type**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Measure workpiece:
- Specify new S_PRNUM or recalibrate probe
- Check whether the probe (type 7xx or 5xx) is suitable for the measuring task

Measure tool:
Tool type impermissible for calibration (adjustment) of the tool probe.

**61315** **[Channel %1: ] Block %2: Check position of cutting edge**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When measuring the workpiece for the technology turning, cutting edge positions 7 and 8 are allowed for probe type 580.
Cutting edge positions 5 and 6 are also possible in special applications, such as measuring at the counterspindle.

**Remedy:** When measuring the workpiece for the technology turning, check the cutting edge position of the probe in the tool list.
When measuring the tool for the technology turning with orientable toolholders, the active cutting edge position of the probe is evaluated.
In this case, the currently active cutting edge position must be checked.

**61316** **[Channel %1: ] Block %2: Center and radius cannot be determined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No circle can be calculated from the measured points, as all measured points lie on a straight line.

**Remedy:** Program change

## 61317 [Channel %1: ] Block %2: Check number of circle calculation points

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Parameterization faulty. 3 or 4 points are required to calculate the center point.

**Remedy:** Change parameterization of CYCLE116.

## 61318 [Channel %1: ] Block %2: Check weighting factor

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** - Check parameter (FW)

## 61319 [Channel %1: ] Block %2: Check call parameter CYCLE114

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check call parameter CYCLE114.

## 61320 [channel %1: ] block %2: check tool name / number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** - Check parameter S_TNAME.
With active tool management, parameter S_TNAME is empty or
the specified tool name is unknown to the tool management.

## 61321 [Channel %1: ] Block %2: Check WO memory number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The work offset to be corrected does not exist.
Or a correction should be made to the coordinate rotation of a global work offset.
Global work offsets have only linear offsets and no rotational offsets.
It is therefore not possible to correct measured angles or other rotational offsets
in them.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the number of the work offset to be corrected that is specified in the measuring cycle mask.
Check also the parameters S_KNUM and S_KNUM1 in the measuring cycle interface.

If the machine data 18601 $MN_MM_NUM_GLOBAL_USER_FRAMES is greater than zero, all work offsets are globally defined. In this case, no coordinate rotation can be corrected. If you want to correct a coordinate rotation, the machine data 18601 must be set to zero so that the work offsets are defined according to the specific channel.
For this the machine data 18601 $MN_MM_NUM_GLOBAL_USER_FRAMES and
28080 $MC_MM_NUM_USER_FRAMES must be checked

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61322** **[Channel %1: ] Block %2: Check 4th digit of _KNUM**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The stated digit of _KNUM includes invalid values. Also check _MVAR.

**Remedy:** Check parameter for the tool offset target (_KNUM) and/or the measurement variant (S_MVAR).

**61323** **[Channel %1: ] Block %2: Check 5th digit of _KNUM**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The stated digit of _KNUM includes invalid values. Also check _MVAR.

**Remedy:** Check parameter for the tool offset target (_KNUM) and/or the measurement variant (S_MVAR).

**61324** **[Channel %1: ] Block %2: Check 6th digit of _KNUM**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The stated digit of _KNUM includes invalid values. Also check _MVAR.

**Remedy:** Check parameter for the tool offset target (_KNUM) and/or the measurement variant (S_MVAR).

**61325** **[Channel %1: ] Block %2: Check measuring axis/offset axis**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check the parameter for the measuring axis (X, Y, Z).

**61326** **[Channel %1: ] Block %2: Check measuring direction**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Milling measuring cycles:
- Check the measuring direction (+/-) entered in the mask.

Turning measuring cycles:
- Check the current pre-positioning of the workpiece probe with reference to the entered inner or outer measurement (setpoint).

**61327** **[Channel %1: ] Block %2: Program reset required**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** NC reset required.

**Remedy:** Execute NC reset.

**61328** **[Channel %1: ] Block %2: Check D number**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The D number in parameter _KNUM is larger than the maximum value in the machine data 18105 $MN_MM_MAX_CUTTING_EDGE_NO.
Only cutting edges 1 and 2 are permitted for the "simultaneous measurement" function.

**Remedy:** Check the parameter for the tool offset target (S_KNUM1).
Check the value in the machine data 18105 $MN_MM_MAX_CUTTING_EDGE_NO.

### 61329 [Channel %1: ] Block %2: Check rotary axis

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** No name has been assigned to the axis number specified in the parameter of the rotary axis, or this axis is not configured as a rotary axis.
Check the machine data 20080 $MC_AXCONF_CHANAX_NAME_TAB, 30300 $MA_IS_ROT_AX and 52207 $MCS_AXIS_USAGE_ATTRIB Bit6.

### 61330 [Channel %1: ] Block %2: Coordinate rotation active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No measuring possible in the rotated coordinate system.

**Remedy:** Check the conditions for measuring.

### 61331 [Channel %1: ] Block %2: Angle too large, change measuring axis

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The parameter Start angle (alpha 0) is too large for the specified measuring axis.

**Remedy:** Select a different measuring axis or check the value for the start angle.

### 61332 [Channel %1: ] Block %2: Modify tool tip position

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tool tip is below the measuring probe surface (e.g. for a ring gauge or cube).

**Remedy:** Place the tool above the measuring probe surface.

### 61333 [Channel %1: ] Block %2: Check calibration block number

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The _CALNUM parameter is too large.

**Remedy:** Reduce the _CALNUM parameter to the permissible value.
Check the following machine data: 51601 $MNS_MEA_CAL_EDGE_NUM

### 61334 [Channel %1: ] Block %2: Check safety area

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameters for the protection area:
-XS
-YS
-ZS

### 61335 [Channel %1: ] Block %2: Reserved

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Alarm triggered: Reserved

**Remedy:** reserved

## 61336 [Channel %1: ] Block %2: Geometry axes do not exist

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Not all the geometry axes required for measurement or machining are configured.

**Remedy:** Machine data 20060[0..2] $MC_AXCONF_GEOAX_NAME_TAB must be checked and, if necessary, changed.

## 61337 [Channel %1: ] Block %2: Check measuring input

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61338 [Channel %1: ] Block %2: Positioning speed equal to zero

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In some measuring variants, e.g. measuring spigots (CYCLE977), intermediate paths are generated in addition to the actual measuring paths.
These are traversed at a specific feed rate.
The values for the feed rate can be found in the setting data 55634 $SCS_MEA_FEED_PLANE_VALUE, 55636 $SCS_MEA_FEED_FEEDAX_VALUE and 55640 $SCS_MEA_FEED_CIRCLE.

**Remedy:** Check the values for the feed rate in the setting data 55634 $SCS_MEA_FEED_PLANE_VALUE, 55636 $SCS_MEA_FEED_FEEDAX_VALUE and 55640 $SCS_MEA_FEED_CIRCLE.

## 61339 [Channel %1: ] Block %2:Correction factor for rapid traverse speed = 0

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The correction factor for rapid traverse speed is 0.

**Remedy:** Check setting data 55632 $SCS_MEA_FEED_RAPID_IN_PERCENT.

## 61340 [Channel %1: ] Block %2: Incorrect alarm number

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Internal error in measuring cycles.

## 61341 [Channel %1: ] Block %2: Probe not calibrated in active plane or wrong calibration data record

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The probe is not calibrated in the active plane or an incorrect calibration data set has been selected.

**Remedy:** Calibrate the probe before measuring.
Check the number of the probe calibration data field (calibration data record) in parameter S_PRNUM.
Note planes G17, G18 and G19. Only G18 is permitted for workpiece measurement when turning.
Check: Setting data 54611 $SNS_MEA_WP_FEED[S_PRNUM-1] > 0 after calibration

**61342** **[Channel %1: ] Block %2: Upgrade NCK software version**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Upgrade NCU software version.

**61343** **%[[channel %1: ] block %2:%]Tool does not exist: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the tool name.

**61344** **[Channel %1: ] Block %2: Several tools are active**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Remove tool from another spindle.

**61345** **[Channel %1: ] Block %2: D number of tool offset, too many digits**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reduce the D number in _KNUM or check MD of flat D number.

**61346** **[Channel %1: ] Block %2: Distance between starting point and measuring point is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The distance between the starting point and the measuring point is less than or equal to 0.
The parameters X1 or X2 are not occupied or smaller than 0.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameters X1 and X2.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61347** **[Channel %1: ] Block %2: Angle 1st edge - 2nd edge equals 0**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The parameter following angle (alpha 1) is 0.

**Remedy:** Check the parameter following angle (alpha 1).

**61348** **[Channel %1: ] Block %2: Angle rel. to reference edge equals 0**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61349 [Channel %1: ] Block %2: Distance upper probe edge - measuring position = 0 for tool radius measurement

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The distance between the upper edge and lower edge of the tool probe is 0. This is relevant for radius measurement.

**Remedy:** Check the setting data 54634 $SNS_MEA_TP_CAL_MEASURE_DEPTH.

## 61350 [Channel %1: ] Block %2: Feed, speed not programmed for tool measurement with rotating spindle

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** No feed rate or spindle speed is programmed for tool measurement with rotating spindle.

**Remedy:** Check parameters F1 and S1.

## 61351 [Channel %1: ] Block %2: Tool length or radius is 0

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The active tool length or the active tool radius is 0.

**Remedy:** Cutter: - Check length and radius of the active tool in the compensation data memory
Drill: - Check length of the active tool in the compensation data memory
- Radius or tip angle of the active tool must be predefined in the compensation data memory

## 61352 [Channel %1: ] Block %2: Path for logfile not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The specified path for the log file is incorrect.

**Remedy:** Check the programmed path specification.
Check parameter _PROTNAME[0].

## 61353 [Channel %1: ] Block %2: Path for logfile not found

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The specified directory does not exist or the specified path is incorrect.

**Remedy:** Check the programmed path specification.
Check parameter _PROTNAME[0].

## 61354 [Channel %1: ] Block %2: Log file not found

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** No name specified for the log file.

**Remedy:** Check the programmed path specification.
Check parameter _PROTNAME[0].

## 61355 [Channel %1: ] Block %2: Incorrect file type for logfile

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The file extension for the log file is incorrect.
The file extensions .txt and .csv are permitted.

**Remedy:** Check parameter _PROTNAME[0].

## 61356 [Channel %1: ] Block %2: Logfile is being used

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The log file is already used by an NC program.

**Remedy:** Check parameter _PROTNAME[1].

## 61357 %[[Channel %1: ] Block %2: %] Not enough NC memory or too many files/directories in the NC

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** There is not enough NC memory available or there are too many files or directories in the NC file system.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete files whose names are comprised exclusively of numbers, e.g. "201202100938202_MPF", in the directory /_N_WKS_DIR/_N_TEMP_WPD.
Also check whether other files in this directory can be deleted.
Check, and if required, increase machine data 18320: $MN_MM_NUM_FILES_IN_FILESYSTEM.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61358 [Channel %1: ] Block %2: Error during reporting: WRITE command %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Internal error caused by the WRITE command.

**Remedy:** Causes of error codes:
10 The file size specified in MD11420 $MN_LEN_PROTOCOL_FILE has been reached (file is full).
Machine data MD11420 must be set to a value of at least 20 kB, and this sets the maximum size of the log file.
- Increase the value in MD11420 or
- Select log data "new" in cycle150 (data are overwritten) or
- Delete log file or
- Create new log file (change the name of the log file in CYCLE150)

Error code 10 occurs only when logging in the passive file system of the NC.
13 The protection level must be greater than or equal to the Write right of the stated log file.
16 Check the path of the log file (invalid external path).
Other errors: See Programming Guide: WRITE command
Save measurement results:
After eliminating the cause of the error, the associated log can be generated with the function "Report last measurement".

**61359** **[Channel %1: ] Block %2: Error recording in table format: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Internal error

**Remedy:** Call the hotline!

**61360** **[Channel %1: ] Block %2: Error recording in JOG: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Internal error

**Remedy:** Call the hotline!

**61361** **[Channel %1: ] Block %2: Error reporting last measurement %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Internal error

**Remedy:** Call the hotline!

**61362** **[Channel %1: ] Block %2: Tolerance of the linear vector %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** If the error comes from CYCLE996 or CYCLE9960:
The tolerance of the linear vectors is exceeded during the measurement of the kinematics.
The value of the tolerance is transferred in parameter TLIN.
If TLIN=0 or tolerance (check) = no, the measured vectors are not monitored.

**Remedy:** A 2nd measurement with a larger tolerance can be made for the analysis. The kinematic data should not be overwritten.
The newly measured vectors are documented in the measurement log (data file).

**61363** **[Channel %1: ] Block %2: Tolerance of the rotary axis vector %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The rotary axis orientation is also calculated during kinematic measurement.
If the deviation is negligible and only the tolerance range is too small, this can be changed in $SN_CORR_TRAFO_DIR_MAX.
A deviation of the rotary axis orientation can also have a mechanical cause.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If the deviation is very large, the cause may be a small measuring circuit.
With a rotary table, the calibration ball must not be too close to the center of rotation.
With head kinematics, the measuring circuit can be enlarged by positioning the 2nd rotary axis when measuring the first.

**61364** **[Channel %1: ] Block %2: Check distance between measuring points %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** In automatic mode, the Distance measuring points (_ID) parameter must be checked.
In JOG mode, the selected measuring points are congruent. The measuring points must be redefined.

**61365** **[Channel %1: ] Block %2: Check circular feed**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check parameter SD55640 $SCS_MEA_FEED_CIRCLE

**61366** **[Channel %1: ] Block %2: Direction of rotation for tool measurement with rotating spindle not specified.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check setting data 54674 $SNS_MEA_CM_SPIND_ROT_DIR. Permissible values are 3 (corresponds to M3) or 4 (corresponds to M4)

**61367** **[channel %1: ] block %2: parameters %4 are identical**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Specify different positions for the relevant points of P1(X1,Y1), P2(X2,Y2), P3(X3,Y3) and P4(X4,Y4).

**61368** **[channel %1: ] block %2: straights through parameter %4 do not intersect**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Specify different positions for the relevant points of P1(X1,Y1), P2(X2,Y2), P3(X3,Y3) and P4(X4,Y4).

**61369** **[Channel %1: ] Block %2: Position of corner not clearly definable, check parameter %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Define points P1(X1,Y1) and P2(X2,Y2) or P3(X3,Y3) and P4(X4,Y4) so that the intersection of the straight lines passing through these points
lies outside the sections formed by P1(X1,Y1) and P2(X2,Y2) or P3(X3,Y3) and P4(X4,Y4).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61371** **[Channel %1: ] Block %2: Product of column width and number of columns is greater than %4 characters per line**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check user programming in CUST_MEAPROT.SPF.

**61372** **[Channel %1: ] Block %2: selected meas.variant requires SPOS-capable spindle**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Change the measuring variant or check the machine equipment.
If the error message comes from CYCLE9960:
Calibration of the probe on ball is not possible with non-SPOS-capable spindle.
Select measuring variant without calibration.

**61373** **[Channel %1: ] Block %2: No SPOS-capable spindle available**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** - Check configuration/parameterization of the spindle axis
- If the intention to use a 3D workpiece probe at a "non-SPOS capable spindle",
then check the setting of MD 52207 $MCS_AXIS_USAGE_ATTRIB[n], bit 9 (also see Commissioning instructions, cycles)
- If a 3D workpiece probe is attached to the machine outside the spindle,
then check the setting of MD 51740 $MNS_MEA_FUNCTION_MASK, bit 4. (also see Commissioning instructions, cycles)

**61374** **[Channel %1: ] Block %2: Probe not calibrated in axis direction %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The probe is not calibrated in the specified axis direction.
Axis calibration is deleted if the following conditions change between
two calibrations:
- Measuring speed
- Spindle position
- Rotations of the coordinate system
- Reference of probe length to ball end or center (MD51740 Bit 1)
- Correction of ball diameter in tool or calibration data (MD54740 Bit 3)

**Remedy:** Calibrate the probe in the specified axis direction.
Check part program and make sure that no condition mentioned above
has been changed between two calibrations.

**61375** **[Channel %1: ] Block %2: Trigger values of measuring sensor are incompatible**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Trigger values of the tool measuring sensor must be fully described either via the _TP[] / _TPW[] fields or via the setting data (SD: 54625-54632 or SD: 54640-54647). A mixture of the two variants is not permitted.

**61376** **[Channel %1: ] Block %2: Number of teeth missing from tool parameters**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Enter the number of teeth of the tool in the tool management.

**61377** **[Channel %1: ] Block %2: Dimensional tolerance %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Error message is displayed while measuring the kinematics of a grinding machine:
When the kinematics are measured (CYCLE496), it is checked whether the measured vectors
lie within the tolerance value of setting data $SCS_GRIND_MEA_KIN_TOL.

**Remedy:** Error message is displayed while measuring the kinematics of a grinding machine:
Enter the vectors of the kinematics in advance so that the tolerance value
in setting data 55844 $SCS_GRIND_MEA_KIN_TOL is not exceeded during the following measuring process.

**61378** **[Channel %1: ] Block %2: Tool spindle is not the master spindle**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Before calling the measuring cycles, the tool spindle must be defined as master spindle (SETMS...).

**61379** **[Channel %1: ] Block %2: Too many teeth**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Tools with a maximum of 100 teeth can be measured.

**Remedy:** Check the number of teeth of the tool in tool management.

**61380** **[Channel %1: ] Block %2: Tool probe width too small**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The width of the tool probe is too small.

**Remedy:** Check the following machine data: 51781 $MNS_MEA_T_PROBE_THICKNESS[n]

**61381** **[Channel %1: ] Block %2: Coupling the spindle position with coordinate rotation around %4 not executable**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The alarm relates to the cross-measuring tasks measuring cycle function "Coupling of spindle position with coordinate rotation around the infeed axis".
This function requires a positionable spindle.

**Remedy:** If a positionable spindle is not available for holding the workpiece probe,
the function "Coupling the spindle position with coordinate rotation around the infeed axis"
can be deactivated with setting data 55740 $SCS_MEA_FUNCTION_MASK, bit 1=0.

**61382** **[Channel %1: ] Block %2 probe is attached to the machine, measuring variant is not possible**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The measuring variant cannot be executed with a probe permanently mounted on the machine.
The selected measuring variant requires rotational positioning/alignment of the probe.

**Remedy:** Select a measuring variant that does not require rotational positioning/alignment of the probe.

**61383** **[Channel %1: ] Block %2: Rotary axis 1: Diameter tolerance of calibration ball of measurement %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** CYCLE996: See measured diameter in the parameters _OVR[72] to _OVR[74] or the value in the SD $SCS_MEA_KIN_DM_TOL
CYCLE9960: See measured diameter in the parameters _OVR[72] or the value in the SD $SCS_MEA_KIN_DM_TOL

**Remedy:** Check the calibration data or recalibrate the 3D probe.
Check also the mechanical structure (stiffness) of the calibration ball in the machine.

**61384** **[Channel %1: ] Block %2: Rotary axis 2: Diameter tolerance of calibration ball of measurement %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** CYCLE996: See measured diameter in the parameters _OVR[75] to _OVR[77] or the value in the SD $SCS_MEA_KIN_DM_TOL
CYCLE9960: See measured diameter in the parameters _OVR[75] or the value in the SD $SCS_MEA_KIN_DM_TOL

**Remedy:** Check the calibration data or recalibrate the 3D probe.
Check also the mechanical structure (stiffness) of the calibration ball in the machine.

**61385** **[Channel %1: ] Block %2: Probe not calibrated in the coordinate system**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Probe has not been calibrated in the coordinate system set in MD52000 $MCS_DISP_COORDINATE_SYSTEM.

**Remedy:** Calibrate the probe before measurement.

**61386** **[Channel %1: ] Block %2: Invalid protection level for executing measuring cycles %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The protection level is inadequate for the execution of measuring cycles.

**Remedy:** Check machine data 51742 $MNS_MEA_ACCESS_EXEC and 11160 $NM_ACCESS_EXEC_CST.

**61387** **[Channel %1: ] Block %2: Internal execution error**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Call the SIEMENS hotline

**61401** **[Channel %1: ] Block %2: Probe does not switch, path reduced by software end position %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The traversing path would extend beyond the software end position on the current measuring axis.
The traversing path has currently been shortened, and does not reach the position specified as a setpoint.
Alarm 61401 is output after 5 unsuccessful contact attempts.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check setpoint value specification.
- Reduce the measuring distance (DFA).
- Place the workpiece further away from the software end position.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61402 [Channel %1: ] Block %2: Probe collision, path reduced by software end position %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** This alarm is only output with external measurements (web, spigot, ball) in conjunction with a possible collision in the infeed axis.
The collision is caused by the reduction of the path in the measuring axis of the working plane, before lowering the infeed axis to the measuring height.
The probe was switched during the following infeed in the infeed axis.
If the path had not been reduced, the traversing movement would have extended beyond the software end position of the working plane, and the corresponding NCK alarm 10722 would have been triggered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check setpoint value specification.
- Place the workpiece further away from the software limit position.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61403 [Channel %1: ] Block %2: Work offset correction not executed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** The measurement result contains more than one rotation component around the geometry axes of the coordinate system.
However, only one of the rotation components of a rotary axis can be corrected.
To prevent any consequential position errors, the offset of the selected rotary axis is not performed.
"Correction into the coordinate system" must be selected as the bypass.

## 61404 [Channel %1: ] Block %2: Tool correction not executed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The offset of the selected tool could not be executed
because of the current tool status.
The following applies to tools without a tool status:
- Must not be disabled, must have been active and in use.
The following applies to tools that form a tool grouping:
- Must not be disabled, must have been active and in use.

**Remedy:** Check the tool state and adapt accordingly.

## 61405 [Channel %1: ] Block %2: Tool environment does not exist

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Correct the name of the tool environment (_TENV) or create this environment.

## 61406 [Channel %1: ] Block %2: Check DL number

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check parameter DL.
Check also the number of the sum and setup offset.

## 61407 [Channel %1: ] Block %2: Check 7th digit and higher of _KNUM

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**
- Check parameter _KNUM.
- Check the the number of the sum offset and that of the setup offset.

## 61408 [Channel %1: ] Block %2: total offsets not present

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Set MD 18080, Bit 8=1

## 61409 [Channel %1: ] Block %2: set up offsets not present

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Set MD 18112, Bit 4=1

## 61410 [Channel %1: ] Block %2 access to nonexistent tool element or property

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** The variable to be corrected requires an option or an increase in MD values.

## 61411 [Channel %1: ] Block %2: Check the distribution of measuring points on the plane.

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the setpoint and actual values.

## 61412 [Channel %1: ] Block %2: channel basic frame not present

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Set machine data 28081 $MC_MM_NUM_BASE_FRAMES > 0 or check $P_CHBFRMASK > 0.

## 61413 [Channel %1: ] Block %2: check setpoint of ball diameter, %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check setpoint value for the spherical diameter.

**61414** **[Channel %1: ] Block %2 : distortion of triangle over limit**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the setpoint and actual values.

**61415** **[Channel %1: ] Block %2: Check probe / machining plane**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A probe permissible for the machining plane must be used.
Check the setting data 54633 $SNS_MEA_TP_TYPE or 54648 $SNS_MEA_TPW_TYPE
or change the machining plane.

**61416** **[Channel %1: ] Block %2: Probe number is greater than the maximum number of fields**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check parameter S_PRNUM
Measure workpiece: Parameter S_PRNUM 1 to 40
Measure tool: Parameter S_PRNUM 1 to 6

**61417** **[Channel %1: ] Block %2: Probe will collide with the carrier of the reference groove.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Take up collision-free initial position of the axes involved in the measuring process.

**61418** **[Channel %1: ] Block %2: Protocol file too small, check MD11420: LEN_PROTOCOL_FILE.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The machine data 11420 $MN_LEN_PROTOCOL_FILE is set too small.

**Remedy:** Check MD11420 $MN_LEN_PROTOCOL_FILE:
A value of at least 20 kB must be set to use the function "Log measurement results".
This machine data specifies the maximum size of the log file.

**61419** **[Channel %1: ] Block %2: Check probe calibration with reference to center of ball/ circumference of ball.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Setting in MD 51740 $MNS_MEA_FUNCTION_MASK Bit 1 does not match calibration status in setting data 54610 $SNS_MEA_WP_STATUS_GEN[S_PRNUM]. Check the THOUSANDS digit:
1 = circumference; 0 = TCP (Tool Center Point)

**Remedy:** Check machine data 51740 $MNS_MEA_FUNCTION_MASK Bit 1
Remedy:
1. Recalibrate probe (adjust)
2. Change probe number S_PRNUM
3. Adjust MD51740 Bit 1

**61420** **[Channel %1: ] Block %2: Check calibration of multi/mono probes.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The tool type does not match the alignment data set.

**Remedy:** The workpiece probe must be calibrated according to its type and use.

**61421** **[Channel %1: ] Block %2: Software release of measuring cycles or NCK inadequate or set up incorrectly - error code %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: Error code see %4
A -> _OVR[] - parameter field too small. Check GUD definition.
B -> $SCS_MEA_KIN_MODE? SD55645 not set up

**61422** **[channel %1: ] block %2: parameter measuring variant incorrect - error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: See error code %4
A -> CYCLE996 _MVAR = 9x identifiers CYCLE996 measure kinematics or
A -> CYCLE996 _MVAR ONES digit outside the value range 0..4
B -> CYCLE996 _MVAR (parameter for normalization) HUNDRED THOUSANDS digit (dec6) or
B -> CYCLE996 ONE MILLION digit(dec7) outside the value range 0..3
C -> CYCLE996 Measurement version "compute kinematics" active, but rotary axes 1 and/or 2 not measured (see also parameter _OVR[40])
or rotary axis 2 exists and no rotary axis vectors (V2xyz) are set up.
D -> CYCLE996 _MVAR TEN THOUSANDS digit (parameter rotary axis 1,2 or vector chain open, closed) outside the value range 0..3
1 -> CYCLE9960 S_MVAR ONES to TEN THOUSANDS digit outside the value range
2 -> CYCLE9960 S_MVAR TENS digit not compatible with the ONES DIGIT
3 -> CYCLE9960 S_MVAR TENS digit outside the value range 0,2

**61423** **[Channel %1: ] Block %2: Parameter %4 not agreed or not created**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: see error code %4
1 Parameter CYCLE996 S_TC incorrect or equal zero
2 No swivel data set created -> MD18088 $MN_MM_NUM_TOOL_CARRIER = 0
3 $NT_NAME? -> CYCLE996 System variable $NT_NAME not present
4 TRAFO NO=0? -> CYCLE996 Trafo number = 0?
5 TRAFO TYP? -> CYCLE996 Transformation type not equal to 24, 40 or 56
6 S_MVAR? -> CYCLE996 Trafo type OK, but incorrect call from CYCLE9960
4 -> CYCLE9960 compile cycle E996 not set up

**61424** **[Channel %1: ] Block %2: Parameter %4 for diameter of calibration ball incorrect**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check whether the correct diameter of the calibration ball is entered in parameter S_SETV,
or the correct probe ball radius is entered in the tool data of the current workpiece probe.

The mechanical deviation of the position of the current workpiece probe must be minimized by presetting.

## 61425 [Channel %1: ] Block %2: Parameter for measuring axis rotary axis 1 or 2 incorrect - Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: see error code %4
A -> Rotary axis number incorrect (1 or 2)
B -> No name agreed for rotary axis 1
C -> Rotary axis vector V1xyz equals zero
D -> No name agreed for rotary axis 2
E -> Rotary axis vector V2xyz equals zero
F VECTOR=0? -> CYCLE996 Orientation vector of the 1st rotary axis = 0
G VECTOR=0? -> CYCLE996 Orientation vector of the 2nd rotary axis = 0
1 -> CYCLE9960 Incorrect number of measurements
2 -> CYCLE9960 Number of measurements incorrect: maximum 12 per axis
3 -> CYCLE9960 Number of measurements incorrect: minimum 3 per axis
4(RA1) -> CYCLE9960 Measuring range rotary axis 1 too small
4(RA2) -> CYCLE9960 Measuring range rotary axis 2 too small
5(RA1) -> CYCLE9960 Measuring range rotary axis1 too large
5(RA2) -> CYCLE9960 Measuring range rotary axis 2 too large
6 -> CYCLE9960 Number of measurements incorrect, min. per axis 2 for interpolation points
7 -> CYCLE9960 Modulo range: Measuring range covers the complete modulo range (360°), and therefore must begin at the starting position of the modulo range (usually 0)
The permissible measuring range of a rotary axis is from 10 to 360 degrees

## 61426 [Channel %1: ] Block %2: Sum of the active offsets does not equal zero - Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: See error code %4
Check the overview of active offsets ($P_ACTFRAME)
Delete offsets in the rotary axes
A -> sum of the translatory offsets of geometry axes <> 0
B -> sum of the fine offsets of the geometry axes <> 0
C -> sum of the rotary components of the geometry axes <> 0
D -> sum of the translatory offsets of rotary axis 1 <> 0
E -> sum of the translatory offsets of rotary axis 2 <> 0

## 61427 [Channel %1: ] Block %2: Tool data of the active workpiece probe incorrect or inactive - Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: See error code %4
A -> Workpiece probe (or tool edge) inactive
B -> Length L1 of the workpiece probe = 0

**61428** **[Channel %1: ] Block %2: Error while creating log file - Error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: See error code %4
A -> Number of log files in the current directory > 99
B -> Log files too long. Rename or delete log files,
check MD11420 $MN_LEN_PROTOCOL_FILE!

**61429** **[Channel %1: ] Block %2: Measuring axis (rotary axis 1 or 2) not in basic or intended position - Error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Error causes: See Error code %4
A -> Rotary axis 1 not in basic position for 1st measurement
B -> Rotary axis 2 not in basic position for 1st measurement
C -> Rotary axis 2 not rotated for the 2nd or 3rd measurement with reference to the 1st measurement -> see parameter _OVR[63 to 65]
D -> Rotary axis 1 not rotated for the 2nd or 3rd measurement with reference to the 1st measurement -> see parameter _OVR[60 to 62]
1 (RA1) -> CYCLE9960 Rotary axis 1 initially not in basic position
2 (AMODE DEC5) -> Selected basic position is not permissible

**61430** **[Channel %1: ] Block %2: Kinematic vectors not computed - Error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Causes of error: see error code %4

A -> Plausibility of the input points PM1, PM2, PM3 not fulfilled, resulting side lengths must not be equal to zero (Notice: even in the case of side lengths not equal to zero, there is a risk of not being able to form a triangle => check PM1...3!)

B -> Enclosed angle at PM1 between the spread vectors PM1PM2 and PM1PM3 is equal to 0. Starting points do not form a triangle.

C -> Enclosed angle at PM2 between the spread vectors PM2PM1 and PM2PM3 is equal to 0. Starting points do not form a triangle.

D -> Enclosed angle at PM3 between the spread vectors PM3PM1 and PM3PM2 is equal to 0. Starting points do not form a triangle.

E -> Normalizing interpolation point: Invalid axis name defined for computation

F -> Normalizing interpolation point: Invalid plane defined for computation

G -> If the computed angle is smaller than the limiting value of the angular segment of the rotary axis in parameter TVL. The computed limit angle and the name of the rotary axis are displayed.
With values of TVL < 20 degrees, inaccuracies are to be expected as a result of measuring inaccuracies in the micrometer range of the probe.
Example: "61429 .. G Axis:C->TVLmin=12.345"
Remedy: Adjust angular value of rotary axis in user program or parameter TVL.
With complete measurement of kinematics with CYCLE9960, the value for the limit angles is entered in SD $SCS_MEA_KIN_MIN_ANG_TRIANGLE (minimum internal angle of the measuring triangle)

"CC Option ? " -> Option compile cycle "Measurement of kinematics" not set

"$MN_CC_ACTIVE_IN_CHAN_C996[0] ? " -> machine data for compile cycle not set

"License ? " -> License for "Measurement of kinematics" not set

When measuring head kinematics without offset (spindle extension), an alternative calculation is performed with error message A or G. This applies on condition that the rotary axis to be measured has been repositioned

H -> Conditions for alternative calculation not fulfilled (rotary axis not positioned -> see _OVR[60] to _OVR]62] or SD55648 $SCS_MEA_KIN_MIN_ANG_POS smaller than the difference of the rotary axis positions in _OVR[60] to _OVR]62]

I -> Conditions for alternative calculation not fulfilled (rotary axis not positioned -> see _OVR[60] to _OVR]62]

## 61431 [Channel %1: ] Block %2: Kinematic vectors not corrected - Error code: %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Error causes: see error code %4

A -> Correction not possible with active transformation. A persistent transformation is active.
The transformation can only be calculated but not corrected. The values to be corrected are to be found in parameters _OVR[1] to _OVR[20].

B -> Correction not possible with active transformation. A user transformation is active.
The transformation can only be calculated but not corrected. The values to be corrected are to be found in parameters _OVR[1] to _OVR[20].

## 61432 [Channel %1: ] Block %2: %4 not active or not created

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** The transformation / tool carrier to be measured must be active before CYCLE9960 is started.
Check whether the specified transformation / tool carrier has been created.
If this is the case, check whether the transformation / tool carrier was activated before calling CYCLE9960.
It is also possible that an incorrect transformation / tool carrier is active.
or
S_TNAME=0 -> No TCARR or no transformation was specified for measuring.

**61440** **[Channel %1: ] Block %2: Position of cutting edge cannot be determined**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A turning tool with a cutting edge position between 1 and 8 must be used as the tool type.
Check the entered cutting edge position with reference to the basic position of the tool carrier.

**61441** **[Channel %1: ] Block %2: Position of cutting edge is not in the machining plane.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The cutting edge position of the turning tool (cutting edge plate) is no longer in the machining plane (interpolation plane), e.g. caused by an orientable tool carrier.

**Remedy:** Check the tool carrier position and, if necessary, correct it!

**61442** **[Channel %1: ] Block %2: Tool carrier not parallel to the geometry axes**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** After positioning the orientable tool carrier, the tool lengths L1, L2 and L3 are not parallel to the geometry axes.

**Remedy:** Check the positioning behavior of the rotary axes (e.g. blocking) of the tool carrier.

**61443** **[Channel %1: ] Block %2: Advance angle %4 or greater/less than +/-90° or +/-120°**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the value in the alpha 1 advance angle parameter!
If 3-point measurement is selected, alpha 1 must not be greater/smaller than +/-120°, and if 4-point measurement is selected, alpha 1 must not be greater/smaller than +/-90°!
The parameter of the advance angle alpha 1 must always be set to a value other than "zero".

**61444** **[Channel %1: ] Block %2: Current measuring speed is not identical to the calibration speed**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** The relevant calibration speed is also stored in each calibration data record.
The current measuring speed with feedrate override of 100% is not equal to the calibration speed.
After calibration, the calibration speed value must be in the following setting data.
For workpiece measurement:
SD 54611 $SNS_MEA_WP_FEED[S_PRNUM-1] > 0
For tool measurement:
SD 54636 $SNS_MEA_TP_FEED[S_PRNUM-1] > 0 for calibration in the machine coordinate system
SD 54651 $SNS_MEA_TPW_FEED[S_PRNUM-1] > 0 for calibration in the workpiece coordinate system
Recalibrate probe (adjust) or specify new S_PRNUM.

**61445** **[Channel %1: ] Block %2: Check holder angle**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the entry for the holder angle in the tool offset.
For cutting edge positions 1-4, the holder angle must be greater than or equal to 90° and less than 180°,
for cutting edge positions 5-8, it must be greater than 0° and less than 90°.

**61446** **[Channel %1: ] Block %2: Check insert angle and clearance angle**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the entry for the insert angle / clearance angle in the tool offset!

**61447** **[Channel %1: ] Block %2: Check reference point, measuring direction, tool default setting of probe**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** This alarm is only output for measurement in JOG with calibration of probe length, on a reference piece or on the sphere.
An implausible result has occurred, comparable with overrunning the safe area in automatic mode.

**Remedy:** Check the specifications stated in the alarm text.

**61501** **[Channel %1: ] Block %2: Simulation is active**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reset simulation

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61502** **[Channel %1: ] Block %2: No tool offset active**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A tool number must be programmed

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61503** **[Channel %1: ] Block %2: tool nose radius compensation left or right**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A tool offset value has to be programmed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61504** **[Channel %1: ] Block %2: _KNG incorrect for setup**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61505** **[Channel %1: ] Block %2: retraction path is smaller than 1mm**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Increase retraction path

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61506** **[Channel %1: ] Block %2: infeed path is smaller than 1mm**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Increase infeed path

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61507** **[Channel %1: ] Block %2: safety clearance is smaller than 1mm**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61508** **[Channel %1: ] Block %2: Incorrect default setting for shoulder position**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61509** **[Channel %1: ] Block %2: Incorrect default setting for dresser position**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61510** **[Channel %1: ] Block %2: Test run feed is active**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Switch off test run feed

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61511** **[Channel %1: ] Block %2: Incorrect shoulder position or tool edge D1/D2**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61512** **[Channel %1: ] Block %2: Incorrect longitudinal position**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61513** **[Channel %1: ] Block %2: Dresser left and inclined grinding wheel**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61514** **[Channel %1: ] Block %2: Grinding wheel type missing**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61515** **[Channel %1: ] Block %2: Retraction path is smaller than or equal to dressing amount**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Change retraction path.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61517** **[Channel %1: ] Block %2: Angle of inclined grinding wheel missing**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Enter angle under $TC_TPG8

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61518** **[Channel %1: ] Block %2: Shoulder height of the grinding wheel must be greater than the grinding wheel radius**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Change shoulder height or grinding wheel radius

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61519** **%[[Channel %1: ] Block %2: %]Incorrect type of machining**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Assign a value between 1 and 3 to parameter B_ART

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61520** **[Channel %1: ] Block %2: Additional offsets not set**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Set MD18094 MM_NUM_CC_TDA_PARAM=10

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61521** **[Channel %1: ] Block %2: Current grinding wheel too wide**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reduce width of grinding wheel

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61522** **[Channel %1: ] Block %2: Overlap is greater than or equal to the actual grinding wheel width**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reduce overlap

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61523** **[Channel %1: ] Block %2: Zero signal of calipers missing**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check calipers signal

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61524 [Channel %1: ] Block %2: Incorrect oblique angle

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** The oblique plunge angles must be >-90° and <90°.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61525 [Channel %1: ] Block %2: Incorrect grinding wheel type

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Change grinding wheel type $TC_TPC1

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61526 [Channel %1: ] Block %2: Workpiece radius = 0

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Enter workpiece radius > 0.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61527 [Channel %1: ] Block %2: Grinding wheel radius is greater than or equal to the workpiece radius

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Change grinding wheel radius or workpiece radius

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61529 [Channel %1: ] Block %2: Dimensional notation INCH programmed

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Basic system MD $MN_SCALING_SYSTEM_IS_METRIC does not correspond to programmed G command (G group 13).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61530 [Channel %1: ] Block %2: Default longitudinal position incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check longitudinal position parameter

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61531** **[Channel %1: ] Block %2: Longitudinal position not registered in Z**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Increase infeed path parameter

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61532** **[Channel %1: ] Block %2: Value for _LAGE is incorrect**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Correct parameter content for _LAGE

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61533** **[Channel %1: ] Block %2: No length L1 entered under D...**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Enter length L1 in the tool offset D of the grinding wheel

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61540** **[Channel %1: ] Block %2: Incorrect D number / dresser D field active**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A tool D number must be programmed that is < _GC_DNUM

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61541** **[Channel %1: ] Block %2: Incorrect grinding wheel type entered**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Select a valid grinding wheel type in tool management

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61542** **[Channel %1: ] Block %2: Incorrect grinding wheel reference point selected when selecting the dresser coordinate system**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A tool D number must be programmed that is < _GC_DNUM

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61543** **[Channel %1: ] Block %2: Incorrect dresser selected when selecting the dresser coordinate system**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** A dresser number > 0 and < 4 must be selected

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61544** **[Channel %1: ] Block %2: Grinding wheel diameter worn down**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** New grinding wheel required, or check limit values in the grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61545** **[Channel %1: ] Block %2: Width of grinding wheel worn down**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** New grinding wheel required, or check limit values in the grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61546** **[Channel %1: ] Block %2: Dresser %4, wear limit length 1 reached**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** New dresser required, or check limit values of dresser

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61547** **[Channel %1: ] Block %2: Dresser %4, wear limit length 2 reached**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** New dresser required, or check limit values of dresser

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61548** **[Channel %1: ] Block %2: Dresser %4, wear limit length 3 reached**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** New dresser required, or check limit values of dresser

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61549** **[Channel %1: ] Block %2: Incorrect dresser type selected**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check dresser type on input

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61550** **[Channel %1: ] Block %2: Swiveling of plane not possible with active grinding tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Swiveling of the plane is not possible with an active grinding tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool before you swivel the plane.
The alarm can be suppressed using SD 55410 $SCS_MILL_SWIVEL_ALARM_MASK.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61551** **[Channel %1: ] Block %2: Setting of milling tool not possible with active grinding tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Setting of milling tools is not possible with an active grinding tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool, before you call positioning.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61552** **[Channel %1: ] Block %2: Alignment of milling tool not possible with active grinding tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Alignment of milling tools is not possible with an active grinding tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Load a milling tool before you call alignment.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61553** **[Channel %1: ] Block %2: Alignment of grinding tool only possible with active grinding tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Alignment of grinding tools is only possible with an active grinding tool.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Load a grinding tool before calling alignment.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61555 [Channel %1: ] Block %2: Diameter of grinding wheel ==0, GWPS cannot be calculated

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Remedy:** Check diameter
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61556 [Channel %1: ] Block %2: Impossible chamfer and radius of left edge of wheel

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Remedy:** Check values in grinding wheel data
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61557 [Channel %1: ] Block %2: Impossible chamfer and radius of right edge of wheel

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Remedy:** Check values in grinding wheel data
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61558 [Channel %1: ] Block %2: Chamfer / radius + shoulder height are larger than the retraction height of the left edge of the grinding wheel

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Remedy:** Check values in grinding wheel data
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61559 [Channel %1: ] Block %2: Chamfer / radius + shoulder height are larger than the retraction height of the right edge of the grinding wheel

**Parameters:** %1 = Channel number
%2 = Block number, label channel number
**Explanation:**
**Remedy:** Check values in grinding wheel data
**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61560** **[Channel %1: ] Block %2: Infeed in Z direction too big per stroke, or wheel too narrow**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Reduce infeed path parameter or use other tool

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61561** **[Channel %1: ] Block %2: Feed left wheel edge is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61562** **[Channel %1: ] Block %2: Feed right wheel edge is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61563** **[Channel %1: ] Block %2: Feed on the diameter is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61564** **%[[Channel %1: ] Block %2: %]Feed insertion is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61565** **[Channel %1: ] Block %2: Feed dressing is smaller than or equal to zero**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61566** **[Channel %1: ] Block %2: Chamfer / radius is larger than the grinding wheel width**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check values in grinding wheel data

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61567** **[Channel %1: ] Block %2: %4 Total infeed depth and sum of the infeed must have the same sign**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Remedy:** Check the signs of the infeeds

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61568** **%[[Channel %1: ] Block %2: %]Error during form-truing %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** -103: Machining not possible
-121: Cancellation due to lack of memory

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** -103: Check grinding wheel contour or position of dresser does not match contour
-121: Check contour of the grinding wheel and technological data
Call the SIEMENS hotline

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61569** **%[[Channel %1: ] Block %2: %]Machining plane different in new profiling and continue profiling**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - The machining plane must be the same for new profiling and continue profiling.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61570** **%[[Channel %1: ] Block %2: %]Profiling type is different in new profiling and continue profiling**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - The type of profiling (parallel to the axis, parallel to the contour) must be the same for new profiling and continue profiling.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61571 %[[Channel %1: ] Block %2: %]Infeed direction is different for new profiling and continue profiling

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - The infeed direction must be the same for new profiling and continue profiling.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61572 %[[Channel %1: ] Block %2: %]Grinding wheel is not suitable for continue profiling

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - The same grinding wheel must be used for continue profiling as for new profiling.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61573 %[[Channel %1: ] Block %2: %]Edge of grinding wheel is not suitable for continue profiling

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - The same edge of the grinding wheel must be used for continue profiling as for new profiling.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61574 %[[Channel %1: ] Block %2: %]Error in contour %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** -1: Contour is not continuous

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the contour
-1: Contour must be continuous in the machining axis

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61575 %[[Channel %1: ] Block %2: %]G0 blocks in the grinding wheel contour description

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** G0 blocks are included in the grinding wheel contour description.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - G0 blocks may not be included in the contour description.
- Check whether approach movements to and retraction movements from the grinding wheel are included in the controur description. If this is the case, remove them.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61576 %[[Channel %1: ] Block %2: %]The grinding wheel profile cannot be exactly machined with the active tool

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The grinding wheel profile cannot be exactly machined with the tool angles (clearance and pitch angles) of the active dressing tool.
Residual material would be left when using the current tool angles.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check tool angles (clearance and pitch angles) of the active dressing tool resp. contour.
Use another dressing tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61577 %[[Channel %1: ] Block %2: %]No tool carrier %4 is active

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - No tool carrier is active

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Activate tool carrier

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61578** **[Channel %1: ] Block %2: B axis kinematics (grinding technology) either not started up or started up incorrectly in swivel cycle - error code: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Causes of error:
1. Error code = B789 -> B axis in start-up of swivel cycle (kinematics) not activated
(789 corresponds to $TC_CARR7[n], n ... number of the swivel data record)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61601** **[Channel %1: ] Block %2: Finished part diameter too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameter SPD or DIATH.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61602** **[Channel %1: ] Block %2: Tool width incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Plunge cutter is larger than the programmed groove width.

**Remedy:** Check tool or change program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61603** **[Channel %1: ] Block %2: Recess type incorrectly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Radii/chamfers at the groove base do not match the groove width. Face groove on a contour element running parallel to the longitudinal axis is not possible.

**Remedy:** Check parameter VARI.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61604** **[Channel %1: ] Block %2: Active tool violates programmed contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Contour violation in the relief cut elements due to the tool clearance angle of the tool used.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a different tool or check the contour subroutine.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61605 [Channel %1: ] Block %2: Contour incorrectly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Illegal relief cut element detected.

**Remedy:** Check contour program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61606 [Channel %1: ] Block %2: Error during contour preparation

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An error has been found on conditioning the contour. This alarm is always related to one of NCK alarms 10930...10934, 15800 or 15810.

**Remedy:** Check contour subroutine.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61607 [Channel %1: ] Block %2: Starting point incorrectly programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The starting point reached before the cycle call does not lie outside the rectangle described by the contour subroutine.

**Remedy:** Check starting point prior to cycle call.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61608 [Channel %1: ] Block %2: Incorrect tool point direction programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** A cutting edge position 1...4, matching the undercut form, must be programmed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61609 [Channel %1: ] Block %2: Shape incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameter for the undercut form or groove form or pocket.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61610 [Channel %1: ] Block %2: No infeed depth programmed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check parameter MID.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61611 [Channel %1: ] Block %2: No point of intersection found

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** No intersection could be calculated with the contour.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check contour programming or modify infeed depth.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61612 [Channel %1: ] Block %2: Synchronized thread machining not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Remedy:** Check the preconditions for synchronized thread machining:
- It is not permissible that a toolholder is active.
- It is not permissible that transformation is active.
- It is not permissible that rotation is active.

If required, deselect thread synchronization.

## 61613 [Channel %1: ] Block %2: Undercut position incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check value in parameter _VARI.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61614 [Channel %1: ] Block %2: %4 mirroring in work offset for main spindle not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The work offset for main spindle machining must not have mirroring in the specified axis.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Deselect mirroring in the specified axis in the work offset used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61615 [Channel %1: ] Block %2: %4 mirroring in the work offset is not permitted for the counterspindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The work offset for counterspindle machining must not have any Z mirroring.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Deselect Z mirroring in the WO used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61616 [Channel %1: ] Block %2: Current cutting edge position %4 impermissible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Cutting edge positions 1 to 4 are permissible for corner stock removal.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61617 [Channel %1: ] Block %2: Maximum spindle speed for the main spindle not entered

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The maximum spindle speed for the main spindle was not entered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter the maximum spindle speed for the main spindle.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61618 [Channel %1: ] Block %2: Main spindle has not been set up

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A main spindle has not been set up.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61619 [Channel %1: ] Block %2: Main spindle has not been correctly set up

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The main spindle has not been correctly set up.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Please check the following machine or setting data:
MD 20070 $MC_AXCONF_MACHAX_USED[]
MD 20080 $MC_AXCONF_CHANAX_NAME_TAB[]
MD 35000 $MA_SPIND_ASSIGN_TO_MACHAX[]
MD 52206 $MCS_AXIS_USAGE[]
MD 52207 $MCS_AXIS_USAGE_ATTRIB bit 8

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61620 [Channel %1: ] Block %2: %4-Mirroring for the linear axis of the counter spindle not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible that the linear axis of the counterspindle machining has Z mirroring.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Deselect Z mirroring in the WO used.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61621 [Channel %1: ] Block %2: Angle of opening of the convex thread too high

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Convexity of the thread is too high.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter XS or RS

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61622 [Channel %1: ] Block %2: Toolcarrier for turning not set up

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A toolcarrier was not set up for turning.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set up a tool with carrier with the rotary axes: B axis and tool spindle.
Set the identifier "B axis kinematics".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61623 [Channel %1: ] Block %2: A toolcarrier has not been set up for milling on the main spindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A toolcarrier has not been setup for a milling on the main spindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set up a toolcarrier with rotary axes: B axis and main spindle.
Do not set the identifier "B axis kinematics".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61624 [Channel %1: ] Block %2: A toolcarrier has not been set up for milling on the counterspindle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** A toolcarrier has not been set up for milling on the counterspindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Set up a toolcarrier with the rotary axes: B axis and counterspindle.
Do not set the identifier "B axis kinematics".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61625 [Channel %1: ] Block %2: Programmed angular value is not in the grid of the Hirth tooth system: %4

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An angular value that is not in the grid of the Hirth tooth system was programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program an angular value that is in the grid of the Hirth tooth system.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61626** **[Channel %1: ] Block %2: With the programmed angular values, the tool tip is not located in the turning plane %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Angular values were programmed where the tool tip is not located in the turning plane.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Program suitable angular values or use the programming based on "Beta" and "Gamma".

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61627** **[Channel %1: ] Block %2: Rotation of the turning tool not possible as the tool holder for turning tools is fixed.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Rotation of the turning tool not possible as the tool holder for turning tools is fixed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select Use "fixed"

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61628** **[Channel %1: ] Block %2: Swivel plane not possible %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Swivel plane is not possible

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** $TC_DPV[n,m]<>0 : A tool with the specified orientation must be defined for the CYCLE800 by the orientation vectors $TC_DPV3,$TC_DPV4 and $TC_DPV5. A definition by $TC_DPV only is not supported by CYCLE800. For a definition by means of vectors, MD 18114 $MN_MM_ENABLE_TOOL_ORIENT must = 2.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61695** **%[[Channel %1: ] Block %2: %]Parameter R123 incorrectly programmed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter R123

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61696** **%[[Channel %1: ] Block %2: %]Parameter R122 too high**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter R122

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61697** **%[[Channel %1: ] Block %2: %]Parameter R122 too low**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter R122

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61698** **%[[Channel %1: ] Block %2: %]Parameter R122 has incorrect sign**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter R122

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61699** **%[[Channel %1: ] Block %2: %]Parameter R121 has incorrect sign**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter R121

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61700** **%[[Channel %1: ] Block %2: %]Name of program to be generated is missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter PRG

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61701** **%[[Channel %1: ] Block %2: %]Contour %4 does not exist**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter CON
- Check contour call
- Check whether the contours exist in the program storage (workpieces, subroutines or part programs)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61702** **%[[Channel %1: ] Block %2: %]Label %4 not existing in machined part contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the machined part contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61703** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the blank contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the blank contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61704** **%[[Channel %1: ] Block %2: %]Machined part contour missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call (CYCLE62)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61705** **%[[Channel %1: ] Block %2: %]Blank contour missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61706** **%[[Channel %1: ] Block %2: %]Error in machined part contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of machined part contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61707** **%[[Channel %1: ] Block %2: %]Error in the blank contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the blank contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61708** **%[[Channel %1: ] Block %2: %]Too many contours specified**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check number of contours
- Max. two contours (machined part and blank contours)
- Min. one contour (machined part contour)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61709** **%[[Channel %1: ] Block %2: %]Cutting edge radius too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check cutting edge radius of the tool in tool management

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61710** **%[[Channel %1: ] Block %2: %]Calculation has been canceled**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Calculation has been canceled by PI service; please try again

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61711** **%[[Channel %1: ] Block %2: %]Infeed D is larger than the tip width of the tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check infeed D in connection with the tip width of the tool in tool management.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61712** **%[[Channel %1: ] Block %2: %]Infeed DX or DZ is larger than tip length of tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check infeed DX or DZ in connection with tip length of the tool in tool management.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61713** **%[[Channel %1: ] Block %2: %]Tool radius larger than half the tip width**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check tool radius and tip width of tool (plunge cutter, cutting tool)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61714** **%[[Channel %1: ] Block %2: %]Error during contour turning %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** -103: Machining not possible
-121: Cancellation due to lack of memory

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** -103: Check contour or the position of the tool does not match the contour
-121: Check contour and technological data
Call the SIEMENS hotline

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61730** **%[[Channel %1: ] Block %2: %]Machining range outside delimitation**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check machining range and delimitation

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61731** **%[[Channel %1: ] Block %2: %]Unable to determine contour direction**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contours
- Check whether the contour starting point exists

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61732** **%[[Channel %1: ] Block %2: %]No material available for machining**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the blank and machined part contour, particularly their position towards each other

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61733** **%[[channel %1: ] block %2: %]Cutting edge not compatible with machining direction**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programmed machining direction in connection with cutting edge position of the tool

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61734** **%[[Channel %1: ] Block %2: %]Machined part contour is outside the blank contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the programming of the machined part and blank contour, particularly their position in relation to each other

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61735** **%[[Channel %1: ] Block %2: %]Infeed D larger than the tip length of the tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check infeed D in relation to the tip length of the tool in tool management

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61736** **%[[Channel %1: ] Block %2: %]Cutting depth greater than maximum depth of cut of the tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61737** **%[[Channel %1: ] Block %2: %]Cutting depth smaller than minimum depth of cut of the tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61738** **%[[Channel %1: ] Block %2: %]Incorrect cutting edge position**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check cutting edge position in tool management

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61739** **%[[Channel %1: ] Block %2: %]Blank must be closed contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the blank contour is closed

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61740** **%[[Channel %1: ] Block %2: %]Collision through approach**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Select the starting position to enable collision-free approach of the contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61741** **%[[Channel %1: ] Block %2: %]Axis in negative range**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the position of the axis in the ordinate

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61742** **%[[Channel %1: ] Block %2: %]Retraction plane %4 is within the machining range**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** For internal machining, check the machining range in relation to the entered retraction distance (SD 55506 $SCS_TURN_ROUGH_I_RELEASE_DIST).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61743** **%[[channel %1: ] block %2: %]Guide channel for two-channel cutting missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if a guide channel has been defined

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61744** **%[[channel %1: ] block %2: %]Following channel for two-channel cutting missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if a following channel has been defined

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61745** **%[[channel %1: ] block %2: %]Two-channel cutting in two guide channels (%4) active**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if two guide channels are active
- Check if two-channel cutting is active simultaneously in more than two channels
- Two channels only may be active: a guide and a following channel

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61746** **%[[channel %1: ] block %2: %]Two-channel cutting active already in the channels (%4)**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if two-channel cutting is active simultaneously in more than two channels.
- Two channels only may be active simultaneously: a guide and a following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61747** **%[[channel %1: ] block %2: %]Incorrect guide channel for two-channel cutting (%4)**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if the program of the guide channel runs in the channel selected via the program of the following channel in parameter partner channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61748** **%[[channel %1: ] block %2: %]Machining plane different in guide and following channel**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Machining plane must be the same in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61749** **%[[channel %1: ] block %2: %]Technology different in guide and following channel**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Technology (cutting / residual, plunge-cutting / residual, plunge-turning / residual) must be the same in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61750** **%[[channel %1: ] block %2: %]Machining different in guide and following channel**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Machining (rough cutting / finish cutting) must not be different in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61751 %[[Channel %1: ] Block %2: %]The dimension system is different in the leading and following channels

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Dimension system (G group: 13 (G70, G71, G700, G710)) must be the same in both the leading and following channels.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61752 %[[Channel %1: ] Block %2: %]Cutting edge positions or cutting directions of the tools are different

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Cutting edge position and cutting direction of the tools must be the same in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61753 %[[channel %1: ] block %2: %]Difference in tool radii too large

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Tool radii may not be greater than the finishing allowance at maximum for rough cutting.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61754 %[[channel %1: ] block %2: %]Tool radii must have same size for rough cutting

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if tool radii have the same size in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61755** **%[[channel %1: ] block %2: %]Plate widths are different**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check if plate widths of recessing tools are the same size in guide and following channel.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61756** **%[[Channel %1: ] Block %2: %]Multichannel machining not possible because of collision of the tools.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Multichannel machining with the programmed parameters would lead to a collision of the tools.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adjust parameter (DCH offset) so that mutichannel machining is possible, or use single-channel machining.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61757** **%[[Channel %1: ] Block %2: %]The finished part lies outside the specified grooving limits.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The finished part lies outside the specified grooving limits.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the position of the finished part contour in respect of grooving limits XDA and XDB

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61758** **%[[Channel %1: ] Block %2: %]Master spindle machine axes different in leading and following channels.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The machine axis references of the master spindle are different in the leading and following channels.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check machine data 35000 $MA_SPIND_ASSIGN_TO_MACHAX, 30550 $MA_AXCONF_ASSIGN_MASTER_CHAN, 20090 $MC_SPIND_DEF_MASTER_SPIND and 20070 $MC_AXCONF_MACHAX_USED

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61759 %[[Channel %1: ] Block %2: %]Position of following channel violates software limit switch

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the case of dual-channel stock removal with Balance Cutting machining (finishing or roughing with parameter DCH=0), the tool position from the leading channel from CYCLE952 is approached before the axis coupling is switched on in the following channel.
In the actual case, the tool position from the leading channel violates the software limit switch in the following channel.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** A position must be approached in the leading channel, which can also be approached in the following channel without violating the software limit switch.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61800 [Channel %1: ] Block %2: Ext. CNC system missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Machine data for external language MD18800: $MN_MM_EXTERN_LANGUAGE or option bit 19800 $ON_EXTERN_LANGUAGE is not set.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61801 [Channel %1: ] Block %2: Wrong G code selected

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the program call CYCLE300<value> an impermissible numerical value was programmed for the entered CNC system, or in the cycles setting data an incorrect value for the G code system was set.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61802 [Channel %1: ] Block %2: Wrong axis type

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed axis is assigned to a spindle

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61803 [Channel %1: ] Block %2: Programmed axis not available

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed axis is not in the system.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameter _AXN.
Check machine data 20050 to 20080.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61804 [Channel %1: ] Block %2: Progr. position exceeds reference point

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed intermediate position or actual position is behind the reference point.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61805 [Channel %1: ] Block %2: Value programmed absolute and incremental

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed intermediate position is both absolutely as well as incrementally programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61806 [Channel %1: ] Block %2: Wrong axis assignment

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The axis-assignment sequence is wrong.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61807 [Channel %1: ] Block %2: Wrong spindle direction programmed (active)

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed spindle direction contradicts the spindle direction planned for the cycle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check parameters SDR and SDAC.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61808 [Channel %1: ] Block %2: Final drilling depth or single drilling depth missing

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The total depth Z or individual drilling depth Q is missing from theG8xblock (initial cycle call).

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61809 [Channel %1: ] Block %2: Drill position not permissible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** --

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61810 [Channel %1: ] Block %2: ISO G code not possible

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the call block an impermissible ISO axis name was programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61811** **[Channel %1: ] Block %2: ISO axis name illegal**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the call block an impermissible numerical value was programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61812** **[Channel %1: ] Block %2: Value(s) in external cycle call wrongly defined**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** In the call block an impermissible numerical value was programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61813** **[Channel %1: ] Block %2: GUD value wrongly defined**

**Explanation:** An impermissible numerical value was
entered in the cycles-setting data.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61814** **[Channel %1: ] Block %2: Polar coordinates not possible with cycle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** --

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61815** **[Channel %1: ] Block %2: G40 not active**

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** G40 was inactive before the cycle call.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61816 [Channel %1: ] Block %2: Axes not on reference point

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** --
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61817 [Channel %1: ] Block %2: Axis coordinates within protection area

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** --
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61818 [Channel %1: ] Block %2: Axis range limits are equal

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** --
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61819 [Channel %1: ] Block %2: Risk of collision on retraction: tool violates programmed contour

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** With G70 in ISO mode, the contour is violated during retraction to the starting point.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Insert a G1 block at the end of the contour at the height of the starting point.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61836 [Channel %1: ] Block %2 wrong axis identifier %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The programmed axis identifiers do not match the identifiers in the source program.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct incorrect axis identifier.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61837 [Channel %1: ] Block %2 syntax error in the program %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Check the program for syntax errors.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct syntax errors.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61838 [Channel %1: ] Block %2: Data format of the program %4 is incorrect

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Check the data format of the program.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct data format.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61839 [Channel %1: ] Block %2: Application does not run

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Ensure that the application runs.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Restart part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61840 [Channel %1: ] Block %2: Error on execution of automatic servo tuning

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Acknowledgment mode
%4 = MMC sequence number
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61841 [Channel %1: ] Block %2: Necessary GUD for automatic servo tuning is missing: %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Missing GUD
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61842 [Channel %1: ] Block %2: Calling a cycle of the automatic servo tuning is not permissible: %3

**Parameters:** %1 = Channel number
%2 = Block number, label
%3 = Caller
**Explanation:** Calling CYCLE75x is not permissible because it is called by a cycle from the standard or manufacturer cycle directory.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** You need the manufacturer password to call CYCLE75x.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61850** **[channel %1: ] block %2: cylinder surface transformation not released**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Cylinder surface transformation not released for ShopMill.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61851** **[channel %1: ] block %2: no suitable transformation set up: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The required transformation is not set up on this machine.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61852** **[channel %1: ] block %2: transformation not set up for this plane: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Transformation not set up for the plane used. Change plane.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61853** **[channel %1: ] block %2: incorrect plane for machining with rotary axis: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Machining cannot be executed on the rotary axis of the current plane. Change plane.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

| 61854 | [Channel %1: ] Block %2: Subprogram level too low for block search |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label |
| **Explanation:** | The subprogram level is too low for block search. |
| **Reaction:** | Interpreter stop<br>NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Execute block search with another block. |
| **Programm continuation:** | Clear alarm with the RESET key. Restart part program |

| 61855 | [Channel %1: ] Block %2: Target point lies in the retraction area |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label |
| **Explanation:** | The specified target point lies in the retraction area. |
| **Reaction:** | Interpreter stop<br>NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Change target point or retraction area. |
| **Programm continuation:** | Clear alarm with the RESET key. Restart part program |

| 61856 | [Channel %1: ] Block %2: Absolute input of the work offset values not enabled |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label |
| **Explanation:** | The absolute input of the work offset value has not been enabled. |
| **Reaction:** | Interpreter stop<br>NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | 52212 $MCS_FUNCTION_MASK_TECH Bit 6: work offset value WO cannot be entered as absolute value (ShopTurn). |
| **Programm continuation:** | Clear alarm with the RESET key. Restart part program |

| 61857 | [Channel %1: ] Block %2: No rotary axis to accept a blank has been set up |
|---|---|
| **Parameters:** | %1 = Channel number<br>%2 = Block number, label |
| **Explanation:** | No rotary axis to accept a blank has been set up. |
| **Reaction:** | Interpreter stop<br>NC Start disable in this channel.<br>Interface signals are set.<br>Alarm display. |
| **Remedy:** | Check machine data 52207 $MCS_AXIS_USAGE_ATTRIB Bit 8. |
| **Programm continuation:** | Clear alarm with the RESET key. Restart part program |

**61858** **[Channel %1: ] Block %2: Turning is only possible with a blank that is clamped, centered**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Turning is only possible with a blank that is clamped, centered.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a blank that is clamped so that it is centered.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61859** **[Channel %1: ] Block %2: Turning has not been enabled**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Turning has not been set up on the machine.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check machine data: 52201 $MCS_TECHNOLOGY_EXTENSION=1 (turning).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61860** **[Channel %1: ] Block %2: Turning only possible on a main spindle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For turning, a main spindle was not selected for clamping.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select a main spindle as clamping for turning.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61861** **[Channel %1: ] Block %2: Tailstock not selected in this channel**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The tailstock was selected in another channel, but not in this channel.
The different selection/deselection results in a conflict.
When the tailstock is selected, it is not permissible that the counterspindle is positioned.
However, when the tailstock is deselected, the counterspindle should be positioned.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select or deselect the tailstock consistently in all channels.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61862** **[Channel %1: ] Block %2: It is not permissible to call a ShopTurn cycle in a ShopMill program**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to call a ShopTurn cycle in a ShopMill program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete block.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61863** **[Channel %1: ] Block %2: It is not permissible to call a ShopMill cycle in a ShopTurn program**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** An attempt was made to call a ShopMill cycle in a ShopTurn program.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Delete block.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61864** **[Channel %1: ] Block %2: The selection, tailstock yes/no must be identical in all channels**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The selection, tailstock yes/no in the program header must be identical in all channels.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** For tailstock yes/no in the program header, make the same selection for all channels.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61865** **[Channel %1: ] Block %2: Calling a ShopTurn cycle is only permissible in a ShopTurn program**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible that a ShopTurn cycle is used outside a ShopTurn program, as the required environment variables are otherwise not assigned.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Calling a ShopTurn cycle in a ShopTurn program. If this is not possible, then the task must be programmed using G code.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61866** **[Channel %1: ] Block %2: It is only permissible to call a ShopMill cycle in a ShopMill program**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** It is not permissible that a ShopMill cycle is used outside a ShopMill program, as the required environment variables are otherwise not assigned.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Calling a ShopMill cycle in a ShopMill program. If this is not possible, then the task must be programmed using G code.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61867** **[Channel %1: ] Block %2: On face C, the retraction distance must not be larger than the distance to the center point.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Retraction distance too large. On face C, the retraction distance must not be larger than the distance to the center point. Otherwise, retraction would become negative, which would lead to a reversal of the work spindle.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a smaller retraction distance or face Y if possible.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61868** **[Channel %1: ] Block %2: Program was created on another machine and must be adjusted.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The program was created on another machine and contains program parts that can not be executed on this machine.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The program must be adjusted in the ShopMill/ShopTurn editor.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61869** **[Channel %1: ] Block %2: Block search is only possible with calculation**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** With ShopMill and ShopTurn, block search is only possible with calculation.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Use a different block search mode.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61870** **[Channel %1: ] Block %2: Danger of collision during automatic retraction. Retract tool manually!**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** There is a danger of collision during automatic retraction.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Retract tool manually!

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61900** **%[[Channel %1: ] Block %2: %]Name of program to be generated is missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter PRG

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61901** **%[[Channel %1: ] Block %2: %]Contour %4 does not exist**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call
- Check whether the contours exist in the program storage (workpieces, subroutines or part programs)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61902** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the pocket contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the pocket contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61903** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the blank contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the blank contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61904** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the island contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the island contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61905** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the spigot contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the spigot contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61906** **%[[Channel %1: ] Block %2: %]Label %4 not existing in the contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels exist in the contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61907** **%[[Channel %1: ] Block %2: %]Pocket contour missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61908** **%[[Channel %1: ] Block %2: %]Blank contour missing**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61909** **%[[Channel %1: ] Block %2: %]Error in pocket contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the pocket contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61910** **%[[Channel %1: ] Block %2: %]Error in the blank contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the blank contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61911** **%[[Channel %1: ] Block %2: %]Error in island contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the island contour
- Check whether the island contour is closed
- Check the contour for self-cuts

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61912** **%[[Channel %1: ] Block %2: %]Error in spigot contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the spigot contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61913** **%[[Channel %1: ] Block %2: %]Error in contour %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61914** **%[[Channel %1: ] Block %2: %]Too many contours specified**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the number of contours

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61915** **%[[Channel %1: ] Block %2: %]Cutter radius too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the radius of the milling cutter in tool management

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61916** **%[[Channel %1: ] Block %2: %]Calculation has been canceled**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Calculation has been canceled by PI service; please try again

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61917** **%[[Channel %1: ] Block %2: %]Combination of centering/predrilling and spigot not allowed**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Machining of spigot in conjunction with predrilling/centering not allowed!

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61918** **%[[Channel %1: ] Block %2: %]Cut. radius for residual mach. must be smaller than cut. radius for ref. tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check cutter radius for residual machining which must be smaller than cutter radius for reference tool !

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61919** **%[[Channel %1: ] block %2: %]Radius of the reference tool is too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the radius of the reference tool.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61920** **%[[Channel %1: ] Block %2: %]Error during contour milling %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** 3020: No more memory is available
3022: The contour is incorrect
3023: Check contour (contour may contain too small elements)
3356: The residual material cannot be removed completely with the tool used.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** 3020, 3022, and 3023: Check contour and technological data
3356: A tool with a smaller diameter, with which the residual material can be removed completely, must be used for residual machining.
Call the SIEMENS hotline

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61921** **%[[Channel %1: ] Block %2: %]Error during groove milling %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61922** **%[[Channel %1: ] Block %2: %]Label %4 not present in the groove contour**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the labels are present in the groove contour
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61923 %[[Channel %1: ] Block %2: %]Error in the groove contour %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Check the programming of the groove contour
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61924 %[[Channel %1: ] Block %2: %]Groove contour missing

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Check contour call
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61925 %[[Channel %1: ] Block %2: %]Communication failure between cycle and application

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Local variables that are used for communication between cycle and spiral algorithm could not be read.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Check the cycle and app versions, they must be identical.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61926 %[[Channel %1: ] Block %2: %]Program %4 could not be copied

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Local variables that are used for communication between cycle and spiral algorithm could not be read.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check the cycle and app versions, they must be identical.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61927 %[[Channel %1: ] Block %2: %]Corner radius %4 too small

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The minimum corner radius is too small.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Increase the corner radius or use a smaller tool.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61928 %[[Channel %1: ] Block %2: %]First contour element too short for corner radius %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The first contour element is too short for the corner radius.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Lengthen the contour element or reduce the corner radius.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61929 %[[Channel %1: ] Block %2: %]Last contour element too short for corner radius %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The last contour element is too short for the corner radius.
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Lengthen the contour element or reduce the corner radius.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61930 %[[Channel %1: ] Block %2: %]No contour available

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour call
- Check whether the contours exist in the program storage (workpieces, subroutines or part programs)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61931 %[[Channel %1: ] Block %2: %]Contour not closed

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check whether the contours are closed

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61932 %[[Channel %1: ] Block %2: %]Selfcutting contour

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Modify contour programming

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61933 %[[Channel %1: ] Block %2: %]Too many contour elements

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Modify contour programming and thereby try to reduce the number of contour elements

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61934 %[[Channel %1: ] Block %2: %]Programming of the machining plane not allowed here

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Modify contour programming
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61935 %[[Channel %1: ] Block %2: %]Programming of inch/metric measuring system not allowed here

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Modify contour programming
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61936 %[[Channel %1: ] Block %2: %]G0 is not allowed in contour programming

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Modify contour programming, replace G0 by G1
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61937 %[[Channel %1: ] Block %2: %]Pocket depth programmed incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** - Check parameter Z1
**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 61938 %[[Channel %1: ] Block %2: %]No starting point specified

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter for specified starting point,
- for G17: XS, YS
- for G18: ZS, XS
- for G19: YS, ZS

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61939 %[[Channel %1: ] Block %2: %]No center point specified for circle

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check contour programming, particularly circle programming

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61940 %[[Channel %1: ] Block %2: %]Specified starting point programmed incorrectly

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Correct specified starting point

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61941 %[[Channel %1: ] Block %2: %]Helix radius too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Increase helix radius

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61942 %[[Channel %1: ] Block %2: %]Helix violates contour

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check helix radius and reduce in size, if possible

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61943 %[[Channel %1: ] Block %2: %]Approach/retract motion violates contour

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Reduce safety clearance SC, if possible

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61944 %[[Channel %1: ] Block %2: %]Ramp path too short

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During oscillating insertion, the message "Ramp path too short" occurs if the tool moves less than the mill diameter away from the insertion point on the ramp path or the machining depth is not reached.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Reduce the insertion angle if the tool remains too near to the insertion point
- Enlarge insertion angle if the tool does not reach the machining depth
- Use tool with smaller radius
- Use another insertion mode

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61945 %[[Channel %1: ] Block %2: %]Plane infeed too large, residual corners remaining

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check parameter for plane infeed
  - for G17: DXY
  - for G18: DZX
  - for G19: DYZ

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61946** **%[[Channel %1: ] Block %2: %]Island contour existing twice**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Delete double island contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61947** **%[[Channel %1: ] Block %2: %]Spigot contour existing twice**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Delete double spigot contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61948** **%[[Channel %1: ] Block %2: %]No material available for machining**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the contours

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61949** **%[[Channel %1: ] Block %2: %]Island is outside the pocket**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check programming of the island/pocket contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61950** **%[[Channel %1: ] Block %2: %]No residual material available**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61951** **%[[Channel %1: ] Block %2: %]Cutter radius for residual material too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Use cutter with smaller radius

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61952** **%[[Channel %1: ] Block %2: %]Radius of res. material cutter too small in relation to ref. cutter**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Use a cutter with a larger radius for residual machining

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61953** **%[[Channel %1: ] Block %2: %]Technology change to preprocessing not possible**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - Technology of the current machining does not match the technology of the preprocessing

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Adapt the technology of the current machining to the technology of the preprocessing

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61954** **%[[Channel %1: ] Block %2: %]Active and programmed tools are different**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - Active and programmed tools are different

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check active and programmed tools

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61955** **%[[Channel %1: ] Block %2: %]Internal memory limit reached for contour calculation**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** - The internal memory is insufficient to calculate the contour.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the following parameters/possibilities:
- The angle of contact can be increased
- A tool with a larger diameter can be used
- Can be reset in setting data $SCS_FUNCTION_MASK_MILL_SET bit3

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61956** **%[[Channel %1: ] Block %2: %]Active tool radius must be less than or equal to the radius of the reference tool**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the active tool radius, this must be less than or equal to the radius of the reference tool

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61957** **%[[Channel %1: ] Block %2: %]Straight contour finish not possible**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The programmed finish contour is not possible because of the length of the last contour element.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Adapt contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61958 %[[Channel %1: ] Block %2: %]Straight contour element too short

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The straight contour element is too short.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check and adapt contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61959 %[[Channel %1: ] Block %2: %]Contour elements overlap

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Elements of the contour overlap.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Eliminate the contour overlaps.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61960 %[[Channel %1: ] Block %2: %]Contour radius too small

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The contour radius is too small for the desired slot width.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check validity of contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 61961 %[[Channel %1: ] Block %2: %]Circular contour element too short

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The circular contour element is too short.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check contour

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61962** **%[[Channel %1: ] Block %2: %]Plane infeed %4 too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The plane infeed is too small.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The plane infeed must be increased.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61963** **%[[Channel %1: ] Block %2: %]Plane infeed %4 too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The plane infeed is too large, it must
not be greater than the tool radius.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The plane infeed must be reduced.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61964** **%[[Channel %1: ] Block %2: %]Angle of wrap %4 too small**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The wrap angle is too small, it must not be less than 8°.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The wrap angle must be increased.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61965** **%[[Channel %1: ] Block %2: %]Angle of wrap %4 too large**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The wrap angle is too large, it must not be greater than or equal to 89°.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The wrap angle must be reduced.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61966** **%[[Channel %1: ] Block %2: %]Only uneven calibration data sets may be selected**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Only uneven calibration data sets may be programmed for the "Simultaneous measurement" function when measuring in AUTO mode. The _PRNUM parameter should be checked.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select another calibration data set.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61967** **%[[Channel %1: ] Block %2: %]Difference between the position deviation of probes is too large (%4)**

**Parameters:** %1 = Channel number
%2 = Block number, label
%4 = Difference between position deviations

**Explanation:** The position deviations between the two probes must not be too large for the "Simultaneous measurement" function. The maximum possible difference can be programmed in SD55701.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Reduce the difference between the position deviations of the two probes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61968** **%[[Channel %1: ] Block %2: %]Only even calibration data sets may be selected for D2**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When calibrating in JOG, for cutting edge 2 only uneven calibration data sets may be programmed for the "Simultaneous measurement" function.
The _PRNUM parameter should be checked.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Select another calibration data set.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

**61969** **%[[Channel %1: ] Block %2: %]Only uneven calibration data sets may be selected for D1**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** When calibrating in JOG, for cutting edge 1 only uneven calibration data sets may be programmed for the "Simultaneous measurement" function.
The _PRNUM parameter should be checked.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Select another calibration data set.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 62000 [Channel %1: ] Block %2: Insert new tool

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Please load new tool.
**Reaction:** Alarm display.
**Remedy:** --
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62001 [Channel %1: ] Block %2: Dynamic response of axis %4 inadequate

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** The programmed cutting speed is too high.
**Reaction:** Alarm display.
**Remedy:** Reduce cutting speed
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62098 [Channel %1: ] Block %2: %4

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** This alarm is used for various purposes.
Please refer to the alarm text.
**Reaction:** Alarm display.
**Remedy:** Depends on alarm text
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62100 [Channel %1: ] Block %2: No drilling cycle active

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No modal drilling cycle has been called before the drilling pattern cycle call.
**Reaction:** Alarm display.
**Remedy:** Check whether a drilling cycle was called prior to calling the drilling pattern cycle.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62101 [Channel %1: ] Block %2: Milling direction incorrect - G3 is generated

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** Synchronous or reverse rotation programmed. But the spindle does not rotate at a cycle call.
**Reaction:** Alarm display.

**Remedy:** Check value in paramter CDIR.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62102 [Channel %1: ] Block %2: pocket not completely solidly machined during finishing

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62103 [Channel %1: ] Block %2: No finishing allowance programmed

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:** No finishing allowance is programmed, although it is necessary for this machining.
**Reaction:** Alarm display.
**Remedy:** Programm a finishing allowance.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62104 [Channel %1: ] Block %2: Drilling cycle incorrectly defined

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62105 [Channel %1: ] Block %2: Number of columns or lines equals zero

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Alarm display.
**Remedy:** Check parameters _NUM1 and _NUM2.
**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62106 [Channel %1: ] Block %2: incorrect value for monitoring status in tool monitoring

**Parameters:** %1 = Channel number
%2 = Block number, label
**Explanation:**
**Reaction:** Alarm display.
**Remedy:**
**Programm continuation:** Clear alarm with the Delete key or NC START.

**62107** **[Channel %1: ] Block %2: parameter %4 incorrectly defined for tool monitoring in cycles**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62108** **[Channel %1: ] Block %2: error in function Tool monitoring in cycles**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62109** **%[[Channel %1: ] Block %2: Machine parameterization not ideal**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** For an optimum machining result, a cycle reduction is required between the servo and interpolation cycles.

**Reaction:** Alarm display.

**Remedy:** The factor for the servo cycle (MD10060 $MN_POSTCTRL_SYSLOCK_TIME_RATIO) must be less than the factor for the interpolation cycle (MD10070 $MN_IPO_SYSLOCK_TIME_RATIO).

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62180** **[Channel %1: ] Block %2: Set rotary axes %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Sample display of the swivel angles to be set for manual rotary axes:
62180 "Set rotary axes B=32.5° C=45°"

**Reaction:** Alarm display.

**Remedy:** Settable angles for manual rotary axes.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62181** **[Channel %1: ] Block %2: Set rotary axis %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Sample display of the swivel angle to be set for a manual rotary axis:
62181 "Set rotary axis B=32.5°"

**Reaction:** Alarm display.

**Remedy:** Settable angle for manual rotary axis.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62182** **[Channel %1: ] Block %2 : load swivel head: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Request to load a swivel head.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62183** **[Channel %1: ] Block %2 : unload swivel head: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62184** **[Channel %1: ] Block %2 : replace swivel head: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62185** **[Channel %1: ] Block %2 : angle adapted to angle grid: %4**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** %4 difference angle with Hirth tooth system

**Reaction:** Alarm display.

**Remedy:** Check setup of swivel CYCLE800.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62186** **[Channel %1: ] Block %2: No swiveling in JOG -> WO G%4 active and total basic WO (G500) contain rotations**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** On swiveling in JOG no rotation can be written to the work offset WO,
if rotations are already contained in the total basic WO or in the basic reference
Error 62186 message can be masked -> see setting data 55410 $SCS_MILL_SWIVEL_ALARM_MASK

**Reaction:** Alarm display.

**Remedy:** %4 number of the active work offset WO.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62187** **[Channel %1: ] Block %2: Swiveling in JOG - G500 active and total basic WO or basic reference contain rotations**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** During swiveling in JOG, it is not possible to write a rotation into the work offset WO,
if, with active G500, rotations are already contained in the total basic WO or in the basic reference
Error message 62187 can be masked -> see setting data 55410 $SCS_MILL_SWIVEL_ALARM_MASK

**Reaction:** Alarm display.

**Remedy:** See notes for 62186 and 62187.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62200** **[Channel %1: ] Block %2: Start spindle**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** Stop prior to thread machining, as the spindle is in stop position.

**Reaction:** Alarm display.

**Remedy:** Start the tool spindle before machining the thread.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62201** **[Channel %1: ] Block %2: Z offset does not influence the retraction planes.**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The retraction planes refer to the workpiece. Therefore, programmable offsets do not influence the retraction planes.

**Reaction:** Alarm display.

**Remedy:** Check that offset does not cause collision.
Then press NC Start.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62202** **[Channel %1: ] Block %2: NOTICE: tool travels directly to machining!**

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** After block search a position is to be reached by direct approach.

**Reaction:** Alarm display.

**Remedy:** Check whether the desired position can be reached without collision.
Then execute an NC start.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62300** **[Channel %1: ] Block %2: Check number of empirical value memory**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** --

**Reaction:** Alarm display.

**Remedy:** Check setpoint value

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62301 [Channel %1: ] Block %2: Notice! Search run, test run or simulation active

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** - Deactivate program test or test run

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62303 [Channel %1: ] Block %2: Safety margin exceeded %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** - Check setpoint value and parameter _TSA

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62304 [Channel %1: ] Block %2: Allowance

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The difference between actual and setpoint measurements is greater than the upper tolerance limit (screen parameter TUL):
- TUL is the upper tolerance limit of the measurement difference.
- TUL is always related to the material, irrespective of whether external or internal machining is involved.
- The hole/pocket is thus too small and the spigot is too large.
- This means that further material can be removed.
- The measuring cycle parameter TUL corresponds to "upper deviation", the usual term used in mechanical engineering for fits and tolerances.

**Reaction:** Alarm display.

**Remedy:** The difference between actual and setpoint value is larger than upper tolerance limit (parameter _TUL).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62305 [Channel %1: ] Block %2: Dimension too small

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The difference between the actual and setpoint measurement is less than the lower tolerance limit (screen parameter TLL):
- TLL is the lower tolerance limit of the measurement difference.
- TLL is always related to the material, irrespective of whether external or internal machining is involved.
- The hole/pocket is thus too large and the spigot too small.
- This means that too much material has already been removed.
- The measuring cycle parameter TLL corresponds to "lower deviation", the usual term used in mechanical engineering for fits and tolerances.

**Reaction:** Alarm display.

**Remedy:** The difference between actual and setpoint value is smaller than lower tolerance limit (parameter _TLL).

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62306** **[Channel %1: ] Block %2: Permissible measuring difference exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** The difference between actual and setpoint value is larger than tolerance parameter _TDIF, tool data are not corrected.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62307** **[Channel %1: ] Block %2: Maximum number of characters per line exceeded.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Insufficient number of characters per line.

**Reaction:** Alarm display.

**Remedy:** Increase the value in _PROTFORM[1]

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62310** **[Channel %1: ] Block %2: The max. number of characters per line is limited to %4 characters per line**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62311** **[Channel %1: ] Block %2: The maximum number of characters per line _PROTFORM[1] is adjusted.**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** Max. number of characters per line _PROTFORM[1] has been adjusted.

**Reaction:** Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62312** **[Channel %1: ] Block %2: probe is not perpendicular to plane!**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** --

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62314** **[Channel %1: ] Block %2: Path limitation via software end position %4, collision detection activated, continue with NC START / cancel with RESET**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** This alarm is only output with external measurements (web, spigot, ball) as a query about the program continuation before the lowering movement in the infeed axis
The alarm scan is caused by the reduction of the path of the measuring axis in the working plane that has just been made.
If the path had not been reduced, the traversing movement would have extended beyond the software end position of the working plane. A corresponding NCK alarm 10722 would have been triggered.
With program stop, the user can check whether the infeed axis can be lowered to measuring height without causing a collision.
Alarm 61402 is output if there is a switch (collision) of the probe in the subsequent movement of the infeed axis.

**Reaction:** Alarm display.

**Remedy:** - Check setpoint value specification.
- Place the workpiece further away from the software limit position.

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62315** **[Channel %1: ] Block %2: Overwrite kinematics data record %4, yes -> NC start, no -> reset**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62316** **[Channel %1: ] Block %2: Overwrite TRAORIdata, yes -> NC start, no -> reset**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62317** **[Channel %1: ] Block %2: Tolerance of the linear vector %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** If the error comes from CYCLE996 or CYCLE9960:
The tolerance of the linear vectors is exceeded during the measurement of the kinematics.
The value of the tolerance is transferred in parameter TLIN.
If TLIN=0 or tolerance (check) = no, the measured vectors are not monitored.

**Reaction:** Alarm display.

**Remedy:** A 2nd measurement with a larger tolerance can be made for the analysis. The kinematic data should not be overwritten.
The newly measured vectors are documented in the measurement log (data file).

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62318 [Channel %1: ] Block %2: Tolerance of the rotary axis vector %4 exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** The rotary axis orientation is also calculated during kinematic measurement.
If the deviation is negligible and only the tolerance range is too small, this can be changed in $SN_CORR_TRAFO_DIR_MAX.
A deviation of the rotary axis orientation can also have a mechanical cause.

**Reaction:** Alarm display.

**Remedy:** If the deviation is very large, the cause may be a small measuring circuit.
With a rotary table, the calibration ball must not be too close to the center of rotation.
With head kinematics, the measuring circuit can be enlarged by positioning the 2nd rotary axis when measuring the first.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62319 [Channel %1: ] Block %2: No internal correction of the calibration data

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Check probe alignment/spindle position!
The alignment (programmed position) of the tool probe in the workspindle must be identical during calibration and measuring!
If these positions vary, the calibration data cannot be corrected cycle-internally with regards to a coordinate rotation of the workplane around the infeed axis!

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62320 [Channel %1: ] Block %2 Individual edges lie outside the dimensional difference: %4

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Measurement of the individual edges shows that the specified number of edges lies outside the dimensional difference.
A decision has to be made: whether or not one can continue working with this tool.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 62321 [Channel %1: ] Block %2: Rotary axis 1: Diameter tolerance of calibration ball between measurement %4 exceeded

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** see measured diameter in the parameters _OVR[72] to _OVR[74] or the value in SD $SCS_MEA_KIN_DM_TOL

**Reaction:** Alarm display.

**Remedy:** Check the calibration data or recalibrate the 3D probe
Check the mechanical structure of the calibration ball in the machine

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62322** **[Channel %1: ] Block %2: Rotary axis 2: Diameter tolerance of calibration ball between measurement %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:** see measured diameter in the parameters _OVR[75] to _OVR[77] or the value in SD $SCS_MEA_KIN_DM_TOL

**Reaction:** Alarm display.

**Remedy:** Check the calibration data or recalibrate the 3D probe
Check the mechanical structure of the calibration ball in the machine

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62377** **[Channel %1: ] Block %2: Dimensional tolerance %4 exceeded**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:**

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62500** **[Channel %1: ] Block %2: GWPS has been limited**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Check limit value for GWPS and program a lower value in the NC program if necessary

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62501** **[Channel %1: ] Block %2: Speed has been limited**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Check limit value for speed and program a lower value in the NC program if necessary

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62502** **[Channel %1: ] Block %2: Dresser %4, GWPS has been limited**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Check limit value for GWPS and program a lower value in the NC program if necessary

**Programm continuation:** Clear alarm with the Delete key or NC START.

**62503** **[Channel %1: ] Block %2: Dresser %4, speed has been limited**

**Parameters:** %1 = Channel number
%2 = Block number, label channel number

**Explanation:**

**Reaction:** Alarm display.

**Remedy:** Check limit value for speed and program a lower value in the NC program if necessary

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75000 [Channel %1: ] CLC: incorrect MD configuration, error code: %2

**Explanation:** On ramp-up the following error was found in the clearance control machine data:

Error code = -1: The intermediate points of one of the two sensor characteristics are not rising or falling strictly monotonously.

Error code = -2: One of the two sensor characteristics has less than 2 valid intermediate points.

Error code = -3: One of the two sensor characteristics has more than 5 intermediate points with negative velocity or more than 5 intermediate points with positive velocity.

Error code = -4: The digital input for sensor collision monitoring as set in MD $MC_CLC_SENSOR_TOUCHED_INPUT has not been activated on the control ( 10350 $MN_FASTIO_DIG_NUM_INPUTS )

Error code = -5: No rapid input was assigned to the special function "Fast retraction in the position controller" via MD $MC_CLC_SENSOR_TOUCHED_INPUT.

Error code = -6: The axis selected for the clearance control in MD $MC_CLC_AXNO is not active in the channel.

Error code = -7: The 5-axis transformation ( 24100 $MC_TRAFO_TYPE_x ) selected for the clearance control in MD $MC_CLC_AXNO is not configured in the channel.

Error code = -8: More than one of the axes involved in the clearance control is the master axis of a gantry grouping 37100 $MA_GANTRY_AXIS_TYPE

Error code = -9: One of the axes involved in the clearance control is the slave axis of a gantry grouping 37100 $MA_GANTRY_AXIS_TYPE

Error code = -10: Export versions will only enable activation of an axial clearance control, if less than four simulataneously interpolating axes have been configured.

Error code = -11: In MD $MC_CLC_PROG_ORI_AX_MASK, no or three axes exactly may be configured for CLC(3). When three axes are configured, these must be assigned to the channel with $MC_AXCONF_MACHAX_USED.

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Alarm display.

**Remedy:** Modify relevant machine data

**Programm continuation:** Switch control OFF - ON.

## 75005 [Channel %1: ] CLC: block %2 General programming error

**Parameters:** %1 = Channel number

%2 = Block number

**Explanation:** The activation / deactivation command for the clearance control "CLC(..)" accepts only the values 3, 2, 1, 0 and -1 as call parameters. This alarm signals that parameters are incorrect or missing. The activation command CLC(2) with monitoring of the sensor collision signal is accepted only if a valid digital input is configured for the monitoring signal in MD $MC_CLC_SENSOR_TOUCHED_INPUT.

**Reaction:** Interpreter stop

Alarm display.

**Remedy:** Modify part program. Configure the digital input for the collision evaluation in MD if necessary.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75010 [Channel %1: ] CLC: block %2 CLC_LIM value exceeds MD limit

**Parameters:** %1 = Channel number

%2 = Block number

**Explanation:** One of the limits for the position offset of the clearance control programmed with CLC_LIM( ...,...) is greater than the permissible limitation set in the associated MD. $MC_CLC_SENSOR_LOWER_LIMIT[ 1 ] or $MC_CLC_SENSOR_UPPER_LIMIT[ 1 ].

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Modify part program. Extend limitation in appropriate machine date.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75015 [Channel %1: ] CLC: block %2 CLC(0) with active TRC

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** The 3D clearance control has been switched off with CLC(0) while tool radius compensation is still active (G41/G42). Since CLC(0) empties the internal block buffer and accepts the current traversed position offset of the clearance control as a "contour jump" in the interpreter, TRC must be deactivated when this command is issued.

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Modify part program: Switch off active G41/G42 before CLC(0) or do not switch of clearance control, but just "freeze" temporarily (CLC_GAIN=0.0) or cancel the position offset mechanically with CLC(-1).

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75016 [Channel %1: ] CLC: block %2 orientation changed for TRAFOOF

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** 1. The 2D/3D clearance control has been switched off before the transformation. The tool direction according to G17/G18/G19 has been applied as the control direction. Switching on the transformation with rotary axis settings that define a different tool orientation requires an orientation step change and is therefore rejected.
2. The transformation has been switched off temporarily (TRAFOOF) while clearance control is still active. When the transformation is switched on again, the tool orientation must be the same as when it was switched off, i.e. the rotary axes must not be moved while the transformation is deactivated.

**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program: Do not switch on the clearance control until the transformation is already active or make sure that the required conditions relating to orientation are observed.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75018 [Channel %1: ] CLC: block %2 in programmable direction, error ID: %3

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Error ID

**Explanation:** The subfunction of the 3D clearance control programmed with CLC(3)
"Closed-loop control in programmable direction" reports an error:
Error ID:
0: CLC(3) was programmed without having set the corresponding option bit or without having entered an axis screen with three validly configured, simulated axes in MD $MC_CLC_PROG_ORI_AX_MASK.
1: The plane in which the closed-loop control direction is to be re-oriented, has not been defined. Probably, two directions programmed one after the other, are anti-parallel.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Modify MD or the part program.

**Programm continuation:** Clear alarm with the RESET key in all channels. Restart part program.

## 75019 [Channel %1: ] CLC: error ID: %2, angle %3

**Parameters:** %1 = Channel number
%2 = Error ID
%3 = Angle

**Explanation:** The subfunction of the 3D clearance control programmed with CLC(3)
"Closed-loop control in programmable direction" reports an error:
Error ID:
1: The clearance control direction has not been defined. Probably, [ 0,0,0 ] has been programmed for the three simulated axes specifying the direction components.
In the "angle" parameter, zero is output.
2: The max. permissible angle between the orientation of the blast tool and the programmed control direction was exceeded.
The permissible angle is set in machine data $MC_CLC_PROG_ORI_MAX_ANGLE.
The angle triggering the alarm is output in the 3rd alarm parameter.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Enlarge the monitoring angle or modify the programming in the part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75020 [Channel %1: ] CLC: position offset at lower limit %2

**Parameters:** %1 = Channel number
%2 = Limit value

**Explanation:** The position offset generated by the overlaid motion has reached the limit set in MD $MC_CLC_SENSOR_LOWER_LIMIT or programmed with CLC_LIM(...,...).
Depending on the setting in bit 0 of MD $MC_CLC_SPECIAL_FEATURE_MASK the following cancel criterion applies:
Bit 0 = 0: Cancel key
Bit 0 = 1: Reset key

**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.

**Remedy:** Check position and form of the workpiece. If necessary, program further limits.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75021 [Channel %1: ] CLC: position offset at upper limit %2

**Parameters:** %1 = Channel number
%2 = Limit value

**Explanation:** The position offset generated by the overlaid motion has reached the limit set in MD $MC_CLC_SENSOR_UPPER_LIMIT or programmed with CLC_LIM(...,...).
Depending on the setting in bit 1 of MD $MC_CLC_SPECIAL_FEATURE_MASK the following cancel criterion is active:
Bit 1 = 0: Cancel key
Bit 1 = 1: Reset

**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.

**Remedy:** Check position and form of the workpiece. If necessary, program further limits.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75025 [Channel %1: ] CLC: stopped because sensor head has been touched

**Parameters:** %1 = Channel number

**Explanation:** The collision monitor of the sensor tip has signaled "Sensor touched".
A retraction motion to the upper limit of the position offset ($MC_CLC_SENSOR_UPPER_LIMIT ) is started using the max available velocity and acceleration reserves. The feedrate override setting has no effect on this retraction motion. The path motion is stopped at the same time.

**Reaction:** Alarm display.
NC Stop on alarm.

**Remedy:** The part program can be continued with NC start. The overlaid motion then returns to the control distance.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75050 [Channel %1: ] MCSC: wrong MD configuration, error code %2

**Parameters:** %1 = Channel number
%2 = Error code

**Explanation:** Incorrect configuration in MD $MA_CC_MASTER_AXIS
Error code = 2: This axis indicated in the alarm message or the CC_Master axis is a spindle.
Error code = 4: Coupling between rotary and linear axes impermissible.
Error code = 8: Coupled axes must not be exchanged between channels.

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Check machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75051 [Channel %1: ] MCSC: CC_COPON CC_COPOFF block number %2 error number %3

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Error code

**Explanation:** Error code = 1: Wrong argument programmed
Error code = 10: An axis for which no coupling has been defined, was programmed in CC_COPON (axis identifier).
Error code = 20: Too many arguments programmed.
Error code = 100: Internal error
Error code = 200: Internal error

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 75060 [Channel %1: ] MCSC: tolerance window exceeded axis %2

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** The actual position value difference between the CC_Slave axis indicated in the alarm message and its CC_Master axis is outside the configured tolerance window.

**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.

**Remedy:** Check configured tolerance window.
Compare dynamic settings of involved axes.
Check mechanical components of axes.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 75061 [Channel %1: ] MCSC: MD modification on active coupling axis %2

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** Machine data MD 63000 CC_MASTER_AXIS has been changed when the coupling was active.

**Reaction:** Alarm display.
NC Stop on alarm.

**Remedy:** Reset machine data to its old value, switch off the coupling and then enter the new value.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 75062 [Channel %1: ] MCSC: axes to be coupled are not in standstill axis %2

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** The CC_Master and/or CC_Slave axes were not at standstill when the coupling was switched on.

**Reaction:** Alarm display.
NC Stop on alarm.

**Remedy:** Input G601 for path axes or program a stop preprocessor (STOPRE) before coupling with CC_COPON.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 75070 [Channel %1: ] MCSC: wrong machine data for collision protection axis %2

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** Incorrect machine data for collision protection.

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Correct machine data. The axes must be either both rotary axes or both linear axes!

**Programm continuation:** Clear alarm with the RESET key. Restart part program

### 75071 [Channel %1: ] MCSC: collision monitoring axis %2

**Parameters:** %1 = Channel number
%2 = Axis name

**Explanation:** The collision monitor has responded because the deceleration precomputation has detected that the distance between the axes has fallen below the configured distance.

**Reaction:** Alarm display.
NC Stop on alarm.
**Remedy:** Traverse the axis out of the danger area in manual mode.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75090 CC_TPM Axis %1 stopped by external process monitoring system

**Parameters:** %1 = Axis number
**Explanation:** An external process monitoring system has stopped the axis, as tool breakage is to be expected or has already occured.
**Reaction:** The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Change current tool, if required.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75091 CC_TPM problem found in the (DPIO) configuration. Error ID = %1

**Parameters:** %1 = Error ID
**Explanation:** Error ID = -1: No DPIO range found that corresponds to $MN_TOOL_MON_LOGIC_ADDRESS_IN
Error ID = -2: $MN_DPIO_RANGE_LENGTH_IN[ 'inIndex' ] is invalid (that is, less than 12 or more than 40)
Error ID = -3: No DPIO range found that corresponds to $MN_TOOL_MON_LOGIC_ADDRESS_OUT
Error ID = -4: $MN_DPIO_RANGE_LENGTH_OUT[ 'outIndex' ] is invalid (that is, less than 12 or more than 40)
Error ID = -5: $MN_DPIO_RANGE_ATTRIBUTE_OUT[ 'outIndex' ] is invalid (bit_1 is not set)
Error ID = -11: $MN_DPIO_RANGE_LENGTH_IN[ 'inIndex + 1' ] of the 2nd monitoring device is invalid
Error ID = -12: $MN_DPIO_RANGE_LENGTH_OUT[ 'outIndex + 1' ] of the 2nd monitoring device is invalid
Error ID = -13: $MN_DPIO_RANGE_ATTRIBUTE_OUT[ 'outIndex + 1' ] of the 2nd monitoring device is invalid
Error ID = -20: General error reading machine data
Error ID = 1: 61700__$MN_TOOL_MONITOR_AX_ASSIGN_TAB[0..7] contains the number of a machine axis that is not active.
**Reaction:** Channel not ready.
NC Start disable in this channel.
Alarm display.
NC Stop on alarm.
**Remedy:** Please correct machine data
**Programm continuation:** Switch control OFF - ON.

## 75200 [Channel %1: ] RCTR: incorrect MD configuration, error in MD: %2

**Parameters:** %1 = Channel number
%2 = MD name
**Explanation:** The following error was detected in the handling transformation machine data:
TRAFO6_IRORO: The orientation entered in MD TRAFO6_TIRORO_RPY is impermissible.
TRAFO6_TFLWP: The orientation entered in MD TRAFO6_TFLWP_RPY is impermissible.
TRAFO6_TX3P3: The orientation entered in MD TRAFO6_TX3P3_RPY is impermissible.
TRAFO6_MAIN_LENGTH_AB: The value entered in MD TRAFO6_MAIN_LENGTH_AB is incorrect.
**Reaction:** Channel not ready.
Alarm display.
**Remedy:** Correct machine data

**Programm continuation:** Switch control OFF - ON.

## 75210 [Channel %1: ] RCTR: number of axes/axis assignment inconsistent

**Parameters:** %1 = Channel number

**Explanation:** On transformation selection an incorrect axis assignment is detected:
The axes entered in MD TRAFO_AXES_IN_1 do not match MD TRAFO6_NUM_AXES.

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Correct machine data.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75212 [Channel %1: ] RCTR: incorrect TRAFO_TYPE_ : use 4100

**Parameters:** %1 = Channel number

**Explanation:** The transformer type entered in MD TRAFO_TYPE_x is incorrect

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** TRAFO_TYPE 4100 is to be used

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75214 [Channel %1: ] RCTR: MD cannot be changed while transformation active.

**Parameters:** %1 = Channel number

**Explanation:** An attempt has been made to modify machine data of an active transformation via NEWCONF.
This is not permissible, because a change to the machine data directly affects the current axis position, which is transformed from the basic coordinate system into the machine coordinate system in real time. Changing the transformation data during an active transformation would cause the axis positions to jump.

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Switch off transformation with TRAFOOF before the machine data is taken over by means of NEWCONF.

**Programm continuation:** Clear alarm with the RESET key. Restart part program
The changed machine data become effective after RESET.

## 75250 [Channel %1: ] RCTR: block: %2 tool parameters incorrect interpreter

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** On block interpretation incorrect tool parameters are detected:

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Correct tool parameters.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75255 [Channel %1: ] RCTR: block: %2 unreachable position interpreter

**Parameters:** %1 = Channel number
%2 = Block number

**Explanation:** On block interpretation a non-approachable position is detected:

**Reaction:** Interpreter stop
Alarm display.

**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75260 [Channel %1: ] RCTR: block: %2, tool parameters incorrect on block editing

**Parameters:** %1 = Channel number
%2 = Block number
**Explanation:** On block editing incorrect tool parameters are detected:
**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct tool parameters.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75263 [channel %1: ] RCTR: block: %2, software limit switch axis %3 %4 violated when preparing block

**Parameters:** %1 = Channel number
%2 = Block number
%3 = Axis name
%4 = Direction
**Explanation:** When preparing the block it is recognized that the software limit switch of an axis is exceeded.
**Reaction:** NC Stop on alarm at block end.
Correction block is reorganized.
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Correct the target position.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75265 [Channel %1: ] RCTR: block: %2, unreachable position on block editing

**Parameters:** %1 = Channel number
%2 = Block number
**Explanation:** On block editing a non-approachable position is detected:
**Reaction:** Interpreter stop
Local alarm reaction.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
**Remedy:** Modify part program.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75270 [Channel %1: ] RCTR: tool parameters incorrect on interpolation

**Parameters:** %1 = Channel number
**Explanation:** On interpolation incorrect tool parameters are detected:

**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.
**Remedy:** Correct tool parameters.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75273 [Channel %1: ] RCTR: Transformation violates software limit switch of axis %2 %3

**Parameters:** %1 = Channel number
%2 = Axis name
%3 = Direction
**Explanation:** A violation of the software limit switch of an axis has been detected while traversing with transformation active in JOG mode.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** JOG traverse in opposite direction.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75274 [Channel %1: ] RCTR: Excessive velocity near pole, error code %2 old value %3 new value %4

**Parameters:** %1 = Channel number
%2 = Error code
%3 = Old value
%4 = New value
**Explanation:** Excessive velocity of the machine axes involved can occur when traversing near the pole with active transformation, especially in JOG mode. The alarm is triggered if excessive velocity or acceleration occurs for an output axis of the transformation (Machine).
Error code:
0: Position jump
1: Excessive velocity
2: Excessive acceleration
Depending on whether a position jump, excessive velocity or excessive acceleration occurs, the old and the new value for position, velocity or acceleration
are output as third and fourth parameter.
**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Reduce velocity. Avoid JOG traverse near pole.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75275 [Channel %1: ] RCTR: block: %2, unreachable position on interpolation

**Parameters:** %1 = Channel number
%2 = Block number
**Explanation:** On block interpolation a non-approachable position is detected:
**Reaction:** NC Start disable in this channel.
Alarm display.
NC Stop on alarm.
**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75500 [Channel %1: ] HSLC: Configuration error ID=%2

**Parameters:** %1 = Channel number

**Explanation:** The function CC_FASTON or CC_FASTON_CONT cannot be executed because the following MD configuration is incorrect:

ID=2: The NCK system function "Timer-controlled cam signal output" (see Description of Functions "Software cams, Position switching signals (N3)" ) is configured with machine data MD 10480 $MN_SW_CAM_TIMER_FASTOUT_MASK > 0 at the same time as the function HSLC. As there is only one hardware timer on the NCU, only one of the two functions can be used.

ID=4: Programming CC_FASTON and CC_FASTON_CONT requires internal block memory:

In order to activate the compile cycle CCHSLC, the entries have to be increased in the following machine data:

MD 28090 $MC_MM_NUM_CC_BLOCK_ELEMENTS by 1 element

MD 28100 $MC_MM_NUM_CC_BLOCK_USER_MEM by 2 [KB]

**Reaction:** Alarm display.

**Remedy:** Modify the stated MD settings

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75501 [Channel %1: ] HSLC: CC_FASTON_CONT velocity too high

**Parameters:** %1 = Channel number

**Explanation:** The path-related switching signal output switched on by the part rogramm command

CC_FASTON_CONT( PATH_DISTANCE_ON, PATH_DISTANCE_OFF )

cannot output all switching signals correctly at the current velocity.

Reason:

A maximum of one switching edge can be output per IPO cycle (see $MN_IPO_CYCLE_TIME ). The current path velocity is so high that there is more than one switching edge to be output within one path distance PATH_DISTANCE_ON or PATH_DISTANCE_OFF.

Example:

IPO cycle = 2ms ( position-control cycle = 1ms )

PATH_DISTANCE_ON = 0.667

PATH_DISTANCE_OFF = 0.667

Maximum path velocity in which no switching edges are lost: 20000 mm/min

When alarm 75501 occurs, the function skips the output of two successive switching edges. This does not affect the position of subsequent switching edges.

Note: Whether the ommission of a signal from the previous switching signal leaves a high or low level present, is purely coincidental.

**Reaction:** Alarm display.

**Remedy:** - Lengthen the operating travels programmed in the command CC_FASTON_CONT

- Program the path velocity or reduce it with the override switch

- Set a shorter IPO cycle (machine manufacturer only)

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75600 [Channel %1: ] RESU: wrong MD configuration. Error code %2

**Parameters:** %1 = Channel number

%2 = Error code

**Explanation:** The following errors were detected in the machine data of the retrace support function when ramping up:

Error code = 4 : Machine date $MC_MM_NUM_CC_BLOCK_ELEMENTS or $MC_MM_NUM_CC_BLOCK_USER_MEM must be increased.

Error code = 5 : Insufficient heap memory for compile cycles available. Adjust machine data $MC_RESU_RING_BUFFER_SIZE, $MC_RESU_SHARE_OF_CC_HEAP_MEM and $MC_MM_NUM_CC_HEAP_MEM.

Error code = 6 : The machine data $MN_ASUP_START_MASK and $MN_ASUP_START_PRIO_LEVEL are not set correctly.

Error code = 11: Machine data $MC_AXCONF_GEOAX_NAME_TAB[n], $MN_INTERMEDIATE_POINT_NAME_TAB[n] and $MN_IPO_PARAM_NAME_TAB[n] are not set correctly for RESU:

Error code = 13: With bit 1 = 0 of MD $MC_RESU_SPECIAL_FEATURE_MASK it was specified that the retraction program cc_resu.mpf is to be stored in the DRAM part program memory. However, no DRAM part program memory was requested via MD $MN_MM_DRAM_FILE_MEM_SIZE. Remedy: Either set MD $MN_MM_DRAM_FILE_MEM_SIZE to a value inequal to zero or set bit 1 of MD $MC_RESU_SPECIAL_FEATURE_MASK equal to one.

**Reaction:** Mode group not ready.

Channel not ready.

NC Start disable in this channel.

Interface signals are set.

Alarm display.

NC Stop on alarm.

**Remedy:** Correct machine data.

**Programm continuation:** Switch control OFF - ON.

## 75601 [Channel %1: ] RESU: block %2 invalid parameter in CC_PREPRE()

**Parameters:** %1 = Channel number

%2 = Block number, label

**Explanation:** Only the values <arg> = -1 0 or 1 are valid parameters for programming CC_STOPRE( <arg>).

**Reaction:** Interpreter stop

Interface signals are set.

Alarm display.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75604 [Channel %1: ] RESU: Return traveling not possible, error code %2

**Parameters:** %1 = Channel number

%2 = Error code

**Explanation:** Return traveling is not possible, as the following error was detected:

Error code = 1 : The current reverse block for return traveling is likely to be a block of cc_resu_ini.spf or cc_resu_end.spf programmed with a block number. It is impermissible to program block numbers in the subroutines cc_resu_ini.spf and cc_resu_end.spf, as they have an internal meaning.

Error code = 2 : Unable to create cc_resu.mpf, as DRAM is insufficient.

Error code = 4 : The selected continuation block is likely to be a block of cc_resu_ini.spf or cc_resu_end.spf programmed with block number. It is impermissible to program block numbers in the subroutines cc_resu_ini.spf and cc_resu_end.spf, as they have an internal meaning.

**Reaction:** NC Start disable in this channel.

Interface signals are set.

Alarm display.

**Remedy:** Error code = 1 or 4 : Remove all block numbers from cc_resu_ini.spf and cc_resu_end.spf and their subroutines.

Error code = 2 : Assign a higher value to machine date $MN_MM_DRAM_FILE_MEM_SIZE.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75605 [Channel %1: ] RESU: internal error, error code %2

**Parameters:** %1 = Channel number
%2 = Error code

**Explanation:** With this alarm, RESU-internal error states are displayed which, together with the transferred error number, provide information on the error cause and error location.

**Reaction:** NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** If this error occurs, please contact us on the SINUMERIK Hotline of the SIEMENS AG, specifying the error number.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75606 [Channel %1: ] RESU: retraceable contour was shortened

**Parameters:** %1 = Channel number

**Explanation:** The block search buffer is full. Therefore the retraceable contour had to be shortened.

**Reaction:** Alarm display.

**Remedy:** This alarm has no effect on the current machining. If the alarm continues to occur frequently, the reason should be eliminated: adjust machine data $MC_RESU_RING_BUFFER_SIZE, $MC_RESU_SHARE_OF_CC_HEAP_MEM and $MC_MM_NUM_CC_HEAP_MEM.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75607 [Channel %1: ] RESU: resynchronisation not possible

**Parameters:** %1 = Channel number

**Explanation:** The block search triggered by the compile cycle has been terminated with an error. It can have the following cause: The control is not in the correct operating mode, e.g. in JOG_ AUTO instead of in AUTO.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Switch the control to the AUTO operating mode and restart resynchronisation.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75608 [Channel %1: ] RESU: NC memory limit reached, RAM type %2

**Explanation:** A memory limit was reached on writing to file cc_resu.mpf. The possible area for return traveling is shortened.
RAM type = 1: File cc_resu.mpf is created in the buffer memory (SRAM). The buffer memory is therefore full. If the buffer memory is used and if alarm 75608 with RAM type 1 is output, system alarm 6500 will be output simultaneously.
RAM type = 2: The memory limit was reached on creating file cc_resu.mpf in the dynamic memory (DRAM part program memory).

**Reaction:** Alarm display.

**Remedy:** RAM type = 1: Increase size of buffer memory ($MN_MM_USER_MEM_BUFFERED) or the available space in the buffer memory, e.g. by unloading unused part programs. Alternatively the ring buffer can be decreased via MD $MC_RESU_RING_BUFFER_SIZE.

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 75609 [Channel %1: ] RESU: POS axis not permitted, axis type %2, block no. %3

**Parameters:** %1 = Channel number
%2 = Axis type
%3 = Block number

**Explanation:** A geometry axis is traversed as a positioning axis with CC_PREPRE active. This programming is not permissible.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** In order to traverse a geometry axis as positioning axis, RESU must be switched off temporarily (with CC_PREPRE(0) ) or completely. In order to make the internal axis state change from the geometry axis as positioning axis after traversing, a block without traveling motion must be programmed, if required: e.g. X=IC(0)

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75610 [Channel %1: ] RESU: NC start currently not possible

**Explanation:** While RESU is active, no NC START must be performed in certain situations. If NC START is confirmed nevertheless, execution will be blocked and alarm 75610 will be displayed. This applies in the following situations:
- On requesting return traveling: NC START is blocked when return traveling program cc_resu.mpf has been created and selected.
- After having triggered continuation under NC STOP condition: as long as the internally started block search or the finally started ASUB cc_resu_bs_asup.spf is running.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Wait for completion of the current internal procedure. Then delete the alarm with NC START and continue

**Programm continuation:** Clear alarm with NC START or RESET key and continue the program.

## 75611 [Channel %1: ] RESU: Block %2 change to the NEWCONF machine data from RESU is not permitted

**Parameters:** %1 = Channel number
%2 = Block number, label

**Explanation:** The change to the NEWCONF machine data from RESU is not permitted if RESU is active or CC_PREPRE(1) is programmed.

**Reaction:** Interpreter stop
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** Modify part program.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75651 [Channel %1: ] PROT: Incorrect configuration no. %2

**Parameters:** %1 = Channel number
%2 = Error code

**Explanation:** Invalid configuration of the axis collision protection PROT
Significance of the displayed error numbers:
1: The axes of one pair are not of the same axis type (linear / rotary axis)
2: A selected axis pair includes an axis not activated in any channel
8: In an assignment $MN_CC_PROTECT_PAIRS[ n ], only one axis was entered
16: MD $MN_CC_PROTECT_SAFE_DIR[ n ] or $MN_CC_PROTECT_OFFSET[ n ] was changed with collision monitoring active
32: The current position difference between the axes to be monitored is smaller than the monitoring window $MN_CC_PROTECT_WINDOW[ n ]
64: The axis is assigned to the channel in which PROT is not activated
128: Problem related to accessing machine data (internal error)

**Reaction:** Mode group not ready.
Interface signals are set.
Alarm display.
**Remedy:** Still missing
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75652 [channel %1: ] PROT: Trace file access error No. %2

**Parameters:** %1 = Channel number
%2 = Error code
**Explanation:** Trace file access error
**Reaction:** Alarm display.
**Remedy:** Close trace file or release memory space
**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 75653 [Channel %1: ] PROT: Collision protection stops axis %2

**Parameters:** %1 = Channel number
%2 = Axis number
**Explanation:** The axis collision protection function PROT has detected a risk of collision, and stopped the critical axes.
**Reaction:** Interface signals are set.
Alarm display.
NC Stop on alarm.
**Remedy:** Retract axis in JOG. Modify part program if necessary.
**Programm continuation:** Clear alarm with the RESET key. Restart part program

# HMI alarms

# 6

| | |
|---|---|
| **120200** | **Image preparation suppressed, please wait.** |
| **Explanation:** | The control is so heavily loaded by the processing of a subroutine, that it cannot keep all the display values up-to-date. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as the overload situation has been eliminated.<br>If this alarm occurrs often, the start-up engineer will have to take appropriate measures (e.g. reduce IPO clock pulse rate). |
| **Programm continuation:** | Internal |

| | |
|---|---|
| **120400** | **The settings for the acyclic links with the drive devices are not yet effective.%nSwitch off/on HMI !** |
| **Explanation:** | A file transfer from/to a drive device has failed as the settings for acyclic links with the drive devices become effective only after an HMI reboot. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Switch off/on HMI and then repeat the process leading to the alarm. |
| **Programm continuation:** | Internal |

| | |
|---|---|
| **120401** | **SINAMICS: Write job for parameter %1, value %2, area %3: %4s timeout!** |
| **Parameters:** | %1 = Number of parameter the value of which is to be written.<br>%2 = Value to be written<br>%3 = Area (drive object class to which the write job was addressed)<br>%4 = Time passed without the write job being acknowledged by the drive device. |
| **Explanation:** | The write job of a SINAMICS parameter was not not acknowledged within 10 seconds by the drive device.<br>If the write job is not acknowledged within the next 10 seconds, the alarm will again be triggered.<br>The waiting period for the acknowledgment of a write job is a maximum of 130 seconds, i.e. if the timeout specified in the alarm is 130 seconds, it is assumed that the write job has failed. Otherwise it can be assumed that the write job was successful despite the timeout. |
| **Reaction:** | Alarm display. |
| **Remedy:** | As long as the timeout specified in the alarm is less than 130 seconds, acknowledge alarm, otherwise switch off/on control, drive system and HMI, and then repeat the process leading to the alarm. |
| **Programm continuation:** | Internal |

| | |
|---|---|
| **120402** | **Bus%1.Slave%2: %3: First commissioning of SINAMICS required!** |
| **Parameters:** | %1 = Bus number<br>%2 = Slave address<br>%3 = Name of the affected drive device |
| **Explanation:** | The drive device with the bus number and slave address specified in the alarm is in 'First commissioning' state. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Execute first commissioning for the affected drive device.<br>To do so, switch in the HMI to the dialog 'First commissioning > Drive system > Drive devices, select the affected drive device, and follow the instructions of the HMI. |
| **Programm continuation:** | Internal |

| 120403 | Bus%1.Slave%2: %3: Check/acknowledge topology! |
|---|---|
| **Parameters:** | %1 = Bus number<br>%2 = Slave address<br>%3 = Name of the affected drive device |
| **Explanation:** | The drive device with the bus number and slave address specified in the alarm has detected an illegal difference between target topology and actual topology during the ramp-up when checking the DRIVE-CLiQ topology.<br>For this reason, the drive device has stopped the ramp-up in the 'Topology error' state. |
| **Reaction:** | Alarm display. |
| **Remedy:** | - Check actual topology and possibly replug in line with the target topology.<br>- Check DRIVE-CLiQ cables for breakage and problems with contacts.<br>- Test DRIVE-CLiQ components for operational functioning.<br>Note:<br>Under 'Setup > Drive system > Drive devices > Topology', HMI offers a suitable diagnostics (e.g. target/actual value comparison). |
| **Programm continuation:** | Internal |

| 120404 | Setting up acyclic link %1 failed.%nSwitch off/on control, drives and HMI. |
|---|---|
| **Parameters:** | %1 = Name of connection |
| **Explanation:** | Setting up an acyclic link with a drive device for file transfer from/to this drive device has failed.<br>The file could not be transferred from/to this drive device.<br>The affected drive device has the bus number and slave address specified in the link name: /DRIVE_<Bus number>_<Slave address>. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Execute the following measures in the sequence specified until the process leading to the alarm can be repeated successfully:<br>1. Switch off/on control, drives and HMI, and then repeat the process leading to the alarm.<br>2. Load PROFIBUS configuration (HW Config) with same PLC and CP-Subnet-ID in PLC and CP, switch off/on control and HMI, and then repeat the process leading to the alarm.<br>3. Return to factory settings of the affected drive device, switch off/on control, drives and HMI, and then repeat the process leading to the alarm.<br>4. Regarding the error text, submit a Support Request to: http://www.siemens.com/automation/support-request |
| **Programm continuation:** | Internal |

| 120405 | SINAMICS: Firmware update for DRIVE-CLiQ components is running.%nPlease wait for the firmware update to be completed! |
|---|---|
| **Explanation:** | The firmware update is being executed for at least one DRIVE-CLiQ component. |
| **Reaction:** | Alarm display. |
| **Remedy:** | None required.<br>Please wait for the firmware update to be completed.<br>Completion of the firmware update is signaled by alarm 120406. |
| **Programm continuation:** | Internal |

| 120406 | SINAMICS: Firmware update of DRIVE-CLiQ components completed.%nSwitch off/on drive system! |
|---|---|
| **Explanation:** | Firmware update of all DRIVE-CLiQ components completed. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Switch off/on drive system including all DRIVE-CLiQ components. |
| **Programm continuation:** | Internal |

| 120407 | SINAMICS: Read job for parameter %1, area %2: %3 s timeout! |
|---|---|
| **Parameters:** | %1 = Number of the parameter whose value was read.<br>%2 = Area (drive object class to which the write job was addressed)<br>%3 = Time required to read the parameter. |
| **Explanation:** | It is taking too long to read a SINAMICS parameter. This can slow down the operation of a connected HMI significantly. |
| **Reaction:** | Alarm display. |
| **Remedy:** | 1. Acknowledge alarm.<br>2. Check drive load: The CPU time load values in parameter r9976 for the corresponding Control Unit should be less than 80%.<br>3. Regarding the error text, submit a Support Request to: http://www.siemens.com/automation/support-request |
| **Programm continuation:** | Internal |

| 120408 | The safety operating mode needs to be adapted in at least one drive device! |
|---|---|
| **Explanation:** | The safety operating mode needs to be adapted in at least one drive device. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The safety operating mode needs to be adapted under 'Setup/Safety/Adapt SI mode'. |
| **Programm continuation:** | Internal |

| 120409 | Adaptation to SINUMERIK required in at least one drive device. |
|---|---|
| **Explanation:** | An adaptation to SINUMERIK is required in at least one drive device. |
| **Reaction:** | Alarm display. |
| **Remedy:** | An adaptation to SINUMERIK is required in at least one drive device. To do so, carry out a Reset (PO), then acknowledge the following system dialog "Adaptation to SINUMERIK" with "OK".<br>Alternatively, a manual adaptation can be made in the affected drive device using the parameter sequence P0009 = 30 and P0976 = 502. Then save the parameters of the drive device. |
| **Programm continuation:** | Internal |

| 150000 | Auto Servo Tuning has been shut down unexpectedly during a previous operation.%nIt may be necessary to restore the output data of the last tuning. |
|---|---|
| **Explanation:** | The alarm signals that a recovery point exists.<br>A recovery point may come to a standstill on a platform if AST is unexpectedly shut down (e.g. in the case of power failure, failure in communications etc.)<br>Recovery of the recovery point sets the machine data back to the values before the tuning. This ensures that the machine is in a consistent state. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Data recovery may be executed from the Auto Servo Tuning application in HMI-Setup. |
| **Programm continuation:** | Internal |

| 150001 | Error during Auto Servo Optimization: %1 |
|---|---|
| **Explanation:** | Automatic axis optimization has failed.<br>Auto Servo Tuning canceled optimization because of an error. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Place a support request with the error text under: http://www.siemens.com/automation/support-request |
| **Programm continuation:** | Internal |

**150002** **Error in the AST Kernel Library: %1**

**Explanation:** Automatic axis optimization has failed.
Auto Servo Tuning canceled optimization because of an error.

**Reaction:** Alarm display.

**Remedy:** Place a support request with the error text under: http://www.siemens.com/automation/support-request

**Programm continuation:** Internal

**150003** **Auto Servo Optimization has aborted the optimization. Reason: %1 (%2<AST>)**

**Explanation:** Automatic axis optimization has failed.
Ensure that:
1. The channel is in RESET.
2. The axis can be traversed in JOG mode.
3. The axis optimization calls in the part program are neither incorrect nor incomplete.

**Reaction:** Alarm display.

**Remedy:** Look up error number in the user documentation.
After debugging, restart the part program.

**Programm continuation:** Internal

**150004** **AST Kernel Library has aborted the optimization. Reason: %1 (%2<AST>)**

**Explanation:** Automatic axis optimization has failed.
The axis optimization calls in the part program are probably incorrect or incomplete.

**Reaction:** Alarm display.

**Remedy:** Look up error number in the user documentation.
After debugging, restart the part program.

**Programm continuation:** Internal

**150005** **Auto Servo Tuning was canceled by the user.**

**Explanation:** Automatic axis optimization was canceled by the user.

**Reaction:** Alarm display.

**Remedy:** The part program must be restarted.

**Programm continuation:** Internal

**150006** **Auto Servo Optimization has aborted the optimization. Reason: %1 (%2<AST>)**

**Explanation:** An error has occurred during a measurement of the automatic axis optimization.

**Reaction:** Alarm display.

**Remedy:** 1: Unselect the REF/TEACH/single block function.
2: Press the "Feedrate enable" key.
3: Increase the feedrate of the axis.
4: Press the "Spindle enable" key.
5: Reference the axis.
6: First stop other measurements. Check parameter p4701 of the CU. Exit all external operates which access the control.
7: First stop the trace (drive). Check parameter p4700 of the CU. Exit all external operates which access the control.
8: Check ON/OFF1 signal enable in the axis diagnostics and, if necessary, set parameter p840 in the drive parameters.
9: Check ON/OFF1 signal enable of the infeed and, if necessary, set parameter p840 in the drive parameters.
After debugging, the part program must be restarted.

**Programm continuation:** Internal

## 150100 Adaptation of the softkey access levels active

**Explanation:** The alarm signalizes that the commissioning mode for softkeys has been activated.
In this mode, the access level of a softkey can be reassigned by a right click on the softkey.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the commissioning mode for softkeys is terminated.

**Programm continuation:** Internal

## 150201 Communication to %1 failed

**Parameters:** %1 = Source URL of the component involved

**Explanation:** The operator panel is connected to the NC and PLC by a communications bus.
This alarm occurs when the communication to these components is interrupted.
In connection with this alarm, all display values connected with the NC/PLC become invalid.
Such faults are normal while the controls are ramping up (e.g. after resetting).

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the fault situation has ended.
If this alarm is continuously present, a wide variety of faults may be the cause. (e.g. wire breakage, NC/PLC not ramped up, faulty address/data transfer rate configuration of one of the bus nodes, etc.).

**Programm continuation:** Internal

## 150202 Waiting for a connection to %1

**Parameters:** %1 = Source URL of the component involved

**Explanation:** The operator panel is connected to the NC and PLC by a communications bus.
This alarm occurs if the MMC is started for the first time and the NC/PLC ramp-up has not yet finished or the communication to these components is faulty.
In conjuncction with this alarm, all display values connected with the NC/PLC become invalid.
Such faults are normal while the controls are starting up (e.g. after resetting).

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the fault situation has ended.
If this alarm is continuously present, a wide variety of faults may be the cause. (e.g. wire breakage, NC/PLC not ramped up, faulty address/data transfer rate configuration of one of the bus nodes, etc.).

**Programm continuation:** Internal

## 150204 ----- Start alarm acquisition -----

**Explanation:** The alarm indicates the start or restart of alarm acquisition in the alarm log.
If the alarm log has been configured so that it is persistently written into the file system, a further alarm is written into the log at each new start. The alarm thus separates the individual time intervals during which alarm acquisition is active.
The coming and going time stamps are identical, and correspond to the time of the start/restart of the alarm acquisition.
The alarm is only visible in the alarm log.

**Reaction:** Alarm display.

**Remedy:** The alarm can but need not be deleted as it is only visible in the alarm log.

**Programm continuation:** Internal

**150205** **%1 %2**

**Explanation:** The alarm displays errors found by the alarm and event server.
The alarm is used universally. That means the actual text appears in the parameters %1 and %2, and is always in English.
The alarm is only visible in the alarm log.

**Reaction:** Alarm display.

**Remedy:** The alarm is deleted immediately after setting, and is therefore only visible in the alarm log.

**Programm continuation:** Internal

**150206** **%1 %2**

**Explanation:** The alarm displays errors found by the adapter of the alarm and event server.
The alarm is used universally. That means the actual text appears in the parameters %1 and %2, and is always in English.
The alarm is only visible in the alarm log.

**Reaction:** Alarm display.

**Remedy:** The alarm is deleted immediately after setting, and is therefore only visible in the alarm log.

**Programm continuation:** Internal

**150207** **----- Maximum log size %1 MB reached -----**

**Parameters:** %1 = Maximum log size

**Explanation:** The alarm indicates that the alarm log, for alarm acquisition, of the alarm recorder has reached its maximum size.
No more events will be recorded!

**Reaction:** Alarm display.

**Remedy:** The alarm can but need not be deleted as it is only visible in the alarm log.

**Programm continuation:** Internal

**150300** **%1 is active**

**Explanation:** The alarm signalizes that a defined energy state has been reached.
Energy states can be configured via an HMI screenform in commissioning.
The HMI screenforms can be accessed with the shortcut "Ctrl-E".

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the energy state reached has been terminated.

**Programm continuation:** Internal

**150301** **HMI Operate version %1 requires CNC software version %2**

**Explanation:** The alarm indicates that the version of the HMI Operate software used requires a different version of the SINUMERIK CNC software.
This combination can lead to malfunctions or display problems.

**Reaction:** Alarm display.

**Remedy:** Use of the version of the SINUMERIK CNC software stated in the alarm.

**Programm continuation:** Internal

**150400** **The system CF card is nearly full.**

**Explanation:** The alarm signalizes that the system CF card is nearly full.
Please delete the programs no longer required on the local drive and/or the data on the system CF card.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as sufficient memory space is available again.

**Programm continuation:** Internal

## 150401 '%1' : '%2' cannot be reselected in channel '%3'

**Parameters:** %1 = Name of the NCU for which reselection is to be made.
%2 = Program name with path details.
%3 = Channel number for reselection.

**Explanation:** On the NCU, the program could not be automatically selected for the channel for external execution.
Please check whether the channel is in reset and if the program is present.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the program is selected on the NCU for the channel for 'Execution from external source'

**Programm continuation:** Internal

## 150402 The buffered memory for the 'NC Extend' drive is full

**Explanation:** The alarm indicates that the 'NC Extend' drive is full.
Please delete programs that are no longer needed from the local drive.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as sufficient memory space is available again.

**Programm continuation:** Internal

## 150403 The set user memory on the 'local drive'/'NC Extend' has been exceeded, see display MD HMI_MEM_LIMIT_USER

**Explanation:** The alarm indicates that the user memory set in display MD HMI_MEM_LIMIT_USER is full.
Please delete data that is no longer needed from the local drive/NC Extend.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as sufficient memory space is available again.

**Programm continuation:** Internal

## 150404 The available manufacturer memory has been exceeded, see display MD HMI_MEM_LIMIT_USER

**Explanation:** The alarm indicates that the available manufacturer memory set in display MD HMI_MEM_LIMIT_USER is full.
Please delete data that is no longer needed from manufacturer area of the CF card.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as sufficient memory space is available again.

**Programm continuation:** Internal

## 150405 The SD card is almost full

**Explanation:** The alarm indicates that the SD card is almost full.
Delete any programs that are no longer needed on the local drive and/or any data on the SD card.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as sufficient memory space is available again.

**Programm continuation:** Internal

| 150406 | The memory available for users and manufacturer data (6 GB) is full |
|---|---|
| **Explanation:** | The alarm indicates that the area for users and manufacturer data is full.<br>Please delete programs that are no longer needed from the drives. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as sufficient memory space is available again. |
| **Programm continuation:** | Internal |

| 150407 | /install directory exceeds the permissible size, please correct. |
|---|---|
| **Explanation:** | The alarm indicates that the install directory is too full.<br>Please delete data that are no longer needed with external tools, and restart the HMI. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm does not disappear until the next HMI restart after the cause has been eliminated. |
| **Programm continuation:** | Internal |

| 150408 | The available memory for manufacturer 'oem' and/or 'individual' is full |
|---|---|
| **Explanation:** | The alarm indicates that the manufacturer drive 'oem' and/or 'individual' is full.<br>Delete any files on the drive that you no longer need. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as sufficient memory space is available. |
| **Programm continuation:** | Internal |

| 150410 | Action not possible. Option not set: %1 |
|---|---|
| **Explanation:** | The functionality can only be executed if the corresponding option is set.<br>In the operating area "Setup", set (HSK) "Licenses", (VSK) "All options" |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears when the option is set and the HMI is then rebooted. |
| **Programm continuation:** | Internal |

| 150411 | Texts in the PLC project have been changed!%nIf required, they must be imported and the HMI restarted. |
|---|---|
| **Explanation:** | Loading new texts to the PLC requires an HMI reboot.<br>If texts have been changed in the PLC project, they have to be imported, and the HMI restarted if they are used in the HMI, e.g. alarm texts. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears on HMI reboot. |
| **Programm continuation:** | Internal |

| 150412 | No information on SIEMENS registration available. |
|---|---|
| **Explanation:** | Checking the machine registration is activated and has failed.<br>The machine is not registered with SIEMENS. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears if the machine is registered with Siemens. The registration can be made in the operating area "Diagnostics" in the operating screen "Version" with the softkey "Register machine". Scan the QR code In the operating screen "Register machine". This code leads via a link to the official SIEMENS registration page. Enter the necessary information on the registration page to receive the 12-digit registration code. The 12-digit registration code must then be entered in the operating screen "Register machine". Please ensure that the registered CF card is also inserted in the registered NCU. |

**Programm continuation:** Internal

## 150413 Backup data archive could not be created, next attempt tomorrow at %1%n %2 .

**Parameters:** %1 = Time of next data backup
%2 = Cause of the error

**Explanation:** The creation of automatic data backup archives is enabled. However, no data backup archive could be created due to errors.
A new attempt will be made after 24 hours.

**Reaction:** Alarm display.

**Remedy:** The alarm explains the cause of the error and how to fix it.
It disappears with the next successful data backup.

**Programm continuation:** Internal

## 150414 The creation of the automatic data backup archive will start in %1 minutes.

**Parameters:** %1 = Number of minutes

**Explanation:** The creation of automatic data backup archives is enabled and notification of the start of the data backup has been given.
Notifications appear at two-minute intervals starting 10 minutes before the start.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears once the system starts the data backup.

**Programm continuation:** Internal

## 150420 Please set Windows enable and distribute drives.

**Explanation:** The alarm signals that logon data for EES drives are missing.
Please set Windows enable under Setup/HMI/Log. drives, and distribute drives.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the logon data have been set for Windows enable and the drives have been distributed.

**Programm continuation:** Internal

## 150421 The drive configuration is being distributed and activated on NCU %1

**Parameters:** %1 = Name of the NCU on which the drive configuration is being distributed.

**Explanation:** The alarm signals that the drives are being distributed.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the drives have been activated on the NCU.

**Programm continuation:** Internal

## 150422 Error during the drive configuration of drives %2 on NCU %1

**Parameters:** %1 = Name of the NCU on which the error occurred.
%2 = List of the drives on which an error occurred.

**Explanation:** The alarm signals that an error has occurred during activation of the drives on the NCU.

**Reaction:** Alarm display.

**Remedy:** The alarm disappears automatically as soon as the NCU drives have been successfully activated.

**Programm continuation:** Internal

| 150423 | The drive configuration could not be distributed on the NCU %1 as programs are being processed |
|---|---|
| **Parameters:** | %1 = Name of the NCU on which programs are being processed. |
| **Explanation:** | The alarm signals that not all channels on the NCU are in the RESET state. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as the NCU drives have been successfully activated. |
| **Programm continuation:** | Internal |

| 150424 | The drive configuration has been changed, and must be redistributed |
|---|---|
| **Explanation:** | The alarm signals that the contents of the logdrive.ini file(s) have changed, or are not the same as those on the NCU.<br>Please distribute the drives under Setup/HMI/Log. drives. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as the drives have been distributed. |
| **Programm continuation:** | Internal |

| 150425 | Error accessing NCU %1. Please check the NCU and redistribute the drives. |
|---|---|
| **Explanation:** | The alarm signals that an error has occurred while accessing the NCU.<br>Please check the NCU, and redistribute the drives under Setup/HMI/Log. Drives. |
| **Reaction:** | Alarm display. |
| **Remedy:** | The alarm disappears automatically as soon as the drives have been distributed. |
| **Programm continuation:** | Internal |

# SINAMICS alarms

# 7

'All objects: A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

## 201000 <location>Internal software error

**Drive object:** 'All objects

**Message value:** Module: %1, line: %2

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- evaluate fault buffer (r0945).
- carry out a POWER ON (switch-off/switch-on) for all components.
- if required, check the data on the non-volatile memory (e.g. memory card).
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

## 201001 <location>FloatingPoint exception

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** An exception occurred for an operation with the FloatingPoint data type.
The error can be caused by the basic system or a technology function (e.g. FBLOCKS, DCC, TEC).
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
Note:
Refer to r9999 for additional information about this fault.
r9999[0]: Fault number.
r9999[1]: Program counter at the time when the exception occurred.
r9999[2]: Cause of the FloatingPoint exception.
Bit 0 = 1: Operation invalid
Bit 1 = 1: Division by zero
Bit 2 = 1: Overflow
Bit 3 = 1: Underflow
Bit 4 = 1: Inaccurate result

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- check configuration and signals of the blocks in FBLOCKS.
- check configuration and signals of DCC charts.
- check configuration and signals of TEC charts.
- upgrade firmware to later version.
- contact Technical Support.

## 201002 <location>Internal software error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201003 <location>Acknowledgment delay when accessing the memory

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A memory area was accessed that does not return a "READY".
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- contact Technical Support.

## 201004 <location>Internal software error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An internal software error has occurred.
Fault value (r0949, hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - read out diagnostics parameter (r9999).
- contact Technical Support.
See also:r9999 (Software error internal supplementary diagnostics)

## 201005 <location>Firmware download for DRIVE-CLiQ component unsuccessful

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** It was not possible to download the firmware to a DRIVE-CLiQ component.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = component number, xxxx = fault cause
xxxx = 000B hex = 11 dec:
DRIVE-CLiQ component has detected a checksum error.
xxxx = 000F hex = 15 dec:
The selected DRIVE-CLiQ component did not accept the contents of the firmware file.
xxxx = 0012 hex = 18 dec:
Firmware version is too old and is not accepted by the component.
xxxx = 0013 hex = 19 dec:
Firmware version is not suitable for the hardware release of the component.
xxxx = 0065 hex = 101 dec:
After several communication attempts, no response from the DRIVE-CLiQ component.
xxxx = 008B hex = 139 dec:
Initially, a new boot loader is loaded (must be repeated after POWER ON).
xxxx = 008C hex = 140 dec:
Firmware file for the DRIVE-CLiQ component not available on the memory card.
xxxx = 008D hex = 141 dec:
An inconsistent length of the firmware file was signaled. The firmware download may have been caused by a loss of connection to the firmware file. This can occur during a project download/reset in the case of a SINAMICS Integrated Control Unit, for example.
xxxx = 008F hex = 143 dec:
Component has not changed to the mode for firmware download. It was not possible to delete the existing firmware.
xxxx = 0090 hex = 144 dec:
When checking the firmware that was downloaded (checksum), the component detected a fault. It is possible that the file on the memory card is defective.
xxxx = 0091 hex = 145 dec:
Checking the loaded firmware (checksum) was not completed by the component in the appropriate time.
xxxx = 009C hex = 156 dec:
Component with the specified component number is not available (p7828).
xxxx = Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** - check the selected component number (p7828).
- check the DRIVE-CLiQ wiring.
- save suitable firmware file for download in the directory "/siemens/sinamics/code/sac/".
- use a component with a suitable hardware version
- after POWER ON has been carried out again for the DRIVE-CLiQ component, download firmware again. Depending on p7826, the firmware will be automatically downloaded.

## 201006 <location>Firmware update for DRIVE-CLiQ component required

**Drive object:** 'All objects

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The firmware of a DRIVE-CLiQ component must be updated as there is no suitable firmware or firmware version in the component for operation with the Control Unit.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.

**Remedy:** Update the firmware using the commissioning tool:
The firmware version of all of the components on the "Version overview" page can be read in the Project Navigator under "Configuration" of the associated drive unit and an appropriate firmware update can be carried out.
Firmware update via parameter:
- take the component number from the alarm value and enter into p7828.
- start the firmware download with p7829 = 1.

## 201007 <location>POWER ON for DRIVE-CLiQ component required

**Drive object:** 'All objects
**Message value:** Component number: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A DRIVE-CLiQ component must be switched on again (POWER ON) (e.g. due to a firmware update).
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.
Note:
For a component number = 1, a POWER ON of the Control Unit is required.
**Remedy:** - Switch off the power supply of the specified DRIVE-CLiQ component and switch it on again.
- For SINUMERIK, auto commissioning is prevented. In this case, a POWER ON is required for all components and the auto commissioning must be restarted.

## 201009 <location>CU: Control module overtemperature

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature (r0037[0]) of the control module (Control Unit) has exceeded the specified limit value.
**Remedy:** - check the air intake for the Control Unit.
- check the Control Unit fan.
Note:
The alarm is automatically withdrawn once the limit value has been fallen below.

## 201010 <location>Drive type unknown

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An unknown drive type was found.
Fault value (r0949, interpret decimal):
Drive object number (refer to p0101, p0107).
**Remedy:** - replace Power Module.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201011 <location>Download interrupted

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** The project download was interrupted.
Fault value (r0949, interpret decimal):
1: The user prematurely interrupted the project download.
2: The communication cable was interrupted (e.g. cable breakage, cable withdrawn).
3: The project download was prematurely exited by the commissioning tool.
100: Different versions between the firmware version and project files which were loaded by loading into the file system "Download from memory card".
Note:
The response to an interrupted download is the state "first commissioning".

**Remedy:** - check the communication cable.
- download the project again.
- boot from previously saved files (switch-off/switch-on or p0976).
- when loading into the file system (download from memory card), use the matching version.

## 201012 <location>Project conversion error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** When converting the project of an older firmware version, an error occurred.
Fault value (r0949, interpret decimal):
Parameter number of the parameter causing the error.
For fault value = 600, the following applies:
The temperature evaluation is no longer assigned to the power unit but to the encoder evaluation.
Notice:
Monitoring of the motor temperature is no longer ensured.

**Remedy:** Check the parameter indicated in the fault value and correctly adjust it accordingly.
For fault value = 600:
Parameter p0600 must be set to the values 1, 2 or 3 in accordance with the assignment of the internal encoder evaluation to the encoder interface.
Value 1 means: The internal encoder evaluation is assigned to the encoder interface 1 via p0187.
Value 2 means: The internal encoder evaluation is assigned to the encoder interface 2 via p0188.
Value 3 means: The internal encoder evaluation is assigned to the encoder interface 3 via p0189.
- if necessary, the internal encoder evaluation must be assigned to an encoder interface via parameters p0187, p0188 or p0189 accordingly.
- if necessary, upgrade the firmware to a later version.

## 201013 <location>CU: Fan operating time reached or exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The maximum operating time of the fan in the Control Unit has either been reached or exceeded.
Alarm value (r2124, interpret decimal):
0: The maximum fan operating time is 500 hours.
1: The maximum fan operating time has been exceeded (50000 hours).

**Remedy:** Replace the fan in the Control Unit and reset the operating hours counter to 0 (p3961 = 0).

## 201014 <location>Topology: DRIVE-CLiQ component property changed

**Drive object:** 'All objects

**Message value:** Component number: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The properties of the DRIVE-CLiQ component have fundamentally changed.
Fault value (r0949, interpret hexadecimal):
Component number.
**Remedy:** - check the DRIVE-CLiQ component, and if required replace.
- carry out a warm restart (p0009 = 30, p0976 = 2, 3).

## 201015 <location>Internal software error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201016 <location>Firmware changed

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** At least one firmware file in the directory was illegally changed on the non-volatile memory (memory card/device memory) with respect to the version when shipped from the factory.
Alarm value (r2124, interpret decimal):
0: Checksum of one file is incorrect.
1: File missing.
2: File too many.
3: Incorrect firmware version.
4: Incorrect checksum of the back-up file.
**Remedy:** For the non-volatile memory for the firmware (memory card/device memory), restore the delivery condition.
Note:
The file involved can be read out using parameter r9925.
The status of the firmware check is displayed using r9926.
See also:r9925 (Firmware file incorrect), r9926 (Firmware check status)

## 201017 <location>Component lists changed

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** On the memory card, one file in the directory /SIEMENS/SINAMICS/DATA or /ADDON/SINAMICS/DATA has been illegally changed with respect to that supplied from the factory. No changes are permitted in this directory.
Alarm value (r2124, interpret decimal):
xyz dec: x = problem, y = directory, z = file name
x = 1: File does not exist.
x = 2: Firmware version of the file does not match the software version.
x = 3: File checksum is incorrect.
y = 0: Directory /SIEMENS/SINAMICS/DATA/
y = 1: Directory /ADDON/SINAMICS/DATA/
z = 0: File MOTARM.ACX
z = 1: File MOTSRM.ACX
z = 2: File MOTSLM.ACX
z = 3: File ENCDATA.ACX
z = 4: File FILTDATA.ACX
z = 5: File BRKDATA.ACX
z = 6: File DAT_BEAR.ACX
z = 7: File CFG_BEAR.ACX
z = 8: File ENC_GEAR.ACX
z = 9: File CFG_BRK.ACX
z = 10: File THERMMOTMOD.ACX
z = 11: File MAPPING.ACX
z = 12: File LOADGEAR.ACX
z = 13: File MOTRSM.ACX

**Remedy:** For the file on the memory card involved, restore the status originally supplied from the factory.

## 201020 <location>Writing to RAM disk unsuccessful

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A write access to the internal RAM disk was unsuccessful.
**Remedy:** Adapt the file size for the system logbook to the internal RAM disk (p9930).
See also:p9930 (System logbook activation)

## 201023 <location>Software timeout (internal)

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An internal software timeout has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201030 <location>Sign-of-life failure for master control

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Hla: OFF3 (NONE, OFF1, OFF2, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** For active PC master control, no sign-of-life was received within the monitoring time.
The master control was returned to the active BICO interconnection.

**Remedy:** Set the monitoring time higher at the PC or, if required, completely disable the monitoring function.
The monitoring time is set as follows using the commissioning tool:
<Drive> -> Commissioning -> Control panel -> Button "Fetch master control" -> A window is displayed to set the monitoring time in milliseconds.
Notice:
The monitoring time should be set as short as possible. A long monitoring time means a late response when the communication fails!

## 201031 <location>Sign-of-life failure for OFF in REMOTE

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Hla: OFF3 (NONE, OFF1, OFF2, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** With the "OFF in REMOTE" mode active, no sign-of-life was received within 3 seconds.

**Remedy:** - check the data cable connection at the serial interface for the Control Unit (CU) and operator panel.
- check the data cable between the Control Unit and operator panel.

## 201032 <location>ACX: all parameters must be saved

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The parameters of an individual drive object were saved (p0971 = 1), although there is still no backup of all drive system parameters.
The saved object-specific parameters are not loaded the next time that the system powers up.
For the system to successfully power up, all of the parameters must have been completely backed up.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0971 (Save drive object parameters)

**Remedy:** Save all parameters (p0977 = 1 or "copy RAM to ROM").
See also:p0977 (Save all parameters)

## 201033 <location>Units changeover: Reference parameter value invalid

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** When changing over the units to the referred representation type, it is not permissible for any of the required reference parameters to be equal to 0.0
Fault value (r0949, parameter):
Reference parameter whose value is 0.0.
See also:p0349 (System of units motor equivalent circuit diagram data), p0505 (Selecting the system of units), p0595 (Technological unit selection)

**Remedy:** Set the value of the reference parameter to a number different than 0.0.
See also:p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004

## 201034 <location>Units changeover: Calculation parameter values after reference value change unsuccessful

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The change of a reference parameter meant that for an involved parameter the selected value was not able to be re-calculated in the per unit representation. The change was rejected and the original parameter value restored.
Fault value (r0949, parameter):
Parameter whose value was not able to be re-calculated.
See also:p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004
**Remedy:** - Select the value of the reference parameter such that the parameter involved can be calculated in the per unit representation.
- technology unit selection (p0595) before changing the reference parameter p0596, set p0595 = 1.

## 201035 <location>ACX: Parameter back-up file corrupted

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When the Control Unit is booted, no complete data set was found from the parameter back-up files. The last time that the parameterization was saved, it was not completely carried out.
It is possible that the backup was interrupted by switching off or withdrawing the memory card.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
aa = 01 hex:
Power up was realized without data backup. The drive is in the factory setting.
aa = 02 hex:
The last available backup data record was loaded. The parameterization must be checked. It is recommended that the parameterization is downloaded again.
dd, cc, bb:
Only for internal Siemens troubleshooting.
See also:p0971 (Save drive object parameters), p0977 (Save all parameters)
**Remedy:** - download the project again using the commissioning tool.
- save all parameters (p0977 = 1 or "copy RAM to ROM").
See also:p0977 (Save all parameters)

## 201036 <location>ACX: Parameter back-up file missing

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** Infeed: NONE (OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY

**Cause:** When downloading the device parameterization, a parameter back-up file PSxxxyyy.ACX associated with a drive object cannot be found.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2, 3, 4:
Only for internal Siemens troubleshooting.

**Remedy:** If you have saved your project data using the commissioning tool, carry-out a new download for your project.
Save using the function "Copy RAM to ROM" or with p0977 = 1.
This means that the parameter files are again completely written into the non-volatile memory.
Note:
If the project data have not been backed up, then a new first commissioning is required.

## 201038 <location>ACX: Loading the parameter back-up file unsuccessful

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** An error has occurred when downloading PSxxxyyy.ACX or PTxxxyyy.ACX files from the non-volatile memory.
Fault value (r0949, interpret hexadecimal):
Byte 1: yyy in the file name PSxxxyyy.ACX
yyy = 000 --> consistency back-up file
yyy = 001 ... 062 --> drive object number
yyy = 099 --> PROFIBUS parameter back-up file
Byte 2:
255: Incorrect drive object type.
254: Topology comparison unsuccessful -> drive object type was not able to be identified.
Reasons could be:
- incorrect component type in the actual topology
- Component does not exist in the actual topology.
- Component not active.
Additional values:
Only for internal Siemens troubleshooting.
Byte 4, 3:
Only for internal Siemens troubleshooting.

**Remedy:** - if you have saved the project data using the commissioning tool, download the project again. Save using the function "Copy RAM to ROM" or with p0977 = 1. This means that the parameter files are again completely written to the non-volatile memory.
- replace the memory card or Control Unit.
For byte 2 = 255:
- correct the drive object type (see p0107).

## 201039 <location>ACX: Writing to the parameter back-up file was unsuccessful

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Writing to at least one parameter back-up file PSxxxyyy.*** in the non-volatile memory was unsuccessful.
- in the directory /USER/SINAMICS/DATA/ at least one parameter back-up file PSxxxyyy.*** has the "read only" file attribute and cannot be overwritten.
- there is not sufficient free memory space available.
- the non-volatile memory is defective and cannot be written to.
Fault value (r0949, interpret hexadecimal):
dcba hex
a = yyy in the file names PSxxxyyy.***
a = 000 --> consistency back-up file
a = 001 ... 062 --> drive object number
a = 070 --> FEPROM.BIN
a = 080 --> DEL4BOOT.TXT
a = 099 --> PROFIBUS parameter back-up file
b = xxx in the file names PSxxxyyy.***
b = 000 --> data save started with p0977 = 1 or p0971 = 1
b = 010 --> data save started with p0977 = 10
b = 011 --> data save started with p0977 = 11
b = 012 --> data save started with p0977 = 12
d, c:
Only for internal Siemens troubleshooting.

**Remedy:** - check the file attribute of the files (PSxxxyyy.***, CAxxxyyy.***, CCxxxyyy.***) and, if required, change from "read only" to "writeable".
- check the free memory space in the non-volatile memory. Approx. 80 kbyte of free memory space is required for every drive object in the system.
- replace the memory card or Control Unit.

## 201040 <location>Save parameter settings and carry out a POWER ON

**Drive object:** 'All objects

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** A parameter was changed, which means that it is necessary to save the parameters and reboot.

**Remedy:** - save parameters (p0971, p0977).
- carry out a POWER ON (switch-off/switch-on) for all components.
Then:
- upload the drive unit (commissioning tool).

## 201041 <location>Parameter save necessary

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Defective or missing files were detected on the memory card when booting.
Fault value (r0949, interpret decimal):
1: Source file cannot be opened.
2: Source file cannot be read.
3: Target directory cannot be set up.
4. Target file cannot be set up/opened.
5. Target file cannot be written to.
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** - save the parameters.
- download the project again to the drive unit.
- update the firmware
- if required, replace the Control Unit and/or memory card.

## 201042 <location>Parameter error during project download

**Drive object:** 'All objects

**Message value:** Parameter: %1, index: %2, fault cause: %3

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** An error was detected when downloading a project using the commissioning software (e.g. incorrect parameter value). It is possible that the parameter limits are dependent on other parameters.
The detailed cause of the fault can be determined using the fault value.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex
aaaa = Parameter
bb = Index
cc = fault cause
0: Parameter number illegal.
1: Parameter value cannot be changed.
2: Lower or upper value limit exceeded.
3: Sub-index incorrect.
4: No array, no sub-index.
5: Data type incorrect.
6: Setting not permitted (only resetting).
7: Descriptive element cannot be changed.
9: Descriptive data not available.
11: No master control.
15: No text array available.
17: Task cannot be executed due to operating state.
20: Illegal value.
21: Response too long.
22: Parameter address illegal.
23: Format illegal.
24: Number of values not consistent.
25: Drive object does not exist.
101: Presently deactivated.
104: Illegal value.
107: Write access not permitted when controller enabled.
108: Unit unknown.
109: Write access only in the commissioning state, encoder (p0010 = 4).
110: Write access only in the commissioning state, motor (p0010 = 3).
111: Write access only in the commissioning state, power unit (p0010 = 2).
112: Write access only in the quick commissioning mode (p0010 = 1).
113: Write access only in the ready mode (p0010 = 0).
114: Write access only in the commissioning state, parameter reset (p0010 = 30).
115: Write access only in the Safety Integrated commissioning state (p0010 = 95).
116: Write access only in the commissioning state, technological application/units (p0010 = 5).
117: Write access only in the commissioning state (p0010 not equal to 0).
118: Write access only in the commissioning state, download (p0010 = 29).
119: Parameter may not be written in download.
120: Write access only in the commissioning state, drive basic configuration (device: p0009 = 3).
121: Write access only in the commissioning state, define drive type (device: p0009 = 2).
122: Write access only in the commissioning state, data set basic configuration (device: p0009 = 4).
123: Write access only in the commissioning state, device configuration (device: p0009 = 1).
124: Write access only in the commissioning state, device download (device: p0009 = 29).
125: Write access only in the commissioning state, device parameter reset (device: p0009 = 30).
126: Write access only in the commissioning state, device ready (device: p0009 = 0).
127: Write access only in the commissioning state, device (device: p0009 not equal to 0).
129: Parameter may not be written in download.
130: Transfer of the master control is inhibited via binector input p0806.
131: Required BICO interconnection not possible because BICO output does not supply floating value

132: Free BICO interconnection inhibited via p0922.
133: Access method not defined.
200: Below the valid values.
201: Above the valid values.
202: Cannot be accessed from the Basic Operator Panel (BOP).
203: Cannot be read from the Basic Operator Panel (BOP).
204: Write access not permitted.

**Remedy:** - correct the parameterization in the commissioning tool and download the project again.
- enter the correct value in the specified parameter.
- identify the parameter that restricts the limits of the specified parameter.

## 201043 <location>Fatal error at project download

**Drive object:** 'All objects

**Message value:** Fault cause: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A fatal error was detected when downloading a project using the commissioning tool.
Fault value (r0949, interpret decimal):
1: Device status cannot be changed to Device Download (drive object ON?).
2: Incorrect drive object number.
3: A drive object that has already been deleted is deleted again.
4: Deleting a drive object that has already been registered for generation.
5: Deleting a drive object that does not exist.
6: Generating an undeleted drive object that already existed.
7: Regenerating a drive object already registered for generation.
8: Maximum number of drive objects that can be generated exceeded.
9: Error while generating a device drive object.
10: Error while generating target topology parameters (p9902 and p9903).
11: Error when generating a drive object (global component).
12: Error when generating a drive object (drive component).
13: Unknown drive object type.
14: Drive status cannot be changed to "ready for operation" (r0947 and r0949).
15: Drive status cannot be changed to drive download.
16: Device status cannot be changed to "ready for operation".
17: It is not possible to download the topology. The component wiring should be checked, taking into account the various messages/signals.
18: A new download is only possible if the factory settings are restored for the drive unit.
19: The slot for the option module has been configured several times (e.g. CAN and COMM BOARD)
20: The configuration is inconsistent (e.g. CAN for Control Unit, however no CAN configured for drive objects A_INF, SERVO or VECTOR).
21: Error when accepting the download parameters.
22: Software-internal download error.
23: download not possible when know-how protection is activated.
24: download not possible during a partial power up after inserting a component.
25: The configuration is inconsistent. Know-how protection is either not activated or only partially.
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** - use the current version of the commissioning tool.
- modify the offline project and carry out a new download (e.g. compare the number of drive objects, motor, encoder, power unit in the offline project and at the drive).
- change the drive state (is a drive rotating or is there a message/signal?).
- Observe additional active messages/signals and remove their cause (e.g. correct any incorrectly set parameters).
- automatically calculate the control parameters (p0340). Then set p0010 = 0.
- boot from previously saved files (switch-off/switch-on or p0976).
- before a new download, restore the factory setting if the know-how protection was not activated on all drive objects.

## 201044 <location>CU: Descriptive data error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** An error was detected when loading the descriptive data saved in the non-volatile memory.
**Remedy:** Replace the memory card or Control Unit.

## 201045 <location>CU: Configuring data invalid

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error was detected when evaluating the parameter files PSxxxyyy.ACX, PTxxxyyy.ACX, CAxxxyyy.ACX, or CCxxxyyy.ACX saved in the non-volatile memory. Because of this, under certain circumstances, several of the saved parameter values were not able to be accepted.
Also see r9406 up to r9408.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - check the parameters displayed in r9406 up to r9408, and correct these if required.
- Restore the factory setting (p0976 = 1) and reload the project into the converter.
Then save the parameterization in STARTER using the function "Copy RAM to ROM" or with p0977 = 1. This overwrites the incorrect parameter files in the non-volatile memory – and this alarm is withdrawn.
See also:r9406 (PS file parameter number parameter not transferred), r9407 (PS file parameter index parameter not transferred), r9408 (PS file fault code parameter not transferred)

## 201049 <location>CU: It is not possible to write to file

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** It is not possible to write into a write-protected file (PSxxxxxx.acx). The write request was interrupted.
Alarm value (r2124, interpret decimal):
Drive object number.
**Remedy:** Check whether the "write protected" attribute has been set for the files in the non-volatile memory under .../USER/SINAMICS/DATA/...
When required, remove write protection and repeat the save operation (e.g. set p0977 = 1).

## 201050 <location>Memory card and device incompatible

**Drive object:** 'All objects
**Message value:** -

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The memory card and the device type do not match (e.g. a memory card for SINAMICS S is inserted in SINAMICS G).
**Remedy:** - insert the matching memory card.
- use the matching Control Unit or power unit.

## 201054 <location>CU: System limit exceeded

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** At least one system overload has been identified.
Fault value (r0949, interpret decimal):
1: Computing time load too high (r9976[1]).
5: Peak load too high (r9976[5]).
Note:
As long as this fault is present, it is not possible to save the parameters (p0971, p0977).
See also:r9976 (System utilization)
**Remedy:** For fault value = 1, 5:
- reduce the computing time load of the drive unit (r9976[1] and r9976[5]) to under 100 %.
- check the sampling times and adjust if necessary (p0115, p0799, p4099).
- deactivate function modules.
- deactivate drive objects.
- remove drive objects from the target topology.
- note the DRIVE-CLiQ topology rules and if required, change the DRIVE-CLiQ topology.
When using the Drive Control Chart (DCC) or free function blocks (FBLOCKS), the following applies:
- the computing time load of the individual runtime groups on a drive object can be read out in r21005 (DCC) or r20005 (FBLOCKS).
- if necessary, the assignment of the runtime group (p21000, p20000) can be changed in order to increase the sampling time (r21001, r20001).
- if necessary, reduce the number of cyclically calculated blocks (DCC) and/or function blocks (FBLOCKS).

## 201055 <location>CU: Internal error (SYNO of port and application not identical)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** All applications that operate with slaves at one port must be derived from the same SYNO clock cycle.
The first application whose registration (log-on) connects a slave to a port defines the SYNO clock cycle that will be used as basis for the port.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201056 <location>CU: Internal error (clock cycle of parameter group already assigned differently)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1

**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The requested parameter group (IREG, NREG, ...) is already being used in a different clock cycle.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201057 <location>CU: Internal error (different DRIVE-CLiQ type for the slave)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The requested DRIVE-CLiQ type (hps_ps, hps_enc, ...) has been specified differently for the same slave component.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201058 <location>CU: Internal error (slave missing in topology)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The requested slave component does not exist in the topology.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201059 <location>CU: Internal error (port does not exist)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The port object assigned according to the topology of the requested slave component does not exist.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201060 <location>CU: Internal error (parameter group not available)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The requested parameter group (IREG, NREG, ...) is not offered by this slave type.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.

**Remedy:** Contact Technical Support.

## 201061 <location>CU: Internal error (application not known)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** An application that is not registered with TSM has attempted to register with registerSlaves().
The cause can be an unsuccessful TSM registration or an incorrect registration sequence. It is always necessary to log in to the TSM before registerSlaves() can be used.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.

**Remedy:** Contact Technical Support.

## 201063 <location>CU: Internal error (PDM)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** An internal software error has occurred.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.

**Remedy:** Contact Technical Support.

## 201064 <location>CU: Internal error (CRC)

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A checksum error (CRC error) has occurred in the Control Unit program memory

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201068 <location>CU: Data memory memory overflow

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The utilization for a data memory area is too large.
Fault value (r0949, interpret binary):
Bit 0 = 1: High-speed data memory 1 overloaded
Bit 1 = 1: High-speed data memory 2 overloaded
Bit 2 = 1: High-speed data memory 3 overloaded
Bit 3 = 1: High-speed data memory 4 overloaded
**Remedy:** - deactivate the function module.
- deactivate drive object.
- remove the drive object from the target topology.

## 201069 <location>Parameter backup and device incompatible

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The parameter backup on the memory card and the drive unit do not match.
The module boots with the factory settings.
Example:
Devices A and B. are not compatible and a memory card with the parameter backup for device A is inserted in device B.
**Remedy:** - insert a memory card with compatible parameter backup and carry out a POWER ON.
- insert a memory card without parameter backup and carry out a POWER ON.
- save the parameters (p0977 = 1).

## 201070 <location>Project/firmware is being downloaded to the memory card

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** An upgrade (project/firmware download) was initiated on the memory card.
While this fault is present, the corresponding update takes place with plausibility and consistency checks. After this, depending on the command option, a new boot (reset) for the Control Unit is initiated.
Caution:
During the upgrade and while this fault is present, it is not permissible to switch off the Control Unit.
If the operation is interrupted, this can destroy the file system on the memory card. The memory card will then no longer work properly and must be repaired.
**Remedy:** Not necessary.
The fault is automatically withdrawn after the upgrade has been completed.

## 201072 <location>Memory card restored from the backup copy

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The Control Unit was switched-off while writing to the memory card. This is why the visible partition became defective.
After switching on, the data from the non-visible partition (backup copy) were written to the visible partition.
**Remedy:** Check that the firmware and parameterization is up-to-date.

## 201073 <location>POWER ON required for backup copy on memory card

**Drive object:** 'All objects

**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The parameter assignment on the visible partition of the memory card has changed.
In order that the backup copy on the memory card is updated on the non-visible partition, it is necessary to carry out a POWER ON or hardware reset (p0972) of the Control Unit.
Note:
It is possible that a new POWER ON is requested via this alarm (e.g. after saving with p0971 = 1).
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for the Control Unit.
- carry out a hardware reset (RESET button, p0972).

## 201082 <location>Parameter error when powering up from data backup

**Drive object:** 'All objects
**Message value:** Parameter: %1, index: %2, fault cause: %3
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY

**Cause:** Parameterizing errors have been detected (e.g. incorrect parameter value). It is possible that the parameter limits are dependent on other parameters.
The detailed cause of the fault can be determined using the fault value.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex
aaaa = Parameter
bb = Index
cc = fault cause
0: Parameter number illegal.
1: Parameter value cannot be changed.
2: Lower or upper value limit exceeded.
3: Sub-index incorrect.
4: No array, no sub-index.
5: Data type incorrect.
6: Setting not permitted (only resetting).
7: Descriptive element cannot be changed.
9: Descriptive data not available.
11: No master control.
15: No text array available.
17: Task cannot be executed due to operating state.
20: Illegal value.
21: Response too long.
22: Parameter address illegal.
23: Format illegal.
24: Number of values not consistent.
25: Drive object does not exist.
101: Presently deactivated.
104: Illegal value.
107: Write access not permitted when controller enabled.
108: Unit unknown.
109: Write access only in the commissioning state, encoder (p0010 = 4).
110: Write access only in the commissioning state, motor (p0010 = 3).
111: Write access only in the commissioning state, power unit (p0010 = 2).
112: Write access only in the quick commissioning mode (p0010 = 1).
113: Write access only in the ready mode (p0010 = 0).
114: Write access only in the commissioning state, parameter reset (p0010 = 30).
115: Write access only in the Safety Integrated commissioning state (p0010 = 95).
116: Write access only in the commissioning state, technological application/units (p0010 = 5).
117: Write access only in the commissioning state (p0010 not equal to 0).
118: Write access only in the commissioning state, download (p0010 = 29).
119: Parameter may not be written in download.
120: Write access only in the commissioning state, drive basic configuration (device: p0009 = 3).
121: Write access only in the commissioning state, define drive type (device: p0009 = 2).
122: Write access only in the commissioning state, data set basic configuration (device: p0009 = 4).
123: Write access only in the commissioning state, device configuration (device: p0009 = 1).
124: Write access only in the commissioning state, device download (device: p0009 = 29).
125: Write access only in the commissioning state, device parameter reset (device: p0009 = 30).
126: Write access only in the commissioning state, device ready (device: p0009 = 0).
127: Write access only in the commissioning state, device (device: p0009 not equal to 0).
129: Parameter may not be written in download.
130: Transfer of the master control is inhibited via binector input p0806.
131: Required BICO interconnection not possible because BICO output does not supply floating value

132: Free BICO interconnection inhibited via p0922.
133: Access method not defined.
200: Below the valid values.
201: Above the valid values.
202: Cannot be accessed from the Basic Operator Panel (BOP).
203: Cannot be read from the Basic Operator Panel (BOP).
204: Write access not permitted.

**Remedy:** - correct the parameterization in the commissioning tool and download the project again.
- enter the correct value in the specified parameter.
- identify the parameter that restricts the limits of the specified parameter.

## 201097 <location>NTP server cannot be accessed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The selected NTP server (p3105[0...3]) cannot be accessed. Time synchronization cannot be performed.
Note:
NTP: Network Time Protocol

**Remedy:** Correctly set the IP address of the NTP server, and check the connection to the NTP server.

## 201099 <location>UTC synchronization tolerance violated

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The tolerance (p3109) set for UTC synchronization was violated.
Note:
UTC: Universal Time Coordinates
See also:p3109 (UTC synchronization tolerance)

**Remedy:** Select the synchronization intervals shorter so that the deviation between the time of day master and drive system lies within the tolerance.
Note:
The deviation when synchronizing is shown in r3107.
See also:r3107 (UTC synchronization time out of tolerance)

## 201100 <location>CU: Memory card withdrawn

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The memory card (non-volatile memory) was withdrawn during operation.
Notice:
It is not permissible for the memory card to be withdrawn or inserted under voltage.

**Remedy:** - switch off the drive system.
- re-insert the memory card that was withdrawn - this card must match the drive system.
- switch on the drive system again.

## 201105 <location>CU: Insufficient memory

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF1

**Acknowledge:** POWER ON

**Cause:** Too many functions have been configured on this Control Unit (e.g. too many drives, function modules, data sets, Technology Extensions, blocks, etc).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - change the configuration on this Control Unit (e.g. fewer drives, function modules, data sets, Technology Extensions, blocks, etc).
- use an additional Control Unit.

## 201106 <location>CU: Insufficient memory

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** There is not sufficient free memory space available.

**Remedy:** Not necessary.

## 201107 <location>CU: Save to memory card unsuccessful

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A data save in the non-volatile memory was not able to be successfully carried out.
- non-volatile memory is defective.
- insufficient space in the non-volatile memory.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - try to save again.
- replace the memory card or Control Unit.

## 201110 <location>CU: More than one SINAMICS G on one Control Unit

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** More than one SINAMICS G type power unit is being operated from the Control Unit.
Fault value (r0949, interpret decimal):
Number of the second drive with a SINAMICS G type power unit.

**Remedy:** Only one SINAMICS G drive type is permitted.

## 201111 <location>CU: Mixed operation of drive units illegal

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Illegal operation of various drive units on one Control Unit:
- SINAMICS S together with SINAMICS G
- SINAMICS S together with SINAMICS S Value or Combi

Fault value (r0949, interpret decimal):
Number of the first drive object with a different power unit type.

**Remedy:** Only power units of one particular drive type may be operated with one Control Unit.

## 201112 <location>CU: Power unit not permissible

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The connected power unit cannot be used together with this Control Unit.
Fault value (r0949, interpret decimal):
1: Power unit is not supported (e.g. PM240).
2: DC/AC power unit connected to CU310 not permissible.
3: Power unit (S120M) not permitted for vector control.

**Remedy:** Replace the power unit that is not permissible by a component that is permissible.

## 201120 <location>Terminal initialization has failed

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An internal software error occurred while the terminal functions were being initialized.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

## 201122 <location>Frequency at the measuring probe input too high

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The frequency of the pulses at the measuring probe input is too high.
Fault value (r0949, interpret decimal):
1: DI/DO 9 (X122.8)
2: DI/DO 10 (X122.10)
4: DI/DO 11 (X122.11)
8: DI/DO 13 (X132.8)
16: DI/DO 14 (X132.10)
32: DI/DO 15 (X132.11)
64: DI/DO 8 (X122.7)
128: DI/DO 12 (X132.7)

**Remedy:** Reduce the frequency of the pulses at the measuring probe input.

## 201122 <location>Frequency at the measuring probe input too high

**Drive object:** CU_NX_840
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The frequency of the pulses at the measuring probe input is too high.
Fault value (r0949, interpret decimal):
1: DI/DO 9 (X122.8)
2: DI/DO 10 (X122.10)
4: DI/DO 11 (X122.11)
64: DI/DO 8 (X122.7)
**Remedy:** Reduce the frequency of the pulses at the measuring probe input.

## 201123 <location>Power unit does not support digital inputs/outputs

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** Power unit does not support the activated "digital inputs/outputs" function module
**Remedy:** Deactivate the function module.

## 201150 <location>CU: Number of instances of a drive object type exceeded

**Drive object:** 'All objects
**Message value:** Drive object type: %1, number permitted: %2, actual number: %3
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The maximum permissible number of instances of a drive object type was exceeded.
Drive object type:
Drive object type (p0107), for which the maximum permissible number of instances was exceeded.
Number permitted:
Max. permissible number of instances for this drive object type.
Actual number:
Current number of instances for this drive object type.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
ddccbbaa hex: aa = drive object type, bb = number limited, cc = actual number, dd = no significance
**Remedy:** - switch off the unit.
- suitably restrict the number of instances of a drive object type by reducing the number of inserted components.
- re-commission the unit.

## 201151 <location>CU: Number of drive objects of a category exceeded

**Drive object:** 'All objects
**Message value:** Drive object category: %1, number permitted: %2, actual number: %3
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** The maximum permissible number of drive objects of a category was exceeded.
Drive object category:
Drive object category, for which the maximum permissible number of drive objects was exceeded.
Number permitted:
Max. permissible number for this drive object category.
Actual number:
Actual number for this drive object category.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
ddccbbaa hex: aa = drive object category, bb = number limited, cc = actual number, dd = no significance

**Remedy:** - switch off the unit.
- suitably restrict the number of drive objects of the specified category by reducing the number of inserted components.
- re-commission the unit.

## 201152 <location>CU: Invalid constellation of drive object types

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** POWER ON

**Cause:** It is not possible to simultaneously operate drive object types SERVO, VECTOR and HLA.
A maximum of 2 of these drive object types can be operated on a Control Unit.

**Remedy:** - switch off the unit.
- restrict the use of drive object types SERVO, VECTOR, HLA to a maximum of 2.
- re-commission the unit.

## 201200 <location>CU: Time slice management internal software error

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A time slice management error has occurred.
It is possible that the sampling times have been inadmissibly set.
Fault value (r0949, interpret hexadecimal):
998:
Too many time slices occupied by technology functions (e.g. DCC).
999:
Too many time slices occupied by the basic system. Too many different sampling times may have been set.
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** - check the sampling time setting (p0112, p0115, p4099, p9500, p9511).
- contact Technical Support.

## 201205 <location>CU: Time slice overflow

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** Insufficient processing time is available for the existing topology.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - reduce the number of drives.
- increase the sampling times.

## 201221 <location>CU: Basic clock cycle too low

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The closed-loop control / monitoring cannot maintain the envisaged clock cycle.
The runtime of the closed-loop control/monitoring is too long for the particular clock cycle or the computing time remaining in the system is not sufficient for the closed-loop control/monitoring.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** Increase the basic clock cycle of DRIVE-CLiQ communication.
See also:p0112 (Sampling times pre-setting p0115)

## 201222 <location>CU: Basic clock cycle too low (computing time for communication not available)

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice has not been defined that fulfills the requirements.
The port cannot be correctly operated as the alternating cyclic clock cycle cannot be maintained.
Fault value (r0949, interpret hexadecimal):
Method ID.
Note:
Only for internal Siemens troubleshooting.
**Remedy:** Contact Technical Support.

## 201223 <location>CU: Sampling time inconsistent

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** When changing a sampling time (p0115[0], p0799 or p4099), inconsistency between the clock cycles has been identified.

Alarm value (r2124, interpret decimal):

1: Value lower than minimum value.

2: Value higher than maximum value.

3: Value not a multiple of 1.25 µs.

4: Value does not match isochronous PROFIBUS operation.

5: Value not a multiple of 125 µs.

6: Value not a multiple of 250 µs.

7: Value not a multiple of 375 µs.

8: Value not a multiple of 400 µs.

10: Special restriction of the drive object violated.

20: On a SERVO with a sampling time of 62.5 µs, more than two drive objects or one drive object of a type other than SERVO have been detected on the same DRIVE-CLiQ line (a maximum of two SERVO type drive objects are permitted).

21: Value can be a multiple of the current controller sampling time of a servo or vector drive in the system (e.g. for TB30, the values of all of the indices should be taken into account).

30: Value less than 31.25 µs.

31: Value less than 62.5 µs (31.25 µs is not supported for SMC10, SMC30, SMI10 and Double Motor Modules).

32: Value less than 125 µs.

33: Value less than 250 µs.

40: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs. Further, none of the nodes has a sampling time of less than 125 µs.

41: A chassis unit was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 250 µs.

42: An Active Line Module was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 125 µs.

43: A Voltage Sensing Module (VSM) was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is not equal to the current controller sampling time of the drive object of the VSM.

44: The highest common denominator of the sampling times of all of the components connected to the DRIVE-CLiQ line is not the same for all components of this drive object (e.g. there are components on different DRIVE-CLiQ lines on which different highest common denominators are generated).

45: A chassis parallel unit was identified on the DRIVE-CLiQ line as a node. Further, the highest common denominator of the sampling times of all of the nodes connected to the line is less than 162.5 µs or 187.5 µs (for a 2x or 3x parallel connection).

46: A node has been identified on the DRIVE-CLiQ line whose sampling time is not a multiple of the lowest sampling time on this line.

52: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 31.25 µs.

54: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 62.5 µs.

56: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 125 µs.

58: Nodes have been identified on the DRIVE-CLiQ line whose highest common denominator of the sampling times is less than 250 µs.

99: Inconsistency of cross drive objects detected.

116: Recommended clock cycle in r0116[0...1].

General note:

The topology rules should be noted when connecting up DRIVE-CLiQ (refer to the appropriate product documentation).

The parameters of the sampling times can also be changed with automatic calculations.

Example for highest common denominator: 125 s, 125 µs, 62.5 µs --> 62.5 µs

**Remedy:** - check the DRIVE-CLiQ cables.

- set a valid sampling time.

See also:p0115, p0799, p4099

## 201224 <location>CU: Pulse frequency inconsistent

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When changing the minimum pulse frequency (p0113) inconsistency between the pulse frequencies was identified.
Alarm value (r2124, interpret decimal):
1: Value lower than minimum value.
2: Value higher than maximum value.
3: Resulting sampling time is not a multiple of 1.25 µs.
4: Value does not match isochronous PROFIBUS operation.
10: Special restriction of the drive object violated.
99: Inconsistency of cross drive objects detected.
116: Recommended clock cycle in r0116[0...1].
**Remedy:** Set a valid pulse frequency.
See also:p0113 (Minimum pulse frequency, selection)

## 201250 <location>CU: CU-EEPROM incorrect read-only data

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE (OFF2)
**Acknowledge:** POWER ON
**Cause:** Error when reading the read-only data of the EEPROM in the Control Unit.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- replace the Control Unit.

## 201251 <location>CU: CU-EEPROM incorrect read-write data

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error when reading the read-write data of the EEPROM in the Control Unit.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** For alarm value r2124 < 256, the following applies:
- carry out a POWER ON (switch-off/switch-on).
- replace the Control Unit.
For alarm value r2124 >= 256, the following applies:
- for the drive object with this alarm, clear the fault memory (p0952 = 0).
- as an alternative, clear the fault memory of all drive objects (p2147 = 1).
- replace the Control Unit.

## 201255 <location>CU: Option Board EEPROM read-only data error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE (OFF2)
**Acknowledge:** POWER ON

**Cause:** Error when reading the read-only data of the EEPROM in the Option Board.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- replace the Control Unit.

## 201256 <location>CU: Option Board EEPROM read-write data error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error when reading the read-write data of the EEPROM in the Option Board.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- replace the Control Unit.

## 201260 <location>Software not released

**Drive object:** 'All objects
**Message value:** -
**Reaction:** Infeed: OFF1
Servo: OFF3
Hla: OFF3
**Acknowledge:** POWER ON
**Cause:** The runtime software (RT-SW) has not been released.
**Remedy:** Only for internal Siemens troubleshooting.

## 201275 <location>Hardware description error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** Infeed: OFF2
Servo: OFF3
Hla: OFF3
**Acknowledge:** POWER ON
**Cause:** An error has occurred while accessing the hardware description file on the CompactFlash card.
Directory and file name: ADDON/SINAMICS/DATA/HW_DESC/<DOType>/DESC0000
Fault value (r0949, interpret decimal):
22: File not found.
24: File read access error.
26: Format error.
28: Version error.
30: Internal reader error.
40: Contents error.
45: Hardware description not consistent.
60: Inconsistency: Number of Power Stack Adapters (PSA).
61: Inconsistency: Number of Sensor Module Cabinets (SMC).
62: Inconsistency: Number of Voltage Sensing Modules (VSM).
63: Inconsistency: Number of Terminal Modules (TM).
64: Inconsistency: Number of Terminal Boards (TB).
**Remedy:** Only for internal Siemens troubleshooting.

## 201276 <location>Hardware description not fully compatible

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The hardware description file contains more data than the firmware requires.
**Remedy:** Not necessary.

## 201302 <location>Error in the component trace

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred in the component trace.
The message appears in the following cases:
- upload trace data (p7792 = 1).
- change factory setting (p7790, p7791) for missing property "component trace" (r0193.1 = 0).
Alarm value (r2124, interpret decimal):
1: The DRIVE-CLiQ component does not support the component trace (r0193.1 = 0).
101: Data from trace 1 cannot be read.
102: Data from trace 2 cannot be read.
103: Data from trace 3 cannot be read.
104: Data from trace 4 cannot be read.
105: Data from trace 5 cannot be read.
**Remedy:** For alarm value = 1:
Upgrade the firmware of the DRIVE-CLiQ component involved.

## 201303 <location>Component does not support the required function

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.
Fault value (r0949, interpret decimal):
1: The component does not support the deactivation.
101: The Motor Module does not support an internal armature short-circuit.
102: The Motor Module does not support the deactivation.
201: The Sensor Module does not support actual value inversion (p0410.0 = 1) when using a Hall sensor (p0404.6 = 1) for the commutation.
202: The Sensor Module does not support parking/unparking.
203: The Sensor Module does not support the deactivation.
204: The firmware of this Terminal Module 15 (TM15) does not support the application TM15DI/DO.
205: The Sensor Module does not support the selected temperature evaluation (r0458, r0459).
206: The firmware of this Terminal Modules TM41/TM31/TM15 refers to an old firmware version. It is urgently necessary to upgrade the firmware to ensure disturbance-free operation.
207: The power unit with this hardware version does not support operation with device supply voltages of less than 380 V.
208: The Sensor Module does not support deselection of commutation with zero mark (via p0430.23).
211: The Sensor Module does not support single-track encoders (r0459.10).
212: The Sensor Module does not support LVDT sensors (p4677.0).
213: The Sensor Module does not support the characteristic type (p4662).
214: The power unit does not support the temperature evaluation via PT1000 (r0193).
215: The Terminal Module does not support the temperature evaluation via PT1000
216: The Voltage Sensing Module (VSM) does not support operation with a PT1000 temperature sensor.

**Remedy:** Upgrade the firmware of the DRIVE-CLiQ component involved.
For fault value = 205, 214, 215:
- check parameter p0600 and p0601 and if required, adapt.
For fault value = 207:
- replace the power unit or if required set the device supply voltage higher (p0210).
For fault value = 208:
- check parameter p0430.23 and reset if necessary.
For fault value = 216:
- check the setting of the sensor type (p3665).
- use a Voltage Sensing module that supports operation with PT1000 (MLFB ...-xxx1).

## 201304 <location>Firmware version of DRIVE-CLiQ component is not up-to-date

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The non-volatile memory has a more recent firmware version than the one in the connected DRIVE-CLiQ component.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component involved.
**Remedy:** Update the firmware (p7828, p7829 - or commissioning tool).

## 201305 <location>Topology: Component number missing

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** The component number from the topology was not parameterized (p0121 (for power unit, refer to p0107), p0131 (for servo/vector drives, refer to p0107), p0141, p0151, p0161).
Fault value (r0949, interpret decimal):
Data set number.
Note:
The fault also occurs if encoders have been configured (p0187 to p0189) but no component numbers exist for them.
In this case, the fault value includes the drive data set number plus 100 * encoder number (e.g. 3xx, if a component number was not entered in p0141 for encoder 3 (p0189)).
See also:p0121, p0131, p0141, p0142, p0151, p0161, p0186, p0187, p0188, p0189

**Remedy:** - enter missing component number.
- if required, remove the component and restart commissioning.
See also:p0121, p0131, p0141, p0142, p0151, p0161, p0186, p0187, p0188, p0189

## 201306 <location>Firmware of the DRIVE-CLiQ component being updated

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Firmware update is active for at least one DRIVE-CLiQ component.
Alarm value (r2124, interpret decimal):
Component number of the DRIVE-CLiQ component.

**Remedy:** Not necessary.
This alarm is automatically withdrawn after the firmware update has been completed.

## 201314 <location>Topology: Component must not be present

**Drive object:** 'All objects

**Message value:** %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For a component, "deactivate and not present" is set but this component is still in the topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
aa = component number
bb = component class of the component
cc = connection number
Note:
Component class and connection number are described in F01375.

**Remedy:** - remove the corresponding component.
- change the setting "deactivate and not present".
Note:
Under "Topology --> Topology view", the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).
See also:p0105, p0125, p0145, p0155, p0165

## 201317 <location>Deactivated component again present

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** If a component of the target topology for an active drive object is inserted and the associated parameter of the component is set to "deactivate" (p0125, p0145, p0155, p0165).
Note:
This is the only message that is displayed for a deactivated component.

**Remedy:** The alarm is automatically withdrawn for the following actions:
- activate the components involved (p0125 = 1, p0145 = 1, p0155 = 1, p0165 = 1).
- again withdraw the component involved.
See also:p0125 (Activate/deactivate power unit components), p0145, p0155, p0165 (Activate/deactivate filter module)

## 201318 <location>BICO: Deactivated interconnections present

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** This alarm is used in the following cases:
- if an inactive/non-operational drive object is active again/ready for operation
- if there are items in the list of BI/CI parameters (r9498[0...29], r9499[0...29])
- if the BICO interconnections saved in the list of BI/CI parameters (r9498[0...29], r9499[0...29]) have actually been changed

**Remedy:** Reset alarm:
- set p9496 to 1 or 2
or
- deactivate the drive object again.

## 201319 <location>Inserted component not initialized

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Initialization is required for at least one inserted component.
This is only possible if the pulses are inhibited for all the drive objects.

**Remedy:** Activate pulse inhibit for all drive objects.

## 201320 <location>Topology: Drive object number does not exist in configuration

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A drive object number is missing in p0978
Alarm value (r2124, interpret decimal):
Index of p0101 under which the missing drive object number can be determined.

**Remedy:** Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

## 201321 <location>Topology: Drive object number does not exist in configuration

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** p0978 contains a drive object number that does not exist.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the drive object number can be determined.
**Remedy:** Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

## 201322 <location>Topology: Drive object number present twice in configuration

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A drive object number is present more than once in p0978.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the involved drive object number is located.
**Remedy:** Set parameter p0009 = 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

## 201323 <location>Topology: More than two partial lists created

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Partial lists are available more than twice in p0978. After the second 0, all must be 0.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the illegal value is located.
**Remedy:** Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

## 201324 <location>Topology: Dummy drive object number incorrectly created

**Drive object:** 'All objects

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In p0978, dummy drive object numbers (255) are only permitted in the first partial list.
Alarm value (r2124, interpret decimal):
Index of p0978 under which the illegal value is located.
**Remedy:** Set p0009 to 1 and change p0978:
Rules:
- p0978 must include all of the drive object numbers (p0101).
- it is not permissible for a drive object number to be repeated.
- by entering a 0, the drive objects with PZD are separated from those without PZD.
- only 2 partial lists are permitted. After the second 0, all values must be 0.
- dummy drive object numbers (255) are only permitted in the first partial list.

## 201325 <location>Topology: Component number not present in target topology

**Drive object:** 'All objects
**Message value:** Component number: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The component configured in a parameter (e.g. p0121, p0131, etc.) is not present in the target topology.
Fault value (r0949, interpret decimal):
Configured component number that is not present in target topology.
**Remedy:** Establish topology and DO configuration consistency.

## 201330 <location>Topology: Quick commissioning not possible

**Drive object:** 'All objects
**Message value:** Fault cause: %1, supplementary information: %2, preliminary component number: %3
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** Unable to carry out a quick commissioning. The existing actual topology does not fulfill the requirements.
Alarm value (r2124, interpret hexadecimal):
ccccbbaa hex: cccc = preliminary component number, bb = supplementary information, aa = fault cause
aa = 01 hex = 1 dec:
On one component illegal connections were detected.
- bb = 01 hex = 1 dec: For a Motor Module, more than one motor with DRIVE-CLiQ was detected.
- bb = 02 hex = 2 dec: For a motor with DRIVE-CLiQ, the DRIVE-CLiQ cable is not connected to a Motor Module.
aa = 02 hex = 2 dec:
The topology contains too many components of a particular type.
- bb = 01 hex = 1 dec: There is more than one master Control Unit.
- bb = 02 hex = 2 dec: There is more than 1 infeed (8 for a parallel circuit configuration).
- bb = 03 hex = 3 dec: There are more than 10 Motor Modules (8 for a parallel circuit configuration).
- bb = 04 hex = 4 dec: There are more than 9 encoders.
- bb = 05 hex = 5 dec: There are more than 8 Terminal Modules.
- bb = 07 hex = 7 dec: Unknown component type
- bb = 08 hex = 8 dec: There are more than 6 drive slaves.
- bb = 09 hex = 9 dec: Connection of a drive slave not permitted.
- bb = 0a hex = 10 dec: There is no drive master.
- bb = 0b hex = 11 dec: There is more than one motor with DRIVE-CLiQ for a parallel circuit.
- bb = 0c hex = 12 dec: Different power units are being used in a parallel connection.
- cccc: Not used.
aa = 03 hex = 3 dec:
More than 16 components are connected at a DRIVE-CLiQ socket of the Control Unit.
- bb = 0, 1, 2, 3 means e.g. detected at the DRIVE-CLiQ socket X100, X101, X102, X103.
- cccc: Not used.
aa = 04 hex = 4 dec:
The number of components connected one after the other is greater than 125.
- bb: Not used.
- cccc = preliminary component number of the first component and component that resulted in the fault.
aa = 05 hex = 5 dec:
The component is not permissible for SERVO.
- bb = 01 hex = 1 dec: SINAMICS G available.
- bb = 02 hex = 2 dec: Chassis available.
- cccc = preliminary component number of the first component and component that resulted in the fault.
aa = 06 hex = 6 dec:
On one component illegal EEPROM data was detected. These must be corrected before the system continues to boot.
- bb = 01 hex = 1 dec: The Article No. [MLFB] of the power unit that was replaced includes a space retainer. The space retainer (*) must be replaced by a correct character.
- cccc = preliminary component number of the component with illegal EEPROM data.
aa = 07 hex = 7 dec:
The actual topology contains an illegal combination of components.
- bb = 01 hex = 1 dec: Active Line Module (ALM) and Basic Line Module (BLM).
- bb = 02 hex = 2 dec: Active Line Module (ALM) and Smart Line Module (SLM).
- bb = 03 hex = 3 dec: SIMOTION control (e.g. SIMOTION D445) and SINUMERIK component (e.g. NX15).
- bb = 04 hex = 4 dec: SINUMERIK control (e.g. SINUMERIK 730.net) and SIMOTION component (e.g. CX32).
- cccc: Not used.
aa = 08 hex = 8 dec:
The motor is not completely connected.
- bb: Not used.
- cccc: Not used.
Note:
Connection type and connection number are described in F01375.

See also:p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

**Remedy:** - adapt the output topology to the permissible requirements.
- commission the device using the commissioning tool.
- for motors with DRIVE-CLiQ, connect the power and DRIVE-CLiQ cable to the same Motor Module (Single Motor Module: DRIVE-CLiQ at X202, Double Motor Module: DRIVE-CLiQ from motor 1 (X1) to X202, from motor 2 (X2) to X203).

For aa = 06 hex = 6 dec and bb = 01 hex = 1 dec:

Correct the Article No. when commissioning using the commissioning tool.

See also:p0097 (Select drive object type), r0098 (Actual device topology), p0099 (Device target topology)

## 201331 <location>Topology: At least one component not assigned to a drive object

**Drive object:** 'All objects

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** At least one component is not assigned to a drive object.
- when commissioning, a component was not able to be automatically assigned to a drive object.
- the parameters for the data sets are not correctly set.

Alarm value (r2124, interpret decimal):

Component number of the unassigned component.

**Remedy:** This component is assigned to a drive object.

Check the parameters for the data sets.

Examples:
- power unit (p0121).
- motor (p0131, p0186).
- encoder interface (p0140, p0141, p0187 ... p0189).
- encoder (p0140, p0142, p0187 ... p0189).
- Terminal Module (p0151).
- option board (p0161).

## 201340 <location>Topology: Too many components on one line

**Drive object:** 'All objects

**Message value:** Component number or connection number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** For the selected communications clock cycle, too many DRIVE-CLiQ components are connected to one line of the Control Unit.

Fault value (r0949, interpret hexadecimal):

xyy hex: x = fault cause, yy = component number or connection number.

1yy:

The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all read transfers.

2yy:

The communications clock cycle of the DRIVE-CLiQ connection on the Control Unit is not sufficient for all write transfers.

3yy:

Cyclic communication is fully utilized.

4yy:

The DRIVE-CLiQ cycle starts before the earliest end of the application. An additional dead time must be added to the control. Sign-of-life errors can be expected.

The conditions of operation with a current controller sampling time of 31.25 µs have not been maintained.

5yy:

Internal buffer overflow for net data of a DRIVE-CLiQ connection.

6yy:

Internal buffer overflow for receive data of a DRIVE-CLiQ connection.

7yy:

Internal buffer overflow for send data of a DRIVE-CLiQ connection.

8yy:

The component clock cycles cannot be combined with one another

900:

The lowest common multiple of the clock cycles in the system is too high to be determined.

901:

The lowest common multiple of the clock cycles in the system cannot be generated with the hardware.

**Remedy:** - check the DRIVE-CLiQ wiring.

- reduce the number of components on the DRIVE-CLiQ line involved and distribute these to other DRIVE-CLiQ sockets of the Control Unit. This means that communication is uniformly distributed over several lines.

For fault value = 1yy - 4yy in addition:

- increase the sampling times (p0112, p0115, p4099). If necessary, for DCC or FBLOCKS, change the assignment of the runtime group (p21000, p20000) so that the sampling time (r21001, r20001) is increased.

- if necessary, reduce the number of cyclically calculated blocks (DCC) and/or function blocks (FBLOCKS).

- reduce the function modules (r0108).

- establish the conditions for operation with a current controller sampling time of 31.25 µs (at the DRIVE-CLiQ line, only operate Motor Modules and Sensor Modules with this sampling time and only use a permitted Sensor Module (e.g. SMC20, this means a 3 at the last position of the Article No.)).

- For an NX, the corresponding Sensor Module for a possibly existing second measuring system should be connected to a free DRIVE-CLiQ socket of the NX.

- for BSR Motor Modules, the following applies: If Safety Extended Functions is enabled, and 6 axes are operated on the DRIVE-CLiQ line, then the clock cycle for the actual value sensing must be set as follows: p9511 >= 8 * current controller sampling time (p0115[0]).

For fault value = 8yy in addition:

- check the clock cycles settings (p0112, p0115, p4099). Clock cycles on a DRIVE-CLiQ line must be perfect integer multiples of one another. As clock cycle on a line, all clock cycles of all drive objects in the previously mentioned parameters apply, which have components on the line involved.

For fault value = 9yy in addition:

- check the clock cycles settings (p0112, p0115, p4099). The lower the numerical value difference between two clock cycles, the higher the lowest common multiple. This behavior has a significantly stronger influence, the higher the numerical values of the clock cycles.

## 201341 <location>Topology: Maximum number of DRIVE-CLiQ components exceeded

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** Too many DRIVE-CLiQ components were defined in the actual topology.
Note:
Pulse enable is withdrawn and prevented.
**Remedy:** - check the DRIVE-CLiQ wiring.
- reduce the number components on the DRIVE-CLiQ line involved in order to maintain the maximum quantity structure.

## 201354 <location>Topology: Actual topology indicates an illegal component

**Drive object:** 'All objects
**Message value:** Fault cause: %1, component number: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The actual topology indicates at least one illegal component.
Fault value (r0949, interpret hexadecimal):
yyxx hex: yy = component number, xx = cause.
xx = 1: Component at this Control Unit not permissible.
xx = 2: Component in combination with another component not permissible.
Note:
Pulse enable is prevented.
**Remedy:** Remove the illegal components and restart the system.

## 201355 <location>Topology: Actual topology changed

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The device target topology (p0099) does not correspond to the device actual topology (r0098).
The fault only occurs if the topology was commissioned using the automatic internal device mechanism and not using the commissioning tool.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also:r0098 (Actual device topology), p0099 (Device target topology)

**Remedy:** One of the following counter-measures can be selected if no faults have occurred in the topology detection itself:
If commissioning is still not completed:
- carry out a self-commissioning routine (starting from p0009 = 1).
In general:
Set p0099 = r0098, set p0009 = 0; for existing Motor Modules, this results in servo drives being automatically generated (p0107).
Generating servo drives: Set p0097 to 1, set p0009 to 0.
Generating vector drives: Set p0097 to 2, set p0009 to 0.
Generating vector drives with parallel connection: set p0097 to 12, set p0009 to 0.
In order to set configurations in p0108, before setting p0009 to 0, it is possible to first set p0009 to 2 and modify p0108. The index corresponds to the drive object (p0107).
If commissioning has already been completed:
- re-establish the original connections and re-connect power to the Control Unit.
- restore the factory setting for the complete equipment (all of the drives) and allow automatic self-commissioning again.
- change the device parameterization to match the connections (this is only possible using the commissioning tool).
Notice:
Topology changes that result in this fault being generated cannot be accepted by the automatic function in the device, but must be transferred using the commissioning tool and parameter download. The automatic function in the device only allows constant topology to be used. Otherwise, when the topology is changed, all of the previous parameter settings are lost and replaced by the factory setting.
See also:r0098 (Actual device topology)

## 201356 <location>Topology: There is a defective DRIVE-CLiQ component

**Drive object:** 'All objects
**Message value:** Fault cause: %1, Component number: %2, Connection number: %3
**Reaction:** NONE (OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The actual topology indicates at least one defective DRIVE-CLiQ component.
Fault value (r0949, interpret hexadecimal):
zzyyxx hex:
zz = connection number of the component at which the defective component is connected
yy = component number of the component at which the defective component is connected
xx = fault cause
xx = 1: Component at this Control Unit not permissible.
xx = 2: component with communication defect.
Note:
Pulse enable is withdrawn and prevented.
**Remedy:** Replace the defective component and restart the system.

## 201357 <location>Topology: Two Control Units identified on the DRIVE-CLiQ line

**Drive object:** 'All objects
**Message value:** component number: %1, connection number: %2
**Reaction:** NONE (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** In the actual topology, 2 Control Units are connected with one another through DRIVE-CLiQ.
As standard, this is not permitted.
This is only permitted if the Technology Extension OALINK has already been installed on the two Control Units and has been commissioned online.
Fault value (r0949, interpret hexadecimal):
yyxx hex:
yy = connection number of the Control Unit at which the second Control Unit is connected
xx = component number of the Control Unit at which the second Control Unit is connected
Note:
Pulse enable is withdrawn and prevented.

**Remedy:** In general:
- remove the connection to the second Control Unit and restart.
- for the S120M component DRIVE-CLiQ extension, interchange the hybrid cable (IN/OUT).
When using OALINK:
- remove the DRIVE-CLiQ connection and restart the systems.
- install OALINK on both Control Units and activate.
- Check the configuration of the DRIVE-CLiQ sockets in OALINK.

## 201358 <location>Topology: Line termination not available

**Drive object:** 'All objects

**Message value:** CU connection number: %1, component number: %2, connection number: %3

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** At least one line with distributed drives is not terminated. The last participant on the line must be terminated with a line termination connector.
This therefore ensures the degree of protection of the distributed drives.
Alarm value (r2124, interpret hexadecimal):
zzyyxx hex:
zz = connection number of the distributed drive where there is no terminating connector
yy = component number
xx = CU connection number

**Remedy:** Install the line terminating connector for the last distributed drive.

## 201359 <location>Topology: DRIVE-CLiQ performance not sufficient

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ performance is not sufficient at one line in order to identify an inserted component.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- Distribute components across several DRIVE-CLiQ lines.
Note:
For this topology, do not withdraw and insert components in operation.

## 201360 <location>Topology: Actual topology not permissible

**Drive object:** 'All objects

**Message value:** Fault cause: %1, preliminary component number: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The detected actual topology is not permissible.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex:
cccc = preliminary component number, bb = no significance, aa = fault cause
aa = 01 hex = 1 dec:
Too many components were detected at the Control Unit. A maximum of 199 components is permissible.
aa = 02 hex = 2 dec:
The component type of a component is not known.
aa = 03 hex = 3 dec:
It is illegal to combine ALM and BLM.
aa = 04 hex = 4 dec:
It is illegal to combine ALM and SLM.
aa = 05 hex = 5 dec:
It is illegal to combine BLM and SLM.
aa = 06 hex = 6 dec:
A CX32 was not directly connected to a permitted Control Unit.
aa = 07 hex = 7 dec:
An NX10 or NX15 was not directly connected to a permitted Control Unit.
aa = 08 hex = 8 dec:
A component was connected to a Control Unit that is not permitted for this purpose.
aa = 09 hex = 9 dec:
A component was connected to a Control Unit with out-of-date firmware.
aa = 0A hex = 10 dec:
Too many components of a particular type detected.
aa = 0B hex = 11 dec:
Too many components of a particular type detected on a single line.
Note:
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** For fault cause = 1:
Change the configuration. Connect less than 199 components to the Control Unit.
For fault cause = 2:
Remove the component with unknown component type.
For fault cause = 3, 4, 5:
Establish a valid combination.
For fault cause = 6, 7:
Connect the expansion module directly to a permitted Control Unit.
For fault cause = 8:
Remove component or use a permissible component.
For fault cause = 9:
Upgrade the firmware of the Control Unit to a later version.
For fault cause = 10, 11:
Reduce the number of components.

## 201361 <location>Topology: Actual topology contains SINUMERIK and SIMOTION components

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The detected actual topology contains SINUMERIK and SIMOTION components.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex: cc = fault cause, bb = component class of the actual topology, aa = component number of the component
cc = 01 hex = 1 dec:
An NX10 or NX15 was connected to a SIMOTION control.
cc = 02 hex = 2 dec:
A CX32 was connected to a SINUMERIK control.

**Remedy:** For alarm value = 1:
Replace all NX10 or NX15 by a CX32.
For alarm value = 2:
Replace all CX32 by an NX10 or NX15.

## 201362 <location>Topology: Topology rule(s) broken

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** At least one topology rule for the SINAMICS S120 Combi has been broken.

In the event of a fault, the ramping up of the drive system is aborted and closed-loop drive control is not enabled.

Alarm value (r2124, interpret decimal):

The alarm value indicates which rule has been violated.

1: The S120 Combi may only be wired via DRIVE-CLiQ socket X200 to X100 on the NCU.

2: In DRIVE-CLiQ socket X101 on the NCU, only one Single Motor Module (SMM) may be connected via X200, one Double Motor Module (DMM) via X200, one Terminal Module 54F (TM54F) via X500 or one DRIVE-CLiQ Hub Module (DMC20, DME20) via X500.

3: In DRIVE-CLiQ socket X102 on the NCU, only one Terminal Module 54F (TM54F) may be connected via X500, one DRIVE-CLiQ Hub Module (Hub) via X500 or one NX15 via X100.

4: Only Sensor Modules may be connected to DRIVE-CLiQ sockets X201 up to X203 (3-axis) or X204 (4-axis) on the S120 Combi.

5: In DRIVE-CLiQ socket X205 (X204 is not available for 3 axes), only SMC / SME Sensor Modules and DRIVE-CLiQ encoders may be connected.

6: In the case of a Single Motor Module as first expansion axis, only one additional Single Motor Module may be connected in the DRIVE-CLiQ socket X201 via X200, one Terminal Module 54F (TM54F) via X500 or one DRIVE-CLiQ Hub Module (DMC20, DME20) via X500.

7: Only Sensor Modules or DRIVE-CLiQ encoders may be connected in the DRIVE-CLiQ socket X202 on possibly available Single Motor Modules.

8: For a second Single Motor Module or for a Double Motor Module, at X201 a 54F Terminal Module (TM54F) or a DRIVE-CLiQ Hub Module (DMC20, DME20) may be connected via X500.

9: If a Double Motor Module is used as an expansion axis, only Sensor Modules may be connected to X202 and X203.

10: If a Terminal Module 54F (TM54F) is configured, only one DRIVE-CLiQ Hub Module (DMC20, DME20) may be connected to X501 of the TM54F module via DRIVE-CLiQ socket X500. In this case, it is not permissible that an existing Hub Module is connected elsewhere.

11: For DRIVE-CLiQ Hub Modules, only Sensor Modules (SMC, SME) and DRIVE-CLiQ encoders may be connected to X501 to X505.

12: Only certain Motor Modules may be used for expansion axes.

13: For an S120 Combi with 3 axes, nothing must be connected at the DRIVE-CLiQ Hub Module at X503.

14: A maximum of one Terminal Module 54F (TM54F) is permitted.

15: A maximum of one DRIVE-CLiQ Hub Module (DMC20, DME20) is permitted.

16: DRIVE-CLiQ socket X100 of NX15 must be connected with the NCU via X102.

17: The S120 Combi may only be connected to X101 of the NX15 via the DRIVE-CLiQ socket X200.

18: In DRIVE-CLiQ socket X102 on the NX15, only one Single Motor Module (SMM) may be connected via X200, one Double Motor Module (DMM) via X200, one Terminal Module 54F (TM54F) via X500 or one DRIVE-CLiQ Hub Module (DMC20, DME20) via X500.

19: It is not permissible that anything is connected at DRIVE-CLiQ socket X103 on the NX15.

**Remedy:** Evaluate the alarm value and ensure compliance with the corresponding topology rule(s).

## 201375 <location>Topology: Connection duplicated between two components

**Drive object:** 'All objects

**Message value:** Component: %1, %2, connection: %3

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** When checking the actual topology, a ring-type connection was detected.
The fault value describes a component contained in the ring.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex:
cc = connection number (%3)
bb = component class (% 2)
aaaa = preliminary component number (%1)
Component class:
0: Component unknown.
1: Control Unit
2: Motor Module
3: Line Module
4: Sensor Module
5: Voltage Sensing Module
6: Terminal Module
7: DRIVE-CLiQ Hub Module
8: Controller Extension
9: Filter Module
10: Hydraulic Module.
49: DRIVE-CLiQ component
50: Option slot
60: Encoder
70: DRIVE-CLiQ motor
71: Hydraulic cylinder
72: Hydraulic valve
80: Motor
Connection number:
0: Port 0, 1: Port 1, 2: Port 2, 3: Port 3, 4: Port 4, 5: Port 5
10: X100, 11: X101, 12: X102, 13: X103, 14: X104, 15: X105
20: X200, 21: X201, 22: X202, 23: X203
50: X500, 51: X501, 52: X502, 53: X503, 54: X504, 55: X505

**Remedy:** Output the fault value and remove the specified connection.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201380 <location>Topology: Actual topology EEPROM defective

**Drive object:** 'All objects
**Message value:** Preliminary component number: %1
**Reaction:** NONE
**Acknowledge:** POWER ON
**Cause:** When detecting the actual topology, a component with a defective EEPROM was detected.
Fault value (r0949, interpret hexadecimal):
bbbbaaaa hex:
bbbb = reserved
aaaa = preliminary component number of the defective components
**Remedy:** Output the fault value and remove the defected component.

## 201381 <location>Topology: Line Module incorrectly inserted

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Line Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201381 <location>Topology: power unit incorrectly inserted

**Drive object:** CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a power unit in the actual topology that has been incorrectly inserted.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201381 <location>Topology: Motor Module incorrectly inserted

**Drive object:** SERVO_840, SERVO_DBSI, TM41

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Motor Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201382 <location>Topology: Sensor Module incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Sensor Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201383 <location>Topology: Terminal Module incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Terminal Module in the actual topology that has been incorrectly inserted with respect to the target technology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201384 <location>Topology: DRIVE-CLiQ Hub Module incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a DRIVE-CLiQ Hub Module in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201385 <location>Topology: Controller Extension incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a controller extension 32 (CX32) in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201386 <location>Topology: DRIVE-CLiQ component incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a DRIVE-CLiQ component in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201389 <location>Topology: Motor with DRIVE-CLiQ incorrectly inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a motor with DRIVE-CLiQ in the actual topology that has been incorrectly inserted with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the incorrectly inserted component (% 1)
Note:
The component is described in dd, cc and bb, where the component involved is incorrectly inserted.
Component class and connection number are described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201416 <location>Topology: Component additionally inserted

**Drive object:** 'All objects

**Message value:** %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has found a component in the actual topology which is not specified in the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = component class (% 2)
cc = connection number (%4)
bb = component class of the additional component (%1)
aa = component number (%3)
Note:
The component class of the additional component is contained in bb.
The component is described in dd, cc and aa, where the additional component is inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- remove the additional component (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201420 <location>Topology: Component different

**Drive object:** 'All objects

**Message value:** Component: %1, target: %2, actual: %3, difference: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected differences in the actual topology and target topologies in the electronic rating plate.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex: aa = component number (%1), bb = component class of the target topology (%2), cc = component class of the actual topology (%3), dd = difference (%4)
dd = 01 hex = 1 dec:
Different component type.
dd = 02 hex = 2 dec:
Different article number.
dd = 03 hex = 3 dec:
Different manufacturer.
dd = 04 hex = 4 dec:
For a multi-component slave, the incorrect subcomponent (index) is connected (e.g. Double Motor Module X201 instead of X200) - or only a part of a multi-component slave is set to "deactivate and not available".
dd = 05 hex = 5 dec:
NX10 or NX15 used instead of CX32.
dd = 06 hex = 6 dec:
NX10 or NX15 used instead of CX32.
dd = 07 hex = 7 dec:
Different number of connections.
Note:
The component class is described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- connect the expected component (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Topology comparison - if required, adapt the comparison level:
- parameterize the topology comparison of all components (p9906).
- parameterize the topology comparison of one components (p9907, p9908).
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201425 <location>Topology: Serial number different

**Drive object:** 'All objects

**Message value:** Component: %1, %2, differences: %3

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected differences in the actual and target topologies in relation to one component. The serial number is different.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = reserved
cc = number of differences (%3)
bb = component class (% 2)
aa = component number (%1)
Note:
The component class is described in F01375.
The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- change over the actual topology to match the target topology.
- load the target topology that matches the actual topology (commissioning tool).

For byte cc:

cc = 1 --> can be acknowledged using p9904 or p9905.

cc > 1 --> can be acknowledged using p9905 and can be deactivated using p9906 or p9907/p9908.

Note:

Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

See also:p9904 (Topology comparison acknowledge differences), p9905 (Device specialization), p9906 (Topology comparison all components comparison level), p9907 (Topology comparison component number), p9908 (Topology comparison of a component comparison level)

## 201428 <location>Topology: Incorrect connection used

**Drive object:** 'All objects

**Message value:** Component: %1, %2, connection (actual): %3, connection (target): %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected differences in the actual and target topologies in relation to one component. For a component, another connection was used.

The different connections of a component are described in the alarm value.

Alarm value (r2124, interpret hexadecimal):

ddccbbaa hex:

dd = connection number of the target topology (%4)

cc = connection number of the actual topology (%3)

bb = component class (% 2)

aa = component number (%1)

Note:

Component class and connection number are described in F01375.

The drive system is no longer booted. In this state, the drive control (closed-loop) cannot be enabled.

**Remedy:** Adapting topologies:
- reinsert the DRIVE-CLiQ cable to the component (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
- automatically remove the topology error (p9904).

Note:

Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

See also:p9904 (Topology comparison acknowledge differences)

## 201451 <location>Topology: Target topology is invalid

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** An error was detected in the target topology.
The target topology is invalid.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex: cccc = index error, bb = component number, aa = fault cause
aa = 1B hex = 27 dec: Error not specified.
aa = 1C hex = 28 dec: Value illegal.
aa = 1D hex = 29 dec: Incorrect ID.
aa = 1E hex = 30 dec: Incorrect ID length.
aa = 1F hex = 31 dec: Too few indices left.
aa = 20 hex = 32 dec: component not connected to Control Unit.

**Remedy:** Download the target topology again using the commissioning tool.

## 201481 <location>Topology: power unit not connected

**Drive object:** CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a power unit that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201481 <location>Topology: Line Module not connected

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Line Module that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201481 <location>Topology: Motor Module not connected

**Drive object:** SERVO_840, SERVO_DBSI, TM41

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Motor Module that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201482 <location>Topology: Sensor Module not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Sensor Module that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201483 <location>Topology: Terminal Module not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Terminal Module that is missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201484 <location>Topology: DRIVE-CLiQ Hub Module not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a DRIVE-CLiQ Hub Module missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201485 <location>Topology: Controller Extension not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a Control Extension (CX32) missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).

Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201486 <location>Topology: DRIVE-CLiQ component not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a DRIVE-CLiQ component missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).

Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.

Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201487 <location>Topology: Option slot component not inserted

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected an option slot component missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201489 <location>Topology: motor with DRIVE-CLiQ not connected

**Drive object:** 'All objects

**Message value:** Component: %1, to %2, %3, connection: %4

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The topology comparison has detected a motor with DRIVE-CLiQ missing in the actual topology with respect to the target topology.
Alarm value (r2124, interpret hexadecimal):
ddccbbaa hex:
dd = connection number (%4)
cc = component number (%3)
bb = component class (% 2)
aa = component number of the component that has not been inserted (% 1)
Note:
The component is described in dd, cc and bb, where the component has not been inserted.
Component class and connection number are described in F01375.

**Remedy:** Adapting topologies:
- insert the components involved at the right connection (correct the actual topology).
- adapt the project/parameterizing in the commissioning tool (correct the target topology).
Check the hardware:
- check the 24 V supply voltage.
- check DRIVE-CLiQ cables for interruption and contact problems.
- check that the component is working properly.
Note:
Under "Topology --> Topology view" the commissioning tool where relevant offers improved diagnostics capability (e.g. setpoint/actual value comparison).

## 201507 <location>BICO: Interconnections to inactive objects present

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** There are BICO interconnections to an inactive/inoperable drive object.
The BI/CI parameters involved are listed in r9498.
The associated BO/CO parameters are listed in r9499.
The list of the BICO interconnections to other drive objects is displayed in r9491 and r9492 of the deactivated drive object.
Note:
r9498 and r9499 are only written to, if p9495 is not set to 0.
Alarm value (r2124, interpret decimal):
Number of BICO interconnections found to inactive drive objects.
**Remedy:** - set all open BICO interconnections centrally to the factory setting with p9495 = 2.
- make the non-operational drive object active/operational again (re-insert or activate components).

## 201508 <location>BICO: Interconnections to inactive objects exceeded

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The maximum number of BICO interconnections (signal sinks) when deactivating a drive object was exceeded.
When deactivating a drive object, all BICO interconnections (signal sinks) are listed in the following parameters:
- r9498[0...29]: List of the BI/CI parameters involved.
- r9499[0...29]: List of the associated BO/CO parameters.
**Remedy:** Not necessary.
This alarm is automatically withdrawn as soon as no BICO interconnection is entered in r9498[29] and r9499[29] (value = 0).
Notice:
When re-activating the drive object, all BICO interconnections should be checked and if required, re-established.

## 201510 <location>BICO: Signal source is not float type

**Drive object:** 'All objects
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The requested connector output does not have the correct data type. This interconnection is not established.
Fault value (r0949, interpret decimal):
Parameter number to which an interconnection should be made (connector output).
**Remedy:** Interconnect this connector input with a connector output having a float data type.

## 201511 <location>BICO: Interconnection with different scalings

**Drive object:** 'All objects
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values.
- the BICO output has different normalized units than the BICO input.
- message only for interconnections within a drive object.
Example:
The BICO output has, as normalized unit, voltage and the BICO input has current.
This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input.
p2002: contains the reference value for current
p2001: contains the reference value for voltage
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal sink).

**Remedy:** Not necessary.

## 201512 <location>BICO: No scaling available

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: OFF2 (OFF1)
Servo: OFF2
Hla: OFF2

**Acknowledge:** POWER ON

**Cause:** An attempt was made to determine a conversion factor for a scaling that does not exist.
Fault value (r0949, interpret decimal):
Unit (e.g. corresponding to SPEED) for which an attempt was made to determine a factor.

**Remedy:** Apply scaling or check the transfer value.

## 201513 <location>BICO: Interconnection cross DO with different scalings

**Drive object:** 'All objects

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The requested BICO interconnection was established. However, a conversion is made between the BICO output and BICO input using the reference values.
An interconnection is made between different drive objects and the BICO output has different normalized units than the BICO input or the normalized units are the same but the reference values are different.
Example 1:
BICO output with voltage normalized unit, BICO input with current normalized unit, BICO output and BICO input lie in different drive objects. This means that the factor p2002/p2001 is calculated between the BICO output and the BICO input.
p2002: contains the reference value for current
p2001: contains the reference value for voltage
Example 2:
BICO output with voltage normalized unit in drive object 1 (DO1), BICO input with voltage normalized unit in drive object 2 (DO2). The reference values for voltage (p2001) of the two drive objects have different values. This means that the factor p2001(DO1)/p2001(DO2) is calculated between the BICO output and the BICO input.
p2001: contains the reference value for voltage, drive objects 1, 2
Fault value (r0949, interpret decimal):
Parameter number of the BICO input (signal sink).

**Remedy:** Not necessary.

## 201514 <location>BICO: Error when writing during a reconnect

**Drive object:** 'All objects

**Message value:** Parameter: %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** During a reconnect operation (e.g. while booting or downloading - but can also occur in normal operation) a parameter was not able to be written to.
Example:
When writing to BICO input with double word format (DWORD), in the second index, the memory areas overlap (e.g. p8861). The parameter is then reset to the factory setting.
Alarm value (r2124, interpret decimal):
Parameter number of the BICO input (signal sink).
**Remedy:** Not necessary.

## 201515 <location>BICO: Writing to parameter not permitted as the master control is active

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** When changing the number of CDS or when copying from CDS, the master control is active.
**Remedy:** If required, return the master control and repeat the operation.

## 201590 <location>Drive: Motor maintenance interval expired

**Drive object:** 'All objects
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The selected service/maintenance interval for this motor was reached.
Alarm value (r2124, interpret decimal):
Motor data set number.
See also:p0650 (Actual motor operating hours), p0651 (Motor operating hours maintenance interval)
**Remedy:** carry out service/maintenance and reset the service/maintenance interval (p0651).

## 201600 <location>SI P1 (CU): STOP A initiated

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (CU) has detected a fault and initiated a STOP A (STO via the safety switch-off signal path of the Control Unit).
- forced checking procedure (test stop) of the safety switch-off signal path of the Control Unit unsuccessful.
- subsequent response to fault F01611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: Stop request from monitoring channel 2.
1005: STO active although STO not selected and there is no internal STOP A present.
1010: STO inactive although STO is selected or an internal STOP A is present.
9999: Subsequent response to fault F01611.

**Remedy:** - select Safe Torque Off and deselect again.
- replace Hydraulic Module involved.
For fault value = 9999:
- carry out diagnostics for fault F01611.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 201600 <location>SI P1 (CU): STOP A initiated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (CU) has detected a fault and initiated a STOP A (STO via the safety switch-off signal path of the Control Unit).
- forced checking procedure (test stop) of the safety switch-off signal path of the Control Unit unsuccessful.
- subsequent response to fault F01611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: Stop request from monitoring channel 2.
1005:
- STO active, although STO not selected and there is no internal STOP A active.
- For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0).
1010: STO inactive although STO is selected or an internal STOP A is present.
1015: Feedback signal of STO for Motor Modules connected in parallel are different.
9999: Subsequent response to fault F01611.
**Remedy:** - select Safe Torque Off and deselect again.
- replace the Motor Module involved.
For fault value = 1005:
- deactivate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function.
For fault value = 9999:
- carry out diagnostics for fault F01611.
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 201611 <location>SI P1 (CU): Defect in a monitoring channel

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on processor 1 has detected a fault in the data cross-check between the two monitoring channels and has initiated a STOP F.

As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.

Fault value (r0949, interpret decimal):

0: Stop request from another monitoring channel.

1 ... 999:

Number of the cross-compared data that resulted in this fault. This number is also displayed in r9795.

1: SI monitoring clock cycle (r9780, r9880).

2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.

3: SI SGE changeover discrepancy time (p9650, p9850).

4: SI transition period STOP F to STOP A (p9658, p9858).

6: SI Motion enable, safety-relevant functions (p9501, internal value).

7: SI delay time of STO for Safe Stop 1 (p9652, p9852).

8: SI PROFIsafe address (p9610, p9810).

9: SI debounce time for STO/SBC/SS1 (p9651, p9851).

10: SI delay time for initiating STO for ESR (p9697, p9897).

11: SI HLA shutoff valve feedback signal contact configuration (p9626, p9826).

12: SI HLA shutoff valve wait time switch-on (p9625[0], p9825[0]).

13: SI HLA shutoff valve wait time switch-off (p9625[1], p9825[1]).

14: SI PROFIsafe telegram selection (p9611, p9811).

15: SI PROFIsafe bus failure response (p9612, p9812).

1000: Watchdog timer has expired.

Within the time of approx. 5 x p9650, alternatively, the following was defined:

- the signal at terminal STO of the Hydraulic Module continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).

- via PROFIsafe/TM54F, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

1001, 1002: Initialization error, change timer / check timer.

1900: CRC error in the SAFETY sector.

1901: CRC error in the ITCM sector.

1902: Overloading in the ITCM sector has occurred in operation.

1903: Internal parameterizing error for CRC calculation.

1950: Module temperature outside the permissible temperature range.

1951: Module temperature not plausible.

2000: Status of the STO selection for both monitoring channels different.

2001: Feedback signal of STO shutdown for both monitoring channels different.

2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).

2003: Status of the STO terminal for both monitoring channels different.

6000 ... 6999:

Error in the PROFIsafe control.

For these fault values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "STOP B after failure of the PROFIsafe communication" (p9612) is parameterized, the transfer of the Failsafe Values is delayed.

6000: A fatal PROFIsafe communication error has occurred.

6064 ... 6071: error when evaluating the F parameter. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.

6064: Destination address and PROFIsafe address are different (F_Dest_Add).

6065: Destination address not valid (F_Dest_Add).

6066: Source address not valid (F_Source_Add).

6067: Watchdog time not valid (F_WD_Time).

6068: Incorrect SIL level (F_SIL).

6069: Incorrect F-CRC length (F_CRC_Length).

6070: Incorrect F parameter version (F_Par_Version).

6071: CRC error for the F parameters (CRC1). The transferred CRC value of the F parameters does not match the value calculated in the PROFIsafe driver.

6072: F parameterization is inconsistent.

6165: A communications error was identified when receiving the PROFIsafe telegram. The fault may also occur if an inconsistent or out-of-date PROFIsafe telegram has been received after switching the Control Unit off and on or after plugging in the PROFIBUS/PROFINET cable.

6166: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.

**Remedy:** For fault value = 1 ... 5 and 7 ... 999:
- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 6:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 1000:
- check the STO terminal at the Hydraulic Module (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the wiring of the failsafe inputs at the TM54F (contact problems).
- check the discrepancy time, and if required, increase the value (p9650/p9850).

For fault value = 1001, 1002:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 1900, 1901, 1902:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Control Unit software.
- replace Control Unit.

For fault value = 2000, 2001, 2002, 2003:
- check the discrepancy time, and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- check the causes of the STO selection in r9772. When the SMM functions are active (p9501 = 1), STO can also be selected using these functions.
- replace Hydraulic Module involved.

Note:
This fault can be acknowledged after removing the cause of the error and after correct selection/deselection of STO.

For fault value = 6000:
- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.
- increase the monitoring cycle clock settings (p9500, p9511).
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

For fault value = 6064:
- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave.
- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the hydraulic module (p9810).

For fault value = 6065:
- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave. It is not permissible for the destination address to be either 0 or FFFF!

For fault value = 6066:
- check the setting of the value in the F parameter F_Source_Add at the PROFIsafe slave. It is not permissible for the source address to be either 0 or FFFF!

For fault value = 6067:
- check the setting of the value in the F parameter F_WD_Time at the PROFIsafe slave. It is not permissible for the watch time to be 0!

For fault value = 6068:
- check the setting of the value in the F parameter F_SIL at the PROFIsafe slave. The SIL level must correspond to SIL2!

For fault value = 6069:

- check the setting of the value in the F parameter F_CRC_Length at the PROFIsafe slave. The setting of the CRC2 length is 2-byte CRC in the V1 mode and 3-byte CRC in the V2 mode!

For fault value = 6070:

- check the setting of the value in the F parameter F_Par_Version at the PROFIsafe slave. The value for the F parameter version is 0 in the V1 mode and 1 in the V2 mode!

For fault value = 6071:

- check the settings of the values of the F parameters and the F parameter CRC (CRC1) calculated from these at the PROFIsafe slave and, if required, update.

For fault value = 6072:

- check the settings of the values for the F parameters and, if required, correct.

The following combinations are permissible for F parameters F_CRC_Length and F_Par_Version:

F_CRC_Length = 2-byte CRC and F_Par_Version = 0

F_CRC_Length = 3-byte CRC and F_Par_Version = 1

For fault value = 6165:

- if the fault occurs after powering up the Control Unit or after plugging in the PROFIBUS/PROFINET cable, acknowledge the fault.

- check the configuration and communication at the PROFIsafe slave.

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.

- check whether all F parameters of the drive match the F parameters of the F host.

For fault value = 6166:

- check the configuration and communication at the PROFIsafe slave.

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- evaluate diagnostic information in the F host.

- check PROFIsafe connection.

- check whether all F parameters of the drive match the F parameters of the F host.

Note:

CU: Control Unit

EP: Enable Pulses (pulse enable)

ESR: Extended Stop and Retract

MM: Motor Module

SGE: Safety-relevant input

SI: Safety Integrated

SMM: Safe Motion Monitoring

SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)

STO: Safe Torque Off / SH: Safe standstill

## 201611 <location>SI P1 (CU): Defect in a monitoring channel

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on processor 1 has detected a fault in the data cross-check between the two monitoring channels and has initiated a STOP F.

As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.

Fault value (r0949, interpret decimal):

0: Stop request from another monitoring channel.

1 ... 999:

Number of the cross-compared data that resulted in this fault. This number is also displayed in r9795.

1: SI monitoring clock cycle (r9780, r9880).

2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.

3: SI SGE changeover discrepancy time (p9650, p9850).

4: SI transition period STOP F to STOP A (p9658, p9858).

5: SI enable Safe Brake Control (p9602, p9802).

6: SI Motion enable, safety-relevant functions (p9501, internal value).

7: SI delay time of STO for Safe Stop 1 (p9652, p9852).

8: SI PROFIsafe address (p9610, p9810).

9: SI debounce time for STO/SBC/SS1 (p9651, p9851).

10: SI delay time for initiating STO for ESR (p9697, p9897).

11: SI Safe Brake Adapter mode, BICO interconnection (p9621, p9821).

12: SI Safe Brake Adapter relay ON time (p9622[0], p9822[0]).

13: SI Safe Brake Adapter relay OFF time (p9622[1], p9822[1]).

14: SI PROFIsafe telegram selection (p9611, p9811).

15: SI PROFIsafe bus failure response (p9612, p9812).

1000: Watchdog timer has expired.

Within the time of approx. 5 x p9650, alternatively, the following was defined:

- the signal at terminal EP of the Motor Module continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).

- via PROFIsafe/TM54F, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

- safe pulse cancellation (r9723.9 - also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

1001, 1002: Initialization error, change timer / check timer.

1900: CRC error in the SAFETY sector.

1901: CRC error in the ITCM sector.

1902: Overloading in the ITCM sector has occurred in operation.

1903: Internal parameterizing error for CRC calculation.

1950: Module temperature outside the permissible temperature range.

1951: Module temperature not plausible.

2000: Status of the STO selection for both monitoring channels different.

2001: Feedback signal of STO shutdown for both monitoring channels different. This value can also subsequently occur as a result of other faults.

2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).

2003: Status of the STO terminal for both monitoring channels different.

2004: Status of the STO selection for Motor Modules connected in parallel different.

2005: Feedback signal of the safe pulse suppression on the Control Unit and Motor Modules connected in parallel different.

6000 ... 6999:

Error in the PROFIsafe control.

For these fault values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "STOP B after failure of the PROFIsafe communication" (p9612) is parameterized, the transfer of the Failsafe Values is delayed.

6000: A fatal PROFIsafe communication error has occurred.

6064 ... 6071: error when evaluating the F parameter. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.

6064: Destination address and PROFIsafe address are different (F_Dest_Add).

6065: Destination address not valid (F_Dest_Add).

6066: Source address not valid (F_Source_Add).

6067: Watchdog time not valid (F_WD_Time).

6068: Incorrect SIL level (F_SIL).

6069: Incorrect F-CRC length (F_CRC_Length).

6070: Incorrect F parameter version (F_Par_Version).

6071: CRC error for the F parameters (CRC1). The transferred CRC value of the F parameters does not match the value calculated in the PROFIsafe driver.

6072: F parameterization is inconsistent.

6165: A communications error was identified when receiving the PROFIsafe telegram. The fault may also occur if an inconsistent or out-of-date PROFIsafe telegram has been received after switching the Control Unit off and on or after plugging in the PROFIBUS/PROFINET cable.

6166: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.

**Remedy:** For fault value = 1 ... 5 and 7 ... 999:
- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 6:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 1000:
- check the EP terminal at the Motor Module (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the wiring of the failsafe inputs at the TM54F (contact problems).
- check the discrepancy time, and if required, increase the value (p9650/p9850).

For fault value = 1001, 1002:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 1900, 1901, 1902:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Control Unit software.
- replace Control Unit.

For fault value = 2000, 2001, 2002, 2003, 2004, 2005:
- check the discrepancy time, and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- check the causes of the STO selection in r9772. When the SMM functions are active (p9501 = 1), STO can also be selected using these functions.
- replace the Motor Module involved.
- diagnose the other active faults and resolve the causes.

Note:
This fault can be acknowledged after removing the cause of the error and after correct selection/deselection of STO.

For fault value = 6000:
- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.
- increase the monitoring cycle clock settings (p9500, p9511).
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

For fault value = 6064:
- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave.
- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the Motor Module (p9810).

For fault value = 6065:
- check the setting of the value in the F parameter F_Dest_Add at the PROFIsafe slave. It is not permissible for the destination address to be either 0 or FFFF!

For fault value = 6066:
- check the setting of the value in the F parameter F_Source_Add at the PROFIsafe slave. It is not permissible for the source address to be either 0 or FFFF!

For fault value = 6067:
- check the setting of the value in the F parameter F_WD_Time at the PROFIsafe slave. It is not permissible for the watch time to be 0!

For fault value = 6068:
- check the setting of the value in the F parameter F_SIL at the PROFIsafe slave. The SIL level must correspond to SIL2!

For fault value = 6069:

- check the setting of the value in the F parameter F_CRC_Length at the PROFIsafe slave. The setting of the CRC2 length is 2-byte CRC in the V1 mode and 3-byte CRC in the V2 mode!

For fault value = 6070:

- check the setting of the value in the F parameter F_Par_Version at the PROFIsafe slave. The value for the F parameter version is 0 in the V1 mode and 1 in the V2 mode!

For fault value = 6071:

- check the settings of the values of the F parameters and the F parameter CRC (CRC1) calculated from these at the PROFIsafe slave and, if required, update.

For fault value = 6072:

- check the settings of the values for the F parameters and, if required, correct.

The following combinations are permissible for F parameters F_CRC_Length and F_Par_Version:

F_CRC_Length = 2-byte CRC and F_Par_Version = 0

F_CRC_Length = 3-byte CRC and F_Par_Version = 1

For fault value = 6165:

- if the fault occurs after powering up the Control Unit or after plugging in the PROFIBUS/PROFINET cable, acknowledge the fault.

- check the configuration and communication at the PROFIsafe slave.

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.

- check whether all F parameters of the drive match the F parameters of the F host.

For fault value = 6166:

- check the configuration and communication at the PROFIsafe slave.

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- evaluate diagnostic information in the F host.

- check PROFIsafe connection.

- check whether all F parameters of the drive match the F parameters of the F host.

Note:

CU: Control Unit

EP: Enable Pulses (pulse enable)

ESR: Extended Stop and Retract

MM: Motor Module

SGE: Safety-relevant input

SI: Safety Integrated

SMM: Safe Motion Monitoring

SS1: Safe Stop 1

STO: Safe Torque Off / SH: Safe standstill

## 201612 <location>SI P1 (CU): STO inputs for power units connected in parallel different

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (CU) has identified different states of the AND'ed STO inputs for power units connected in parallel and has initiated a STOP F.

As a result of this fault, after the parameterized transition has expired (p9658), fault F01600 (SI CU: STOP A initiated) is output.

Fault value (r0949, interpret binary):

Binary image of the digital inputs of the Control Unit that are used as signal source for the function "Safe Torque Off".

**Remedy:** - check the tolerance time SGE changeover and if required, increase the value (p9650).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
Note:
CU: Control Unit
SGE: Safety-relevant input
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 201620 <location>SI P1 (CU): Safe Torque Off active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The "Safe Torque Off" (STO) function of the basic functions has been selected on the Control Unit (CU) using the input terminal and is active.
Note:
- this message does not result in a safety stop response.
- this message is not output when STO is selected using the Extended Functions.
**Remedy:** Not necessary.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 201621 <location>SI P1 (CU): Safe Stop 1 active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The "Safe Stop 1" (SS1) function has been selected on the Control Unit (CU) and is active.
Note:
This message does not result in a safety stop response.
**Remedy:** Not necessary.
Note:
CU: Control Unit
SI: Safety Integrated
SS1: Safe Stop 1

## 201625 <location>SI P1 (CU): Sign-of-life error in safety data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (CU) has detected an error in the sign-of-life of the safety data between the two monitoring channels and has initiated a STOP A.
- there is either a DRIVE-CLiQ communication error or communication has failed.
- a time slice overflow of the safety software has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - select STO and then deselect again.
- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.
- deselect all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance

Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off

## 201630 <location>SI P1 (CU): Brake control error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (CU) has detected a brake control fault and initiated a STOP A.
- motor cable is not shielded correctly.
- defect in the brake control circuit of the Motor Module.

Fault value (r0949, interpret decimal):
10, 11:
Fault in "open holding brake" operation.
- parameter p1278 incorrectly set.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC deactivated)).
- ground fault in brake cable.

20:
Fault in "brake open" state.
- short-circuit in brake winding.

30, 31:
Fault in "close holding brake" operation.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC deactivated)).
- short-circuit in brake winding.

40:
Fault in "brake closed" state.

50:
Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control diagnostics).

80:
Safe Brake Adapter.
Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control diagnostics).

90:
Brake released for service purposes (X4).

**Remedy:** - check parameter p1278 (for SBC, only p1278 = 0 is permissible).
- for a parallel connection, check the setting of the power unit data set to control the holding brake (p7015).
- select Safe Torque Off and deselect again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Motor Module involved.

Operation with Safe Brake Module or Safe Brake Adapter:
- check the Safe Brake Module or Safe Brake Adapter connection.
- Replace the Safe Brake Module or Safe Brake Adapter.

Note:
CU: Control Unit
SBC: Safe Brake Control
SI: Safety Integrated

## 201631 <location>SI P1 (CU): motor holding brake/SBC configuration not practical

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A configuration of motor holding brake and SBC was detected that is not practical.
The following configurations can result in this message:
- "No motor holding brake available" (p1215 = 0) and "SBC" enabled (p9602 = 1).
- "Motor holding brake just like the sequence control, connection via BICO" (p1215 = 3) and "SBC" enabled (p9602 = 1).

**Remedy:** Check the parameterization of the motor holding brake and SBC and correct.
Note:
SBC: Safe Brake Control
See also:p1215 (Motor holding brake configuration), p9602 (SI enable Safe Brake Control (Control Unit)), p9802 (SI enable Safe Brake Control (Motor Module))

## 201632 <location>SI P1 (CU): shutoff valve control/feedback signal error

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on the Control Unit (monitoring channel 1) has detected a fault for the control/feedback signal of the shutoff valve and initiated a STOP A.
Possible causes:
- shutoff valve either not connected or not correctly connected (X272).
- feedback signal of the shutoff valve either not connected or not correctly connected (X281/X282).
- feedback signal of the shutoff valve incorrectly set (p9626/p9826).
- shutoff valve defective.
- Hydraulic Module defective.

Fault value (r0949, interpret decimal):
10, 11:
Fault in the "Open shutoff valve" operation.
20:
Fault in the "Shutoff valve open" state.
30, 31:
Fault in the "Close shutoff valve" operation.
40:
Fault in the "Shutoff valve closed" state.
50, 80:
Fault in the control/feedback signal of the cutoff valve or communication error between the Control Unit and the Hydraulic Module.

**Remedy:**
- check the shutoff valve connection (X272).
- check the feedback signals of the shutoff valve (X281, X282).
- check the configuration of the feedback signals of the shutoff valve (p9626/p9826).
- check for EMC-compliant control cabinet design and cable routing (e.g. use shielded cables and connect the shield).
- if necessary, replace the shutoff valve.
- if necessary, replace the Hydraulic Module.

See also:p9626 (SI HLA shutoff valve feedback signal contact configuration (CU)), p9826 (SI HLA shutoff valve feedback signal contact configuration (MM))

## 201640 <location>SI P1 (CU): component replacement identified and acknowledgment/save required

**Drive object:** HLA_840, HLA_DBSI

**Message value:** Fault cause: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** "Safety Integrated" has identified that a component has been replaced.
It is no longer possible to operate the particular drive without fault.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that sensor channel 2 has been replaced.

**Remedy:** - acknowledge component replacement (p9702 = 29).
- save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. binector input p2103).
Note:
In addition to the fault, diagnostics bits r9776.2 and r9776.3 are set.
See also:p9702 (SI Acknowledge component replacement), r9776 (SI diagnostics)

## 201640 <location>SI P1 (CU): component replacement identified and acknowledgment/save required

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** "Safety Integrated" has identified that a component has been replaced.
Replacing the component means that the "Global checksum" of the "Safety-relevant hardware" is changed. It is no longer possible to operate the particular drive without fault.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that sensor channel 2 has been replaced.
**Remedy:** - acknowledge component replacement (p9702 = 29).
- save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. binector input p2103).
Note:
In addition to the fault, diagnostics bits r9776.2 and r9776.3 are set.
See also:p9702 (SI Acknowledge component replacement), r9776 (SI diagnostics)

## 201641 <location>SI P1 (CU): component replacement identified and save required

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, TM41
**Message value:** Fault cause: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** "Safety Integrated" has identified that a component has been replaced.
No additional fault response is initiated, therefore operation of the particular drive is not restricted.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that sensor channel 2 has been replaced.

**Remedy:** - save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. binector input p2103).
See also:r9776 (SI diagnostics)

## 201641 <location>SI P1 (CU): component replacement identified and save required

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** "Safety Integrated" has identified that a component has been replaced.
Replacing the component does not change the "Global checksum" of the "Safety-relevant hardware". No additional fault response is initiated, therefore operation of the particular drive is not restricted.
When safety functions are active, after a component has been replaced it is necessary to carry out a partial acceptance test.
Fault value (r0949, interpret binary):
Bit 0 = 1:
It has been identified that the Control Unit has been replaced.
Bit 1 = 1:
It has been identified that the Motor Module/Hydraulic Module has been replaced.
Bit 2 = 1:
It has been identified that the Power Module has been replaced.
Bit 3 = 1:
It has been identified that the Sensor Module channel 1 has been replaced.
Bit 4 = 1:
It has been identified that the Sensor Module channel 2 has been replaced.
Bit 5 = 1:
It has been identified that the sensor channel 1 has been replaced.
Bit 6 = 1:
It has been identified that sensor channel 2 has been replaced.

**Remedy:** - save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").
- acknowledge fault (e.g. binector input p2103).
See also:r9776 (SI diagnostics)

## 201649 <location>SI P1 (CU): Internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An internal error in the Safety Integrated software on the Control Unit has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- re-commission the "Safety Integrated" function and carry out a POWER ON.
- upgrade the firmware of the Control Unit to a later version.
- contact Technical Support.
- replace the Control Unit.
Note:
CU: Control Unit
SI: Safety Integrated

## 201650 <location>SI P1 (CU): Acceptance test required

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on monitoring channel 1 requires an acceptance test.

Note:

This fault results in a STOP A that can be acknowledged.

Fault value (r0949, interpret decimal):

130: Safety parameters for monitoring channel 2 not available.

Note:

This fault value is always output when Safety Integrated is commissioned for the first time.

1000: Reference and actual checksum on monitoring channel 1 are not identical (booting).

- as a result of the changed current controller sampling time (p0115[0]), the clock cycle time for the Safety Integrated Basic Functions (r9780) was adapted.
- at least one checksum-checked piece of data is defective.
- safety parameters set offline and loaded into the Control Unit.

2000: Reference and actual checksum on monitoring channel 1 are not identical (commissioning mode).

- reference checksum on monitoring channel 1 incorrectly entered (p9799 not equal to r9798).
- when deactivating the safety functions, p9501 or p9503 were not deleted.

2001: Reference and actual checksum on monitoring channel 2 are not identical (commissioning mode).

- reference checksum on monitoring channel 2 incorrectly entered (p9899 not equal to r9898).
- when deactivating the safety functions, p9501 or p9503 are not deleted.

2002: Enable of safety-related functions between the two monitoring channels differ (p9601 not equal to p9801).

2003: Acceptance test is required as a safety parameter has been changed.

2004: An acceptance test is required because a project with enabled safety-functions has been downloaded.

2005: The Safety logbook has identified that a functional safety checksum has changed. An acceptance test is required.

2010: Enable of safety-related brake control between the two monitoring channels differ (p9602 not equal to p9802).

2020: Error when saving the safety parameters for the monitoring channel 2.

3003: Acceptance test is required as a hardware-related safety parameter has been changed.

3005: The Safety logbook has identified that a hardware-related safety checksum has changed. An acceptance test is required.

9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

**Remedy:** For fault value = 130:
- carry out safety commissioning routine.

For fault value = 1000:
- check the Safety Integrated Basic Functions (r9780) and adapt the reference checksum (p9799).
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.
- Using STARTER, activate the safety parameters for the drive involved (change settings, copy parameters, activate settings).

For fault value = 2000:
- check the safety parameters on monitoring channel 1 and adapt the reference checksum (p9799).

For fault value = 2001:
- check the safety parameters on monitoring channel 2 and adapt the reference checksum (p9899).

For fault value = 2002:
- check the enable the safety-related functions on both monitoring channels (p9601 = p9801).

For fault value = 2003, 2004, 2005:
- carry out an acceptance test and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated

Note:
The fault with fault value 2005 can only be acknowledged when the "STO" function is deselected.

For fault value = 2010:
- check the enable the safety-related brake control on both monitoring channels (p9602 = p9802).

For fault value = 2020:
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.

For fault value = 3003:
- carry out the function checks for the modified hardware and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated

For fault value = 3005:
- carry out the function checks for the modified hardware and generate an acceptance report.

The fault with fault value 3005 can only be acknowledged when the "STO" function is deselected.

For fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.

Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off

See also:p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

## 201650 <location>SI P1 (CU): Acceptance test required

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on monitoring channel 1 requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
130: Safety parameters for monitoring channel 2 not available.
Note:
This fault value is always output when Safety Integrated is commissioned for the first time.
1000: Reference and actual checksum on monitoring channel 1 are not identical (booting).
- as a result of the changed current controller sampling time (p0115[0]), the clock cycle time for the Safety Integrated Basic Functions (r9780) was adapted.
- at least one checksum-checked piece of data is defective.
- safety parameters set offline and loaded into the Control Unit.
2000: Reference and actual checksum on monitoring channel 1 are not identical (commissioning mode).
- reference checksum on monitoring channel 1 incorrectly entered (p9799 not equal to r9798).
- when deactivating the safety functions, p9501 or p9503 were not deleted.
2001: Reference and actual checksum on monitoring channel 2 are not identical (commissioning mode).
- reference checksum on monitoring channel 2 incorrectly entered (p9899 not equal to r9898).
- when deactivating the safety functions, p9501 or p9503 are not deleted.
2002: Enable of safety-related functions between the two monitoring channels differ (p9601 not equal to p9801).
2003: Acceptance test is required as a safety parameter has been changed.
2004: An acceptance test is required because a project with enabled safety-functions has been downloaded.
2005: The Safety logbook has identified that a functional safety checksum has changed. An acceptance test is required.
2020: Error when saving the safety parameters for the monitoring channel 2.
3003: Acceptance test is required as a hardware-related safety parameter has been changed.
3005: The Safety logbook has identified that a hardware-related safety checksum has changed. An acceptance test is required.
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

**Remedy:** For fault value = 130:
- carry out safety commissioning routine.

For fault value = 1000:
- check the Safety Integrated Basic Functions (r9780) and adapt the reference checksum (p9799).
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.
- Using STARTER, activate the safety parameters for the drive involved (change settings, copy parameters, activate settings).

For fault value = 2000:
- check the safety parameters on monitoring channel 1 and adapt the reference checksum (p9799).

For fault value = 2001:
- check the safety parameters on monitoring channel 2 and adapt the reference checksum (p9899).

For fault value = 2002:
- check the enable the safety-related functions on both monitoring channels (p9601 = p9801).

For fault value = 2003, 2004, 2005:
- carry out an acceptance test and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated
The fault with fault value 2005 can only be acknowledged when the "STO" function is deselected.

For fault value = 2020:
- again carry out safety commissioning routine.
- replace the memory card or Control Unit.

For fault value = 3003:
- carry out the function checks for the modified hardware and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated

For fault value = 3005:
- carry out the function checks for the modified hardware and generate an acceptance report.

The fault with fault value 3005 can only be acknowledged when the "STO" function is deselected.

For fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.

Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off
See also:p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

## 201651 <location>SI P1 (CU): Synchronization safety time slices unsuccessful

**Drive object:** SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The "Safety Integrated" function requires a synchronization of the safety time slices between the two monitoring channels and between the Control Unit and the higher-level control. This synchronization routine was unsuccessful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
121:
- with SINUMERIK Safety Integrated enabled, a drive-side warm restart was performed on the CU/NX.
- with SINUMERIK Safety Integrated enabled, the function "restore factory setting" was selected on a drive object of the CU and a drive-side warm restart was initiated.
150:
- fault in the synchronization to the PROFIBUS master.
All other values:
- only for internal Siemens troubleshooting.
See also:p9510 (SI Motion isochronous PROFIBUS master)

**Remedy:** For fault value = 121:
- carry out a common POWER ON/warm restart for the higher-level control and SINAMICS.
For fault value = 150:
- check the setting of p9510 (SI Motion isochronous PROFIBUS master) and if required, correct.
General:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module/Hydraulic Module software.
- upgrade the Control Unit software.
- upgrade the software of the higher-level control.
Note:
CU: Control Unit
SI: Safety Integrated

## 201651 <location>SI P1 (CU): Synchronization safety time slices unsuccessful

**Drive object:** HLA_840, SERVO_840

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The "Safety Integrated" function requires a synchronization of the safety time slices between the Control Unit and Motor Module and between the Control Unit and the higher-level control. This synchronization routine was unsuccessful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
121:
- with SINUMERIK Safety Integrated enabled, a drive-side warm restart was performed on the CU/NX.
- with SINUMERIK Safety Integrated enabled, the function "restore factory setting" was selected on a drive object of the CU and a drive-side warm restart was initiated.
All other values:
- only for internal Siemens troubleshooting.
See also:p9510 (SI Motion isochronous PROFIBUS master)

**Remedy:** For fault value = 121:
- carry out a common POWER ON/warm restart for the higher-level control and SINAMICS.

General:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- upgrade the software of the higher-level control.

Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

## 201652 <location>SI P1 (CU): Illegal monitoring clock cycle

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the Safety Integrated monitoring clock cycles is not permissible.

- the monitoring clock cycle integrated in the drive cannot be maintained due to the communication conditions required in the system.
- the monitoring clock cycle for safe motion monitoring functions is not permissible (p9500).
- the actual value sensing clock cycle for safe motion monitoring functions is not permissible (p9511).
- the sampling time for the current controller (p0112, p0115[0]) cannot be supported.

Note:

This fault results in a STOP A that cannot be acknowledged.

Fault value (r0949, interpret decimal):

For motion monitoring functions that are not enabled (p9601.2 = p9801.2 = 0, p9501 = 0), the following applies:

- Minimum setting for the monitoring clock cycle (in µs).

For motion monitoring functions that are enabled (p9601.2 = p9801.2 = 1 and/or p9501 > 0), the following applies:

100:

- no matching monitoring clock cycle was able to be found.
- an illegal actual value sensing clock cycle was set for S120M (p9511).

101:

- the monitoring clock cycle is not an integer multiple of the actual value sensing clock cycle.

102:

- An error has occurred when transferring the actual value sensing clock cycle to the Hydraulic Module.

103:

- An error has occurred when transferring the actual value sensing clock cycle to the Sensor Module.

104, 105:

- four times the current controller sampling time (p0115[0]) is greater than 1 ms when operating with a non-isochronous PROFIBUS.
- four times the current controller sampling time (p0115[0]) is greater than the DP clock cycle when operating with an isochronous PROFIBUS.
- the DP clock cycle is not an integer multiple of the sampling time of the current controller (p0115[0]).

106:

- the monitoring clock cycle does not match the monitoring clock cycle of the TM54F.

107:

- the actual value sensing clock cycle (p9511) is less than four times the current controller sampling time (p0115[0]).
- the actual value sensing clock cycle (p9511) is not an integer multiple of the sampling time of the current controller (p0115[0]).

108:

- the parameterized actual value sensing clock cycle cannot be set on this component

111:

- the monitoring clock cycle is not an integer multiple of the sampling time of the current controller (p0115[0]).

112:

- an actual value sensing clock cycle p9511 = 0 is not permissible in this configuration.

202:

- the current controller sampling time is set to zero (p0115[0]).

**Remedy:** For enabled SI monitoring integrated in the drive (p9601/p9801 > 0):

- upgrade the firmware of the Control Unit to a later version.

For enabled motion monitoring function (p9501 > 0):

- correct the monitoring clock cycle (p9500) and carry out POWER ON.

For fault value = 100:

- for S120M, set the actual value sensing clock cycle to p9511 = 0.

For fault value = 101:

- actual value sensing clock cycle corresponds to position control clock cycle/DP clock cycle (factory setting).
- for motion monitoring functions integrated in the drive (p9601/p9801bit 2 = 1) the actual value sensing clock cycle can be directly parameterized in p9511/p9311.

For fault value = 104, 105:

- set a separate actual value sensing clock cycle in p9511.
- restrict operation to a maximum of two vector drives. For the standard setting in p0112, p0115, the current controller sampling time is automatically reduced to 250 µs. If the standard values were changed, then the current controller sampling time (p0112, p0115) should be appropriately set.
- increase the DP clock cycle for operation with an isochronous PROFIBUS so that there is a multiple clock cycle ratio of at least 4:1 between the DP clock cycle and the current controller sampling time. A clock cycle ratio of at least 8:1 is recommended.
- With firmware version 2.5, please ensure that parameter p9510 is set to 1 in the drive (clock cycle synchronous operation).

For fault value = 106:

- set the parameters for the monitoring clock cycles the same (p10000 and p9500/p9300).

For fault value = 107:

- set an actual value sensing clock cycle that matches the current controller clock cycle (p9511 >= 4 * p0115[0], 8 * p0115[0]) is recommended.

Note:

An actual value sensing clock cycle (p9511) that is set too low, can sporadically mean that safety messages C01711/C30711 are output with message value 1020 or 1021.

For fault value = 108:

- set a suitable actual value sensing clock cycle in p9511.
- if the DP clock cycle is used as the actual value sensing clock cycle for operation with isochronous PROFIBUS (p9511 = 0), then a suitable DP clock cycle must be configured. This must be set to less than 8 ms. If this is not possible, then p9511 must be set to the required actual value sensing clock cycle (< 8 ms).
- For SIMOTION D410-2, a suitable multiple of the DP clock cycle (e.g. 1, 2, 3, 4, 5, 6, 8, 10) must be parameterized. Otherwise, the clock cycle must be set to less than 8 ms.

For fault value = 111:

- set the monitoring clock cycle in p9500 as an integer multiple of the sampling time of the current controller (p0115[0]).

For fault value = 112:

- set the actual value sensing clock cycle p9511 to the required value (not equal to zero).

For fault value = 202:

- set the current controller sampling time to a sensible value (p0115[0]).

Note:

CU: Control Unit

SI: Safety Integrated

## 201652 <location>SI P1 (CU): Illegal monitoring clock cycle

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the Safety Integrated monitoring clock cycles is not permissible.

- the monitoring clock cycle integrated in the drive cannot be maintained due to the communication conditions required in the system.
- the monitoring clock cycle for safe motion monitoring functions is not permissible (p9500).
- the actual value sensing clock cycle for safe motion monitoring functions is not permissible (p9511).
- the sampling time for the current controller (p0112, p0115[0]) cannot be supported.

Note:

This fault results in a STOP A that cannot be acknowledged.

Fault value (r0949, interpret decimal):

For motion monitoring functions that are not enabled (p9601.2 = p9801.2 = 0, p9501 = 0), the following applies:

- Minimum setting for the monitoring clock cycle (in µs).

For motion monitoring functions that are enabled (p9601.2 = p9801.2 = 1 and/or p9501 > 0), the following applies:

100:

- no matching monitoring clock cycle was able to be found.
- an illegal actual value sensing clock cycle was set for S120M (p9511).

101:

- the monitoring clock cycle is not an integer multiple of the actual value sensing clock cycle.
- SINAMICS S120M: the monitoring clock cycle (p9500) is not an integer multiple of 2 ms.

102:

- An error has occurred when transferring the actual value sensing clock cycle to the Motor Module.

103:

- An error has occurred when transferring the actual value sensing clock cycle to the Sensor Module.

104, 105:

- four times the current controller sampling time (p0115[0]) is greater than 1 ms when operating with a non-isochronous PROFIBUS.
- four times the current controller sampling time (p0115[0]) is greater than the DP clock cycle when operating with an isochronous PROFIBUS.
- the DP clock cycle is not an integer multiple of the sampling time of the current controller (p0115[0]).

106:

- the monitoring clock cycle does not match the monitoring clock cycle of the TM54F.

107:

- the actual value sensing clock cycle (p9511) is less than four times the current controller sampling time (p0115[0]).
- the actual value sensing clock cycle (p9511) is not an integer multiple of the sampling time of the current controller (p0115[0]).

108:

- the parameterized actual value sensing clock cycle cannot be set on this component

109:

- if the motion monitoring functions have been parameterized as encoderless (p9506), the actual value sensing clock cycle (p9511) and the current controller clock cycle (p0115[0]) must be identical.
- SINAMICS S110: if the motion monitoring functions have been parameterized as encoderless (p9506), the actual value sensing clock cycle p9511 must be = 250 µs.

110:

- the actual value sensing clock cycle (p9511) for safety with encoder (p9506 = 0) is less than 2 ms for this Control Unit (e.g. CU305).

111:

- the monitoring clock cycle is not an integer multiple of the sampling time of the current controller (p0115[0]).

112:

- An actual value sensing clock cycle p9511 = 0 on a drive object of a Double Motor Module is not permissible in the existing configuration.

200, 201:

- S120M: the monitoring clock cycle cannot be maintained as a result of the conditions required in the system.

202:

- the current controller sampling time is set to zero (p0115[0]).

**Remedy:** For enabled SI monitoring integrated in the drive (p9601/p9801 > 0):

- upgrade the firmware of the Control Unit to a later version.

For enabled motion monitoring function (p9501 > 0):

- correct the monitoring clock cycle (p9500) and carry out POWER ON.

For fault value = 100:

- for S120M, set the actual value sensing clock cycle to p9511 = 0.

For fault value = 101:

- actual value sensing clock cycle corresponds to position control clock cycle/DP clock cycle (factory setting).
- for motion monitoring functions integrated in the drive (p9601/p9801bit 2 = 1) the actual value sensing clock cycle can be directly parameterized in p9511/p9311.
- SINAMICS S120M: set the monitoring clock cycle (p9500) to an integer multiple of 2 ms.

For fault value = 104, 105:

- set a separate actual value sensing clock cycle in p9511.
- restrict operation to a maximum of two vector drives. For the standard setting in p0112, p0115, the current controller sampling time is automatically reduced to 250 µs. If the standard values were changed, then the current controller sampling time (p0112, p0115) should be appropriately set.
- increase the DP clock cycle for operation with an isochronous PROFIBUS so that there is a multiple clock cycle ratio of at least 4:1 between the DP clock cycle and the current controller sampling time. A clock cycle ratio of at least 8:1 is recommended.
- With firmware version 2.5, please ensure that parameter p9510 is set to 1 in the drive (clock cycle synchronous operation).

For fault value = 106:

- set the parameters for the monitoring clock cycles the same (p10000 and p9500/p9300).

For fault value = 107:

- set an actual value sensing clock cycle that matches the current controller clock cycle (p9511 >= 4 * p0115[0], 8 * p0115[0]) is recommended.

Note:

An actual value sensing clock cycle (p9511) that is set too low, can sporadically mean that safety messages C01711/C30711 are output with message value 1020 or 1021.

For fault value = 108:

- set a suitable actual value sensing clock cycle in p9511.
- if the DP clock cycle is used as the actual value sensing clock cycle for operation with isochronous PROFIBUS (p9511 = 0), then a suitable DP clock cycle must be configured. This must be set to less than 8 ms. If this is not possible, then p9511 must be set to the required actual value sensing clock cycle (< 8 ms).
- For SIMOTION D410-2, a suitable multiple of the DP clock cycle (e.g. 1, 2, 3, 4, 5, 6, 8, 10) must be parameterized. Otherwise, the clock cycle must be set to less than 8 ms.

For fault value = 109:

- set the actual value sensing clock cycle in p9511 to the same value as the current controller clock cycle (p0115[0]).
- SINAMICS S110: set the actual value sensing clock cycle to p9511 = 250 µs.

For fault value = 110:

- set the actual value sensing clock cycle in p9511 to 2 ms or higher.

For fault value = 111:

- set the monitoring clock cycle in p9500 as an integer multiple of the sampling time of the current controller (p0115[0]).

For fault value = 112:

- set the actual value sensing clock cycle p9511 to the required value (not equal to zero).

For fault value = 200, 201:

- increase the current controller sampling time (p0115[0]).
- if required, reduce the number of components connected to the corresponding DRIVE-CLiQ line, or distribute the components across several DRIVE-CLiQ sockets.

For fault value = 202:

- set the current controller sampling time to a sensible value (p0115[0]).

Note:

CU: Control Unit

MM: Motor Module

SI: Safety Integrated

## 201653 <location>SI P1 (CU): PROFIBUS/PROFINET configuration error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** There is a PROFIBUS/PROFINET configuration error for using Safety Integrated monitoring functions with a higher-level control (SINUMERIK or F-PLC).
Note:
For safety functions that have been enabled, this fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
200: A safety slot for receive data from the control has not been configured.
210, 220: The configured safety slot for the receive data from the control has an unknown format.
230: The configured safety slot for the receive data from the F-PLC has the incorrect length.
231: The configured safety slot for the receive data from the F-PLC has the incorrect length.
240: The configured safety slot for the receive data from the SINUMERIK has the incorrect length.
250: A PROFIsafe slot is configured in the higher-level F control, however PROFIsafe is not enabled in the drive.
300: A safety slot for the send data to the control has not been configured.
310, 320: The configured safety slot for the send data to the control has an unknown format.
330: The configured safety slot for the send data to the F-PLC has the incorrect length.
331: The configured safety slot for the send data to the F-PLC has the incorrect length.
340: The configured safety slot for the send data to the SINUMERIK has the incorrect length.
400: The telegram number in the F-PLC does not match the parameterization in the drive.

**Remedy:** The following generally applies:
- check and, if necessary, correct the PROFIBUS/PROFINET configuration of the safety slot on the master side.
- upgrade the Control Unit software.
For fault value = 250:
- remove the PROFIsafe configuring in the higher-level F control or enable PROFIsafe in the drive.
For fault value = 231, 331:
- in the drive, parameterize the appropriate PROFIsafe telegram (p9611/p9811) to be set on the F-PLC and to be set in p60022.
- Configure the PROFIsafe telegram matching the parameterization (p9611/p9811) in the F-PLC.

## 201654 <location>SI P1 (CU): Deviating PROFIsafe configuration

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The configuration of a PROFIsafe telegram in the higher-level control (F-PLC) does not match the parameterization in the drive.
Note:
This message does not result in a safety stop response.
Alarm value (r2124, interpret decimal):
1:
A PROFIsafe telegram is configured in the higher-level control, however PROFIsafe is not enabled in the drive (p9601.3).
2:
PROFIsafe is parameterized in the drive; however, a PROFIsafe telegram has not been configured in the higher-level control.

**Remedy:** The following generally applies:
- check and, if necessary, correct the PROFIsafe configuration in the higher-level control.

For alarm value = 1:
- remove the PROFIsafe configuring in the higher-level F control or enable PROFIsafe in the drive.

For alarm value = 2:
- configure the PROFIsafe telegram to match the parameterization in the higher-level F-control.

## 201655 <location>SI P1 (CU): Align monitoring functions

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An error has occurred when aligning the Safety Integrated monitoring functions of both monitoring channels. No common set of supported SI monitoring functions was able to be determined.
- there is either a DRIVE-CLiQ communication error or communication has failed.
- Safety Integrated software releases on the Control Unit and Motor Module/Hydraulic Module are not compatible with one another.

Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module/Hydraulic Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance

Note:
CU: Control Unit
SI: Safety Integrated

## 201656 <location>SI CU: Parameter monitoring channel 2 error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When accessing the Safety Integrated parameters for monitoring channel 2 in the non-volatile memory, an error has occurred.

Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
129:
- safety parameters for monitoring channel 2 corrupted.
- drive with enabled safety functions was possibly copied offline using the commissioning tool and the project downloaded.

131: Internal Motor Module/Hydraulic Module software error.
132: Communication errors when uploading or downloading the safety parameters for monitoring channel 2.
255: Internal software error on the Control Unit.

**Remedy:** - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module/Hydraulic Module software.
- replace the memory card or Control Unit.
For fault value = 129:
- activate the safety commissioning mode (p0010 = 95).
- adapt the PROFIsafe address (p9610).
- start the copy function for SI parameters (p9700 = D0 hex).
- acknowledge data change (p9701 = DC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0977 = 1 or "copy RAM to ROM").
- carry out a POWER ON (switch-off/switch-on) for all components.
For fault value = 132:
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
SI: Safety Integrated

## 201657 <location>SI P1 (CU): PROFIsafe telegram number invalid

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** The PROFIsafe telegram number set in p9611 is not valid.
When PROFIsafe is enabled (p9601.3 = 1), then a telegram number greater than zero must be entered in p9611.
Note:
This fault does not result in a safety stop response.
See also:p9611 (SI PROFIsafe telegram selection (Control Unit)), p60022 (PROFIsafe telegram selection)
**Remedy:** Check the telegram number setting (p9611).

## 201658 <location>SI P1 (CU): PROFIsafe telegram number differ

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The PROFIsafe telegram number is set differently in p9611 and p60022.
For p9611 not equal to 998, the following applies:
The telegram number must be identically set in both parameters.
The following applies for p9611 = 998:
As a result of the compatibility to firmware versions < 4.5, then only the values 0 and 30 are permitted in p60022.
Note:
This fault does not result in a safety stop response.
See also:p9611 (SI PROFIsafe telegram selection (Control Unit)), p60022 (PROFIsafe telegram selection)
**Remedy:** Match the telegram number in both parameters so that they are the same (p9611, p60022).

## 201659 <location>SI P1 (CU): Write request for parameter rejected

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The write request for one or several Safety Integrated parameters on the Control Unit (CU) was rejected.

Note:

This fault does not result in a safety stop response.

Fault value (r0949, interpret decimal):

1: The Safety Integrated password is not set.

2: A reset of the drive parameters was selected. However, the Safety Integrated parameters were not reset, as Safety Integrated is presently enabled.

3: The interconnected STO input is in the simulation mode.

10: An attempt was made to enable the STO function although this cannot be supported.

11: An attempt was made to enable the SBC function although this cannot be supported.

12: An attempt was made to enable the SBC function although this cannot be supported for a parallel circuit configuration (r9871.14).

13: An attempt was made to enable the SS1 function although this cannot be supported.

14: An attempt was made to enable the PROFIsafe communication - although this cannot be supported or the version of the PROFIsafe driver used on both monitoring channels is different.

15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.

16: An attempt was made to enable the STO function although this cannot be supported when the internal voltage protection (p1231) is enabled.

17: An attempt was made to enable the PROFIsafe function although this cannot be supported for a parallel circuit configuration.

18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.

19: An attempt was made to enable the SBA (Safe Brake Adapter), although this cannot be supported.

20: An attempt was made to enable the motion monitoring functions integrated in the drive and the STO function, both controlled via F-DI.

21: An attempt was made to enable the motion monitoring functions integrated in the drive for a parallel connection, although these cannot be supported.

22: An attempt was made to enable the Safety Integrated Functions although these cannot be supported by the connected Power Module.

23: For ESR, an attempt was made to enable the delay of STO, although this cannot be supported.

24: An attempt was made to enable the SBC function, although no power unit data set is set for the brake control (p7015 = 99).

25: An attempt was made to parameterize a PROFIsafe telegram although this cannot be supported.

26: With the selected signal source for STO/SS1, an attempt was made to activate the simulation mode.

27: An attempt was made to activate the Basic Functions by controlling via TM54F although this is not supported.

28: An attempt was made to enable the "STO via terminals at the Power Module" function although this cannot be supported.

29: An attempt was made to parameterize the STOP B as stop response for PROFIsafe failure, although this cannot be supported.

9612: An attempt was made to parameterize STOP B as stop response for PROFIsafe failure, although PROFIsafe is not enabled.

See also:p0970, p3900, p9612, r9771, r9871

**Remedy:** For fault value = 1:
- set the Safety Integrated password (p9761).

For fault value = 2:
- inhibit Safety Integrated (p9501, p9601) or reset safety parameters (p0970 = 5), then reset the drive parameters again.

For fault value = 3:
- end the simulation mode for the digital input (p0795).

For fault value = 10, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23, 27:
- check whether there are faults in the safety function alignment between the two monitoring channels (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Motor Module that supports the required function.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 16:
- inhibit the internal voltage protection (p1231).

For fault value = 20:
- correct the enable setting (p9601).

For fault value = 22:
- use a Power Module that supports the Safety Integrated Functions.

For fault value = 24:
- set the power unit data set for the holding brake (p7015).

For fault value = 25:
- use a Power Module that supports the PROFIsafe telegram selection.
- correct the telegram number setting (p9611).

For fault value = 26:
- deactivate the simulation mode for the set signal source for STO/SS1 (p9620) (p0795).

For fault value = 28:
- use the power unit with the feature "STO via terminals at the Power Module".

For fault value = 29:
- use a Motor Module that supports the required function.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- if required, parameterize the stop response for PROFIsafe failure to STOP A (p9612 = p9812 = 0).

For fault value = 33:
- deselect drive integrated motion monitoring without selection (p9601.5, p9801.5) and select safety functions that are supported (see p9771/p9871).
- use a Motor Module that supports the required function.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 9612:
- establish communications with PROFIsafe (p9601).
- parameterize STOP A as the stop response for PROFIsafe failure (p9612 = 0).

Note:
CU: Control Unit
ESR: Extended Stop and Retract
F-DI: Failsafe Digital Input
SBA: Safe Brake Adapter
SBC: Safe Brake Control
SI: Safety Integrated
SS1: Safe Stop 1
STO: Safe Torque Off / SH: Safe standstill
See also:p9501, p9601, p9612, p9620, p9761

## 201659 <location>SI P1 (CU): Write request for parameter rejected

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The write request for one or several Safety Integrated parameters on the Control Unit (CU) was rejected.

Note:

This fault does not result in a safety stop response.

Fault value (r0949, interpret decimal):

1: The Safety Integrated password is not set.

2: A reset of the drive parameters was selected. However, the Safety Integrated parameters were not reset, as Safety Integrated is presently enabled.

3: The interconnected STO input is in the simulation mode.

10: An attempt was made to enable the STO function although this cannot be supported.

13: An attempt was made to enable the SS1 function although this cannot be supported.

14: An attempt was made to enable the PROFIsafe communication - although this cannot be supported or the version of the PROFIsafe driver used on both monitoring channels is different.

15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.

16: An attempt was made to enable the STO function although this cannot be supported when the internal voltage protection (p1231) is enabled.

18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.

23: For ESR, an attempt was made to enable the delay of STO, although this cannot be supported.

25: An attempt was made to parameterize a PROFIsafe telegram although this cannot be supported.

26: With the selected signal source for STO/SS1, an attempt was made to activate the simulation mode.

27: An attempt was made to activate the Basic Functions by controlling via TM54F although this is not supported.

29: An attempt was made to parameterize the fault response for PROFIsafe failure to STOP B although this cannot be supported.

See also:p0970, p3900, p9612, r9771, r9871

**Remedy:** For fault value = 1:
- set the Safety Integrated password (p9761).

For fault value = 2:
- inhibit Safety Integrated (p9501, p9601) or reset safety parameters (p0970 = 5), then reset the drive parameters again.

For fault value = 3:
- end the simulation mode for the digital input (p0795).

For fault value = 10, 11, 12, 13, 14, 15, 17, 18, 19, 21, 22, 23:
- check whether there are faults in the safety function alignment between the two monitoring channels (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Hydraulic Module that supports the required function.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 16:
- inhibit the internal voltage protection (p1231).

For fault value = 25:
- correct the telegram number setting (p9611).

For fault value = 26:
- deactivate the simulation mode for the set signal source for STO/SS1 (p9620) (p0795).

For fault value = 29:
- check whether p9612 and p9812 are set; if required, correct the settings.
- use a Hydraulic Module that supports the required function.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

Note:
CU: Control Unit
ESR: Extended Stop and Retract
SI: Safety Integrated
SS1: Safe Stop 1
STO: Safe Torque Off / SH: Safe standstill
See also:p9501, p9601, p9612, p9620, p9761

## 201660 <location>SI P1 (CU): Safety-related functions not supported

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The Motor Module/Hydraulic Module does not support the safety-related functions (e.g. the Motor Module/Hydraulic Module version is not the correct one). Safety Integrated cannot be commissioned.

Note:
This fault does not result in a safety stop response.

**Remedy:**
- use a Motor Module/Hydraulic Module that supports the safety-related functions.
- upgrade the Motor Module/Hydraulic Module software.

Note:
CU: Control Unit
SI: Safety Integrated

## 201663 <location>SI P1 (CU): Copying the SI parameters rejected

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** In p9700, the value 87 or 208 is saved or was entered offline.
This is the reason that when booting, an attempt is made to copy Safety Integrated parameters from monitoring channel 1 to monitoring channel 2. However, no safety-relevant function has been selected in monitoring channel 1 (p9501 = 0, p9601 = 0). Copying was rejected for safety reasons.
As a consequence, inconsistent parameterization can occur in both monitoring channels, which in turn results in additional error messages.
Especially for inconsistent enabling of the safety functions on both monitoring channels (p9601 = 0, p9801 <> 0), fault F30625 is output.
Note:
This fault does not result in a safety stop response.
SI: Safety Integrated
See also:p9700 (SI Motion copy function)

**Remedy:** - set p9700 to 0.
- check p9501 and p9601 and if required, correct.
- restart the copying function by entering the corresponding value into p9700.
Alternatively, using the STARTER commissioning tool, perform the following steps in the online mode:
- call the "Safety Integrated" screen form (the field "Select safety functions" is at "No Safety Integrated").
- click on "Change settings".
- click on "Activate settings" (as a consequence, Safety Integrated is inhibited on both monitoring channels).
- save all parameters (p0977 = 1 or "copy RAM to ROM").
- carry out a POWER ON (switch-off/switch-on) for all components.

## 201664 <location>SI P1 (CU): No automatic firmware update

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** During booting, the system detected that the "Firmware update automatic" function (p7826 = 1) was not activated.
This function must be activated for automatic firmware updates/downgrades to prevent impermissible version combinations when safety functions are enabled.
Note:
This fault does not result in a safety stop response.
See also:p7826 (Firmware update automatic)

**Remedy:** When safety functions are enabled (p9501 <> 0 and/or p9601 <> 0):
1. Activate the "Firmware update automatic" function (p7826 = 1).
2. Backup the parameters (p0977 = 1) and carry out a POWER ON.
When deactivating the safety functions (p9501 = 0, p9601 = 0), the fault can be acknowledged after exiting the safety commissioning mode.

## 201665 <location>SI P1 (CU): System is defective

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A system defect was detected before the last boot or in the actual one. The system might have been rebooted (reset).
Fault value (r0949, interpret hexadecimal):
200000 hex, 400000 hex, 8000yy hex (yy any):
- fault in the actual booting/operation.
800004 hex:
- parameters p9500/p9300 are, under certain circumstances, not the same. In addition, Safety message C01711/C30711 is displayed.
Additional values:
- defect before the last time that the system booted.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.
For fault value = 200000 hex, 400000 hex, 8000yy hex (yy any):
- ensure that the Control Unit is connected to the Power Module.
For fault value = 800004 hex:
- check that parameters p9500/p9300 are the same.
Note:
PM: Power Module
STO: Safe Torque Off

## 201669 <location>SI Motion: Unfavorable combination of motor and power unit

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The combination of motor and power unit used is not suitable for using safe motion monitoring functions without an encoder.
The ratio between the power unit rated current (r0207[0]) and rated motor current (p0305) is greater than 5.
Alarm value (r2124, interpret decimal):
Number of the motor data set, which caused the fault.
Notice:
If this alarm is not observed, then message C01711 or C30711 – with the value 1041 ... 1044 – can sporadically occur.
**Remedy:** Use a suitable power unit with a lower power rating or a motor with a higher power rating.

## 201670 <location>SI Motion: Invalid parameterization Sensor Module

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameterization of a Sensor Module used for Safety Integrated is not permissible.

Note:

This fault results in a STOP A that cannot be acknowledged.

Fault value (r0949, interpret decimal):

1: No encoder was parameterized for Safety Integrated.

2: An encoder was parameterized for Safety Integrated that does not have an A/B track (sine/cosine).

3: The encoder data set selected for Safety Integrated is still not valid.

4: A communication error with the encoder has occurred.

5: Number of relevant bits in the encoder coarse position invalid.

6: DRIVE-CLiQ encoder configuration invalid.

7: Non-safety relevant component of the encoder coarse position for the linear DRIVE-CLiQ encoder not valid.

8: Parameterized Safety comparison algorithm not supported.

9: Relationship between the grid division and measuring step for linear DRIVE-CLiQ encoder is not binary.

10: For an encoder used for Safety Integrated, not all of the Drive Data Sets (DDS) are assigned to the same Encoder Data Set (EDS) (p0187 ... p0189).

11: The zero point setting of a linear DRIVE-CLiQ encoder used in Safety Integrated is not zero.

12: The second encoder is not parameterized (p9526 = 1 is not permissible).

13: Hydraulic Module: A second encoder has not been parameterized and a DRIVE-CLiQ encoder is not being used.

14: SCSE encoder is used in conjunction with an HTL/TTL encoder, another SCSE encoder or in a 1-encoder system.

**Remedy:** For fault value = 1, 2:

- use and parameterize an encoder that Safety Integrated supports (encoder with track A/B sine-wave, p0404.4 = 1).

For fault value = 3:

- check whether the drive or drive commissioning function is active and if required, exit this (p0009 = p00010 = 0), save the parameters (p0971 = 1) and carry out a POWER ON

For fault value = 4:

- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Sensor Module involved and if required, carry out a diagnostics routine for the faults identified.

For fault value = 5:

- p9525 = 0 (not permissible). Check the encoder parameterization on the Sensor Modules involved.

For fault value = 6:

- check p9515.0 (for DRIVE-CLiQ encoders, the following applies: p9515.0 = 1). Check the encoder parameterization on the Sensor Modules involved.

For fault value = 7:

- p12033 for an encoder used for Safety Integrated is not equal to 1. Use a linear DRIVE-CLiQ encoder and parameterize for p12033 = 1.

For fault value = 8:

- check p9541. Use and parameterize an encoder that implements an algorithm supported by Safety Integrated.

For fault value = 9:

- check p9514 and p9522. Use an encoder and parameterize, where the ratio between p9514 and p9522 is binary.

For fault value = 10:

- align the EDS assignment of all of the encoders used for Safety Integrated (p0187 ... p0189).

For fault value = 11:

- use and parameterize a linear DRIVE-CLiQ encoder, where the zero point setting is equal to 0.

For fault value = 12:

- parameterize an encoder for the second channel (p9526 > 1).

For fault value = 13:

- parameterize a second encoder or use a DRIVE-CLiQ encoder.

For fault value = 14:

- use a DRIVE-CLiQ encoder for channel 1 in conjunction with an SCSE encoder for channel 2.

Note:

SCSE: Single Channel Safety Encoder (single-channel encoder)

SI: Safety Integrated

## 201671 <location>SI Motion: Parameterization encoder error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameterization of the encoder used by Safety Integrated is different to the parameterization of the standard encoder.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Parameter number of the non-corresponding safety parameter.

**Remedy:** Align the encoder parameterization between the safety encoder and the standard encoder.
Note:
SI: Safety Integrated

## 201672 <location>SI P1 (CU): Motor Module software/hardware incompatible

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The existing Hydraulic Module software does not support safe motion monitoring or is not compatible to the software on the Control Unit or there is a communications error between the Control Unit and Hydraulic Module.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
1:
The existing Hydraulic Module software does not support the safe motion monitoring function.
2, 3, 6, 8:
There is a communications error between the Control Unit and Hydraulic Module.
4, 5, 7:
The existing Hydraulic Module software is not compatible to the software on the Control Unit.

**Remedy:** - check whether there are faults in the safety function alignment between the Control Unit and the Hydraulic Module involved (F01655, F30655) and if required, carry out diagnostics for the faults involved.
For fault value = 1:
- use a Hydraulic Module that supports safe motion monitoring.
For fault value = 2, 3, 6, 8:
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Hydraulic Module involved and, if required, carry out a diagnostics routine for the faults identified.
For fault value = 4, 5, 7:
- upgrade the Hydraulic Module software.
Note:
SI: Safety Integrated
HM: Hydraulic Module.

## 201672 <location>SI P1 (CU): Motor Module software/hardware incompatible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The existing Motor Module software does not support safe motion monitoring or is not compatible to the software on the Control Unit or there is a communications error between the Control Unit and Motor Module.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
1:
The existing Motor Module software does not support the safe motion monitoring function.
2, 3, 6, 8:
There is a communications error between the Control Unit and Motor Module.
4, 5, 7:
The existing Motor Module software is not compatible to the software on the Control Unit.
9, 10, 11, 12:
The existing Motor Module software does not support the safe encoderless motion monitoring function.
13:
At least one Motor Module in parallel operation does not support the safe motion monitoring function.

**Remedy:** - check whether there are faults in the safety function alignment between the Control Unit and the Motor Module involved (F01655, F30655) and if required, carry out diagnostics for the faults involved.
For fault value = 1:
- use a Motor Module that supports safe motion monitoring.
For fault value = 2, 3, 6, 8:
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.
For fault value = 4, 5, 7, 9, 13:
- upgrade the Motor Module software.
Note:
SI: Safety Integrated

## 201673 <location>SI Motion: Sensor Module software/hardware incompatible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The existing Sensor Module software and/or hardware does not support the safe motion monitoring function with the higher-level control.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - upgrade the Sensor Module software.
- use a Sensor Module that supports the safe motion monitoring function.
Note:
SI: Safety Integrated

## 201674 <location>SI Motion P1 (CU): Safety function not supported by PROFIsafe telegram

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON

**Cause:** The monitoring function enabled in p9501 and p9601 is not supported by the currently set PROFIsafe telegram (p9611).
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret bitwise binary):
Bit 4 = 1:
SS2ESR via PROFIsafe is not supported (p9501.4).
Bit 18 = 1:
SS2E via PROFIsafe is not supported (p9501.18).
Bit 24 = 1:
Transfer SLS (SG) limit value via PROFIsafe not supported (p9501.24).
Bit 25 = 1:
Transfer safe position (SP) via PROFIsafe is not supported (p9501.25).
Bit 26 = 1:
Gearbox stage switchover via PROFIsafe is not supported (p9501.26).
Bit 28 = 1:
SCA via PROFIsafe is not supported (p9501.28).

**Remedy:** - Deselect the monitoring function involved (p9501, p9601).
- set the matching PROFIsafe telegram (p9611).
Note:
SCA: Safe Cam
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SP: Safe Position
SS2E: Safe Stop 2 External (Safe Stop 2 with external stop, external STOP D)
SS2ESR: Safe Stop 2 Extended Stop and Retract

## 201675 <location>SI Motion P1: settings in the PROFIBUS/PROFINET controller not permissible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the "Safe synchronous position via PROFIsafe" function, an incorrect configuration setting was identified.
Note:
This fault results in a STOP A that can be acknowledged in the following way.
- select STO and then deselect again.
- internal event acknowledge (if the "Extended message acknowledgment" is active, p9507.0 = 1).
Fault value (r0949, interpret decimal):
1:
"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1) and is not set according to the rule Tdp = 2 x n x p9500 (n = 1, 2, 3, ...).
2:
"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1) and isochronous operation is not set.
Note:
STO: Safe Torque Off

**Remedy:** For fault value = 1:
- set bus cycle time Tdp and monitoring clock cycle p9500 according to the rule Tdp = 2 x n x p9500 (n = 1, 2, 3, ...).
For fault value = 2:
- set "Isochronous mode" on the PROFIBUS/PROFINET controller.

## 201679 <location>SI CU: Safety parameter settings and topology changed, warm restart/POWER ON required

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (OFF1, OFF3)

**Acknowledge:** POWER ON

**Cause:** Safety parameters have been changed; these will only take effect following a warm restart or POWER ON (see alarm A01693).

A partial power up (boot) with modified configuration was then performed.

**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).

- carry out a POWER ON (switch-off/switch-on) for all components.

## 201680 <location>SI Motion P1 (CU): Checksum error safety monitoring functions

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The actual checksum calculated by the drive and entered in r9728 via the safety-relevant parameters does not match the reference checksum saved in p9729 at the last machine acceptance.

Safety-relevant parameters have been changed or a fault is present.

Note:

This fault results in a STOP A that can be acknowledged.

Fault value (r0949, interpret decimal):

0: Checksum error for SI parameters for motion monitoring.

1: Checksum error for SI parameters for actual values.

2: Checksum error for SI parameters for component assignment.

**Remedy:** - check the safety-relevant parameters and if required, correct.

- execute the function "Copy RAM to ROM".
- perform a POWER ON if safety parameters requiring a POWER ON have been modified.
- carry out an acceptance test.

## 201681 <location>SI Motion P1 (CU): Incorrect parameter value

**Drive object:** HLA_840, HLA_DBSI

**Message value:** Parameter: %1, supplementary information: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be parameterized with this value.

Note:

This message does not result in a safety stop response.

Fault value (r0949, interpret decimal):

yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter

yyyy = 0:

No additional information available.

xxxx = 9500 and yyyy = 1:

Parameter p9500 is not equal to p9300 or not an integer multiple of the sampling time of the current controller (p0115[0]).

xxxx = 9500 and yyyy = 16:

"Synchronous safe position via PROFIsafe" is enabled on several axes (p9501.29 = 1), and the monitoring clock cycle p9500 is set differently for these axes.

It is possible that the maximum permissible number of axes for the "Synchronous safe position via PROFIsafe" has been exceeded.

xxxx = 9501:

It is not permissible to enable the function "n < nx hysteresis and filtering" (p9501.16) in conjunction with the function "Extended functions without selection" (p9601.5).

xxxx = 9501 and yyyy = 8:

Referencing via SCC (p9501.27 = 1) is enabled without enabling absolutes motion monitoring functions (p9501.1 or p9501.2).

xxxx = 9501 and yyyy = 10:

Referencing via SCC (p9501.27 = 1) and EPOS (r0108.4 = 1) are simultaneously

enabled.

xxxx = 9501 and yyyy = 11:

Safe function SS2E (p9501.18 = 1) is enabled without enabling PROFIsafe.

xxxx = 9501 and yyyy = 12:

SCA (p9501.28 = 1) is enabled without enabling PROFIsafe.

xxxx = 9501 and yyyy = 14:

"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1), without enabling "Safe position via PROFIsafe" (p9501.25).

xxxx = 9501 and yyyy = 17:

"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1) and "Safety without encoder" is enabled (p9506).

xxxx = 9501 and yyyy = 19:

SLA (p9501.20 = 1) is enabled with encoderless actual value sensing (p9506 equal to 1 or 3).

xxxx = 9501 and yyyy = 20:

SLA (p9501.20 = 1) is enabled with a 2-encoder system (p9526 not equal to 1).

xxxx = 9511 and yyyy = 1:

Parameter p9511 is not equal to p9311.

xxxx = 9511 and yyyy = 2:

Between the drive objects no different values in p9511 and p0115[0] are permitted.

xxxx = 9522:

The gear stage was set too high.

xxxx = 9534 or 9535:

The limit values of SLP have been set too high (absolute values).

xxxx = 9544:

For linear axes, the maximum value is limited to 1 mm.

xxxx = 9547:

Parameter p9547 has been set too low.

xxxx = 9573:

"Referencing via Safety Control Channel" was requested (p9573 = 263), without enabling the function "Referencing via SCC" (p9501.27 = 0).

xxxx = 9578:

SLA is enabled (p9501.20 = 1). Acceleration limit is too low (p9578). The acceleration resolution is no longer sufficient (r9790).

The minimum limit is x-times the acceleration resolution:

- firmware version 5.1: 3 * r9790[0]

- firmware version 5.2 and higher: 10 * r9790[1]

xxxx = 9601 and yyyy = 1:

If motion monitoring functions integrated in the drive (p9601.2 = 1) and extended functions without selection (p9601.5 = 1) are activated, then PROFIsafe (p9601.3 = 1) is not possible.

xxxx = 9601 and yyyy = 2:

Extended functions without selection (p9601.5 =1) are enabled without enabling motion monitoring functions integrated in the drive (p9601.2).

xxxx = 9601 and yyyy = 5:

Transfer of the SLS limit value via PROFIsafe (p9501.24) has been enabled, without enabling PROFIsafe.

xxxx = 9601 and yyyy = 6:

Transfer of the safe position via PROFIsafe (p9501.25) has been enabled, without enabling PROFIsafe.

xxxx = 9601 and yyyy = 7:

Safe switchover of the gearbox stages (p9501.26) has been enabled without enabling PROFIsafe.

xxxx = 9601 and yyyy = 18:

SLA (p9501.20 = 1) is enabled without enabling PROFIsafe.

xxxx = 9601 and yyyy = 21:

SS2ESR (p9501.4 = 1) is enabled without enabling PROFIsafe.

**Remedy:** Correct parameter (if required, also on another monitoring channel, p9801).

If xxxx = 9500 and yyyy = 1:

- set p9500 "SI Motion monitoring clock cycle" as an integer multiple of p0115[0] "Current controller sampling time".
- align parameters 9300 and 9500, backup parameters (p0971 = 1) and carry out a POWER ON.

For xxxx = 9500 and yyyy = 16:

Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or set monitoring clock cycle p9500 on all axes the same when the function is enabled.

If xxxx = 9501:

- correct parameters p9501.16 and p9301.16, or deselect the extended functions without selection (p9601.5).

If xxxx = 9501 and yyyy = 8:

Inhibit referencing via SCC (p9501.27) or enable an absolute motion monitoring function (p9501.1 or p9501.2).

If xxxx = 9501 and yyyy = 10:

Inhibit referencing via SCC (p9501.27) or EPOS (r0108.4).

For xxxx = 9501 and yyyy = 11:

Inhibit SS2E (p9501.18) - or enable PROFIsafe.

For xxxx = 9501 and yyyy = 12:

Inhibit SCA (p9501.28) - or enable PROFIsafe.

For xxxx = 9501 and yyyy = 14:

Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or enable "Safe position via PROFIsafe" (p9501.25).

For xxxx = 9501 and yyyy = 17:

Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or set "Safety with encoder" (p9506).

For xxxx = 9501 and yyyy = 19:

Inhibit SLA (p9501.20) or activate actual value sensing with encoder (p9506 equal to 0 or 2).

For xxxx = 9501 and yyyy = 20:

Inhibit SLA (p9501.20) or activate a 1-encoder system (p9526 equal to 5).

For xxxx = 9511:

Align parameters p9311 and p9511, back up the parameters (p0971 = 1) and carry out a POWER ON.

For xxxx = 9517:

Parameter p9516.0 should also be checked.

For xxxx = 9522:

Correct the corresponding parameter.

For xxxx = 9534 or 9535:

Reduce the limit values (absolute values) of SLP.

For xxxx = 9544:

Correct parameter (for linear axes, the maximum value is limited to 1 mm).

For xxxx = 9547:

With hysteresis/filtering enabled (p9501.16 = 1), the following applies:

- set parameters p9546/p9346 and p9547/p9347 according to the following rule: p9546 >= 2 x p9547; p9346 >= 2 x p9347
- if the actual value synchronization is enabled (p9501.3 = 1), then this rule must be complied with: p9549 <= p9547; p9349 <= p9347

For xxxx = 9578:

- observe the information in r9790.

If xxxx = 9601:

yyyy = 1:

Only enable motion monitoring functions integrated in the drive (p9601.2 = 1) and extended functions without selection (p9601.5 = 1) – or only PROFIsafe (p9601.3 = 1).

yyyy = 2:

Enable motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 5:

To transfer the SLS limit values via PROFIsafe (p9501.24 = 1), also enable PROFIsafe (p9601.3 =1) and motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 6:

For the safe position via PROFIsafe (p9501.25 = 1), also enable PROFIsafe (p9601.3 =1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 7:

For safe switchover of gearbox stages (p9501.26 = 1) also enable PROFIsafe (p9601.3 =1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 18:

For Safely-Limited Acceleration (p9501.20 = 1), also enable PROFIsafe (p9601.3 = 1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 21:

For Safe Stop 2 Extended Stop and Retract (p9501.4), also enable PROFIsafe (p9601.3 = 1) and motion monitoring functions integrated in the drive (p9601.2 = 1).

## 201681 <location>SI Motion P1 (CU): Incorrect parameter value

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1, supplementary information: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be parameterized with this value.

Note:

This message does not result in a safety stop response.

Fault value (r0949, interpret decimal):

yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter

yyyy = 0:

No additional information available.

xxxx = 9500 and yyyy = 1:

Parameter p9500 is not equal to p9300 or not an integer multiple of the sampling time of the current controller (p0115[0]).

xxxx = 9500 and yyyy = 16:

"Synchronous safe position via PROFIsafe" is enabled on several axes (p9501.29 = 1), and the monitoring clock cycle p9500 is set differently for these axes.

It is possible that the maximum permissible number of axes for the "Synchronous safe position via PROFIsafe" has been exceeded.

xxxx = 9501:

It is not permissible to enable the function "n < nx hysteresis and filtering" (p9501.16) in conjunction with the function "Extended functions without selection" (p9601.5).

xxxx = 9501 and yyyy = 8:

Referencing via SCC (p9501.27 = 1) is enabled without enabling an absolute motion monitoring function (p9501.1 or p9501.2).

xxxx = 9501 and yyyy = 10:

Referencing via SCC (p9501.27 = 1) and EPOS (r0108.4 = 1) are simultaneously enabled.

xxxx = 9501 and yyyy = 14:

"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1), without enabling "Safe position via PROFIsafe" (p9501.25).

xxxx = 9501 and yyyy = 17:

"Synchronous safe position via PROFIsafe" is enabled (p9501.29 = 1) and "Safety without encoder" is enabled (p9506).

xxxx = 9501 and yyyy = 19:

SLA (p9501.20 = 1) is enabled with encoderless actual value sensing (p9506 equal to 1 or 3).

xxxx = 9501 and yyyy = 20:

SLA (p9501.20 = 1) is enabled with a 2-encoder system (p9526 not equal to 1).

xxxx = 9505:

When SLP is active (p9501.1 = 1), the modulo function is activated and this is not permitted (p9505 not equal to 0).

xxxx = 9506 and yyyy = 1:

Parameter p9506 is not equal to p9306.

xxxx = 9511 and yyyy = 1:

Parameter p9511 is not equal to p9311.

xxxx = 9511 and yyyy = 2:

On a Double Motor Module, between the drive objects, no different values in p9511 and p0115[0] is permitted.

xxxx = 9319:

The fine resolution of the encoder for the second channel is too high.

xxxx = 9522:

The gear stage was set too high.

xxxx = 9534 or 9535:

The limit values of SLP have been set too high (absolute values).

xxxx = 9544:

For linear axes, the maximum value is limited to 1 mm.

xxxx = 9547:

The hysteresis tolerance is not permissible.

xxxx = 9573:

"Referencing via Safety Control Channel" was requested (p9573 = 263), without enabling the function "Referencing via SCC" (p9501.27 = 0).

xxxx = 9576:

The filtering for SLA has been enabled - however, the Motor Module used does not support this function.

xxxx = 9578:

SLA is enabled (p9501.20 = 1). Acceleration limit is too low (p9578). The acceleration resolution is no longer sufficient (r9790).

The minimum limit is x-times the acceleration resolution:

- firmware version 5.1: 3 * r9790[0]

- firmware version 5.2 and higher: 10 * r9790[1]

xxxx = 9585:

For Safety without encoder and synchronous motor, p9585 must be set to 4.

xxxx = 9601 and yyyy = 1:

If motion monitoring functions integrated in the drive (p9601.2 = 1) and extended functions without selection (p9601.5 = 1) are enabled, then PROFIsafe (p9601.3 = 1) or onboard F-DI (p9601.4 = 1) is not possible.

xxxx = 9601 and yyyy = 2:

Extended functions without selection (p9601.5 =1) are enabled without enabling motion monitoring functions integrated in the drive (p9601.2).

xxxx = 9601 and yyyy = 3:

Onboard F-DI are enabled without enabling motion monitoring functions integrated in the drive (p9601.2).

xxxx = 9601 and yyyy = 4:

Onboard F-DI are enabled. Then, it is not permissible to simultaneously set PROFIsafe and F-DI via PROFIsafe (p9501.30).

xxxx = 9601 and yyyy = 5:

Transfer of the SLS limit value via PROFIsafe (p9501.24) has been enabled, without enabling PROFIsafe.

xxxx = 9601 and yyyy = 6:

Transfer of the safe position via PROFIsafe (p9501.25) has been enabled, without enabling PROFIsafe.

xxxx = 9601 and yyyy = 7:

Safe switchover of the gearbox stages (p9501.26) has been enabled without enabling PROFIsafe.

xxxx = 9601 and yyyy = 11:

SS2E (p9501.18 = 1) is enabled without PROFIsafe being enabled.

xxxx = 9601 and yyyy = 12:

SCA (p9501.28 = 1) is enabled without enabling PROFIsafe.

xxxx = 9601 and yyyy = 18:

SLA (p9501.20 = 1) is enabled without enabling PROFIsafe.

xxxx = 9601 and yyyy = 21:

SS2ESR (p9501.4 = 1) is enabled without enabling PROFIsafe.

**Remedy:** Correct parameter (if required, also on another monitoring channel, p9801).
If xxxx = 9500 and yyyy = 1:
- set p9500 "SI Motion monitoring clock cycle" as an integer multiple of p0115[0] "Current controller sampling time".
- align parameters 9300 and 9500, backup parameters (p0971 = 1) and carry out a POWER ON.
For xxxx = 9500 and yyyy = 16:
Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or set monitoring clock cycle p9500 on all axes the same when the function is enabled.
If xxxx = 9501:
- correct parameters p9501.16 and p9301.16, or deselect the extended functions without selection (p9601.5).
If xxxx = 9501 and yyyy = 8:
Inhibit referencing via SCC (p9501.27) or enable an absolute motion monitoring function (p9501.1 or p9501.2).
If xxxx = 9501 and yyyy = 10:
Inhibit referencing via SCC (p9501.27) or EPOS (r0108.4).
For xxxx = 9501 and yyyy = 11:
Inhibit SS2E (p9501.18) - or enable PROFIsafe.
For xxxx = 9501 and yyyy = 12:
Inhibit SCA (p9501.28) - or enable PROFIsafe.
For xxxx = 9501 and yyyy = 14:
Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or enable "Safe position via PROFIsafe" (p9501.25).
For xxxx = 9501 and yyyy = 17:
Inhibit "Synchronous safe position via PROFIsafe" function (p9501.29 = 0), or set "Safety with encoder" (p9506).
For xxxx = 9501 and yyyy = 19:
Inhibit SLA (p9501.20) or activate actual value sensing with encoder (p9506 equal to 0 or 2).
For xxxx = 9501 and yyyy = 20:
Inhibit SLA (p9501.20) or activate a 1-encoder system (p9526 equal to 1).
For xxxx = 9505:
Correct parameter p9501.1 or p9505.
For xxxx = 9507:
Set synchronous or induction motor according to p0300.
For xxxx = 9506:
Align parameters p9306 and p9506, back up the parameters (p0971 = 1) and carry out a POWER ON.
For xxxx = 9511:
Align parameters p9311 and p9511, back up the parameters (p0971 = 1) and carry out a POWER ON.
For xxxx = 9517:
Parameter p9516.0 should also be checked.
For xxxx = 9319:
For the SCSE encoder, parameter p9319 must not be set higher than 11.
For xxxx = 9522:
Correct the corresponding parameter.
For xxxx = 9534 or 9535:
Reduce the limit values (absolute values) of SLP.
For xxxx = 9544:
Correct parameter (for linear axes, the maximum value is limited to 1 mm).
For xxxx = 9547:
With hysteresis/filtering enabled (p9501.16 = 1), the following applies:
- set parameters p9546 and p9547 according to the following rule: p9547 <= 0.75 x p9546
- if the actual value synchronization is enabled (p9501.3 = 1), then this rule must be complied with: p9547 >= p9549
For xxxx = 9576:
- update the firmware on the Motor Module.
- deselect function with value 0.
For xxxx = 9578:
- observe the information in r9790.

For xxxx = 9585:

Correct parameter (if required, also on the second monitoring channel, p9385).

If xxxx = 9601:

yyyy = 1:

Only enable motion monitoring functions integrated in the drive (p9601.2 = 1) and extended functions without selection (p9601.5 = 1), or only enable PROFIsafe (p9601.3 = 1) or only onboard F-DI (p9601.4 = 1).

yyyy = 2, 3:

Enable motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 4:

If onboard F-DI are enabled, then it is not permissible to simultaneously set PROFIsafe and F-DI via PROFIsafe (p9501.30), deselect PROFIsafe functionality or onboard F-DI.

yyyy = 5:

To transfer the SLS limit values via PROFIsafe (p9501.24 = 1), also enable PROFIsafe (p9601.3 =1) and motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 6:

For the safe position via PROFIsafe (p9501.25 = 1), also enable PROFIsafe (p9601.3 =1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 7:

For safe switchover of gearbox stages (p9501.26 = 1) also enable PROFIsafe (p9601.3 =1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 18:

For Safely-Limited Acceleration (p9501.20 = 1), also enable PROFIsafe (p9601.3 = 1) and the motion monitoring functions integrated in the drive (p9601.2 = 1).

yyyy = 21:

For Safe Stop 2 Extended Stop and Retract (p9501.4), also enable PROFIsafe (p9601.3 = 1) and motion monitoring functions integrated in the drive (p9601.2 = 1).

Note:

SCA: Safe Cam

SCSE: Single Channel Safety Encoder (single-channel encoder)

SS2E: Safe Stop 2 External (Safe Stop 2 with external stop, external STOP D)

SS2ESR: Safe Stop 2 Extended Stop and Retract

SLA: Safely-Limited Acceleration

## 201682 <location>SI Motion P1 (CU): Monitoring function not supported

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The monitoring function enabled in p9501, p9601 or p9801 is not supported in this firmware version.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
2: Monitoring function SCA not supported (p9501.7 and p9501.8 ... 15 and p9503).
3: Monitoring function SLS override not supported (p9501.5).
6: Enable actual value synchronization not supported (p9501.3).
9: Monitoring function not supported by the firmware or enable bit not used.
13: SINUMERIK Safety Integrated with SPL on a Hydraulic Module is not supported.
14: Monitoring function SLA and ncSI not supported.
20: Motion monitoring functions integrated in the drive are only supported in conjunction with PROFIsafe (p9501, p9601.1 ... 2 and p9801.1 ... 2).
21: Enable a safe motion monitoring function (in p9501), not supported for enabled basic functions via PROFIsafe (p9601.2 = 0, p9601.3 = 1).
45: Deactivating SOS/SLS during an external STOP A is not supported (p9501.23).
46: This firmware version does not support control of the basis functions via TM54F and the simultaneous enable of the extended functions or ncSI.
50: Switchover times for SOS (p9569/p9369, p9567/p9367) are not supported.
53: SS2E function not supported (p9501.18).
54: SCA function not supported (p9501.28).
57: "Synchronous transfer safe position" function not supported (p9501.29).
58: "Safety limited acceleration" function (SLA) not supported (p9501.20).
9612: The setting p9612/p9812 = 1 is not supported for control via TM54F.
See also:p9612 (SI PROFIsafe failure response (Control Unit))

**Remedy:** - deselect the monitoring function involved (p9501, p9601, p9801).
For fault value = 9612:
- set parameter p9612/p9812 = 0.
Note:
ESR: Extended Stop and Retract
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
SPL: Safe programmable logic
SS2E: Safety Stop 2 external (external STOP D)
See also:p9501, p9503, p9601, p9612, r9771

## 201682 <location>SI Motion P1 (CU): Monitoring function not supported

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The monitoring function enabled in p9501, p9601, p9801, p9307 or p9507 is not supported in this firmware version.

Note:

This fault results in a STOP A that cannot be acknowledged.

Fault value (r0949, interpret decimal):

1: Monitoring function SLP not supported (p9501.1).

2: Monitoring function SCA not supported (p9501.7 and p9501.8 ... 15 and p9503).

3: Monitoring function SLS override not supported (p9501.5).

4: Monitoring function external ESR activation not supported (p9501.4).

5: Monitoring function F-DI in PROFIsafe not supported (p9501.30).

6: Enable actual value synchronization not supported (p9501.3).

9: Monitoring function not supported by the firmware or enable bit not used.

10: Monitoring functions only supported for a SERVO drive object.

11: Encoderless monitoring functions (p9506.1) only supported for motion monitoring integrated in the drive (p9601.2).

12: Monitoring functions for ncSI are not supported for CU305.

14: Monitoring function SLA and ncSI not supported.

20: Motion monitoring functions integrated in the drive are only supported in conjunction with PROFIsafe (p9501, p9601.1 ... 2 and p9801.1 ... 2).

21: Enable a safe motion monitoring function (in p9501), not supported for enabled basic functions via PROFIsafe (p9601.2 = 0, p9601.3 = 1).

22: Encoderless monitoring functions in "chassis" format not supported.

23: CU240 does not support monitoring functions requiring an encoder.

24: Monitoring function SDI not supported (p9501.17).

25: Drive-integrated motion monitoring functions not supported (p9501, p9601.2).

26: Hysteresis and filtering for SSM monitoring function without an encoder not supported (p9501.16).

27: This hardware does not support onboard F-DI and F-DO.

28: Encoderless monitoring functions are not supported for synchronous motors (p9507.2).

29: SINAMICS S120M: Safety Extended Functions without encoder not supported.

31: This hardware does not support transfer SLS (SG) limit value via PROFIsafe (p9301/p9501.24).

33: Safety functions without selection not supported (p9601.5, p9801.5).

34: This module does not support safe position via PROFIsafe.

36: Function "SS1E" not supported.

37: Safe actual value sensing with HTL/TTL encoder (SMC30) not supported.

38: It is not permissible to simultaneously enable the safety functions (p9601) and the essential service mode (ESM, Essential Service Mode, p3880).

39: This module or software version of the CU/MM does not support safe gearbox stage switchover (p9501.26).

40: SIMOTION D410-2: Motion monitoring functions integrated in the drive or PROFIsafe control not supported.

41: SIMOTION D410-2: Safety functions not supported for the "Chassis" format.

42: Motion monitoring functions SLP and SP not supported for D4x5-2 and CX32-2 (p9501.1/25).

43: Motion monitoring functions SLP and SP as well as PROFIsafe telegrams 31/901/902 not supported for D410-2 (p9501.1/24/25/30, p9611).

44: This module/this software version does not support referencing via the Safety Control Channel (p9501.27).

45: Deactivating SOS/SLS during an external STOP A is not supported (p9501.23).

46: This firmware version does not support control of the basis functions via TM54F and the simultaneous enable of the extended functions or ncSI or PROFIsafe.

50: Shortening the switchover times for SOS (p9569/p9369, p9567/p9367) is not supported.

51: Safe actual value sensing with SCSE is not supported for dbSi (motion monitoring functions integrated in the drive, p9601.2 = 1).

52: "SBR with encoder" function is not supported (p9506 = 2).

53: SS2E function not supported (p9501.18).

54: SCA function not supported (p9501.28).

57: "Synchronous transfer safe position via PROFIsafe" function not supported (p9501.29).

58: "Safety limited acceleration" function (SLA) not supported (p9501.20).

59: Safe actual value sensing with SIL3 encoder not supported.

9586: The set value of p9586/p9386 is greater than the supported maximum value.
9588: The set value of p9588/p9388 is greater than the supported maximum value.
9589: The set value of p9589/p9389 is greater than the supported maximum value.
9612: An attempt was made to parameterize STOP B as stop response for PROFIsafe failure, although PROFIsafe is not enabled.
See also:p9612 (SI PROFIsafe failure response (Control Unit))

**Remedy:** - deselect the monitoring function involved (p9501, p9503, p9506, p9601, p9801, p9307, p9507).
- reduce the set value (p9586, p9588, p9589).
- increase the set value (p9578).
For fault value = 59:
- upgrade the firmware of the Motor Module to a later version.
For fault value = 9612:
- establish communications with PROFIsafe (p9601).
- parameterize STOP A as the stop response for PROFIsafe failure (p9612 = 0).
Note:
ESR: Extended Stop and Retract
SBR: Safe Brake Ramp (safe brake ramp monitoring)
SCA: Safe Cam / SN: Safe software cam
SCSE: Single Channel Safety Encoder (single-channel encoder)
SDI: Safe Direction (safe motion direction)
SLA: Safely-Limited Acceleration
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
SP: Safe Position
SPL: Safe programmable logic
SS1E: Safe Stop 1 External (Safe Stop 1 with external stop)
SS2E: Safe Stop 2 External (Safe Stop 2 with external stop, external STOP D)
See also:p9501, p9503, p9601, p9612, r9771

## 201683 <location>SI Motion P1 (CU): SOS/SLS enable missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The safety-relevant basic function "SOS/SLS" is not enabled in p9501 although other safety-relevant monitoring functions are enabled.
Note:
This fault does not result in a safety stop response.

**Remedy:** Enable the function "SOS/SLS" (p9501.0) and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
See also:p9501 (SI Motion enable safety functions (Control Unit))

## 201684 <location>SI Motion P1 (CU): Safely-Limited Position limit values interchanged

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the function "Safely-Limited Position" (SLP), a lower value is in p9534 than in p9535.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
1: Limit values SLP1 interchanged.
2: Limit values SLP2 interchanged.
See also:p9534, p9535

**Remedy:** - correct the lower and upper limit values (p9535, p9534).
- carry out a POWER ON (switch-off/switch-on).
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches

## 201685 <location>SI Motion P1 (CU): Safely-Limited Speed limit value too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The limit value for the function "Safely-Limited Speed" (SLS) is greater than the speed that corresponds to an encoder limit frequency of 500 kHz.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Maximum permissible speed.

**Remedy:** Correct the limit values for SLS and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also:p9531

## 201686 <location>SI Motion: Illegal parameterization cam position

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For dbSI:

- at least one enabled "Safe cam" (SCA) is parameterized in p9536 or p9537 too close to the tolerance range around the modulo position: the minus position value of a cam must be greater than the lower modulo limit + cam tolerance (p9540) + position tolerance (p9542); the plus position value of a cam must be less than the modulo limit - cam tolerance (p9540) - position tolerance (p9542). For a parameterized modulo position (p9505>0), the lower modulo limit = 0, the upper modulo limit = p9505.
- the cam length of cam x = p9536[x]-p9537[x] is less than the cam tolerance + the position tolerance (= p9540 + p9542).

This also means that cams of the minus position value must be less than the plus position value.

For ncSI:

At least one enabled "Safety Cam" (SCA) is parameterized in p9536 or p9537 too close to the tolerance range around the modulo position.

The following conditions must be complied with to assign cams to a cam track:

- the cam length of cam x = p9536[x]-p9537[x] must be greater or equal to the cam tolerance + the position tolerance (= p9540 + p9542). This also means that for cams on a cam track, the minus position value must be less than the plus position value.
- the distance between 2 cams x and y (minus position value[y] - plus position value[x] = p9537[y] - p9536[x]) on a cam track must be greater than or equal to the cam tolerance + position tolerance (= p9540 + p9542).

Note:

This fault does not result in a safety stop response.

Fault value (r0949, interpret decimal):

Number of the "Safe Cam" with an illegal position.

See also:p9501 (SI Motion enable safety functions (Control Unit))

**Remedy:** Correct the cam position and carry out a POWER ON.

Note:

SCA: Safe Cam / SN: Safe software cam

SI: Safety Integrated

See also:p9536, p9537

## 201687 <location>SI Motion: Illegal parameterization modulo value SCA (SN)

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameterized modulo value for the "Safe Cam" (SCA) function is not a multiple of 360 000 mDegrees.

Note:

This fault does not result in a safety stop response.

**Remedy:** Correct the modulo value for SCA and carry out a POWER ON.

Note:

SCA: Safe Cam / SN: Safe software cam

SI: Safety Integrated

See also:p9505

## 201688 <location>SI Motion CU: Actual value synchronization not permissible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** - it is not permissible to enable actual value synchronization for a 1-encoder system.
- it is not permissible to simultaneously enable actual value synchronization and a monitoring function with absolute reference (SCA/SLP).
- it is not permissible to simultaneously enable actual value synchronization and safe position via PROFIsafe.
Note:
This fault results in a STOP A that cannot be acknowledged.

**Remedy:** - Either select the "actual value synchronization" function or parameterize a 2-encoder system.
- either deselect the function "actual value synchronization" or the monitoring functions with absolute reference (SCA/SLP) and carry out a POWER ON.
- either deselect the "actual value synchronization" function or do not enable "Safe position via PROFIsafe".
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
SP: Safe Position
See also:p9501, p9526

## 201689 <location>SI Motion: Axis re-configured

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** The axis configuration was changed and internally set to the correct value (e.g. switchover, linear axis/rotary axis).
Parameter p0108.13 is internally set to the correct value.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Number of the parameter that initiated the change.
See also:p9502 (SI Motion axis type (Control Unit))

**Remedy:** The following should be carried out after the changeover:
- exit the safety commissioning mode (p0010).
- save all parameters (p0977 = 1 or "copy RAM to ROM").
- carry out a POWER ON.
Once the Control Unit has been switched on, safety message F01680 or F30680 indicates that the checksums in r9398[0] and r9728[0] have changed in the drive. The following must, therefore, be carried out:
- activate safety commissioning mode again.
- complete safety commissioning of the drive.
- exit the safety commissioning mode (p0010).
- save all parameters (p0977 = 1 or "copy RAM to ROM").
- carry out a POWER ON.
Note:
For the commissioning tool, the units are only consistently displayed after a project upload.

## 201690 <location>SI Motion: Data save problem for the NVRAM

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** POWER ON

**Cause:** There is not sufficient memory space in the NVRAM on the drive to save parameters r9781 and r9782 (safety logbook).
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
0: There is no physical NVRAM available in the drive.
1: There is no longer any free memory space in the NVRAM.

**Remedy:** For fault value = 0:
- use a Control Unit NVRAM.
For fault value = 1:
- deselect functions that are not required and that take up memory space in the NVRAM.
- contact Technical Support.
Note:
NVRAM: Non-Volatile Random Access Memory (non-volatile read and write memory)

## 201691 <location>SI Motion: Ti and To unsuitable for DP cycle

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The configured times for PROFIBUS communication are not permitted and the DP cycle is used as the actual value acquisition cycle for the safe movement monitoring functions.
Isochronous PROFIBUS:
The sum of Ti and To is too high for the selected DP cycle. The DP cycle should be at least 1 current controller cycle greater than the sum of Ti and To.
No isochronous PROFIBUS:
The DP clock cycle must be at least 4x the current controller clock cycle.
Notice:
If this alarm is not observed, then message C01711 or C30711 – with the value 1020 ... 1021 – can sporadically occur.

**Remedy:** Configure Ti and To low so that they are suitable for the DP cycle or increase the DP cycle time.
Alternative when SI monitoring integrated in the drive is enabled (p9601/p9801 > 0):
Use the actual value acquisition cycle p9511/p9311 and, in turn, set independently from DP cycle. The actual values sensing clock cycle must be at least 4x the current controller clock cycle. A clock cycle ratio of at least 8:1 is recommended.
See also:p9511 (SI Motion actual value sensing cycle clock (Control Unit))

## 201692 <location>SI Motion P1 (CU): Parameter value not permitted for encoderless

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be set to this value if encoderless motion monitoring functions have been selected in p9506.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.
See also:p9501 (SI Motion enable safety functions (Control Unit))

**Remedy:** - correct the parameter specified in the fault value.
- if necessary, deselect encoderless motion monitoring functions (p9506).
See also:p9501 (SI Motion enable safety functions (Control Unit))

## 201693 <location>SI P1 (CU): Safety parameter setting changed, warm restart/POWER ON required

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_DBSI, TM41

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Safety parameters have been changed; these will only take effect following a warm restart or POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a warm restart or POWER ON.
**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).
- carry out a POWER ON (switch-off/switch-on) for all components.
Note:
Before performing an acceptance test, a POWER ON must be carried out for all components.

## 201693 <location>SI P1 (CU): Safety parameter setting changed, warm restart/POWER ON required

**Drive object:** SERVO_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Safety parameters have been changed; these will only take effect following a warm restart or POWER ON.
Notice:
All changed parameters of the safety motion monitoring functions will only take effect following a warm restart or POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a warm restart or POWER ON.
**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).
- carry out a POWER ON (switch-off/switch-on) for all components.
Note:
Before performing an acceptance test, a POWER ON must be carried out for all components.

## 201694 <location>SI Motion CU: Firmware version Motor Module/Hydraulic Module older Control Unit

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The firmware version of the Motor Module/Hydraulic Module is older than the version of the Control Unit.
It is possible that safety functions are not available (r9771/r9871).
Note:
This message does not result in a safety stop response.
This message can also occur, if after an automatic firmware update, a POWER ON was not carried out (Alarm A01007).
**Remedy:** Upgrade the firmware of the Motor Module/Hydraulic Module to a later version.
See also:r9390 (SI Motion version safety motion monitoring (Motor Module)), r9590 (SI Motion version safety motion monitoring (Control Unit))

## 201695 <location>SI Motion: Sensor Module was replaced

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** A Sensor Module, which is used for safe motion monitoring functions, was replaced. The hardware replacement must be acknowledged. An acceptance test must be subsequently performed.
Note:
This message does not result in a safety stop response.

**Remedy:** Carry out the following steps using the STARTER commissioning tool:
- press the "Acknowledge hardware replacement" button in the safety screen form.
- execute the function "Copy RAM to ROM".
- carry out a POWER ON (switch-off/switch-on) for all components.

As an alternative, carry out the following steps in the expert list of the commissioning tool:
- start the copy function for the node identifier on the drive (p9700 = 1D hex).
- acknowledge the hardware CRC on the drive (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

Then carry out an acceptance test (refer to the Safety Integrated Function Manual).
For SINUMERIK, the following applies:
HMI supports the replacement of components with Safety functions (operating area "Diagnostics" --> Softkey "Alarm list" --> Softkey "Confirm SI HW" etc.).
The precise procedure is given in the following document:
SINUMERIK Function Manual Safety Integrated
See also:p9700 (SI Motion copy function), p9701 (Acknowledge SI motion data change)

## 201696 <location>SI Motion: Test stop for the motion monitoring functions selected when booting

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The forced checking procedure (test stop) for the safe motion monitoring functions is already selected when booting, which is not permissible.
This is the reason that the test is only carried out again after first selecting the forced checking procedure.
Note:
This message does not result in a safety stop response.
See also:p9705 (SI Motion test stop signal source)
**Remedy:** Deselect the forced checking procedure for the safe motion monitoring functions and then select again.
Notice:
It is not permissible to use TM54F inputs to select the test stop.
Note:
The signal source to select the forced checking procedure is set via binector input p9705.
SI: Safety Integrated

## 201697 <location>SI Motion: Test stop for motion monitoring functions required

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The time set in p9559 for the forced checking procedure (test stop) for the safe motion monitoring functions has been exceeded. A new forced checking procedure is required.
After the next time the forced checking procedure is selected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- As the switch-off signal paths are not automatically checked during booting, an alarm is always issued once booting is complete.
- the test must be performed within a defined, maximum time interval (p9559, maximum of 9000 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.
See also:p9559 (SI Motion forced checking procedure timer (Control Unit)), r9765 (SI Motion forced check procedure remaining time (Control Unit))

**Remedy:** Carry out the forced checking procedure of the safety motion monitoring functions.
The signal source to select the forced checking procedure is set via binector input p9705.
Notice:
It is not permissible to use TM54F inputs to select the forced checking procedure.
Note:
SI: Safety Integrated
See also:p9705 (SI Motion test stop signal source)

## 201698 <location>SI P1 (CU): Commissioning mode active

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The commissioning of the "Safety Integrated" function is selected.
This message is withdrawn after the safety functions have been commissioned.
Note:
- this message does not result in a safety stop response.
- in the safety commissioning mode, the "STO" function is internally selected.
See also:p0010

**Remedy:** Not necessary.
Note:
CU: Control Unit
SI: Safety Integrated

## 201699 <location>SI P1 (CU): Test stop for STO required

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The time set in p9659 for the forced checking procedure (test stop) for the "STO" function has been exceeded. A new forced checking procedure is required.
After the next time the "STO" function is deselected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- the test must be performed within a defined, maximum time interval (p9659) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.
See also:p9659 (SI forced checking procedure timer), r9660 (SI forced checking procedure remaining time)

**Remedy:** Select STO and then deselect again.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 201700 <location>SI Motion P1 (CU): STOP A initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP A (STO via the safety switch-off signal path of the Control Unit).
Possible causes:
- stop request from the second monitoring channel.
- STO not active after parameterized time (p9557) after test stop selection.
- subsequent response to the message C01706 "SI Motion CU: SAM/SBR limit exceeded".
- subsequent response to the message C01714 "SI Motion CU: Safely-Limited Speed exceeded".
- subsequent response to the message C01701 "SI Motion CU: STOP B initiated".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C01716 "SI Motion CU: tolerance for safe motion direction exceeded".

**Remedy:** - remove the cause of the fault on the second monitoring channel.
- carry out a diagnostics routine for message C01706.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01701.
- carry out a diagnostics routine for message C01715.
- carry out a diagnostics routine for message C01716.
- check the value in p9557 (where available), increase the value if necessary, and carry out a POWER ON
- check the switch-off signal path of the Control Unit (check DRIVE-CLiQ communication if it has been implemented)
- replace the Motor Module, Power Module or Hydraulic Module.
- replace Control Unit.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe brake ramp monitoring)
SI: Safety Integrated

## 201701 <location>SI Motion P1 (CU): STOP B initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE (OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP B (braking along the OFF3 deceleration ramp).
As a result of this fault, after the time parameterized in p9556 has expired, or the speed threshold parameterized in p9560 has been undershot, message C01700 "STOP A initiated" is output.
Possible causes:
- stop request from the second monitoring channel.
- subsequent response to the message C01714 "SI Motion CU: Safely-Limited Speed exceeded".
- subsequent response to the message C01711 "SI Motion CU: Defect in a monitoring channel".
- subsequent response to the message C01707 "SI Motion CU: tolerance for safe operating stop exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C01716 "SI Motion CU: tolerance for safe motion direction exceeded".

**Remedy:** - remove the cause of the fault on the second monitoring channel.
- carry out a diagnostics routine for message C01714.
- carry out a diagnostics routine for message C01711.
- carry out a diagnostics routine for message C01707.
- carry out a diagnostics routine for message C01715.
- carry out a diagnostics routine for message C01716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated

## 201706 <location>SI Motion P1 (CU): SAM/SBR limit exceeded

**Drive object:** HLA_840, HLA_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Motion monitoring functions with encoder (p9506 = 0):
- after initiating STOP B (SS1) or STOP C (SS2), the speed has exceeded the selected tolerance.
The drive is shut down by the message C01700 "SI Motion: STOP A initiated".

**Remedy:** Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe ramp monitoring)
SI: Safety Integrated
See also:p9548, p9581, p9582, p9583

## 201706 <location>SI Motion P1 (CU): SAM/SBR limit exceeded

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Motion monitoring functions with encoder (p9506 = 0) or encoderless with set acceleration monitoring (SAM, p9506 = 3):
- after initiating STOP B (SS1) or STOP C (SS2), the speed has exceeded the selected tolerance.

Motion monitoring functions encoderless with set brake ramp monitoring (SBR p9506 = 1):
- after initiating STOP B (SS1) or SLS changeover to the lower speed level, the speed has exceeded the selected tolerance.

The drive is shut down by the message C01700 "SI Motion: STOP A initiated".

**Remedy:** Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe ramp monitoring)
SI: Safety Integrated
See also:p9548, p9581, p9582, p9583

## 201707 <location>SI Motion P1 (CU): Tolerance for safe operating stop exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The actual position has distanced itself further from the target position than the standstill tolerance.

The drive is shut down by the message C01701 "SI Motion: STOP B initiated".

**Remedy:** - check whether safety faults are present and if required carry out the appropriate diagnostic routines for the particular faults.
- check whether the standstill tolerance matches the accuracy and control dynamic performance of the axis.
- carry out a POWER ON.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop
See also:p9530

## 201708 <location>SI Motion P1 (CU): STOP C initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** STOP2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP C (braking along the OFF3 deceleration ramp).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion CU: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C01716 "SI Motion CU: tolerance for safe motion direction exceeded".
See also:p9552 (SI Motion transition time STOP C to SOS (SBH) (Control Unit))

**Remedy:**
- remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714/C01715/C01716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 201709 <location>SI Motion P1 (CU): STOP D initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP D (braking along the path).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion CU: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C01716 "SI Motion CU: tolerance for safe motion direction exceeded".
See also:p9553 (SI Motion transition time STOP D to SOS (SBH) (Control Unit))

**Remedy:**
- remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714/C01715/C01716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 201710 <location>SI Motion P1 (CU): STOP E initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP E (retraction motion).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C01714 "SI Motion CU: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C01716 "SI Motion CU: tolerance for safe motion direction exceeded".
See also:p9554 (SI Motion transition time STOP E to SOS (SBH) (Control Unit))

**Remedy:**
- remove the cause of the fault at the control.
- carry out a diagnostics routine for message C01714/C01715/C01716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 201711 <location>SI Motion P1 (CU): Defect in a monitoring channel

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

If at least one monitoring function is active, then after the parameterized timer has expired, the message C01701 "SI Motion: STOP B initiated" is output.

The message value that resulted in a STOP F is displayed in r9725.

If the drive is operated together with a SINUMERIK, the message values are described in message 27001 of SINUMERIK, with the exception of the following message values, which can only occur in SINAMICS:

1007: communication error with the PLC (sign-of-life)

1008: communication error with the PLC (CRC)

The following described message values involve the data cross-check between the two monitoring channels (safety functions integrated in the drive).

The message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:

- cycle times not uniformly parameterized (p9500/p9300 and p9511/p9311)
- excessively fast cycle times (p9500/p9300, p9511/p9311).
- For message values 3, 44 ... 57, 232 and 1-encoder system, differently set encoder parameters.
- For message values 3, 44 ... 57, 232 and 2-encoder system, encoder parameters that have not been correctly set.
- incorrect synchronization.

Message value (r9749, interpret decimal):

0 to 999: Number of the cross-compared data that resulted in this fault.

Message values that are not subsequently listed are only for internal Siemens troubleshooting.

0: Stop request from another monitoring channel.

1: Status image of monitoring functions SOS, SLS, SAM/SBR, SDI or SLP (result list 1) (r9710[0], r9710[1]).

2: Status image of monitoring function SCA or n < nx (result list 2) (r9711[0], r9711[1]).

3: The position actual value differential (r9713[0/1]) between the two monitoring channels is greater than the tolerance in p9542/p9342. When actual value synchronization is enabled (p9501.3/p9301.3), the velocity differential (based on the position actual value) is greater than the tolerance in p9549/p9349.

4: Error when synchronizing the data cross-check between the two channels.

5: Enable safe functions (p9501/p9301). Safety monitoring clock cycle too small (p9500/p9300).

6: Limit value for SLS1 (p9531[0]/p9331[0])

7: Limit value for SLS2 (p9531[1]/p9331[1])

8: Limit value for SLS3 (p9531[2]/p9331[2])

9: Limit value for SLS4 (p9531[3]/p9331[3])

10: Standstill tol. (p9530/p9330)

11: Upper limit value for SLP1 (p9534[0]/p9334[0]).

12: Lower limit value for SLP1 (p9535[0]/p9335[0]).

13: Upper limit value for SLP2 (p9534[1]/p9334[1]).

14: Lower limit value for SLP2 (p9535[1]/p9335[1]).

31: Position tolerance (p9542/p9342) or (p9549/p9349) when actual value synchronization is enabled (p9501.3/p9301.3)

32: Position tolerance for safe referencing (p9544/p9344).

33: Time, velocity changeover (p9551/p9351)

35: Delay time, STOP A (p9556/p9356)

36: Checking time, STO (p9557/p9357)

37: Trans. time, STOP C to SOS (p9552/p9352)

38: Trans. time STOP D to SOS (p9553/p9353)

39: Trans. time, STOP E to SOS (p9554/p9354)

40: Stop response for SLS (p9561/p9361).

41: Stop response for SLP1 (p9562[0]/p9362[0]).

42: Shutdown speed, STO (p9560/p9360)

43: Memory test stop response (STOP A).

44 ... 57: General

Possible cause 1 (during commissioning or parameter modification)

The tolerance value for the monitoring function is not the same on the two monitoring channels.

Possible cause 2 (during active operation)

The limit values are based on the actual value (r9713[0/1]). If the safe actual values on the two monitoring channels do not match, the limit values, which have been set at a defined interval, will also be different (i.e. corresponding to message value 3). This can be ascertained by checking the safe actual positions.

Permissible deviation between the two monitoring channels: p9542/p9342.

44: Position actual value (r9713[0/1]) + limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (p9500/p9300).

45: Position actual value (r9713[0/1]) - limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (p9500/p9300).

46: Position actual value (r9713[0/1]) + limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (p9500/p9300).

47: Position actual value (r9713[0/1]) - limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (p9500/p9300).

48: Position actual value (r9713[0/1]) + limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (p9500/p9300).

49: Position actual value (r9713[0/1]) - limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (p9500/p9300).

50: Position actual value (r9713[0/1]) + limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (p9500/p9300).

51: Position actual value (r9713[0/1]) - limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (p9500/p9300).

52: Standstill position + tolerance (p9530/9330)

53: Standstill position - tolerance (p9530/9330)

54: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300) + tolerance (p9542/p9342).

55: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300).

56: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300).

57: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300) - tolerance (p9542/p9342).

58: Actual stop request.

75: Velocity limit nx (p9546, p9346).

When the function "n < nx: hysteresis and filtering" (p9501.16 = 1) is enabled, this message value is also output for a different hysteresis tolerance (p9547/p9347).

76: Stop response for SLS1 (p9563[0]/p9363[0]).

77: Stop response for SLS2 (p9563[1]/p9363[1]).

78: Stop response for SLS3 (p9563[2]/p9363[2]).

79: Stop response for SLS4 (p9563[3]/p9363[3]).

81: Velocity tolerance for SAM (p9548/p9348)

82: SGEs for SLS correction factor.

83: Acceptance test timer (p9558/p9358)

84: Trans. time STOP F (p9555/p9355)

85: Trans. time bus failure (p9580/p9380)

86: ID 1-encoder system (p9526/p9326).

87: Encoder assignment, second channel (p9526/p9326)

89: Encoder limit freq.

230: Filter time constant for n < nx.

231: Hysteresis tolerance for n < nx.

232: Smoothed velocity actual value.

233: Limit value nx / safety monitoring clock cycle + hysteresis tolerance.

234: Limit value nx / Safety monitoring clock cycle.

235: -Limit value nx / Safety monitoring clock cycle.

236: -Limit value nx / safety monitoring clock cycle - hysteresis tolerance.

237: SGA n < nx.

238: Speed limit value for SAM (p9568/p9368).

243: Function configuration (p9507/p9307).

246: Voltage tolerance acceleration (p9589/p9389).

247: SDI tolerance (p9564/p9364).

248: SDI positive upper limit (7FFFFFFF hex).

249: Position actual value (r9713[0/1]) - SDI tolerance (p9564/p9364).

250: Position actual value (r9713[0/1]) + SDI tolerance (p9564/p9364).

251: SDI negative lower limit (80000001 hex).

252: SDI stop response (p9566/p9366).

253: SDI delay time (p9565/p9365).

256: Status image of monitoring functions SOS, SLS, SLP, test stop, SBR, SDI (result list 1 ext) (r9710).

257: Safety functions for motion monitoring functions without selection (p9512/p9312) different.

259: Scaling factor for safe position via PROFIsafe (p9574/p9374) or PROFIsafe telegram (p9611/p9811) different.

260: Modulo value including scaling (p9505/p9305 and p9574/p9374) for SP with 16 bit.

263: Stop response for SLP2 (p9562[1]/p9362[1])

264: Position tolerance including scaling (p9542/p9342 and p9574/p9374) for SP with 16 bit.

265: Status image of all change functions (results list 1) (r9710).

266: The switchover speed to SOS differs (p9567/p9367).

267: The transition time to SOS after standstill differs (p9569/p9369).

268: SLP delay time differs (p9577/p9377).

269: Factor to increase the position tolerance when switching over the gearbox stage (p9543/9343).

270: Screen form for SGE image: all functions, which are not supported/enabled for the actual parameterization (p9501/p9301, p9601/p9801 and p9506/p9306)..

271: Screen form for SGE image: Deselect all bits for the "Safe gearbox switchover" function.

272: Activation of the increased position tolerance for the "Safe gearbox switchover" function different.

273: speed limit value for flattening the ramp for SAM/SBR different.

274: SGA SCA, cams 1 to 15.

275: SGA SCA, cams 16 to 30.

276: Limit value for SLA1 (p9578/p9378).

277: Stop response for SLA1 (p9579/p9379).

278: Upper limit value for SLA1.

279: Lower limit value for SLA1.

280: Upper limit value for SLA1 (fine resolution).

281: Lower limit value for SLA1 (fine resolution).

282: SLA filter time.

283: Acceleration actual value (fine resolution).

1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.

1001: Initialization error of watchdog timer.

1002:

User agreement after the timer has expired different.

The user agreement is not consistent. After a time of 4 s has expired, the status of the user agreement is different in both monitoring channels.

1003:

Reference tolerance exceeded.

When the user agreement is set, the difference between the new reference point that has been determined after the system boots (absolute encoder) or reference point approach (distance-coded or incremental measuring system) and the safe actual position (saved value + traversing distance) is greater than the reference tolerance (p9544). In this case, the user agreement is withdrawn.

1004:

Plausibility error for user agreement.

1. If the user agreement has already been set, then the setting is initiated again. In this case, the user agreement is withdrawn.

2. The user agreement was set, although the axis has still not been referenced.

1005: STO already active for test stop selection.

1011: Acceptance test status between the monitoring channels differ.

1012: Plausibility violation of the encoder actual value.

1014: fault when synchronizing the SGA for the "Safe cam" function

1015: Gearbox switchover (bit 27 in PROFIsafe telegram) takes longer than 2 min.

1020: Cyc. communication failure between the monit. channels.

1021: Cyc. communication failure between the monit. channel and Sensor Module.

1022: Sign-of-life error for DRIVE-CLiQ encoders monitoring channel 1.

1023: Error in the effectiveness test in the DRIVE-CLiQ encoder

1024: Sign-of-life error for HTL/TTL encoders.

1032: Sign-of-life error for DRIVE-CLiQ encoders monitoring channel 2.

1033: Error checking offset between POS1 and POS2 for DRIVE-CLiQ encoder monitoring channel 1.

1034: Error checking offset between POS1 and POS2 for DRIVE-CLiQ encoder monitoring channel 2.

1039: Overflow when calculating the position.

1041: Current absolute value too low (encoderless)

1042: Current/voltage plausibility error

1043: Too many acceleration phases

1044: Current actual values plausibility error.

5000 ... 5140:

PROFIsafe message values.

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions.

5000, 5014, 5023, 5024, 5030 ... 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140: an internal software error has occurred (only for internal Siemens fault diagnostics).

5012: Error when initializing the PROFIsafe driver.

5013: The result of the initialization is different for the two controllers.

5022: Error when evaluating the F parameters. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.

5025: The result of the F parameterization is different for the two controllers.

5026: CRC error for the F parameters. The transferred CRC value of the F parameters does not match the value calculated in the PST.

5065: A communications error was identified when receiving the PROFIsafe telegram.

5066: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.

6000 ... 6166:

PROFIsafe message values (PROFIsafe driver for PROFIBUS DP V1/V2 and PROFINET).

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "Stop B after failure of the PROFIsafe communication" (9612) is parameterized, the transfer of the Failsafe Values is delayed.

The significance of the individual message values is described in safety fault F01611.

7000: Difference of the safe position is greater than the parameterized tolerance (p9542/p9342).

7001: Scaling value for the safe position in the 16 bit notation, too low (p9574/p9374).

7002: Cycle counter for transferring the safe position is different in both monitoring channels.

7003: error when providing the data for the "Synchronous safe position via PROFIsafe" function.

7004: PROFIsafe clock cycle not correctly synchronized to the DP clock cycle.

See also:p9555 (SI Motion transition time STOP F to STOP B (Control Unit)), r9725 (SI Motion diagnostics STOP F)

**Remedy:** The following generally applies:

The monitoring clock cycles in both channels and the axis types should be checked for equality and the same setting applied if necessary. If the error continues to be identified, increasing the monitoring clock cycles may resolve it.

For message value = 0:

- no error was identified in this monitoring channel. Note the error message of the other monitoring channel (for HM: C30711).

For message value = 3:

Commissioning phase:

- check the encoder parameters, and if required, correct (p9516/p9316, p9517/p9317, p9518/p9318, p9520/p9320, p9521/p9321, p9522/p9322, p9526/p9326).

In operation:

- check the mechanical design and the encoder signals.

For message value = 4:

The monitoring clock cycles in both channels should be checked for equality and if required, set the same. In combination with message value 5 from the other monitoring channel (with HM: C30711), the monitoring clock cycle settings must be increased.

For message value = 11 ... 14:

- the limit values in p9534/p9334 or p9535/p9335 are not equal or have been set too high. Correct the values.

For message value = 232:

- increase the hysteresis tolerance (p9547/p9347). Possibly set the filtering higher (p9545/p9345).

For message value = 274, 275:

- increase the cam tolerance p9540/p9340 and/or the position tolerance p9542/p9342.

For message value = 278, 279, 280, 281:

- check as to whether the same acceleration limit has been set for both channels. A different result depends on whether SLA is enabled and not selected - or enabled and selected. In this case, another message value is possible.

For message value = 1 ... 999:

- if the message value is listed under cause: Check the cross-checked parameters to which the message value refers.

- copy the safety parameters.

- carry out a POWER ON (switch-off/switch-on) for all components.

- upgrade the Hydraulic Module software.

- upgrade the Control Unit software.

- correction of the encoder evaluation. The actual values differ as a result of mechanical faults (V belts, travel to a mechanical endstop, wear and window setting that is too narrow, encoder fault, ...).

Note:

For SINAMICS firmware version >= 4.7, the KDV list is increased when setting p9567 > 0. For a non-compatible version of SINUMERIK this can lead to an error for the data cross-check (is indicated with message value >= 237). If necessary, p9567 must be set = 0, or the firmware version of SINUMERIK upgraded.

For message value = 1000:

- investigate the signal associated with the safety-relevant input (contact problems).

For message value = 1001:

- carry out a POWER ON (switch-off/switch-on) for all components.

- upgrade the Hydraulic Module software.

- upgrade the Control Unit software.

For message value = 1002:

- perform safe acknowledgment, set the user agreement in both monitoring channels simultaneously (within 4 s).

For message value = 1003:

- check the mechanical system of the axis. It is possible that the axis was shifted when switched-off, and the last saved actual position no longer corresponds with the new actual position after the system has been powered up again.

- increase the tolerance for the actual value comparison when referencing (p9544).

Then check the actual values, perform a POWER ON and set the user agreement again.

For message value = 1004:

For 1., the following applies: Perform safe acknowledgment. Set the user agreement again.

For 2., the following applies: Perform safe acknowledgment. Only set the user agreement again if the axis has been referenced.

For message value = 1005: deselect checking the conditions for STO.

For message value = 1007:

- check the PLC for the correct operating state (run state, basic program).

For message value = 1008:

- check whether incorrect or overlapping address ranges have been set in SINUMERIK machine data MD10393.

For message value = 1011:

- for diagnostics, refer to parameter (r9571).

For message value = 1012:

- upgrade the Sensor Module firmware to a more recent version.

- for 1-encoder systems, the following applies: check the encoder parameters for equality (p9515/p9315, p9519/p9319, p9523/p9323, p9524/p9324, p9525/p9325, p9529/p9329).

- for a 1-encoder system and 2-encoder system the following applies: in order to correctly copy the encoder parameters from p04xx, p9700 must be set to 46 and p9701 must be set to 172.

- for DQI encoders the following applies: If required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.

- the parameterized encoder does not correspond to the connected encoder - replace the encoder.

- check the electrical cabinet design and cable routing for EMC compliance

- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).

- replace the hardware.

For message value = 1014:

- check the encoder actual values. If required, increase the position tolerance (p9542) and/or cam tolerance (p9540).

For message value = 1020, 1021, 1024:

- check the communication link.

- if required, increase the monitoring cycle clock settings (p9500, p9511).

- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).

- replace the hardware.

For message value = 1033:

- if required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.

For message value = 1039:

- check the conversion factors such as spindle pitch or gearbox ratios.

For message value = 1041:

- check whether the motor has sufficient current (>r9785[0]).

- reduce the minimum current (p9588).

- for synchronous motors increase the absolute value of p9783.

- check whether the function "Closed-loop controlled operation with HF signal injection" is activated (p1750.5 = 1) and if required, deactivate.

For message value = 1042:

- increase the ramp-function generator ramp-up/down time (p1120/p1121).

- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).

- reduce the dynamic response of the setpoint value.

- check the absolute current and voltage values, and set the control behavior so that this is greater than 3% of the rated converter data in operation or in the case of a fault.

- increase the minimum current (p9588).

For message value = 1043:

- increase the voltage tolerance (p9589). When operating a reluctance motor, the controller settings are generally set to be more dynamic. If this message is output for the factory setting of p9589, then the acceleration limit should be increased as countermeasure (p9589 = 500 ... 1000 %). From experience, this provides a rugged response.

- increase the ramp-function generator ramp-up/down time (p1120/p1121).

- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).

- reduce the dynamic response of the setpoint value.

For message value = 5000, 5014, 5023, 5024, 5030, 5031, 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:

- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Hydraulic Module involved and, if required, carry out a diagnostics routine for the faults identified.
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.

For message value = 5012:

- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the hydraulic module (p9810). It is not permissible for the PROFIsafe address to be 0 or FFFF!

For message value = 5013, 5025:

- carry out a POWER ON (switch-off/switch-on) for all components.
- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the hydraulic module (p9810).
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Hydraulic Module involved and, if required, carry out a diagnostics routine for the faults identified.

For message value = 5022:

- check the setting of the values of the F parameters at the PROFIsafe slave (F_SIL, F_CRC_Length, F_Par_Version, F_Source_Add, F_Dest_add, F_WD_Time).

For message value = 5026:

- check the settings of the values of the F parameters and the F parameter CRC (CRC1) calculated from these at the PROFIsafe slave and update.

For message value = 5065:

- check the configuration and communication at the PROFIsafe slave (cons. No. / CRC).
- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Hydraulic Module involved and, if required, carry out a diagnostics routine for the faults identified.

For message value = 5066:

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.
- evaluate diagnostic information in the F host.
- check PROFIsafe connection.

For message value = 6000 ... 6999:

Refer to the description of the message values in safety fault F01611.

For message value = 7000:

- increase the position tolerance (p9542/p9342).
- determine the actual position of CU (r9713[0] and the second channel r9713[1], and check the difference for plausibility.
- reduce the difference of the actual position from CU (r9713[0] and the second channel r9713[1] for a 2-encoder system.

For message value = 7001:

- increase the scaling value for the safe position in the 16 bit notation (p9574/p9374).
- if required, reduce the traversing range.

For message value = 7002:

- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Hydraulic Module involved and, if required, carry out a diagnostics routine for the faults identified.

This message can be acknowledged as follows:

- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe
- motion monitoring functions with SINUMERIK: Via the machine control panel

For message value = 7003, 7004:

- if required, adapt the settings for the times for Tdp, Ti and To - or increase the monitoring clock cycle p9500 (rule Tdp = 2 x n x p9500, n= 1, 2, 3, ...).

See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 201711 <location>SI Motion P1 (CU): Defect in a monitoring channel

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

If at least one monitoring function is active, then after the parameterized timer has expired, the message C01701 "SI Motion: STOP B initiated" is output.

The message value that resulted in a STOP F is displayed in r9725.

If the drive is operated together with a SINUMERIK, the message values are described in message 27001 of SINUMERIK, with the exception of the following message values, which can only occur in SINAMICS:

1007: communication error with the PLC (sign-of-life).

1008: communication error with the PLC (CRC).

The following described message values involve the data cross-check between the two monitoring channels (safety functions integrated in the drive).

The message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:

- cycle times not uniformly parameterized (p9500/p9300 and p9511/p9311)
- differently parameterized axis types (p9502/p9302).
- excessively fast cycle times (p9500/p9300, p9511/p9311).
- For message values 3, 44 ... 57, 232 and 1-encoder system, differently set encoder parameters.
- For message values 3, 44 ... 57, 232 and 2-encoder system, encoder parameters that have not been correctly set.
- incorrect synchronization.

Message value (r9749, interpret decimal):

0 to 999: Number of the cross-compared data that resulted in this fault.

Message values that are not subsequently listed are only for internal Siemens troubleshooting.

0: Stop request from another monitoring channel.

1: Status image of monitoring functions SOS, SLS, SAM/SBR, SDI, SLA or SLP (result list 1) (r9710[0], r9710[1]).

2: Status image of monitoring function SCA or n < nx (result list 2) (r9711[0], r9711[1]).

3: The position actual value differential (r9713[0/1]) between the two monitoring channels is greater than the tolerance in p9542/p9342. When actual value synchronization is enabled (p9501.3/p9301.3), the velocity differential (based on the position actual value) is greater than the tolerance in p9549/p9349.

4: Error when synchronizing the data cross-check between the two channels.

5: Enable safe functions (p9501/p9301). Safety monitoring clock cycle too small (p9500/p9300).

6: Limit value for SLS1 (p9531[0]/p9331[0])

7: Limit value for SLS2 (p9531[1]/p9331[1])

8: Limit value for SLS3 (p9531[2]/p9331[2])

9: Limit value for SLS4 (p9531[3]/p9331[3])

10: Standstill tol. (p9530/p9330)

11: Upper limit value for SLP1 (p9534[0]/p9334[0]).

12: Lower limit value for SLP1 (p9535[0]/p9335[0]).

13: Upper limit value for SLP2 (p9534[1]/p9334[1]).

14: Lower limit value for SLP2 (p9535[1]/p9335[1]).

15: Upper limit value for SCA, cam 1 plus position (p9536[0]/p9336[0]+p9540/p9340)

16: Lower limit value for SCA, cam 1 plus position (p9536[0]/p9336[0])

17: Upper limit value for SCA, cam 1 minus position (p9537[0]/p9337[0]+p9540/p9340)

18: Lower limit for SCA, cam 1 minus position (p9537[0]/p9337[0])

19...30: limit value SCA, cams 2 to 4. Refer above fault values 15 to 18 for cam 1

31: Position tolerance (p9542/p9342) or (p9549/p9349) when actual value synchronization is enabled (p9501.3/p9301.3)

32: Position tolerance for safe referencing (p9544/p9344).

33: Time, velocity changeover (p9551/p9351)

35: Delay time, STOP A (p9556/p9356)

36: Checking time, STO (p9557/p9357)

37: Trans. time, STOP C to SOS (p9552/p9352)

38: Trans. time STOP D to SOS (p9553/p9353)

39: Trans. time, STOP E to SOS (p9554/p9354)

40: Stop response for SLS (p9561/p9361).

41: Stop response for SLP1 (p9562[0]/p9362[0]).

42: Shutdown speed, STO (p9560/p9360)

43: Memory test stop response (STOP A).

44 ... 57: General

Possible cause 1 (during commissioning or parameter modification)

The tolerance value for the monitoring function is not the same on the two monitoring channels.

Possible cause 2 (during active operation)

The limit values are based on the actual value (r9713[0/1]). If the safe actual values on the two monitoring channels do not match, the limit values, which have been set at a defined interval, will also be different (i.e. corresponding to message value 3). This can be ascertained by checking the safe actual positions.

Permissible deviation between the two monitoring channels: p9542/p9342.

44: Position actual value (r9713[0/1]) + limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (p9500/p9300).

45: Position actual value (r9713[0/1]) - limit value SLS1 (p9531[0]/p9331[0]) * safety monitoring clock cycle (p9500/p9300).

46: Position actual value (r9713[0/1]) + limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (p9500/p9300).

47: Position actual value (r9713[0/1]) - limit value SLS2 (p9531[1]/p9331[1]) * safety monitoring clock cycle (p9500/p9300).

48: Position actual value (r9713[0/1]) + limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (p9500/p9300).

49: Position actual value (r9713[0/1]) - limit value SLS3 (p9531[2]/p9331[2]) * safety monitoring clock cycle (p9500/p9300).

50: Position actual value (r9713[0/1]) + limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (p9500/p9300).

51: Position actual value (r9713[0/1]) - limit value SLS4 (p9531[3]/p9331[3]) * safety monitoring clock cycle (p9500/p9300).

52: Standstill position + tolerance (p9530/9330)

53: Standstill position - tolerance (p9530/9330)

54: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300) + tolerance (p9542/p9342).

55: Position actual value (r9713[0/1]) + limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300).

56: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300).

57: Position actual value (r9713[0/1]) - limit value nx (p9546/p9346) * safety monitoring clock cycle (p9500/p9300) - tolerance (p9542/p9342).

58: Actual stop request.

75: Velocity limit nx (p9546, p9346).

When the function "n < nx: hysteresis and filtering" (p9501.16 = 1) is enabled, this message value is also output for a different hysteresis tolerance (p9547/p9347).

76: Stop response for SLS1 (p9563[0]/p9363[0]).

77: Stop response for SLS2 (p9563[1]/p9363[1]).

78: Stop response for SLS3 (p9563[2]/p9363[2]).

79: Stop response for SLS4 (p9563[3]/p9363[3]).

80: Modulo value for SP for rotary axes (p9505/p9305).

81: Velocity tolerance for SAM (p9548/p9348)

82: SGEs for SLS correction factor.

83: Acceptance test timer (p9558/p9358)

84: Trans. time STOP F (p9555/p9355)

85: Trans. time bus failure (p9580/p9380)

86: ID 1-encoder system (p9526/p9326).

87: Encoder assignment, second channel (p9526/p9326)

88: SCA (SN) enable (p9503/p9303).

89: Encoder limit freq.

90: Upper limit value for SCA, cam 5 plus position (p9536[4]/p9336[4]+p9540/p9340).

91: Lower limit value for SCA, cam 5 plus position (p9536[4]/p9336[4]).

92: Upper limit value for SCA, cam 5 minus position (p9537[4]/p9337[4]+p9540/p9340).
93: Lower limit for SCA, cam 5 minus position (p9537[4]/p9337[4]).
94...224: limit value SCA, cams 6 to 30. See above, fault values 90 to 93 for cam 5.
225...229: Status screens of the monitoring function SCA (result lists 3...7).
230: Filter time constant for n < nx.
231: Hysteresis tolerance for n < nx.
232: Smoothed velocity actual value.
233: Limit value nx / safety monitoring clock cycle + hysteresis tolerance.
234: Limit value nx / Safety monitoring clock cycle.
235: -Limit value nx / Safety monitoring clock cycle.
236: -Limit value nx / safety monitoring clock cycle - hysteresis tolerance.
237: SGA n < nx.
238: speed limit value for SAM (p9568/p9368 or p9346/p9346).
239: Acceleration for SBR (p9581/p9381 and p9583/p9383).
240: Inverse value of acceleration for SBR (p9581/p9381 and p9583/p9383).
241: Deceleration time for SBR (p9582/p9382).
242: Function specification (p9506/p9306).
243: Function configuration (p9507/p9307).
244: Encoderless actual value sensing filter time (p9587/p9387).
245: Encoderless actual value sensing minimum current (p9588/p9388).
246: Voltage tolerance acceleration (p9589/p9389).
247: SDI tolerance (p9564/p9364).
248: SDI positive upper limit (7FFFFFFF hex).
249: Position actual value (r9713[0/1]) - SDI tolerance (p9564/p9364).
250: Position actual value (r9713[0/1]) + SDI tolerance (p9564/p9364).
251: SDI negative lower limit (80000001 hex).
252: SDI stop response (p9566/p9366).
253: SDI delay time (p9565/p9365).
254: Setting the evaluation delay for actual value sensing after pulse enable (p9586/p9386).
255: Setting, behavior during pulse suppression (p9509/p9309).
256: Status image of monitoring functions SOS, SLS, SLP, test stop, SBR, SDI (result list 1 ext) (r9710).
257: Safety functions for motion monitoring functions without selection (p9512/p9312) different.
258: Fault tolerance, actual value sensing encoderless (p9585/p9385).
259: Scaling factor for safe position via PROFIsafe (p9574/p9374) or PROFIsafe telegram (p9611/p9811) different.
260: Modulo value including scaling (p9505/p9305 and p9574/p9374) for SP with 16 bit.
261: Scaling factor for acceleration for SBR different.
262: Scaling factor for the inverse value of the acceleration for SBR different.
263: Stop response for SLP2 (p9562[1]/p9362[1])
264: Position tolerance including scaling (p9542/p9342 and p9574/p9374) for SP with 16 bit.
265: Status image of all change functions (results list 1) (r9710).
266: The switchover speed to SOS differs (p9567/p9367).
267: The transition time to SOS after standstill differs (p9569/p9369).
268: SLP delay time differs (p9577/p9377).
269: Factor to increase the position tolerance when switching over the gearbox stage (p9543/9343).
270: Screen form for SGE image: all functions, which are not supported/enabled for the actual parameterization (p9501/p9301, p9601/p9801 and p9506/p9306)..
271: Screen form for SGE image: Deselect all bits for the "Safe gearbox switchover" function.
272: activation of the increased position tolerance for the "Safe gearbox switchover" function different (p9568/p9368 or p9346/p9346 or "0").
273: speed limit value for flattening the ramp for SAM/SBR different.
274: SGA SCA, cams 1 to 15.
275: SGA SCA, cams 16 to 30.
276: Limit value for SLA1 (p9578/p9378).

277: Stop response for SLA1 (p9579/p9379).

278: Upper limit value for SLA1.

279: Lower limit value for SLA1.

280: Upper limit value for SLA1 (fine resolution).

281: Lower limit value for SLA1 (fine resolution).

282: SLA filter time.

283: Acceleration actual value (fine resolution).

1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.

1001: Initialization error of watchdog timer.

1002:

User agreement after the timer has expired different.

The user agreement is not consistent. After a time of 4 s has expired, the status of the user agreement is different in both monitoring channels.

1003:

Reference tolerance exceeded.

When the user agreement is set, the difference between the new reference point that has been determined after the system boots (absolute encoder) or reference point approach (distance-coded or incremental measuring system) and the safe actual position (saved value + traversing distance) is greater than the reference tolerance (p9544). In this case, the user agreement is withdrawn.

1004:

Plausibility error for user agreement.

1. If the user agreement has already been set, then the setting is initiated again. In this case, the user agreement is withdrawn.

2. The user agreement was set, although the axis has still not been referenced.

1005:

- for safe motion monitoring functions without encoder: pulses already suppressed for test stop selection.

- for safe motion monitoring functions with encoder: STO already active for test stop selection.

1011: Acceptance test status between the monitoring channels differ.

1012: Plausibility violation of the encoder actual value.

1014: Error when synchronizing the SGA for the "Safe cam" function.

1015: Gearbox switchover (bit 27 in PROFIsafe telegram) takes longer than 2 min.

1020: Cyc. communication failure between the monit. channels.

1021: Cyc. communication failure between the monit. channel and Sensor Module.

1022: Sign-of-life error for DRIVE-CLiQ encoders monitoring channel 1.

1023: Error in the effectiveness test in the DRIVE-CLiQ encoder

1024: Sign-of-life error for HTL/TTL encoders.

1032: Sign-of-life error for DRIVE-CLiQ encoders monitoring channel 2.

1033: Error checking offset between POS1 and POS2 for DRIVE-CLiQ encoder monitoring channel 1.

1034: Error checking offset between POS1 and POS2 for DRIVE-CLiQ encoder monitoring channel 2.

1035: offset between POS1 and POS2 for DRIVE-CLiQ encoder on one of the monitoring channels has changed since the last commissioning.

1039: Overflow when calculating the position.

1041: Current absolute value too low (encoderless)

1042: Current/voltage plausibility error

1043: Too many acceleration phases

1044: Current actual values plausibility error.

5000 ... 5140:

PROFIsafe message values.

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions.

5000, 5014, 5023, 5024, 5030 ... 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:

An internal software error has occurred (only for internal Siemens troubleshooting).

5012: Error when initializing the PROFIsafe driver.

5013: The result of the initialization is different for the two controllers.

5022: Error when evaluating the F parameters. The values of the transferred F parameters do not match the expected values in the PROFIsafe driver.

5025: The result of the F parameterization is different for the two controllers.

5026: CRC error for the F parameters. The transferred CRC value of the F parameters does not match the value calculated in the PST.

5065: A communications error was identified when receiving the PROFIsafe telegram.

5066: A time monitoring error (timeout) was identified when receiving the PROFIsafe telegram.

6000 ... 6166:

PROFIsafe message values (PROFIsafe driver for PROFIBUS DP V1/V2 and PROFINET).

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "Stop B after failure of the PROFIsafe communication" (p9612) is parameterized, the transfer of the Failsafe Values is delayed.

The significance of the individual message values is described in safety fault F01611.

7000: Difference of the safe position is greater than the parameterized tolerance (p9542/p9342).

7001: Scaling value for the safe position in the 16 bit notation, too low (p9574/p9374).

7002: Cycle counter for transferring the safe position is different in both monitoring channels.

7003: error when providing the data for the "Synchronous safe position via PROFIsafe" function.

7004: PROFIsafe clock cycle not correctly synchronized to the DP clock cycle.

See also:p9555 (SI Motion transition time STOP F to STOP B (Control Unit)), r9725 (SI Motion diagnostics STOP F)

**Remedy:** The following generally applies:

The monitoring clock cycles in both channels and the axis types should be checked for equality and the same setting applied if necessary. If the error continues to be identified, increasing the monitoring clock cycles may resolve it.

For message value = 0:

- no error was identified in this monitoring channel. Note the error message of the other monitoring channel (for MM: C30711).

For message value = 3:

Commissioning phase:

- check the encoder parameters, and if required, correct (p9516/p9316, p9517/p9317, p9518/p9318, p9520/p9320, p9521/p9321, p9522/p9322, p9526/p9326).

In operation:

- check the mechanical design and the encoder signals.

- if closed-loop control with edge modulation is parameterized (p1802[x] = 9): parameterize edge modulation for actual value sensing without encoder (p9507.5 = p9307.5 = 1).

For message value = 4:

The monitoring clock cycles in both channels should be checked for equality and if required, set the same. In combination with message value 5 from the other monitoring channel (with MM: C30711), the monitoring clock cycle settings must be increased.

For message value = 11 ... 14:

- the limit values in p9534/p9334 or p9535/p9335 are not equal or have been set too high. Correct the values.

For message value = 15 ... 30 and 90 ... 229:

- the cam positions for function SCA in p9536/p9336, p9537/p9337 or the cam tolerance p9540/p9340 are not equal. Correct the values. Increase the cam tolerance p9540/p9340.

For message value = 232:

- increase the hysteresis tolerance (p9547/p9347). Possibly set the filtering higher (p9545/p9345).

For message value = 274, 275:

- increase the cam tolerance p9540/p9340 and/or the position tolerance p9542/p9342.

For message value = 278, 279:

- check as to whether the same acceleration limit has been set for both channels. A different result depends on whether SLA is enabled and not selected - or enabled and selected. In this case, another message value is possible.

For message value = 1 ... 999:

- if the message value is listed under cause: Check the cross-checked parameters to which the message value refers.

- copy the safety parameters.

- carry out a POWER ON (switch-off/switch-on) for all components.

- upgrade the Motor Module software.

- upgrade the Control Unit software.

- correction of the encoder evaluation. The actual values differ as a result of mechanical faults (V belts, travel to a mechanical endstop, wear and window setting that is too narrow, encoder fault, ...).

Note:

For SINAMICS firmware version >= 4.7, the KDV list is increased when setting p9567 > 0. For a non-compatible version of SINUMERIK this can lead to an error for the data cross-check (is indicated with message value >= 237). If necessary, p9567 must be set = 0, or the firmware version of SINUMERIK upgraded.

For message value = 1000:

- investigate the signal associated with the safety-relevant input (contact problems).

For message value = 1001:

- carry out a POWER ON (switch-off/switch-on) for all components.

- upgrade the Motor Module software.

- upgrade the Control Unit software.

For message value = 1002:

- perform safe acknowledgment, set the user agreement in both monitoring channels simultaneously (within 4 s).

For message value = 1003:

- check the mechanical system of the axis. It is possible that the axis was shifted when switched-off, and the last saved actual position no longer corresponds with the new actual position after the system has been powered up again.

- increase the tolerance for the actual value comparison when referencing (p9544).

Then check the actual values, perform a POWER ON and set the user agreement again.

For message value = 1004:

For 1., the following applies: Perform safe acknowledgment. Set the user agreement again.

For 2., the following applies: Perform safe acknowledgment. Only set the user agreement again if the axis has been referenced.

For message value = 1005:

- for safe motion monitoring functions without encoder: check the conditions for pulse enable.

- for safe motion monitoring functions with encoder: check the conditions for STO deselection.

Note:

For a Power Module, the test stop should always be performed when the pulses are enabled (independent of whether with encoder or without encoder).

For message value = 1007:

- check the PLC for the correct operating state (run state, basic program).

For message value = 1008:

- check whether incorrect or overlapping address ranges have been set in SINUMERIK machine data MD10393.

For message value = 1011:

- for diagnostics, refer to parameter (r9571).

For message value = 1012:

- upgrade the Sensor Module firmware to a more recent version.

- for 1-encoder systems, the following applies: check the encoder parameters for equality (p9515/p9315, p9519/p9319, p9523/p9323, p9524/p9324, p9525/p9325, p9529/p9329).

- for a 1-encoder system and 2-encoder system the following applies: in order to correctly copy the encoder parameters from p04xx, p9700 must be set to 46 and p9701 must be set to 172.

- for DQI encoders the following applies: If required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.

- the parameterized encoder does not correspond to the connected encoder - replace the encoder.

- check the electrical cabinet design and cable routing for EMC compliance

- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).

- replace the hardware.

For message value = 1014:

- check the encoder actual values. If required, increase the position tolerance (p9542) and/or cam tolerance (p9540).

For message value = 1020, 1021, 1024:

- check the communication link.

- if required, increase the monitoring cycle clock settings (p9500, p9511).

- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).

- replace the hardware.

For message value = 1033, 1034:

- if required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.

For message value = 1035, if one of the safety encoders was replaced:

- confirm the hardware replacement (p9700 = 29, p9701 = 236 or p9702 = 29).

- save all parameters (p0977 = 1 or p0971 = 1 or "copy RAM to ROM").

- acknowledge fault (e.g. binector input p2103).

For message value = 1039:

- check the conversion factors such as spindle pitch or gearbox ratios.

For message value = 1041:

- check whether the motor has sufficient current (>r9785[0]).

- reduce the minimum current (p9588).

- for synchronous motors increase the absolute value of p9783.

- check whether the function "Closed-loop controlled operation with HF signal injection" is activated (p1750.5 = 1) and if required, deactivate.

For message value = 1042:

- increase the ramp-function generator ramp-up/down time (p1120/p1121).

- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).

- reduce the dynamic response of the setpoint value.

- check the absolute current and voltage values, and set the control behavior so that this is greater than 3% of the rated converter data in operation or in the case of a fault.

- increase the minimum current (p9588).

For message value = 1043:

- increase the voltage tolerance (p9589). When operating a reluctance motor, the controller settings are generally set to be more dynamic. If this message is output for the factory setting of p9589, then the acceleration limit should be increased as countermeasure (p9589 = 500 ... 1000 %). From experience, this provides a rugged response.

- increase the ramp-function generator ramp-up/down time (p1120/p1121).

- check that the current/speed control is set correctly (torque-generating/field-generating current and actual speed value may not fluctuate).

- reduce the dynamic response of the setpoint value.

For message value = 5000, 5014, 5023, 5024, 5030, 5031, 5032, 5042, 5043, 5052, 5053, 5068, 5072, 5073, 5082 ... 5087, 5090, 5091, 5122 ... 5125, 5132 ... 5135, 5140:

- carry out a POWER ON (switch-off/switch-on) for all components.

- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.

- upgrade firmware to later version.

- contact Technical Support.

- replace the Control Unit.

For message value = 5012:

- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the Motor Module (p9810). It is not permissible for the PROFIsafe address to be 0 or FFFF!

For message value = 5013, 5025:

- carry out a POWER ON (switch-off/switch-on) for all components.

- check the setting of the PROFIsafe address of the Control Unit (p9610) and that of the Motor Module (p9810).

- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.

For message value = 5022:

- check the setting of the values of the F parameters at the PROFIsafe slave (F_SIL, F_CRC_Length, F_Par_Version, F_Source_Add, F_Dest_add, F_WD_Time).

For message value = 5026:

- check the settings of the values of the F parameters and the F parameter CRC (CRC1) calculated from these at the PROFIsafe slave and update.

For message value = 5065:

- check the configuration and communication at the PROFIsafe slave (cons. No. / CRC).

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.

For message value = 5066:

- check the setting of the value for F parameter F_WD_Time on the PROFIsafe slave and increase if necessary.

- evaluate diagnostic information in the F host.

- check PROFIsafe connection.

For message value = 6000 ... 6999:

Refer to the description of the message values in safety fault F01611.

For message value = 7000:

- increase the position tolerance (p9542/p9342).

- determine the actual position of CU (r9713[0] and the second channel r9713[1], and check the difference for plausibility.

- reduce the difference of the actual position from CU (r9713[0] and the second channel r9713[1] for a 2-encoder system.

For message value = 7001:

- increase the scaling value for the safe position in the 16 bit notation (p9574/p9374).

- if required, reduce the traversing range.

For message value = 7002:

- carry out a POWER ON (switch-off/switch-on) for all components.

- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):

- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

For message value = 7003, 7004:

- if required, adapt the settings for the times for Tdp, Ti and To - or increase the monitoring clock cycle p9500 (rule Tdp = 2 x n x p9500, n= 1, 2, 3, ...).

See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 201712 <location>SI Motion P1 (CU): Defect in F-IO processing

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross checking and comparing the two monitoring channels, the drive detected a difference between parameters or results of the F-IO processing and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

The safety message C01711 with message value 0 is also displayed due to initiation of STOP F.

If at least one monitoring function is active, the safety message C01701 "SI Motion: STOP B initiated" is output after the parameterized timer has expired.

Message value (r9749, interpret decimal):

Number of the cross-compared data that resulted in this message.

1: SI discrepancy monitoring time inputs (p10002, p10102).

2: SI acknowledgment internal event input terminal (p10006, p10106).

3: SI STO input terminal (p10022, p10122).

4: SI SS1 input terminal (p10023, p10123).

5: SI SS2 input terminal (p10024, p10124).

6: SI SOS input terminal (p10025, p10125).

7: SI SLS input terminal (p10026, p10126).

8: SI SLS_Limit(1) input terminal (p10027, p10127).

9: SI SLS_Limit(2) input terminal (p10028, p10128).

10: SI Safe State signal selection (p10039, p10139).

11 SI F-DI input mode (p10040, p10140).

12: SI F-DO 0 signal sources (p10042, p10142).

13: Different states for static inactive signal sources (p10006, p10022 ... p10031).

14: SI discrepancy monitoring time outputs (p10002, p10102).

15: SI acknowledgment internal event (p10006, p10106).

16: SI test sensor feedback signal test mode selected for test stop (p10046, p10146, p10047, p10147).

17: SI delay time for test stop at DOs (p10001).

18 ... 25: SI test sensor feedback signal (p10046, p10146, p10047, p10147). Expected state of internal readback signal, generated from the selected test stop mode.

26 ... 33: SI test sensor feedback signal (p10046, p10146, p10047, p10147). Expected state of external readback signal, generated from the selected test stop mode.

34 ... 41: SI test sensor feedback signal (p10046, p10146, p10047, p10147). Expected state of second internal readback signal, generated from the selected test stop mode.

42: Internal data for processing the second internal readback signal, generated from the selected test stop mode (p10047, p10147).

43: Internal data for processing the internal readback signal, generated from the selected test stop mode (p10047, p10147).

44: Internal data for processing the external readback signal, generated from the selected test stop mode (p10047, p10147).

45: Internal data for initialization state of test stop mode, dependent upon test stop parameters.

46: SI digital inputs debounce time (p10017, p10117)

47: Selection F-DI for PROFIsafe (p10050, p10150)

48: Screen form of the F-DIs used (p10006, p10022 ... p10031).

49: SI SDI positive input terminal (p10030, p10130).

50: SI SDI negative input terminal (p10031, p10131).

51: SI SLP input terminal (p10032, p10132).

52: SI SLP select input terminal (p10033, p10133).

53: Internal data for retraction logic (p10009, p100109).

54: SI F-DI for retraction SLP (p10009, p100109).

**Remedy:** - check parameterization in the parameters involved and correct if required.

- ensure equality by copying the SI data to the second channel and then carry out an acceptance test.

- check monitoring clock cycle in p9500 and p9300 for equality.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):

- onboard F-DI (only CU310-2).

- PROFIsafe.

- machine control panel.

See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 201714 <location>SI Motion P1 (CU): Safely-Limited Speed exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive has moved faster than that specified by the velocity limit value (p9531). The drive is stopped as a result of the configured stop response (p9563).
Message value (r9749, interpret decimal):
100: SLS1 exceeded.
200: SLS2 exceeded.
300: SLS3 exceeded.
400: SLS4 exceeded.
1000: Encoder limit frequency exceeded.

**Remedy:** - check the traversing/motion program in the control.
- check limits for SLS and if required adapt accordingly (p9531).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also:p9531, p9563

## 201715 <location>SI Motion P1 (CU): Safely-Limited Position exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The axis has moved past a parameterized position that is monitored by the "SLP" function.
Message value (r9749, interpret decimal):
10: SLP1 violated.
20: SLP2 violated.

**Remedy:** - check the traversing/motion program in the control.
- check the limits for "SLP" function and if required, adapt (p9534, p9535).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
Prerequisite:
- deselect "SLP" function and retract the axis into the permitted position range.
Carry out a safe acknowledgment using one of the following options:
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
See also:p9534, p9535

## 201716 <location>SI Motion P1 (CU): Tolerance for safe motion direction exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The tolerance for the "safe motion direction" function was exceeded. The drive is stopped as a result of the configured stop response (p9566).
Message value (r9749, interpret decimal):
0: Tolerance for the "safe motion direction positive" function exceeded.
1: Tolerance for the "safe motion direction negative" function exceeded.
**Remedy:** - check the traversing/motion program in the control.
- check the tolerance for "SDI" function and if required, adapt (p9564).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
Prerequisite:
- deselect the "SDI" function and if required select again.
Carry out a safe acknowledgment using one of the following options:
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SDI: Safe Direction (safe motion direction)
SI: Safety Integrated
See also:p9564, p9565, p9566

## 201717 <location>SI Motion P1 (CU): SLA limit exceeded

**Drive object:** HLA_DBSI, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The acceleration limit for the "Safely-Limited Acceleration" function was exceeded. The drive is stopped as a result of the configured stop response (p9579).
Message value (r9749, interpret decimal):
0: The monitoring of the coarsely resolved acceleration has violated the acceleration limit.
1: The monitoring of the finely resolved acceleration and possibly filtered acceleration has violated the acceleration limit.
**Remedy:** - check the traversing/motion program in the control.
- check the acceleration limit for the "SLA" function and if required, adapt (p9578).
- carry out a safe acknowledgment.
For message value = 0:
Analyze the causes using r9714[0] and r9714[3].
For message value = 1:
Analyze the causes using r9789[0], r9789[1] and r9789[2].
Note:
SI: Safety Integrated
SLA: Safely-Limited Acceleration
See also:p9578 (SI Motion SLA acceleration limit (CU)), p9579 (SI Motion SLA stop response (Control Unit))

## 201730 <location>SI Motion P1 (CU): Reference block for dynamic Safely-Limited Speed invalid

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The reference block transferred via PROFIsafe is negative.
A reference block is used to generate a referred velocity limit value based on the reference quantity "Velocity limit value SLS1" (p9531[0]).
The drive is stopped as a result of the configured stop response (p9563[0]).
Message value (r9749, interpret decimal):
requested, invalid reference block.

**Remedy:** In the PROFIsafe telegram, input data S_SLS_LIMIT_IST must be corrected.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- PROFIsafe.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed

## 201745 <location>SI Motion P1 (CU): Checking braking torque for the brake test

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** POWER ON (IMMEDIATELY)

**Cause:** The scaling of the brake torque for the brake test can be changed using parameter p2003.
An acceptance test must be carried out again for the braking test. This determines whether the braking test is still carried out with the correct braking torque.

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- repeat the acceptance test for the safe brake test if the brake test is used.
See also:p2003

## 201750 <location>SI Motion P1 (CU): Hardware fault safety-relevant encoder

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The encoder that is used for the safety-relevant motion monitoring functions signals a hardware fault.
Message value (r9749, interpret decimal):
Encoder status word 1, encoder status word 2 that resulted in the message.

**Remedy:** - check the encoder connection.
- replace encoder.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note regarding encoder replacement for a third-party motor:
The serial number of the encoder must be copied in order to acknowledge this safety message.
This can be realized using p0440 = 1 or p1990 = 1.

## 201751 <location>SI Motion P1 (CU): Effectivity test fault safety-relevant encoder

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The DRIVE-CLiQ encoder for safe motion monitoring signals an error for the effectivity tests.
Message value (r9749, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - check the encoder connection.
- replace encoder.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

## 201752 <location>SI Motion P1 (CU): reference position invalid

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The transferred reference position is invalid.
Message value (r9749, interpret decimal):
1: It is not possible to directly transfer the reference position (p9573=89).
2: It is not possible to transfer the reference position into the motion.
**Remedy:** - unpark axis/encoder.
- acknowledge encoder fault
- deactivate gearbox stage switchover.
- when referencing via the Safety Control Channel (SCC), enable the function "Referencing via SCC" (p9501.27/9301.27).
This message can be acknowledged as follows:
- motion monitoring functions integrated in the drive: Via Terminal Module 54F (TM54F) or PROFIsafe

## 201780 <location>SBT When selected, the brake is closed

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Following brakes are closed: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When selecting the brake test or starting the brake test, not all of the brakes were open.
Alarm value (r2124, interpret binary):
Bit 0 = 1:
The internal brake is closed.
Bit 1 = 1:
The external brake is closed (p10230.5, p10235.5, p10202).
Note:
The alarm is also issued, if a brake has not been configured in p10202.
SBT: Safe Brake Test
See also:p10202, p10230, p10235
**Remedy:** Open all brakes and reselect the brake test (p10230.0, p10235.0).

## 201781 <location>SBT brake opening time exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The maximum time (11 s) to open the brake during the brake test was exceeded.
Possible causes:
- during the brake test the drive went into a fault condition, and therefore the brake was closed by the drive.
- for an external brake, the feedback signal "Brake closed" was signaled too long (p10230.5, p10235).
Alarm value (r2124, interpret binary):
Bit 0 = 1:
Internal brake was not able to be opened.
Bit 1 = 1:
External brake was not able to be opened.
Note:
SBT: Safe Brake Test

**Remedy:**
- carry out a safe acknowledgment.
- restart the brake test (p10230.1, p10235.1).
See also:p10230, p10235

## 201782 <location>SBT brake test incorrect control

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The brake test was canceled as a result of incorrect control.
Alarm value (r2124, interpret binary):
Alarm value 0:
The brake test was canceled as a result of a fault (brake opening time or brake closing time exceeded).
Bit 0:
The safe brake test was canceled by resetting the brake test selection.
Bit 1:
The safe brake test was canceled by resetting the brake test start.
Bit 2:
The brake, which was selected at the start of the brake test, has not been configured in p10202.
When starting the brake test, as a result of the test top selection, brake 1 is not configured as internal brake.
There is a brake test configuration error. In this case, alarm A01785 is also output.
Note:
SBT: Safe Brake Test
See also:p10202 (SI Motion SBT brake selection)

**Remedy:**
- check parameterization of the brake test (p10202).
- check as to whether alarm A01785 is present, and if so, evaluate.
- carry out a safe acknowledgment.
- if required, restart the brake test.

## 201783 <location>SBT brake closing time exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The maximum time (11 s) to close the brake during the brake test was exceeded.
Alarm value (r2124, interpret binary):
Bit 0 = 1:
Internal brake was not able to be closed.
Bit 1 = 1:
External brake was not able to be closed.
Note:
SBT: Safe Brake Test

**Remedy:** - When using an external brake, check that the feedback signal "brake closed" is correctly interconnected with the control word of the brake test (p10230.5, p10235.5).
- When using an internal brake with external feedback signal, check whether the feedback signal is correctly interconnected with the extended brake control.
- carry out a safe acknowledgment.
- restart the brake test (p10230.1, p10235.1).

## 201784 <location>SBT brake test canceled with fault

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The safe brake test was canceled as a result of a fault.
Alarm value (r2124, interpret binary):
Bit 17 = 1: fault in the brake test sequence (cause, see bits 0 ... 10).
Bit 18 = 1: the internal brake is closed. It must be open when the external brake is tested (p10202).
Bit 19 = 1: the external brake is closed. It must be open when the internal brake is tested (p10202).
Bit 20 = 1: not all brakes are open (p10202).
Bit 21 = 1: axis position during the brake test not valid due to parking axis.
Bit 22 = 1: internal software error.
Bit 23 = 1: the permissible position range of the axis was violated with the brake closed (p10212/p10222).
Bit 24 = 1: the tested internal brake was opened while the brake test was active.
Bit 25 = 1: the tested external brake was opened while the brake test was active.
Bit 26 = 1: during the active brake test, the test torque left its tolerance bandwidth (20 %).
Cause for alarm value bit 17:
Bit 0 = 1: operation when selecting the brake test not enabled (r0899.2 = 0).
Bit 1 = 1: external fault occurred (e.g. the brake test that has already started is canceled by the user).
Bit 2 = 1: when selecting the brake test a brake is closed.
Bit 3 = 1: when determining the load torque a brake is closed.
Bit 4 = 1: A fault has occurred with stop response (e.g. OFF1, OFF2 or OFF3) - or the pulse enable was withdrawn (e.g. STO selected or operation no longer enabled).
Bit 5 = 1: when selecting the brake test the axis speed setpoint is too high.
Bit 6 = 1: the actual speed (r0063) of the axis is too high (e.g. brake does not hold during the brake test).
Bit 7 = 1: Incorrect speed controller mode (e.g. encoderless speed control or U/f operation).
Bit 8 = 1: closed-loop control not enabled or function generator active.
Bit 9 = 1: control does not switch over to the brake test (e.g. because PI speed control has not been parameterized).
Bit 10 = 1: torque limit reached (r1407.7, r1408.8).
Note:
SBT: Safe Brake Test

**Remedy:** - remove the fault cause.
- carry out a safe acknowledgment.
- if required, restart the brake test.
For bit 17 = 1 with bit 6 = 1 or bit 23 = 1:
If the brake closing time of the motor holding brake (p1217) has been set too low, then at the start of the brake test, the brake is closed too late. The brake closing time should be adapted (p1217).

## 201785 <location>SBT brake test configuration error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error when parameterizing the brake test.
In this configuration, the brake test cannot be started or cannot be started without error.
Alarm value (r2124, interpret decimal):
1:
No motion monitoring functions have been enabled.
2:
Two internal brakes were configured (p10202).
4:
No internal brakes were configured (p10202).
8:
The brake test is configured for an internal brake, however the safety brake control is not enabled (p9602/p9802).
Note:
From firmware version 5.1, SBT without SBC is also permitted for the internal brake.
16:
The safe brake test and Safety without encoder are simultaneously enabled (p9306/p9506). This is not permissible.
32:
The Safe Brake Test and vector U/f control is enabled. The safe brake test is not possible in this control mode.
Note:
SBC: Safe Brake Control
SBT: Safe Brake Test
**Remedy:** Check parameterization of the brake test.

## 201786 <location>SCC signal source changed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The signal source in p10235 or p10250 was changed.
The new signal source is effective immediately.
Note:
SCC: Safety Control Channel
See also:p10235 (SI Safety Control Channel control word S_STW3B), p10250 (SI Safety Control Channel control word S_STW1B)
**Remedy:** Acknowledge fault.

## 201787 <location>SBT motor type different

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY
**Cause:** The motor type set for the safe brake test (p10204) does not match the motor type set via the function module (r0108.12).
**Remedy:** Adapt the motor type set for the safe brake test.
Note:
All of the parameters for the brake test, whose unit depends on the motor type, should be checked.
See also:p10204, p10209

## 201788 <location>SI: Automatic test stop waits for STO deselection via motion monitoring functions

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The automatic test stop (forced checking procedure) was not able to be carried out after powering up.
Possible causes:
- the STO function is selected via safe motion monitoring functions.
- a safety message is present, that resulted in a STO.
Note:
STO: Safe Torque Off
**Remedy:** - deselect STO via safe motion monitoring functions.
- remove the cause of the safety messages and acknowledge the messages.
Note:
The automatic test stop is performed after removing the cause.

## 201789 <location>SI: Automatic test stop and brake test when test stop is selected not permitted

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The parameterization of the automatic test stop (p9507.6/p9307.6) and the brake test when a test stop is selected (p10203 = 2) are not permissible.
The test stop is not automatically carried out when the powering up.
**Remedy:** - correct the parameter assignment.
- set p10203 not equal to 2 or deactivate the automatic test stop.
Note:
A warm restart or POWER ON is required to carry out the automatic test stop.

## 201794 <location>SI Motion: check modulo value for safe position via PROFIsafe

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When parameterizing the modulo value for safe position via PROFIsafe (p9505) the position actual value can jump when the range that can be represented overflows.
Range that can be represented:
- 32-bit value: +/- 2048 revolutions
- 16-bit value: +/- 2048 revolutions (depending on p9574)

**Remedy:** Correct the parameter assignment.

Set p9505 to 2^n revolutions - and to complete revolutions (i.e. a multiple of 360 °).

Note:

This alarm can be hidden for the case that the possible position actual value jump can be tolerated for the particular application, or does not represent a problem; for example because the parameterized modulo range fits "almost as integer number" in the range of +/- 2048 revolutions that can be represented.

To re-parameterize the alarm to "NO REPORT", it is not permissible that the alarm is present. As a consequence, the following sequence is required for the re-parameterization:

- correct p9505 to "2^n".
- re-parameterize the alarm using p2118 and p2119.
- set p9505 back to the required value.

## 201795 <location>SI Motion P1 (CU): Wait time after exiting the safe pulse cancellation expired

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** After exiting safe pulse cancellation, within the wait time of 5 seconds, encoderless actual value sensing was not able to be activated for the extended functions without selection.

A change is again made into the "safe pulse cancellation" state.

**Remedy:** - check missing enable signals, which prevent the drive control from being commissioned (r0046).

- evaluate possible fault messages of the encoderless actual value sensing and remove.

## 201796 <location>SI P1 (CU): Wait for communication

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The drive waits for communication to be established to execute the safety-relevant motion monitoring functions.

Note:

STO is active in this state.

Alarm value (r2124, interpret decimal):

1: Wait for communication to be established to SINUMERIK.

2: Wait for communication to be established to TM54F.

3: Wait for communication to be established to PROFIsafe F-Host.

**Remedy:** If, after a longer period of time, the message is not automatically withdrawn, the following checks have to be made as appropriate:
For communication with SINUMERIK, the following applies:
- check any other PROFIBUS messages/signals present and remove their cause.
- check that assignment of the axes on the higher-level control to the drives in the drive unit is correct.
- check enable signal of the safety-relevant motion monitoring functions for the corresponding axis on the higher-level control and if required, set it.
For communication with TM54F, the following applies:
- check any other messages/signals present for DRIVE-CLiQ communication with the TM54F and remove their cause.
- check the setting of p10010. All the drive objects controlled by the TM54F must be listed.
For communication with PROFIsafe F-Host, the following applies:
- evaluate any other PROFIsafe communication messages/signals present.
- check the operating state of the F-Host.
- check the communication connection to the F Host.
- check the communication connection to the Motor Module/Hydraulic Module. It must be ensured that when the Control Unit powers up, the Motor Module/Hydraulic Module is connected and at the latest is also switched-on with the Control Unit. Otherwise, if the Motor Module/Hydraulic Module is subsequently inserted or switched on, a POWER ON must be performed at the Control Unit.
Note:
STO: Safe Torque Off
See also:p9601, p9801

## 201797 <location>SI Motion P1 (CU): Axis not safely referenced

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The standstill position saved before switching off does not match the actual position determined at switch-on.
Message value (r9749, interpret decimal):
1: Axis not safely referenced.
2: User agreement missing.
**Remedy:** If safe automatic referencing is not possible the user must issue a user agreement for the new position using the softkey. This mean that this position is then designated as safety-relevant.
Note:
SI: Safety Integrated

## 201798 <location>SI Motion P1 (CU): Test stop for motion monitoring functions running

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The forced checking procedure (test stop) for the safe motion monitoring functions is currently in progress.
**Remedy:** Not necessary.
The message is automatically withdrawn when the test stop has been completed.
Note:
SI: Safety Integrated

## 201799 <location>SI Motion P1 (CU): Acceptance test mode active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The acceptance test mode is active.
This means the following:
- the setpoint velocity limiting is deactivated (r9733).
- the standard limit switches are deactivated during the acceptance test for function SLP (SE) (for EPOS internal, otherwise via r10234).
- for safety functions with SINUMERIK, the following applies: The POWER ON signals of the safety-relevant motion monitoring functions can be acknowledged during the acceptance test using the acknowledgment functions of the higher-level control.

**Remedy:** Not necessary.
The message is withdrawn when exiting the acceptance test mode.
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches

## 201800 <location>DRIVE-CLiQ: Hardware/configuration error

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A DRIVE-CLiQ connection fault has occurred.
Fault value (r0949, interpret decimal):
100 ... 107:
Communication via DRIVE-CLiQ socket X100 ... X107 has not been switched to cyclic operation. The cause may be an incorrect structure or a configuration that results in an impossible bus timing.
10:
Loss of the DRIVE-CLiQ connection. The cause may be, for example, that the DRIVE-CLiQ cable was withdrawn from the Control Unit or as a result of a short-circuit for motors with DRIVE-CLiQ. This fault can only be acknowledged in cyclic communication.
11:
Repeated faults when detecting the connection. This fault can only be acknowledged in cyclic communication.
12:
A connection was detected but the node ID exchange mechanism does not function. The reason is probably that the component is defective. This fault can only be acknowledged in cyclic communication.

**Remedy:** For fault value = 100 ... 107:
- ensure that the DRIVE-CLiQ components have the same firmware versions.
- avoid longer topologies for short current controller sampling times.

For fault value = 10:
- check the DRIVE-CLiQ cables at the Control Unit.
- remove any short-circuit for motors with DRIVE-CLiQ.
- carry out a POWER ON.

For fault value = 11:
- check the electrical cabinet design and cable routing for EMC compliance

For fault value = 12:
- replace the component involved.

## 201839 <location>DRIVE-CLiQ diagnostics: cable fault to the component

**Drive object:** 'All objects

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The fault counter (r9936[0...199]) to monitor the DRIVE-CLiQ connections/cables has been incremented.
Alarm value (r2124, interpret decimal):
Component number.
Note:
The component number specifies the component whose feeder cable from the direction of the Control Unit is faulted.
The alarm is automatically withdrawn after 5 seconds, assuming that no other data transfer error has occurred.
See also:r9936 (DRIVE-CLiQ diagnostic error counter connection)

**Remedy:** - check the corresponding DRIVE-CLiQ cables.
- check the electrical cabinet design and cable routing for EMC compliance

## 201840 <location>SMI: Component found without motor data

**Drive object:** 'All objects

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An SMI/DQI without motor data has been found (e.g. SMI installed as replacement part).
Alarm value (r2124, interpret decimal):
Component number from target topology.

**Remedy:** 1. Download the SMI/DQI data (motor/encoder data) from the data backup again (p4690, p4691).
2. Carry out a POWER ON (switch-off/switch-on) for this component.
Note:
DQI: DRIVE-CLiQ Sensor Integrated
SMI: SINAMICS Sensor Module Integrated
See also:p4690 (SMI spare part component number), p4691 (SMI spare part save/download data)

## 201900 <location>PB/PN: Configuration telegram error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A controller attempts to establish a connection using an incorrect configuring telegram.
Alarm value (r2124, interpret decimal):
1:
Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence are defined in p0978.
2:
Too many PZD data words for output or input to a drive object. The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051.
3:
Uneven number of bytes for input or output.
4:
Setting data for synchronization not accepted. For more information, see A01902.
211:
Unknown parameterizing block.
223:
Clock synchronization for the PZD interface set in p8815[0] is not permissible.
More than one PZD interface is operated in clock synchronism.
253:
PN Shared Device: Illegal mixed configuration of PROFIsafe and PZD.
254:
PN Shared Device: Illegal double assignment of a slot/subslot.
255:
PN: Configured drive object and existing drive object do not match.
256:
PN: configured telegram cannot be set.
257:
PN Shared Device: Too many PZD data words for the output or input in the overall device.
500:
Illegal PROFIsafe configuration for the interface set in p8815[1].
More than one PZD interface is operated with PROFIsafe.
501:
PROFIsafe parameter error (e.g. F_dest).
502:
PROFIsafe telegram does not match.
503:
PROFIsafe connection is rejected as long as there is no isochronous connection (p8969).
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** Check the bus configuration on the master and the slave sides.
For alarm value = 1, 2:
- check the list of the drive objects with process data exchange (p0978).
Note:
With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.
For alarm value = 2:
- check the number of data words for output and input to a drive object.
For alarm value = 211:
- Ensure offline version <= online version.
For alarm value = 223, 500:
- check the setting in p8839 and p8815.
- check for inserted but not configured CBE20.
- ensure that only one PZD interface is operated in clock synchronism or with PROFIsafe.
For alarm value = 255:
- check configured drive objects.
For alarm value = 256:
- check the configured telegram.
For alarm value = 257:
- check the number of data words for output and input to the complete device.
For alarm value = 501:
- check the set PROFIsafe address (p9610).
For alarm value = 502:
- check the set PROFIsafe telegram (p60022, p9611).

## 201902 <location>PB/PN: clock cycle synchronous operation parameterization not permissible

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Parameterization for isochronous operation is not permissible.
Alarm value (r2124, interpret decimal):
0: Bus cycle time Tdp < 0.5 ms.
1: Bus cycle time Tdp > 32 ms.
2: Bus cycle time Tdp is not an integer multiple of the current controller sampling time.
3: Instant of the actual value sensing Ti > Bus cycle time Tdp or Ti = 0.
4: Instant of the actual value sensing Ti is not an integer multiple of the current controller sampling time.
5: Instant of the setpoint acceptance To >= Bus cycle time Tdp or To = 0.
6: Instant of the setpoint acceptance To is not an integer multiple of the current controller sampling time.
7: Master application cycle time Tmapc is not an integer multiple of the speed controller sampling time.
8: Bus reserve bus cycle time Tdp - data exchange time Tdx less than two current controller sampling times.
10: Instant of the setpoint acceptance To <= data exchange time Tdx + current controller sampling time
11: Master application cycle time Tmapc > 14 x Tdp or Tmapc = 0.
12: PLL tolerance window Tpll_w > Tpll_w_max.
13: Bus cycle time Tdp is not a multiple of all basic clock cycles p0110[x].
16: For COMM BOARD, the instant in time for the actual value sensing Ti is less than two current controller sampling times.

**Remedy:** - Adapt the bus parameterization Tdp, Ti, To.
- adapt the sampling time for the current controller or speed controller.
For alarm value = 10:
- reduce Tdx by using fewer bus participants or shorter telegrams.
Note:
PB: PROFIBUS
PN: PROFINET

## 201903 <location>COMM INT: Receive configuration data invalid

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The drive unit did not accept the receive configuration data.
Alarm value (r2124, interpret decimal):
Return value of the receive configuration data check.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence are defined in p0978.
2: Too many PZD data words for output or input to a drive object. The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted. For more information, see A01902.
5: Cyclic operation not active.
501: PROFIsafe parameter error (e.g. F_dest).
Additional values:
Only for internal Siemens troubleshooting.
**Remedy:** Check the receive configuration data.
For alarm value = 1, 2:
Check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.
For alarm value = 2:
Check the number of data words for output and input to a drive object.
For alarm value = 501:
Check the set PROFIsafe address (p9610).

## 201910 <location>Fieldbus: setpoint timeout

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM31, TM41
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Hla: OFF3 (NONE, OFF1, OFF2, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** The reception of setpoints from the fieldbus interface (onboard, PROFIBUS/PROFINET/USS) has been interrupted.
- bus connection interrupted.
- controller switched off.
- controller set into the STOP state.
See also:p2040
**Remedy:** Restore the bus connection and set the controller to RUN.
Note regarding PROFIBUS slave redundancy:
For operation on a Y link, it must be ensured that "DP alarm mode = DPV1" is set in the slave parameterization.

## 201911 <location>PB/PN: clock cycle synchronous operation clock cycle failure

**Drive object:** 'All objects

**Message value:** -

**Reaction:** Infeed: OFF1
Servo: OFF1 (OFF3)
Hla: OFF1 (OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The global control telegram to synchronize the clock cycles has failed - in cyclic operation - for several DP clock cycles or has violated the time grid specified in the parameterizing telegram over several consecutive DP clock cycles (refer to the bus cycle time, Tdp and Tpllw).

**Remedy:** - check the physical bus configuration (cable, connector, terminating resistor, shielding, etc.).
- check whether communication was briefly or permanently interrupted.
- check the bus and controller for utilization level (e.g. bus cycle time Tdp was set too short).
Note:
PB: PROFIBUS
PN: PROFINET

## 201912 <location>PB/PN: clock cycle synchronous operation sign-of-life failure

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: OFF1
Servo: OFF1 (OFF3)
Hla: OFF1 (OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The maximum permissible number of errors in the controller sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.

**Remedy:** - physically check the bus (cables, connectors, terminating resistor, shielding, etc.).
- correct the interconnection of the controller sign-of-life (p2045).
- check whether the controller correctly sends the sign-of-life (e.g. create a trace with STW2.12 ... STW2.15 and trigger signal ZSW1.3).
- check the permissible telegram failure rate (p0925).
- check the bus and controller for utilization level (e.g. bus cycle time Tdp was set too short).
Note:
PB: PROFIBUS
PN: PROFINET

## 201913 <location>COMM INT: Monitoring time sign-of-life expired

**Drive object:** 'All objects

**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The monitoring time for the sign-of-life counter has expired.
The connection between the drive and the higher-level control (SIMOTION, SINUMERIK) has been interrupted for the following reasons:
- the control was reset.
- the data transfer to the control was interrupted.

**Remedy:** - wait until the control has re-booted.
- restore data transfer to the control.

## 201914 <location>COMM INT: Monitoring time configuration expired

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (OFF1, OFF2, OFF3)
Hla: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The monitoring time for the configuration has expired.
Fault value (r0949, interpret decimal):
0: The transfer time of the send configuration data has been exceeded.
1: The transfer time of the receive configuration data has been exceeded.

**Remedy:** - acknowledge faults that are present.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 201915 <location>PB/PN: clock cycle synchronous operation sign-of-life failure drive object 1

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Group display for problems with the sign-of-life of the master (isochronous operation) on the drive object 1 (Control Unit).
For central measurements, synchronism with the central master is lost.

**Remedy:** Note:
PB: PROFIBUS
PN: PROFINET

## 201920 <location>PROFIBUS: Interruption cyclic connection

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The cyclic connection to the PROFIBUS master is interrupted.

**Remedy:** Establish the PROFIBUS connection and activate the PROFIBUS master in the cyclic mode.
Note:
If there is no communication to a higher-level control system, then p2030 should be set = 0 to suppress this message.

## 201921 <location>PROFIBUS: Receive setpoints after To

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Output data of PROFIBUS master (setpoints) received at the incorrect instant in time within the PROFIBUS clock cycle.

**Remedy:** - check bus configuration.
- check parameters for clock cycle synchronization (ensure To > Tdx).
Note:
To: Time of setpoint acceptance
Tdx: Data exchange time

## 201930 <location>PB/PN: current controller sampling time clock cycle synch. not equal

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The current controller sampling time of all drives must be set the same for the clock cycle synchronous operation.
Alarm value (r2124, interpret decimal):
Number of the drive object with different current controller sampling time.
**Remedy:** Set current controller sampling time to identical values (p0115[0]).
Note:
PB: PROFIBUS
PN: PROFINET
See also:p0115

## 201931 <location>PB/PN: speed controller sampling time clock cycle synch. not equal

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The speed controller sampling time of all drives must be set the same for the clock cycle synchronous operation.
Alarm value (r2124, interpret decimal):
Number of the drive object with the different speed controller sampling time.
**Remedy:** Set the speed controller sampling times to identical values (p0115[1]).
Note:
PB: PROFIBUS
PN: PROFINET
See also:p0115

## 201932 <location>PB/PN: clock cycle synchronization missing for DSC

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** There is no clock synchronization or clock synchronous sign of life and DSC is selected.
Note:
DSC: Dynamic Servo Control
See also:p0922, p1190, p1191
**Remedy:** Set clock synchronization across the bus configuration and transfer clock synchronous sign-of-life.
See also:r2064 (PB/PN diagnostics clock cycle synchronism)

## 201940 <location>PB/PN: clock cycle synchronism not reached

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. It was not possible to synchronize to the clock cycle specified by the master.
- the master does not send a clock synchronous global control telegram although clock synchronous operation was selected when configuring the bus.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.
- at least one drive object has a pulse enable (also not controlled from PROFIBUS/PROFINET).

**Remedy:**
- check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.
- check that no drive object has a pulse enable. Only enable the pulses after synchronizing the PROFIBUS/PROFINET drives.

Note:
PB: PROFIBUS
PN: PROFINET

## 201941 <location>PB/PN: clock cycle signal missing when establishing bus communication

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram. The global control telegram for synchronization is not being received.
**Remedy:** Check the master application and bus configuration.

Note:
PB: PROFIBUS
PN: PROFINET

## 201943 <location>PB/PN: clock cycle signal error when establishing bus communication

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram.
The global control telegram for synchronization is being irregularly received.
-.the master is sending an irregular global control telegram.
- the master is using another clock synchronous DP clock cycle than was transferred to the slave in the parameterizing telegram.

**Remedy:**
- check the master application and bus configuration.
- check the consistency between the clock cycle input when configuring the slave and clock cycle setting at the master.

Note:
PB: PROFIBUS
PN: PROFINET

## 201944 <location>PB/PN: sign-of-life synchronism not reached

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The bus is in the data exchange state and clock synchronous operation has been selected using the parameterizing telegram.
Synchronization with the master sign-of-life (STW2.12 ... STW2.15) could not be completed because the sign-of-life is changing differently to how it was configured in the Tmapc time grid.

**Remedy:** - ensure that the master correctly increments the sign-of-life in the master application clock cycle Tmapc.
- correct the interconnection of the master sign-of-life (p2045).
Note:
PB: PROFIBUS
PN: PROFINET

## 201945 <location>PROFIBUS: Connection to the Publisher failed

**Drive object:** 'All objects
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For PROFIBUS peer-to-peer data transfer, the connection to at least one Publisher has failed.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection failed.
...
Bit 15 = 1: Publisher with address in r2077[15], connection failed.
**Remedy:** - check the PROFIBUS cables.
- carry out a first commissioning of the Publisher that has the failed connection.

## 201946 <location>PROFIBUS: Connection to the Publisher aborted

**Drive object:** 'All objects
**Message value:** Fault cause: %1 bin
**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** At this drive object, the connection to at least one Publisher for PROFIBUS peer-to-peer data transfer in cyclic operation has been aborted.
Fault value (r0949, interpret binary):
Bit 0 = 1: Publisher with address in r2077[0], connection aborted.
...
Bit 15 = 1: Publisher with address in r2077[15], connection aborted.
**Remedy:** - check the PROFIBUS cables.
- check the state of the Publisher that has the aborted connection.

## 201950 <location>PB/PN: clock cycle synchronous operation synchronization unsuccessful

**Drive object:** 'All objects
**Message value:** -
**Reaction:** OFF1 (NONE)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Synchronization of the internal clock cycle to the global control telegram has failed. The internal clock cycle exhibits an unexpected shift.
**Remedy:** Only for internal Siemens troubleshooting.
Note:
PB: PROFIBUS
PN: PROFINET

## 201951 <location>CU SYNC: Synchronization application clock cycle missing

**Drive object:** 'All objects
**Message value:** %1

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** If DRIVE-CLiQ components with different application clock cycle are operated on a DRIVE-CLiQ port, this requires synchronization with the Control Unit. This synchronization routine was unsuccessful.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the software of the DRIVE-CLiQ components.
- upgrade the Control Unit software.
Note:
If a Controller Extension is being used (e.g. CX32, NX10), then the following applies:
Check whether the Controller Extension is issuing error messages, and if required, remove these.

## 201952 <location>CU DRIVE-CLiQ: Synchronization of component not supported

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The existing system configuration requires that the connected DRIVE-CLiQ components support the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and the application clock cycle.
However, not all DRIVE-CLiQ components have this functionality.
Fault value (r0949, interpret decimal):
Component number of the first faulty DRIVE-CLiQ component.

**Remedy:** Upgrade the firmware of the component specified in the fault value.
Note:
If required, also upgrade additional components in the DRIVE-CLiQ line.

## 201953 <location>CU SYNC: Synchronization not completed

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** After the drive system is switched on, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time tolerance.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components.
If the error occurs after the drive sampling times were changed, and if a Terminal Module 31 (TM31) is being used, the sampling times (p0115, p4099) should be set as integer multiples to the drive clock cycles (p0115).

## 201954 <location>CU DRIVE-CLiQ: Synchronization unsuccessful

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started and was not able to be successfully completed (e.g. after switch-on).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** 1. Remove the cause of a possible DRIVE-CLiQ fault.
2. Initiate a new synchronization, e.g. as follows:
- remove the PROFIBUS master and re-insert again.
- restart the PROFIBUS master.
- switch off the Control Unit and switch on again.
- carry out a Control Unit hardware reset (RESET button, p0972).
- carry out a parameter reset and download the saved parameters (p0009 = 30, p0976 = 2, 3).

## 201955 <location>CU DRIVE-CLiQ: Synchronization DO not completed

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** After the drive system is switched on, the synchronization between the basic clock cycle, DRIVE-CLiQ clock cycle and application clock cycle was started but was not completed within the selected time tolerance.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components of the DO.

## 201970 <location>CBExx: cyclic connection interrupted

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The cyclic connection to the PROFINET controller is interrupted.
**Remedy:** Establish the PROFINET connection and activate the PROFINET controller in the cyclic mode.

## 201971 <location>CBExx: maximum number of controllers exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Info 1: %1, Info 2: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A controller attempts to establish a connection to the drive, and as a consequence exceeds the permitted number of PROFINET connections.
The alarm is automatically withdrawn after approx. 30 seconds.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info 1 = 0: number of RT connections exceeded
Info 1 > 0: number of IRT connections exceeded
Info 2: permitted number of connections
**Remedy:** Check the configuration of the PROFINET controllers.

## 201977 <location>CBE41: overtemperature alarm

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The alarm threshold for the overtemperature of the Communication Board Ethernet 41 (CBE41) was reached.
**Remedy:** - check the air intake for the Control Unit.
- check the Control Unit fan.
Note:
The alarm is automatically withdrawn once the limit value has been fallen below.

## 201978 <location>CBE41: overtemperature fault

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** Infeed: OFF2 (OFF1)
Servo: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Hla: OFF3 (NONE, OFF1, OFF2, STOP2)
**Acknowledge:** POWER ON
**Cause:** The shutdown threshold for the overtemperature of the Communication Board Ethernet 41 (CBE41) was reached.
Note:
This fault results in the component being shut down.
As a consequence, communication via CBE41 is no longer possible.
**Remedy:** - Switch-off the Control Unit and after a wait time, switch-on again.
- check the air intake for the Control Unit.
- check the Control Unit fan.
- Replace the component if the fault occurs again.

## 201979 <location>CBExx: internal error for cyclic data transfer

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The cyclic actual values and/or setpoints were not transferred within the specified times.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** Correctly set T_io_input or T_io_output.

## 201980 <location>PN: cyclic connection interrupted

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The cyclic connection to the PROFINET controller is interrupted.
**Remedy:** Establish the PROFINET connection and activate the PROFINET controller in the cyclic mode.

## 201981 <location>PN: Maximum number of controllers exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Info 1: %1, Info 2: %2
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** A controller attempts to establish a connection to the drive, and as a consequence exceeds the permitted number of PROFINET connections.
The alarm is automatically withdrawn after approx. 30 seconds.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info 1 = 0: number of RT connections exceeded
Info 1 > 0: number of IRT connections exceeded
Info 2: permitted number of connections

**Remedy:** Check the configuration of the PROFINET controllers.

## 201982 <location>PN: second controller missing

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Connections to two PROFINET controllers are expected. However, only the connection to a PROFINET controller is available or the controller is in the STOP state.
- system redundancy is activated.

**Remedy:** Check the PROFINET controller.

## 201983 <location>PN: system redundancy switchover running

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The "PROFINET system redundancy" function is configured and the connection between the primary control and drive device is interrupted. The backup controller assumes control of the drive device.

**Remedy:** Not necessary.
This alarm is automatically withdrawn after switchover has been completed.

## 201989 <location>PN: internal cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The cyclic actual values and/or setpoints were not transferred within the specified times.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** Correctly set T_io_input or T_io_output.

## 201990 <location>USS: PZD configuration error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The configuration of the process data (PZD) for the USS protocol is incorrect.
Alarm value (r2124, interpret decimal):
2: PZD amount (p2022) too great for the first drive object (p978[0]).
The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051.
**Remedy:** For alarm value = 2:
Check the amount of USS PZD (p2022) and the maximum PZD amount (r2050/p2051) for the first drive object (p0978[0]).

## 202000 <location>Function generator: Start not possible

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The function generator has already been started.
**Remedy:** Stop the function generator and restart again if necessary.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4800 (Function generator control)

## 202005 <location>Function generator: Drive does not exist

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The drive object specified for connection does not exist.
See also:p4815 (Function generator drive number)
**Remedy:** Use the existing drive object with the corresponding number.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4815 (Function generator drive number)

## 202006 <location>Function generator: No drive specified for connection

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** No drive specified for connection in p4815.
See also:p4815 (Function generator drive number)
**Remedy:** At least one drive to be connected must be specified in p4815.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4815 (Function generator drive number)

## 202007 <location>Function generator: Drive not SERVO / VECTOR / DC_CTRL

**Drive object:** 'All objects

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The drive object specified for connection is not a SERVO / VECTOR or DC_CTRL.
See also:p4815 (Function generator drive number)
**Remedy:** Use a SERVO / VECTOR / DC_CTRL drive object with the corresponding number.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202008 <location>Function generator: Drive specified a multiple number of times

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The drive object specified for connection is already specified.
Alarm value (r2124, interpret decimal):
Drive object number of the drive object that is specified a multiple number of times.
**Remedy:** Specify a different drive object.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202009 <location>Function generator: Illegal mode

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The set operating mode (p1300) of the drive object is not permissible when using the function generator.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.
**Remedy:** Change the operating mode for this drive object to p1300 = 20 (encoderless speed control) or p1300 = 21 (speed control with encoder).
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202010 <location>Function generator: Speed setpoint from the drive is not zero

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The speed setpoint of a drive selected for connection is greater than the value for the standstill detection set using p1226.

**Remedy:** For all of the drives specified for connection, set the speed setpoints to zero.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202011 <location>Function generator: The actual drive speed is not zero

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, TB30, TM120, TM150, TM15DI_DO, TM17, TM31
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The speed actual value of a drive selected for connection is greater than the value for the standstill detection set using p1226.
**Remedy:** Set the relevant drives to zero speed before starting the function generator.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202015 <location>Function generator: Drive enable signals missing

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The master control and/or enable signals are missing to connect to the specified drive.
See also:p4815 (Function generator drive number)
**Remedy:** Fetch the master control to the specified drive object and set all enable signals.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202016 <location>Function generator: Magnetizing running

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Magnetizing has not yet been completed on a drive object specified for connection.
Alarm value (r2124, interpret decimal):
Number of the drive object involved.
See also:p4815 (Function generator drive number)
**Remedy:** Wait for magnetizing of the motor (r0056.4).
Note:
The alarm is reset as follows:
- restart the function generator.
See also:r0056 (Status word, closed-loop control)

## 202020 <location>Function generator: Parameter cannot be changed

**Drive object:** 'All objects
**Message value:** -

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** This parameter setting cannot be changed when the function generator is active (p4800 = 1).
See also:p4810, p4812, p4813, p4815, p4820, p4821, p4822, p4823, p4824, p4825, p4826, p4827, p4828, p4829
**Remedy:** - stop the function generator before parameterizing (p4800 = 0).
- if required, start the function generator (p4800 = 1).
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4800 (Function generator control)

## 202025 <location>Function generator: Period too short

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, TB30, TM120, TM150, TM15DI_DO, TM17, TM31
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The value for the period is too short.
See also:p4821 (Function generator period)
**Remedy:** Check and adapt the value for the period.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4821 (Function generator period)

## 202026 <location>Function generator: Pulse width too high

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The selected pulse width is too high.
The pulse width must be less than the period duration.
See also:p4822 (Function generator pulse width)
**Remedy:** Reduce pulse width.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4821 (Function generator period), p4822 (Function generator pulse width)

## 202030 <location>Function generator: Physical address equals zero

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The specified physical address is zero.
See also:p4812 (Function generator physical address)

**Remedy:** Set a physical address with a value other than zero.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4812 (Function generator physical address)

## 202040 <location>Function generator: Illegal value for offset

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The value for the offset is higher than the value for the upper limit or lower than the value for the lower limit.
See also:p4826 (Function generator offset)
**Remedy:** Adjust the offset value accordingly.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:p4826 (Function generator offset), p4828 (Function generator lower limit), p4829 (Function generator upper limit)

## 202041 <location>Function generator: Illegal value for bandwidth

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The bandwidth referred to the time slice clock cycle of the function generator has either been set too low or too high.
Depending on the time slice clock cycle, the bandwidth is defined as follows:
Bandwidth_max = 1 / (2 x time slice clock cycle)
Bandwidth_min = Bandwidth_max / 100000
Example:
Assumption: p4830 = 125 µs
--> Bandwidth_max = 1 / (2 x 125 µs) = 4000 Hz
--> Bandwidth_min = 4000 Hz / 100000 = 0.04 Hz
Note:
p4823: Function generator bandwidth
p4830: Function generator time slice clock cycle
See also:p4823 (Function generator bandwidth), p4830 (Function generator time slice cycle)
**Remedy:** Check the value for the bandwidth and adapt accordingly.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.

## 202047 <location>Function generator: Time slice clock cycle invalid

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The time slice clock cycle selected does not match any of the existing time slices.
See also:p4830 (Function generator time slice cycle)
**Remedy:** Enter an existing time slice clock cycle. The existing time slices can be read out via p7901.
Note:
The alarm is reset as follows:
- remove the cause of this alarm.
- restart the function generator.
See also:r7901 (Sampling times)

## 202050 <location>Trace: Start not possible

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The trace has already been started.
See also:p4700 (Trace control)
**Remedy:** Stop the trace and, if necessary, start again.

## 202051 <location>Trace: recording not possible as a result of know-how protection

**Drive object:** 'All objects
**Message value:** initiating recorder: %1, parameter %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** TRACE recording is not possible as at least one signal or trigger signal being used is under know-how protection.
Alarm value (r2124, interpret hexadecimal):
bbbbaaaa hex:
aaaa = 1: recorder 0
aaaa = 2: recorder 1
aaaa = 3: recorders 0 and 1
bbbb = parameter number (hexadecimal), that was not able to be written to.
See also:p4700, p4711, p4730, p4731, p4732, p4733, p4734, p4735, p4736, p4737
**Remedy:** - Temporarily activate or deactivate know-how protection (p7766).
- include the signal in the OEM exception list (p7763, p7764).
- Where relevant do not record the signal.
See also:p7763 (KHP OEM exception list number of indices for p7764), p7764 (KHP OEM exception list)

## 202055 <location>Trace: Recording time too short

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The trace duration is too short.
The minimum is twice the value of the trace clock cycle.
See also:p4721 (Trace recording time)
**Remedy:** Check the selected recording time and, if necessary, adjust.

## 202056 <location>Trace: Recording cycle too short

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE

**Acknowledge:** NONE
**Cause:** The selected recording cycle is shorter than the selected basic clock cycle 0 (p0110[0]).
See also:p4720 (Trace recording cycle)
**Remedy:** Increase the value for the trace cycle.

## 202057 <location>Trace: Time slice clock cycle invalid

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The time slice clock cycle selected does not match any of the existing time slices.
See also:p4723 (Trace time slice cycle)
**Remedy:** Enter an existing time slice clock cycle. The existing time slices can be read out via p7901.
See also:r7901 (Sampling times)

## 202058 <location>Trace: Time slice clock cycle for endless trace not valid

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The selected time slice clock cycle cannot be used for the endless trace
See also:p4723 (Trace time slice cycle)
**Remedy:** Enter the clock cycle of an existing time slice with a cycle time >= 2 ms for up to 4 recording channels or >= 4 ms from 5 recording channels per trace.
The existing time slices can be read out via p7901.
See also:r7901 (Sampling times)

## 202059 <location>Trace: Time slice clock cycle for 2 x 8 recording channels not valid

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The selected time slice clock cycle cannot be used for more than 4 recording channels.
See also:p4723 (Trace time slice cycle)
**Remedy:** Enter the clock cycle of an existing time slice with a cycle time >= 4 ms or reduce the number of recording channels to 4 per trace.
The existing time slices can be read out via p7901.
See also:r7901 (Sampling times)

## 202060 <location>Trace: Signal to be traced missing

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** - a signal to be traced was not specified.
- the specified signals are not valid.
See also:p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)
**Remedy:** - specify the signal to be traced.
- check whether the relevant signal can be traced.

## 202061 <location>Trace: Invalid signal

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, TB30, TM120, TM150, TM15DI_DO, TM17, TM31

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** - the specified signal does not exist.
- the specified signal can no longer be traced (recorded).
See also:p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)

**Remedy:** - specify the signal to be traced.
- check whether the relevant signal can be traced.

## 202062 <location>Trace: Invalid trigger signal

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** - a trigger signal was not specified.
- the specified signal does not exist.
- the specified signal is not a fixed-point signal.
- the specified signal cannot be used as a trigger signal for the trace.
See also:p4711 (Trace trigger signal)

**Remedy:** Specify a valid trigger signal.

## 202063 <location>Trace: Invalid data type

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The specified data type to select a signal using a physical address is invalid.
See also:p4711 (Trace trigger signal), p4730 (Trace record signal 0), p4731 (Trace record signal 1), p4732 (Trace record signal 2), p4733 (Trace record signal 3)

**Remedy:** Use a valid data type.

## 202070 <location>Trace: Parameter cannot be changed

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The trace parameter settings cannot be changed when the trace is active.
See also:p4700, p4710, p4711, p4712, p4713, p4714, p4715, p4716, p4720, p4721, p4722, p4730, p4731, p4732, p4733, p4780, p4781, p4782, p4783, p4789, p4795

**Remedy:** - stop the trace before parameterization.
- if required, start the trace.

## 202075 <location>Trace: Pretrigger time too long

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE
**Cause:** The selected pretrigger time must be shorter than the trace time.
See also:p4721 (Trace recording time), p4722 (Trace trigger delay)
**Remedy:** Check the pretrigger time setting and change if necessary.

## 202080 <location>Trace: Parameterization deleted due to unit changeover

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The trace parameterization in the drive unit was deleted due to a unit changeover or a change in the reference parameters.
**Remedy:** Restart trace.

## 202085 <location>Message function: Parameterization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** parameter: %1, index:%2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A parameterization error was identified when starting the variable message function.
Alarm value (r2124, interpret decimal):
yyxxxx dec: yy = index, xxxx = parameter
See also:p3290, p3291, p3292, p3293, r3294, p3295, p3296, p3297, p3298, p3299
**Remedy:** Correct the parameter and restart.
Note:
The alarm is automatically withdrawn when stopping, or when successfully starting the variable message function.

## 202095 <location>MTrace 0: multiple trace cannot be activated

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 0):
- measuring function
- long-time trace
- trigger condition "immediate recording start" (IMMEDIATE)
- trigger condition "start with function generator" (FG_START)

**Remedy:**
- if required, deactivate the multiple trace (p4840[0] = 0).
- deactivate function or setting that is not permissible

## 202096 <location>MTrace 0: cannot be saved

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 0).
A multiple trace is not started or is canceled.
Alarm value (r2124, interpret decimal):
1: Memory card cannot be accessed.
- card is not inserted or is blocked by a mounted USB drive.
3: data save operation to slow.
- a second trace has been completed before the measurement results of the first trace were able to be saved.
- writing the measurement result files to the card is blocked by the parameter save.
4: Data save operation canceled.
- for instance, the file required for the data save operation was not able to be found.

**Remedy:** - insert or remove the memory card.
- use a larger memory card.
- configure a longer trace time or use an endless trace.
- avoid saving parameters while a multiple trace is running.
- check whether other functions are presently accessing measurement result files.

## 202097 <location>MTrace 1: multiple trace cannot be activated

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The following functions or settings are not permissible in conjunction with a multiple trace (trace recorder 1):
- measuring function
- long-time trace
- trigger condition "immediate recording start" (IMMEDIATE)
- trigger condition "start with function generator" (FG_START)

**Remedy:** - if required, deactivate the multiple trace (p4840[1] = 0).
- deactivate function or setting that is not permissible

## 202098 <location>MTrace 1: cannot be saved

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** It is not possible to save the measurement results of a multiple trace on the memory card (trace recorder 1).
A multiple trace is not started or is canceled.
Alarm value (r2124, interpret decimal):
1: Memory card cannot be accessed.
- card is not inserted or is blocked by a mounted USB drive.
3: data save operation to slow.
- a second trace has been completed before the measurement results of the first trace were able to be saved.
- writing the measurement result files to the card is blocked by the parameter save.
4: Data save operation canceled.
- for instance, the file required for the data save operation was not able to be found.

**Remedy:** - insert or remove the memory card.
- use a larger memory card.
- configure a longer trace time or use an endless trace.
- avoid saving parameters while a multiple trace is running.
- check whether other functions are presently accessing measurement result files.

## 202099 <location>Trace: Insufficient Control Unit memory

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The memory space still available on the Control Unit is no longer sufficient for the trace function.

**Remedy:** Reduce the memory required, e.g. as follows:
- reduce the trace time.
- increase the trace clock cycle.
- reduce the number of signals to be traced.

See also:r4708 (Trace memory space required), r4799 (Trace memory location free)

## 202100 <location>Drive: Computing dead time current controller too short

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The value in p0118 produces a dead time of one clock cycle because it is prior to setpoint availability.
Possible causes:
- a parameter backup with a version higher than 4.3 was loaded to a version less than or equal to 4.3.
- the system properties after replacing a component no longer match the parameter assignment.

Alarm value (r2134, floating point):
Minimum value for p0118 where dead time no longer occurs.

**Remedy:**
- set p0118 to zero.
- set p0118 to a value greater than or equal to the alarm value (for p1810.11 = 1)
- set p0117 (from the device) to an automatic setting (p0117 = 1).
- check the firmware versions of the components involved.

See also:p0117 (Current controller computing dead time mode), p0118 (Current controller computing dead time)

## 202150 <location>TEC: Technology Extension cannot be loaded

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The system was not able to load a Technology Extension.
Alarm value (r2124, interpret hexadecimal):
10 hex (16 dec):
The interface version in the DCB user library is not compatible to the DCC standard library that has been loaded.
12 hex (18 dec):
A technology package was not able to be downloaded to a Control Unit because the warm restart necessary was not able to be performed.
Only for internal Siemens troubleshooting.

**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
For alarm value = 10 hex (16 dec):
Load a compatible DCB user library (compatible to the interface of the DCC standard library).
For alarm value = 12 hex (18 dec):
Carry out a POWER ON (switch-off/switch-on) for all components.
Note:
DCB: Drive Control Block
DCC: Drive Control Chart
TEC: Technology Extension
See also:r4950, r4955, p4956, r4957

## 202151 <location>TEC: internal software error

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An internal software error has occurred within a Technology Extension.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
- replace the Control Unit.
Note:
TEC: Technology Extension
See also:r4950, r4955, p4956, r4957

## 202152 <location>TEC: insufficient memory

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Too many functions have been configured on this Control Unit (e.g. too many drives, function modules, data sets, Technology Extensions, blocks, etc).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - change the configuration on this Control Unit (e.g. fewer drives, function modules, data sets, Technology Extensions, blocks, etc).
- use an additional Control Unit.
Note:
TEC: Technology Extension

## 202153 <location>TEC: technology function does not exist

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A technology function (e.g. Technology Extension, DCB library) does not exist on the drive device.
When configuring, a technology function is activated, which does not exist on the drive device. This can occur when downloading a project or when powering up.

**Remedy:** - load the required technology function to the drive device.
- if required, deactivate the technology function not required in the configuration.
Note:
DCB: Drive Control Block
TEC: Technology Extension

## 203000 <location>NVRAM fault on action

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A fault occurred during execution of action p7770 = 1 or 2 for the NVRAM data.
Fault value (r0949, interpret hexadecimal):
yyxx hex: yy = fault cause, xx = application ID
yy = 1:
The action p7770 = 1 is not supported by this version if Drive Control Chart (DCC) is activated for the drive object concerned.
yy = 2:
The data length of the specified application is not the same in the NVRAM and the backup.
yy = 3:
The data checksum in p7774 is not correct.
yy = 4:
No data available to load.
See also:p7770 (NVRAM action)

**Remedy:** - Perform the remedy according to the results of the troubleshooting.
- if necessary, start the action again.

## 203001 <location>NVRAM checksum incorrect

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A checksum error occurred when evaluating the non-volatile data (NVRAM) on the Control Unit.
The NVRAM data affected was deleted.

**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components.

## 203500 <location>TM: Initialization

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When initializing the Terminal Modules, the terminals of the Control Unit or the Terminal Board 30, an internal software error has occurred.
Fault value (r0949, interpret decimal):
yxxx dex
y = Only for internal Siemens troubleshooting
xxx = component number (p0151)

**Remedy:** - switch-off/switch-on the power supply for the Control Unit.
- check the DRIVE-CLiQ connection.
- if required, replace the Terminal Module.
The Terminal Module should be directly connected to a DRIVE-CLiQ socket of the Control Unit.
If the fault occurs again, replace the Terminal Module.

## 203501 <location>TM: Sampling time change

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The sampling times of the inputs/outputs were changed.
This change only becomes valid after the next boot.
**Remedy:** Carry out a POWER ON.

## 203505 <location>Analog input wire breakage

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The wire-break monitoring for an analog input has responded.
**Remedy:** Check the wiring for interruptions.

## 203505 <location>Analog input wire breakage

**Drive object:** CU_LINK, CU_NX_840, TM120, TM150
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The wire-break monitoring for an analog input has responded.
The input value of the analog input has exceeded the threshold value parameterized in p4061[x].
Index x = 0: Analog input 0 (X521.1/X521.2)
Index x = 1: Analog input 1 (X521.3/X521.4)
Fault value (r0949, interpret decimal):
yxxx dec
y = analog input (0 = analog input 0 (AI 0), 1 = analog input 1 (AI 1))
xxx = component number (p0151)
Note:
For the following analog input type, the wire breakage monitoring is active:
p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)
**Remedy:** - check the wiring for interruptions.
- check the magnitude of the injected current - it is possible that the infed signal is too low.
- check the load resistor (250 Ohm).
Note:
The input current measured by the Terminal Module can be read out from r4052[x].
For p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:
A current less than 4 mA is not displayed in r4052[x] - but instead r4052[x] = 4 mA is output.

## 203505 <location>CU: Analog input wire breakage

**Drive object:** CU_I_840
**Message value:** %1

**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The wire-break monitoring for an analog input has responded.
The input value of the analog input has exceeded the threshold value parameterized in p0761[0].
p0756[0]: analog input 0 (X131.7/X131.8)
Fault value (r0949, interpret decimal):
Note:
For the following analog input type, the wire breakage monitoring is active:
p0756[0] = 3 (4 ... 20 mA with monitoring)
**Remedy:** - check the wiring to the signal source for interruptions.
- check the magnitude of the injected current - it is possible that the infed signal is too low.
- check the load resistor (250 Ohm).
Note:
The input current measured by the analog input can be read in r0752[0].
For p756[0] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:
A current less than 4 mA is not displayed in r752[0] - but instead r752[0] = 4 mA is output.

## 203505 <location>TB: Analog input wire breakage

**Drive object:** TB30
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The wire-break monitoring for an analog input has responded.
**Remedy:** Check the wiring for interruptions.

## 203505 <location>TM: Analog input wire breakage

**Drive object:** TM15DI_DO, TM17, TM31
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The wire-break monitoring for an analog input has responded.
The input value of the analog input has exceeded the threshold value parameterized in p4061[x].
Index x = 0: Analog input 0 (X521.1/X521.2)
Index x = 1: Analog input 1 (X521.3/X521.4)
Fault value (r0949, interpret decimal):
yxxx dec
y = analog input (0 = analog input 0 (AI 0), 1 = analog input 1 (AI 1))
xxx = component number (p0151)
Note:
For the following analog input type, the wire breakage monitoring is active:
p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)
**Remedy:** - check the wiring for interruptions.
- check the magnitude of the injected current - it is possible that the infed signal is too low.
- check the load resistor (250 Ohm).
Note:
The input current measured by the Terminal Module can be read out from r4052[x].
For p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:
A current less than 4 mA is not displayed in r4052[x] - but instead r4052[x] = 4 mA is output.

## 203505 <location>TM: Analog input wire breakage

**Drive object:** TM41

**Message value:** %1

**Reaction:** OFF1 (NONE, OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The wire-break monitoring for an analog input has responded.
The input value of the analog input has exceeded the threshold value parameterized in p4061[x].
Index x = 0: Analog input 0 (X522.1 to .3)
Index x = 1: Analog input 1 (X522.4 to .5)
Fault value (r0949, interpret decimal):
yxxx dec
y = analog input (0 = analog input 0 (AI 0), 1 = analog input 1 (AI 1))
xxx = component number (p0151)
Note:
For the following analog input type, the wire breakage monitoring is active:
p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)

**Remedy:** - check the wiring for interruptions.
- check the magnitude of the injected current - it is possible that the infed signal is too low.
- check the load resistor (250 Ohm).
Note:
The input current measured by the Terminal Module can be read out from r4052[x].
For p4056[x] = 3 (unipolar current input monitored (+4 ... +20 mA)) the following applies:
A current less than 4 mA is not displayed in r4052[x] - but instead r4052[x] = 4 mA is output.

## 203506 <location>24 V power supply missing

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The 24 V power supply for the digital outputs (X124) is missing.

**Remedy:** Check the terminals for the power supply voltage (X124, L1+, M).

## 203507 <location>Digital output not set

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Despite specification by the signal source the digital output has not been set.
Possible causes:
- power supply missing.
- the digital output is in current limiting (e.g. due to short-circuit).
- the digital output is being used for Safety Extended Functions.
- the control has authority to access the digital output by means of direct access (see also r0729).
Alarm value (r2124, interpret bitwise binary):
Digital output involved (structured the same as r0747).

**Remedy:** - check the 24 V power supply (e.g. X131.7 for CU305, ground is X131.8).
- check the output terminals for short-circuits.
- reset the signal source of the digital output for use by Safety Extended Functions.
- carry out a POWER ON (switch-off/switch-on).

## 203507 <location>Digital output not set

**Drive object:** CU_I_840, CU_LINK, ENC_840, HUB, TB30, TM120, TM150, TM15DI_DO, TM17, TM31

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Despite specification by the signal source the digital output has not been set.
Possible causes:
- power supply missing.
- the digital output is in current limiting (e.g. due to short-circuit).
- the digital output is being used for Safety Extended Functions.
- the control has authority to access the digital output by means of direct access (see also r0729).
Alarm value (r2124, interpret bitwise binary):
Digital output involved (structured the same as r0747).

**Remedy:**
- check the 24 V power supply (e.g. X130.6 for CU310-2, ground is X130.5).
- check the output terminals for short-circuits.
- reset the signal source of the digital output for use by Safety Extended Functions.
- carry out a POWER ON (switch-off/switch-on).

## 203510 <location>Calibration data not plausible

**Drive object:** A_INF_840, B_INF_840, CU_LINK, CU_NX_840, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** During ramp-up, the Terminal Module 31 (TM31) calibration data is read in and checked for plausibility.
At least one calibration data point was determined to be invalid.
Alarm value (r2124, interpret binary):
Bit 1: 10 V value, analog input 0 invalid.
Bit 3: 10 V value, analog input 1 invalid.
Bit 4: Offset, analog output 0 invalid.
Bit 5: 10 V value, analog output 0 invalid.
Bit 6: Offset, analog output 1 invalid.
Bit 7: 10 V value, analog input 1 invalid.

**Remedy:**
- switch-off/switch-on the power supply for the Control Unit.
- check the DRIVE-CLiQ wiring.
Note:
If it reoccurs, then replace the module.
In principle, operation could continue.
The analog channel involved possibly does not achieve the specified accuracy.

## 203510 <location>CU: Calibration data not plausible

**Drive object:** CU_I_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** During ramp-up, the Terminal Module 31 (TM31) calibration data is read in and checked for plausibility.
At least one calibration data point was determined to be invalid.
Alarm value (r2124, interpret binary):
Bit 1: 10 V value, analog input 0 invalid.
Bit 3: 10 V value, analog input 1 invalid.
Bit 4: Offset, analog output 0 invalid.
Bit 5: 10 V value, analog output 0 invalid.
Bit 6: Offset, analog output 1 invalid.
Bit 7: 10 V value, analog input 1 invalid.

**Remedy:** - switch-off/switch-on the power supply for the Control Unit.
- check the DRIVE-CLiQ wiring.
Note:
If it reoccurs, then replace the module.
In principle, operation could continue.
The analog channel involved possibly does not achieve the specified accuracy.

## 203510 <location>TM: Calibration data not plausible

**Drive object:** TM120, TM150, TM15DI_DO, TM17, TM31

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** During ramp-up, the Terminal Module 31 (TM31) calibration data is read in and checked for plausibility.
At least one calibration data point was determined to be invalid.
Alarm value (r2124, interpret binary):
Bit 1: 10 V value, analog input 0 invalid.
Bit 3: 10 V value, analog input 1 invalid.
Bit 4: Offset, analog output 0 invalid.
Bit 5: 10 V value, analog output 0 invalid.
Bit 6: Offset, analog output 1 invalid.
Bit 7: 10 V value, analog input 1 invalid.

**Remedy:** - switch-off/switch-on the power supply for the Control Unit.
- check the DRIVE-CLiQ wiring.
Note:
If it reoccurs, then replace the module.
In principle, operation could continue.
The analog channel involved possibly does not achieve the specified accuracy.

## 203550 <location>TM: Speed setpoint filter natural frequency > Shannon frequency

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The natural filter frequency of the speed setpoint filter (p1417) is greater than or equal to the Shannon frequency.
The Shannon frequency is calculated according to the following formula:
0.5 / p4099[3]
See also:p1417

**Remedy:** Reduce the natural frequency of the speed setpoint filter (PT2 low pass) (p1417).

## 203590 <location>TM: Module not ready

**Drive object:** 'All objects

**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: OFF2 (NONE)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The Terminal Module involved does not send a ready signal and no valid cyclic data.
Fault value (r0949, interpret decimal):
Drive object number of the Terminal Module involved.
**Remedy:** - check the 24 V power supply.
- check the DRIVE-CLiQ wiring.
- check whether the sampling time of the drive object involved is not equal to zero (p4099[0]).

## 205000 <location>Power unit: Overtemperature heat sink AC inverter

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for overtemperature at the inverter heat sink has been reached. The response is set using p0290.
If the heat sink temperature exceeds the value set in p0292[0], then fault F30004 is output.
**Remedy:** Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the cooling failed?

## 205001 <location>Power unit: Overtemperature depletion layer chip

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Alarm threshold for overtemperature of the power semiconductor in the AC converter has been reached.
Note:
- the response is set using p0290.
- if the temperature of the barrier layer increases by the value set in p0292[1], then fault F30025 is initiated.
**Remedy:** Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the cooling failed?
- pulse frequency too high?
See also:r0037, p0290

## 205002 <location>Power unit: Air intake overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for the air intake overtemperature has been reached. For air-cooled power units, the threshold is 42 °C (hysteresis 2 K). The response is set using p0290.
If the air intake temperature increases by an additional 13 K, then fault F30035 is output.

**Remedy:** Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

## 205003 <location>Power unit: Internal overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for internal overtemperature has been reached.
If the temperature inside the power unit increases by an additional 5 K, then fault F30036 is triggered.
**Remedy:** Check the following:
- is the ambient temperature within the defined limit values?
- has the fan failed? Check the direction of rotation.

## 205004 <location>Power unit: Rectifier overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for the overtemperature of the rectifier has been reached. The response is set using p0290.
If the temperature of the rectifier increases by an additional 5 K, then fault F30037 is triggered.
**Remedy:** Check the following:
- is the ambient temperature within the defined limit values?
- have the load conditions and the load duty cycle been appropriately dimensioned?
- has the fan failed? Check the direction of rotation.
- has a phase of the line supply failed?
- is an arm of the supply (incoming) rectifier defective?

## 205005 <location>Cooling unit: Cooling medium flow rate too low

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Cooling unit: Alarm - flow rate has fallen below the alarm value
**Remedy:** - check the feedback signals and parameter assignment (p0260 ... p0267).
- check the coolant feed.

## 205006 <location>Power unit: Overtemperature thermal model

**Drive object:** A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature difference between the chip and heat sink has exceeded the permissible limit value (blocksize power units only).
Depending on p0290, an appropriate overload response is initiated.
See also:r0037

**Remedy:** Not necessary.
This alarm is automatically withdrawn once the limit value has been fallen below.
Note:
If the alarm is not automatically withdrawn and the temperature continues to rise, this can result in fault F30024.
See also:p0290 (Power unit overload response)

## 205007 <location>Power unit: Overtemperature thermal model (chassis PU)

**Drive object:** A_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature difference between the chip and heat sink has exceeded the permissible limit value (r0293) (chassis power units only).
Depending on p0290, an appropriate overload response is initiated.
See also:r0037, r0293
**Remedy:** Not necessary.
This alarm is automatically withdrawn once the limit value has been fallen below.
See also:p0290 (Power unit overload response)

## 205050 <location>Parallel circuit: Pulse enable in spite of pulse inhibit

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A power unit signals that the pulses are enabled although the pulses are inhibited.
Fault value (r0949, interpret decimal):
Number of the power unit involved.
**Remedy:** The power unit is defective and must be replaced.

## 205051 <location>Parallel circuit: Power unit pulse enable missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** For one or several power units, the pulses were not able to be enabled.
Fault value (r0949, interpret decimal):
Number of the power unit involved.
**Remedy:** - acknowledge power unit faults that are still present.
- inhibit the pulses of the power unit involved (p7001).

## 205052 <location>Parallel circuit: Illegal current asymmetry

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The deviation of the individual currents of the power units exceeds the alarm threshold specified in p7010.
Alarm value (r2124, interpret decimal):
1: Phase U.
2: Phase V.
3: Phase W.

**Remedy:** - inhibit the pulses of the faulted power unit (p7001).
- check the connecting cables. Loose contacts can cause current spikes.
- the motor reactors are non-symmetrical or faulty and must be replaced.
- the CTs must be calibrated or replaced.

## 205053 <location>Parallel circuit: Inadmissible DC link voltage asymmetry

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The deviation of the DC link voltage measured values exceeds the alarm threshold specified in p7011.
**Remedy:** - inhibit the pulses of the faulted power unit (p7001).
- check the DC link connecting cables.
- the DC link voltage measurement is incorrect and must be calibrated or renewed.

## 205054 <location>Parallel circuit: Power unit deactivated

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the drive object involved, fewer power units connected in parallel are active than exist in the target topology. Operation is only possible at reduced power (power derating).
**Remedy:** Re-activate the deactivated power units if required.
See also:p0125 (Activate/deactivate power unit components), p0895 (Activate/deactivate power unit components), p0897 (Parking axis selection)

## 205055 <location>Parallel connection: Power units with illegal code numbers

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840
**Message value:** Parameter: %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** The code numbers of the power units are not permissible.
For parallel circuit configurations, only power units with identical power unit data may be used.
Possible causes:
- the code numbers of the power units do not match.
For booksize drive units, the following additionally applies:
- a parallel connection is not possible for the power units being used.
- there are too many power units being used in the parallel connection.
Fault value (r0949, interpret decimal):
Parameter in which the inadmissible power unit code number was detected.
**Remedy:** - Use power units with the same code number.
For booksize drive units, the following additionally applies:
- use power units which are permitted for a parallel connection.
- reduce the number of power units being used in the parallel connection.

## 205055 <location>Parallel connection: Power units with illegal code numbers

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY

**Cause:** The code numbers of the power units do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different power unit code number was detected.
**Remedy:** Use power units with the same code number.
For parallel circuit configurations, only power units with identical power unit data may be used.

## 205056 <location>Parallel circuit: Power unit EEPROM versions differ

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** The EEPROM versions of the power units do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
**Remedy:** Use power units with the same EEPROM version.
Note:
For parallel circuit configurations, only power units with identical EEPROM versions may be used.

## 205057 <location>Parallel circuit: Power unit firmware versions differ

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** The firmware versions of the power units connected in parallel do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
**Remedy:** Use power units with the same firmware version.
For parallel circuit configurations, only power units with identical firmware versions may be used.

## 205058 <location>Parallel circuit: VSM EEPROM versions differ

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The EEPROM versions of the Voltage Sensing Modules (VSM) do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
**Remedy:** For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical EEPROM versions may be used.

## 205059 <location>Parallel circuit: VSM firmware versions differ

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The firmware versions of the Voltage Sensing Module (VSM) do not match.
Fault value (r0949, interpret decimal):
Parameter in which the first different version number was detected.
**Remedy:** For parallel circuit configurations, only Voltage Sensing Modules (VSM) with identical firmware versions may be used.

## 205060 <location>Parallel circuit: Power unit firmware version does not match

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** Firmware from version V02.30.01.00 is required when connecting the power units in parallel.
**Remedy:** Update the firmware of the power units (at least V02.30.01.00).

## 205061 <location>Infeed VSM count

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The number of active Voltage Sensing Modules (VSM) for the drive object infeed with chassis power units is not correct.
For A_Infeed, each active power unit must be assigned an active VSM also for a parallel circuit configuration.
For S_Infeed, the active drive object, must be assigned at least one active VSM.
Fault value (r0949, interpret decimal):
Number of VSMs that are currently assigned to the drive object.
**Remedy:** Adapts the number of active Voltage Sensing Modules (VSM).

## 205064 <location>Parallel connection: Pulse synchronization error

**Drive object:** A_INF_840, S_INF_840
**Message value:** -
**Reaction:** Infeed: OFF2 (OFF1)
**Acknowledge:** POWER ON (IMMEDIATELY)
**Cause:** The pulse synchronization of at least one of the power units connected in parallel is incorrect.
**Remedy:** Restart the drive system.

## 205066 <location>Parallel connection: inadmissible asymmetry VSM voltage

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The deviation of the individual voltages of the Voltage Sensing Module (VSM) exceeds the alarm threshold set in p7324.
Alarm value (r2124, interpret decimal):
1: VSM voltage u1 - u2.
2: VSM voltage u2 - u3.
**Remedy:** - Check alarm threshold p7324, and if required, adapt.
- Check the connecting cables. Loose contacts can cause voltage spikes.
- Check the line connections, line circuit breaker and bypass contactors.
- Check filter reactors and filter capacitances. All parallel line filters must be of the same type, and must not have faulty reactors or capacitors.
- Deactivate the faulty Voltage Sensing Module (VSM) and faulty power unit (p7001), or if required, replace.
See also:p7001 (Par_circuit power units enable), p7324 (Par_connection VSM voltage asymmetry alarm threshold)

## 205118 <location>Precharging contactor simultaneity monitoring time exceeded

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** fault cause: %1, additional information: %2
**Reaction:** OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A feedback signal for the precharging contactor (ALM, SLM, BLM diode) or the line contactor (BLM thyristor) interconnected and the simultaneity monitoring (p0255[4, 6]) activated.
After opening or closing a contactor of the parallel connection, after a monitoring time has elapsed, not all of the contactors have assumed the same state.
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
Fault cause:
Bit 0 = 1: simultaneity error when closing the contactors.
Bit 1 = 1: simultaneity error when opening the contactors.
Supplementary information:
Bit 0 = 1: PDS0 contactor is closed.
Bit 1 = 1: PDS1 contactor is closed.
Bit 2 = 1: PDS2 contactor is closed.
Bit 3 = 1: PDS3 contactor is closed.
Bit 4 = 1: PDS4 contactor is closed.
Bit 5 = 1: PDS5 contactor is closed.
Bit 6 = 1: PDS6 contactor is closed.
Bit 7 = 1: PDS7 contactor is closed.
Note:
ALM: Active Line Module
BLM: Basic Line Module
PDS: Power unit Data Set
SLM: Smart Line Module

**Remedy:** - check the monitoring time setting (p0255[4, 6]).
- check the wiring and control of the contactor.
- if required, replace the contactor.
See also:p0255 (Power unit contactor monitoring time)

## 205119 <location>Bypass contactor simultaneity monitoring time exceeded

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** fault cause: %1, additional information: %2

**Reaction:** OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A feedback signal for the bypass contactor is interconnected and the simultaneity monitoring (p0255[5, 7]) activated.
After opening or closing a contactor of the parallel connection, after a monitoring time has elapsed, not all of the contactors have assumed the same state.
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
Fault cause:
Bit 0 = 1: simultaneity error when closing the contactors.
Bit 1 = 1: simultaneity error when opening the contactors.
Supplementary information:
Bit 0 = 1: PDS0 contactor is closed.
Bit 1 = 1: PDS1 contactor is closed.
Bit 2 = 1: PDS2 contactor is closed.
Bit 3 = 1: PDS3 contactor is closed.
Bit 4 = 1: PDS4 contactor is closed.
Bit 5 = 1: PDS5 contactor is closed.
Bit 6 = 1: PDS6 contactor is closed.
Bit 7 = 1: PDS7 contactor is closed.
Note:
PDS: Power unit Data Set

**Remedy:** - check the monitoring time setting (p0255[5, 7]).
- check the wiring and control of the contactor.
- if required, replace the contactor.
See also:p0255 (Power unit contactor monitoring time)

## 206000 <location>Infeed: Precharging monitoring time expired

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** After the line contactor closes the power unit does not signal the READY state within the monitoring time (p0857).
The end of the DC link precharging was not able to be completed for one of the following reasons:
1) There is no line supply voltage connected.
2) The line contactor/line side switch has not been closed.
3) The line supply voltage is too low.
4) Line supply voltage incorrectly set (p0210).
5) The precharging resistors are overheated as there were too many precharging operations per time unit.
6) The precharging resistors are overheated as the DC link capacitance is too high.
7) The precharging resistors are overheated because when there is no "ready for operation" (r0863.0) of the infeed unit, power is taken from the DC link.
8) The precharging resistors are overheated as the line contactor was closed during the DC link fast discharge through the Braking Module.
9) The DC link has either a ground fault or a short-circuit.
10) The precharging circuit is possibly defective (only for chassis units).
See also:p0210 (Drive unit line supply voltage), p0857 (Power unit monitoring time)

**Remedy:** In general:
- check the line supply voltage at the connecting terminals.
- check the line supply voltage setting (p0210).
- check the monitoring time and, if required, increase (p0857).
- where relevant, observe additional power unit messages/signals (e.g. F30027).
- the following applies to booksize units: Wait (approx. 8 min.) until the precharging resistors have cooled down. For this purpose, preferably disconnect the infeed unit from the line supply.

For 5):
- carefully observe the permissible precharging frequency (refer to the appropriate Equipment Manual).

For 6):
- check the total capacitance of the DC link and reduce in accordance with the maximum permissible DC link capacitance if necessary (refer to the appropriate Equipment Manual)

For 7):
- interconnect the ready-for-operation signal from the infeed unit (r0863.0) in the enable logic of the drives connected to this DC link

For 8):
- check the connections of the external line contactor. The line contactor must be open during DC link fast discharge.

For 9):
- check the DC link for ground faults or short circuits.

## 206010 <location>Infeed: Power unit EP 24 V missing in operation

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** In operation, the pulse enable via terminal EP at the Line Module (X21.3, X21.4) was withdrawn.

Note:
EP: Enable Pulses (pulse enable)

**Remedy:**
- do not open the line side switch in operation - only when the pulses are inhibited.
- check the wiring of terminal EP (X21.3, X21.4) at the Line Module to exclude any poor contacts.

## 206050 <location>Infeed: Smart Mode not supported

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The power unit does not support the Smart Mode or pulse frequency wobbulation is activated (p1810).

**Remedy:**
- set the suitable sampling time 250 µs <= p0115[0] <= 400 µs (e.g. by setting p0112 and p0115 to the factory setting).
- upgrade the power unit software and/or hardware for the Smart Mode. The availability of the Smart Mode function is displayed in r0192.
- when the software gating unit is activated (p1810.2 = 1 or p1810.13 = 1), then the Smart Mode is not permissible. Either the Smart Mode must be deactivated (p3400.0 = 0) or the software gating unit must be deactivated.
- for A_INF the following applies: deactivate the Smart Mode using p3400.0 = 0, and activate closed-loop voltage control with p3400.3 = 1. For booksize power units, it must be noted that for a supply voltage p0210 > 415 V only the Smart Mode is possible in the presetting. If DC link voltages above 660 V are permissible in the application, then voltage-controlled operation can be activated with p0280, p0210, p3400 and p3510. The information regarding p0210 should be carefully noted.

See also:r0192 (Power unit firmware properties 1)

## 206052 <location>Infeed: Filter temperature evaluation not supported

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** The power unit does not support filter temperature evaluation.
This feature (r0192.11) is required when an Active Interface Module is used as a line filter (p0220 = 41 ... 45).
**Remedy:** Upgrade the firmware for the power unit to a later version.
See also:r0192 (Power unit firmware properties 1), p0220

## 206080 <location>Infeed: parameter error

**Drive object:** A_INF_840, S_INF_840
**Message value:** Parameter: %1
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An infeed parameter is incorrectly set.
Fault value (r0949, interpret decimal):
Number of the parameter involved.
See also:p0220, p3665, p3667, p3668
**Remedy:** Appropriately change the parameter specified in the fault value.
See also:p0220, p3665, p3667, p3668

## 206100 <location>Infeed: Shutdown due to line supply undervoltage condition

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF2 (OFF1)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The filtered (steady-state) value of the line supply voltage is less than the fault threshold (p0283).
Fault condition: Vrms < p0283 * p0210
Fault value (r0949, floating point):
Actual steady-state line supply voltage.
Note:
The occurrence of this fault is delayed by the time in p3492. If the fault is removed during this design time, then the power unit is not tripped (shut down).
See also:p0283 (Line supply undervoltage shutdown (trip) threshold), p3492 (Infeed, line supply undervoltage delay time)
**Remedy:** - check the line supply.
- check the line supply voltage (p0210).
- check the threshold value (p0283).

## 206105 <location>Infeed: Line supply undervoltage

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The filtered (steady-state) value of line supply voltage is lower than the alarm threshold (p0282).
Alarm condition: Vrms < p0282 * p0210
Alarm value (r2124, floating point):
Actual steady-state line supply voltage.
See also:p0282 (Line supply undervoltage alarm threshold)
**Remedy:** - check the line supply.
- check the line supply voltage (p0210).
- check the alarm threshold (p0282).

## 206200 <location>Infeed: One or several line phases failed

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Failure overvoltage in one or several line supply phases.

The fault can be output in two operating states:

1. During the switch-on phase of the infeed unit.

The measured line supply angle deviates from the regular characteristic for a 3-phase system - the PLL cannot be synchronized.

The fault occurs immediately after switch-on if, when operating with a Voltage Sensing Module (VSM), the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.

2. While the infeed is operational.

During an active line voltage alarm (A06205) or current symmetry alarm (A06206), an additional fault occurred, which resulted in a shutdown. Alarm values A06205 and A06206 could provide additional information about the cause of the shutdown.

Possible causes:

- voltage dip on the line side or phase failure or overvoltage lasting longer than 10 ms.
- overload condition on the load side with peak current.
- line reactor missing.

**Remedy:**

- check the line supply, terminals and fuses.
- check the connection and size (rating) of the line filter and/or the line commutating reactor.
- check and correct the phase assignment at the VSM (X521 or X522) and at the power unit.
- check the load.
- if failed in operation, carefully note the previous alarm messages A06205/A06206 with alarm values.

See also:p3463 (Infeed phase failure detection line supply angle change)

## 206205 <location>Infeed: Voltage dip in at least one line supply phase

**Drive object:** A_INF_840, S_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Voltage dip or overvoltage in one or several line supply phases has been detected in operation.

The event is displayed in status parameter r3405.2.

If nothing else is specified for the alarm values, then at the instant of the alarm, the pulses are inhibited for a minimum of 8 ms.

Also for alarm values with pulse inhibit, the operating signal of the infeed remains in r0863.0.

Alarm value (r2124, interpret bitwise binary):

Bit 0: Line angle deviation due to a line supply fault (limit value p3463).

Bit 2: Active current deviation.

Bit 3: Line frequency deviation (limit values: 115 % * p0284, 85 % * p0285).

Bit 4: Line overvoltage (limit value: 120 % * p0281 * p0210).

Bit 5: Line undervoltage (limit value: 20 % * p0210).

Bit 7: peak current event.

Bit 8: Line supply angle deviation identified in the Smart Mode (p3400.0 = 1). In addition, for Extended Smart Mode (p3440.1 = 1) the following applies: pulses are not inhibited.

Bit 9: DC link voltage dip identified in the Smart Mode (p3400.0 = 1).

Bit 11: Line voltage detection error identified in the Smart Mode (p3400.0 = 1):

Bit 12: Line voltage deviation identified in the Extended Smart Mode (p3400.0 = 1, p3440.1 = 1). Pulses are not inhibited.

Bit 14: Recharging current fault.

**Remedy:** When the alarm occurs, the following always applies:
- check the line supply, terminals and fuses.
- check the line supply quality and system fault level.
- check the load.

Dependent on the alarm value in r2124, the following also applies:
For bit 0 = 1:
Line fault occurred or poor/incorrect controller setting. For poor line quality or frequent line supply changeover operations, when required, limit value p3463 can be increased until the alarm value no longer occurs.
For bit 2 = 1:
Line fault occurred or poor/incorrect controller setting. - check the controller setting and load.
For bit 3 = 1:
Line fault occurred. For poor line quality or frequent line changeover operations, when required, limit values p0284 and p0285 can be increased until the alarm value no longer occurs.
For bit 4 = 1:
Line interrupted or line overvoltage has occurred.
For bit 5 = 1:
Line interrupted or line undervoltage occurred.
For bit 7 = 1:
Peak current shutdown due to a line fault, overload or incorrect/missing line reactor.
For bit 8 = 1:
Line fault occurred.
For bit 9 = 1:
Line undervoltage or overload.
For bit 11 = 1:
Fault in at least one line phase.
For bit 12 = 1:
Voltage fault in at least one line phase. Check the settings in p3444[2, 3].
For bit 14 = 1:
Supply/infeed overload or a fault in at least one line phase.
See also:r3405, p3463 (Infeed phase failure detection line supply angle change)

## 206206 <location>Infeed: Line currents asymmetrical alarm

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The asymmetry of the three line currents at the terminals of the power unit exceeds the set alarm threshold (p3465).
Generally, the cause of current asymmetry is line voltage asymmetry or failure of a line phase (e.g. a fuse has ruptured or a terminal connection has become loose). As a consequence, the message is also signaled as possible phase failure in status parameter r3405.2.
Cyclic power fluctuations in the DC link with the line frequency can also result in unequal rms values of the line currents. For this type of operating scenario, it is recommended that monitoring is deactivated (p3465[0, 3] = 0).
Alarm value (r2134, floating point):
Digits to the left of the decimal point:
Highest rms phase current in amps.
Decimal places:
Quotient of the lowest and highest rms phase current value.
**Remedy:** - check the line supply, terminals and fuses.
- check the line supply quality and system fault level.
- check the load.
- check the settings in p3462 and p3465.

See also:r3405, p3465 (Infeed current symmetry monitoring thresholds)

## 206207 <location>Infeed: Line currents asymmetrical

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The asymmetry of the line currents is continuously too high.
The most probable cause is failure of a line phase.
Fault value (r2133, floating point):
Digits to the left of the decimal point:
Highest rms phase current in amps.
Decimal places:
Quotient of the lowest and highest rms phase current value.
**Remedy:** - check the previous alarm A06206 and the alarm value.
- check the line supply, terminals and fuses.
- check the settings in p3462 and p3465.
- check the connection and size (rating) of the line filter and/or the line commutating reactor.

## 206208 <location>Infeed line: supply voltage asymmetrical

**Drive object:** A_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Asymmetry of the voltages in the line phase too high.
The most probable cause is failure of a line phase.
Note:
This message is only output when asymmetry monitoring is activated (p3640.1 = 1).
**Remedy:** - check the line supply, terminals and fuses.
- check the setting values for the phase asymmetry (p3647[0, 1]).

## 206210 <location>Infeed: Summation current too high

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF2 (OFF1)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The smoothed total of the phase currents (i1 + i2 + i3) is greater than 4 % of the maximum power unit current (r0209).
Possible causes:
- the DC link has a ground fault that results in a high summation current (r0069.6). The DC component in the line currents can damage/destroy the power unit, line reactor or line filter!
- the zero point calibration of the current measurement was not carried out (p3491, A06602).
- defective current measurement in the power unit.
Fault value (r0949, floating point):
Smoothed total of the phase currents.
**Remedy:** - check the DC link for a low-ohmic or high-ohmic ground fault and if present, remove.
- increase the monitoring time of the current offset measurement (p3491).
- replace the power unit if necessary.

## 206211 <location>Infeed: Summation current impermissibly high

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The smoothed sum of the phase currents (i1 + i2 + i3) is impermissibly high. The summed current has exceeded the parameterized threshold for the ground fault monitoring (p0287).
Possible causes:
- there is a ground fault that results in a high summation current (r0069.6). The DC component in the line currents can damage/destroy the power unit, line reactor or line filter!
- the zero point calibration of the current measurement was not carried out (p3491, A06602).
- the current measurement in the power unit is defective.
Fault value (r0949, floating point):
Smoothed total of the phase currents (peak value).

**Remedy:**
- check the line supply for ground faults and remove any that are present.
- check the set threshold for the ground fault monitoring (p0287).
- if required, replace the power unit.
See also:p0287 (Ground fault monitoring shutdown threshold)

## 206215 <location>Infeed: Summation current too high

**Drive object:** A_INF_840, S_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The smoothed total of the phase currents (i1 + i2 + i3) is greater than 3 % of the maximum power unit current (r0209).
Possible causes:
- the DC link has a ground fault that results in a high summation current (r0069.6). The DC component in the line currents can damage/destroy the power unit, line reactor or line filter!
- the zero point calibration of the current measurement was not carried out (p3491, A06602).
- defective current measurement in the power unit.
Alarm value (r2124, floating point):
Smoothed total of the phase currents.

**Remedy:**
- check the DC link for a low-ohmic or high-ohmic ground fault and if present, remove.
- increase the monitoring time of the current offset measurement (p3491).
- replace the power unit if necessary.

## 206250 <location>Infeed: Defective capacitor(s) in at least one phase of line filter

**Drive object:** A_INF_840, S_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A change in the line filter capacitance was detected in at least one line phase.
The voltages and phase currents of the line filter, measured using a VSM, indicate a deviation of the filter capacitances from the value parameterized in p0221.
A change or a defect of the line filter capacitors results in a shift of the resonant frequencies and can result in severe damage to the drive system.
Alarm value (r2124, floating point):
The currently calculated capacitance in µF (rounded-off to an integer number).
Note:
The first decimal point specifies the number of the phase (1, 2, 3) where the capacitance deviates from the specified value.

**Remedy:** - check the parameterized value of the filter capacitance (p0221).
- check the correct wiring of the VSM:
Differential voltages u12 and u23 must be available at the 100 V/690 V inputs of the VSM.
The phase currents of the line filter must be available at the 10 V inputs via a current-voltage transformer.
- check the alarm limits for the permissible filter capacitance deviation (p3676).
- check the scaling of the line supply voltage measurement using the VSM (p3660).
- check the scaling of the filter current measurement using the VSM (p3670).
- check the line filter capacitors and if required, replace the line filter.
For a parallel connection of power units, the following applies:
- parameter r3677[0...2] indicates the average value of all filter capacitances.
- parameters r7320[0...n], r7321[0...n] and r7322[0...n] indicate the capacitance of each individual filter. The defective filter can be localized by the particular VSM.
Note:
VSM: Voltage Sensing Module
See also:p0221, p3660, p3670, p3676

## 206255 <location>Infeed: temperature threshold value not permissible

**Drive object:** A_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** At least one temperature threshold value is set outside the permissible value range.
For sensor type KTY84 (p3665 = 2) or PT1000 (p3665 = 6), the value range from 181 °C to 300 °C is not permissible.
Fault value (r0949, interpret bitwise binary):
The bit number corresponds to the number of the Voltage Sensing Module (VSM) involved.
Bit 0:
The value in p3667/p3668 is outside the permissible value range.
For liquid-cooled Active Interface Modules (AIM, see p0220), the value range between 71 °C and 300 °C is also not permissible.
Bit 1:
The value in p5467[0]/p5468[0] is outside the permissible value range.
Bit 2:
The value in p5467[1]/p5468[1] is outside the permissible value range.
See also:p3667, p3668, p5467 (VSM2 overtemperature alarm threshold), p5468 (VSM2 overtemperature shutdown threshold)
**Remedy:** Set the temperature thresholds within the measuring range.

## 206260 <location>Infeed: Temperature in the line filter too high

**Drive object:** A_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature monitoring in the line filter has responded.
If the temperature remains too high during the complete monitoring time, this results in fault F06261.
Note:
The temperature monitoring is only available for an Active Interface Module.

**Remedy:**
- check whether the line filter type set in p0220[0] matches the line filter that is actually connected. Ensure that the line filter specified for the infeed being used is connected or correct the setting of the line filter type in p0220[0].
- temperature monitoring is mandatory for AIM line filters (refer to p0220). Ensure that the line filter temperature switch is correctly and reliably connected to input X21 of the infeed.
- reduce the ambient temperature of the line filter.
- reduce the load on the infeed and the filter module.
- check the magnitude of the line supply voltage.
- the internal fan of the filter module is defective. Replace the fan if necessary.
- defective temperature switch of the filter module. Replace the filter module if necessary.

## 206261 <location>Infeed: Temperature in the line filter permanently too high

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** After the temperature monitoring responded, the temperature in the line filter was permanently exceeded.
Note:
The temperature monitoring is only available for an Active Interface Module (AIM).

**Remedy:**
- check whether the line filter type set in p0220[0] matches the line filter that is actually connected. Ensure that the line filter specified for the infeed being used is connected or correct the setting of the line filter type in p0220[0].
- temperature monitoring is mandatory for AIM line filters (refer to p0220). Ensure that the temperature switch in the line filter is correctly and reliably connected to input X21 of the infeed.
- reduce the ambient temperature of the line filter.
- reduce the load on the infeed and the line filter.
- check the magnitude of the line supply voltage.
- the internal fan of the line filter is defective. Replace the fan if necessary.
- defective temperature switch of the line filter. Replace the line filter if necessary.

## 206262 <location>Infeed: Temperature switch in the line filter open when switching on

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** When switching on the infeed, the temperature in the line filter is too high. Switching on is prevented.

**Remedy:**
- check whether the line filter type set in p0220[0] matches the line filter that is actually connected. Ensure that the line filter specified for the infeed being used is connected or correct the setting of the line filter type in p0220[0].
- temperature monitoring is mandatory for AIM line filters (refer to p0220). Ensure that the temperature switch in the line filter is correctly and reliably connected to input X21 of the infeed.
- the filter temperature is too high. Allow the system to cool down.
- the internal fan of the line filter is defective. Replace the fan if necessary.
- defective temperature switch of the line filter. Replace the line filter if necessary.

## 206300 <location>Infeed: Line voltage too high at power on

**Drive object:** A_INF_840, S_INF_840

**Message value:** %1

**Reaction:** OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The RMS line supply voltage Vrms was so high when switching on that controlled operation is not possible without exceeding the permissible maximum voltage in the DC link (p0280).
Fault condition: Vrms * 1.5 > p0280.
Fault value (r0949, floating point):
Lowest possible controlled DC link voltage for the line supply voltage presently connected.
See also:p0280 (DC link voltage maximum steady-state)

**Remedy:** - check the line supply voltage
- check the maximum DC link voltage and if required, increase (p0280).
- check the line supply voltage and compare with the actual line supply voltage (p0210).
- check whether the power unit is dimensioned for the line supply voltage actually being used.
See also:p0210 (Drive unit line supply voltage), p0280 (DC link voltage maximum steady-state)

## 206301 <location>Infeed: Line supply overvoltage

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Line supply voltage: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The filtered (steady-state) value of the rms line supply voltage Vrms is higher than the alarm threshold (p0281).
Alarm condition: Vrms > p0281 * p0210.
Alarm value (r2124, floating point):
Actual steady-state line supply voltage.
See also:p0281 (Line supply overvoltage alarm threshold)
**Remedy:** - check the line supply.
- check the line supply voltage (p0210).
- check the alarm threshold (p0281).
See also:p0210 (Drive unit line supply voltage), p0281 (Line supply overvoltage alarm threshold)

## 206310 <location>Infeed: Supply voltage (p0210) incorrectly parameterized

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Line supply voltage: %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** After precharging was completed, the line supply voltage Vrms was calculated using the measured DC link voltage. This voltage Vrms is not within the tolerance range of the supply voltage.
The following applies for the tolerance range: 85 % * p0210 < Vrms < 110 % * p0210
Fault value (r0949, floating point):
Line supply voltage Vrms present.
See also:p0210 (Drive unit line supply voltage)
**Remedy:** - check the parameterized supply voltage and if required change (p0210).
- check the line supply voltage.
See also:p0210 (Drive unit line supply voltage)

## 206310 <location>Supply voltage (p0210) incorrectly parameterized

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For AC/AC drive units, the measured DC voltage lies outside the tolerance range after precharging has been completed.
The following applies for the tolerance range: 1.16 * p0210 < r0070 < 1.6 * p0210
Note:
The fault can only be acknowledged when the drive is switched off.
See also:p0210 (Drive unit line supply voltage)

**Remedy:** - check the parameterized supply voltage and if required change (p0210).
- check the line supply voltage.
See also:p0210 (Drive unit line supply voltage)

## 206311 <location>Infeed: Supply voltage (p0210) incorrect

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** Line supply voltage: %1

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The line voltage nominal value indicated in p0210 is outside the nominal voltage range of the power unit.
After precharging was completed, the actual line supply voltage Vrms was calculated using the measured DC link voltage. This voltage Vrms does not lie within the extended tolerance range of the supply voltage set in p0210.
The following applies for the extended tolerance range: 75 % * p0210 < Vrms < 120 % * p0210
Alarm value (r2124, floating point):
Line supply voltage Vrms present.
See also:p0210 (Drive unit line supply voltage)

**Remedy:** - check the parameterized supply voltage and if required change (p0210).
- check the line supply voltage.
See also:p0210 (Drive unit line supply voltage)

## 206320 <location>Master/slave: 4-channel multiplexer control not valid

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Values 0, 1, 2, and 3 are valid to control the 4-channel multiplexer via connector input p3572.
In this case, an invalid value was identified. The control remains effective with the previous value.
Fault value (r0949, interpret decimal):
Invalid value to control the multiplexer.
See also:p3572 (Master/slave active current setpoint multiplexer selection)

**Remedy:** - check the interconnection to control the multiplexer (CI: p3572).
- check the signal source signal value of the BICO interconnection.
See also:p3572 (Master/slave active current setpoint multiplexer selection)

## 206321 <location>Master/slave: 6-channel multiplexer control not valid

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** For the 6-channel multiplexer control via connector input p3577 an invalid value was identified. Values of 0, 1, 2, 3, 4 and 5 are valid. The control remains effective with the previous value.
Fault value (r0949, interpret decimal):
Invalid value used to control the multiplexer.
See also:p3577 (Master/slave current distribution factor multiplexer selection)

**Remedy:** - check the interconnection to control the multiplexer (CI: p3577).
- check the signal source signal value of the BICO interconnection.

## 206350 <location>Infeed: Measured line frequency too high

**Drive object:** A_INF_840, S_INF_840
**Message value:** Line frequency: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The actual line frequency f_line is higher than the parameterized alarm threshold (f_line > p0211 * p0284).
The alarm can be output in two operating states:
1. During the switch-on phase of the infeed unit.
Consequence:
Synchronization of the infeed to the line supply is interrupted and is restarted.
The alarm is reissued if the line frequency remains higher than the parameterized alarm threshold.
2. While the infeed is operational.
Consequence:
The infeed still remains in the operating state, alarm A06350 is output. This signifies a critical operational fault.
Alarm value (r2124, floating point):
Actual line frequency determined.
See also:p0284 (Line supply frequency exceeded alarm threshold)
**Remedy:** - check the parameterized line frequency and if required change (p0211).
- check the alarm threshold (p0284).
- check the line supply.
- check the line supply quality.
See also:p0211, p0284

## 206351 <location>Infeed: Measured line frequency too low

**Drive object:** A_INF_840, S_INF_840
**Message value:** Line frequency: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The actual line frequency f_line is lower than the parameterized alarm threshold (f_line < p0211 * p0285).
The alarm can be output in two operating states:
1. During the switch-on phase of the infeed unit.
Consequence:
Synchronization of the infeed to the line supply is interrupted and is restarted.
The alarm is reissued if the line frequency remains less than the parameterized alarm threshold.
2. While the infeed is operational.
Consequence:
The infeed remains in the "operating" (run) state and alarm A06351 is output. This signifies a critical operational fault.
Alarm value (r2124, floating point):
Actual line frequency determined.
See also:p0285 (Line supply frequency undershot alarm threshold)
**Remedy:** - check the parameterized line frequency and if required change (p0211).
- check the alarm threshold (p0285).
- check the line supply.
- check the line supply quality.
See also:p0211, p0285

## 206400 <location>Infeed: Line supply data identification selected/active

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The line supply data identification is selected and active.
The line inductance and the DC link capacitance are measured at the next pulse enable.
See also:p3410 (Infeed identification method)

**Remedy:** Not necessary.
This alarm is automatically withdrawn after the measurement has been completed.

## 206401 <location>Infeed: Transformer data identification/test mode selected/active

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A transformer data identification type or a transformer test operation has been selected or is active.
Alarm value (r2124, interpret decimal):
11: Identification type 1 selected for transformer data (automatic determination of the magnetizing inductance).
12: Identification type 2 selected for transformer data (automatic determination of transformer phase shift and gain correction).
13: Identification type 3 selected for transformer data (determination of total leakage inductance of transformer during line data identification).
101: Test mode 1 selected.
102: Test mode 2 selected.
See also:p5480 (Transformer magnetization mode)

**Remedy:** Not necessary.
This alarm is automatically withdrawn after the identification has expired.

## 206500 <location>Infeed: Line synchronization not possible

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The line synchronization is not possible within the monitoring time.
The infeed was re-synchronized to the line supply because it was interrupted due to an incorrect line frequency or due to excessively high line voltage distortion.
After 20 attempts, synchronization - and therefore also the switching-on operation - were interrupted.
Especially for ALM chassis units, one possible cause is that the bypass contactor or circuit breaker does not close.

**Remedy:** - check the parameterized line frequency and if required change (p0211).
- check the setting of the threshold values (p0284, p0285).
- check the line supply.
- check the connecting terminals
- check the bypass contactor (if one is being used) and its associated control.
- check the state of the circuit breaker and its associated control.
- for significant line voltage distortion, after assessment by experts, the tolerance threshold p3457[2] can be adapted.

When using a Voltage Sensing Module (VSM):
- check the line supply connection at the terminals (X521, X522).
- check VSM activation (p0145, p3400).
- check the line supply quality.

Note:
In the case of chassis power units, the availability of correct VSM voltage measured values is imperative for line synchronization.
See also:p0211, p0284, p0285, p3457

## 206502 <location>Infeed: Unable to achieve line synchronization in transformer magnetization

**Drive object:** A_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Line synchronization is not possible within the monitoring time (p5481[2]).
**Remedy:** - check the setting of the threshold value (p5485).
- check the setting of the maximum time (p5481[2])
- check the line supply quality.

See also:p5481 (Transformer magnetization times), p5485 (Transformer magnetization voltage thresholds)

## 206503 <location>Infeed: Line black start unsuccessful

**Drive object:** A_INF_840
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The line black start was unsuccessful.
Fault value (r0949, interpret decimal):
State of the black start (corresponds to r5482).
The following applies for fault value r0949 = 109:
At the start of a black start (p5581 = 1), a line supply was identified (frequency and voltage within the specified limits p0281 to p0285).
The following applies to all other fault values:
The maximum time for a black start (p5581[2]) was exceeded.
**Remedy:** - check the conditions of a line black start.
- check the parameterization of the line black start.

See also:p5581 (Island grid times)

## 206504 <location>Infeed: Island line supply synchronization unsuccessful

**Drive object:** A_INF_840
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The island line supply synchronization was unsuccessful.
Alarm value (r2124, interpret decimal):
State, in which the island line supply synchronization has remained (corresponds to r5482).
See also:r5482 (Line synchronization status)

**Remedy:** - check the conditions for the island line supply synchronization.
- check the parameterization of the island line supply synchronization.
See also:p5581 (Island grid times)

## 206505 <location>Infeed: For transformer magnetization current limit exceeded

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The current limit was exceeded when magnetizing the transformer (r0068 > p5494[1] * r0207).

**Remedy:** - check the setting of the current limit (p5494[1])
- check the primary side of the transformer for a short-circuit.
- check the control and feedback signal of the circuit breaker.
See also:p5494 (Transformer magnetization scaling values)

## 206601 <location>Infeed: Current offset measurement interrupted

**Drive object:** A_INF_840, S_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Defective current measurement or a DC current is present during the offset measurement.
Alarm value (r2124, interpret decimal):
1: Excessively high phase current has occurred during the current offset calibration.
2: The measured current offset is greater than the 3% of the maximum permissible converter current (e.g. due to a ground fault in the DC link).

**Remedy:** For alarm value = 1:
- possible counter-measure if there is no line contactor: Power up an adequately long time before OFF1 = 1.
For alarm value = 2:
- defective current measurement or a DC current is present during the offset measurement.
- check the DC link for a ground fault.

## 206602 <location>Infeed: Current offset measurement not possible

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** After an OFF1 = 1 no valid current offset measurement was able to be made within the monitoring time (p3491) before closing the line contactor. The current offset is set to 0.
See also:p3491 (Infeed I-offset measurement monitoring time)

**Remedy:** - check the DC link for a ground fault. A ground fault can destroy parts and components!
- check the monitoring time setting and if required increase (p3491). At least 100 ms is required for a valid measurement (p3491 > 100 ms).
Notice:
If there is no valid measurement, then under certain circumstances the quality of the DC link control will be reduced.
See also:p3491 (Infeed I-offset measurement monitoring time)

## 206700 <location>Infeed: Switch line contactor for load condition

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** For an ON command, the infeed line contactor should be switched under load.

**Remedy:** - do not load the DC link if the infeed has not issued an operating signal (r0863.0 = 1).
- after the infeed has been switched off, all power units connected to the DC link should be switched off. To realize this, the operating signal of the infeed (r0863.0) must be suitably interconnected.

## 206800 <location>Infeed: Maximum steady-state DC link voltage reached

**Drive object:** A_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The DC link voltage setpoint has reached the maximum steady-state voltage parameterized in p0280.
The DC link voltage is increased by the modulation depth reserve controller for the following reasons:
- modulation depth reserve is too low (p3480).
- line supply voltage is too high.
- supply voltage (p0210) parameterized to be too low.
- excessively high setpoint for the reactive line current.

**Remedy:** - check the line supply voltage setting (p0210).
- check the line supply for an overvoltage condition.
- reduce the modulation depth reserve (p3480).
- reduce the reactive current setpoint.

See also:p0210 (Drive unit line supply voltage), p0280 (DC link voltage maximum steady-state), p3480 (Infeed modulation depth limit)

## 206810 <location>Infeed: DC link voltage alarm threshold fallen below

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** In operation, the DC link voltage has dropped to below the alarm threshold. The alarm threshold is obtained from the sum of p0279 and r0296.
Note:
When the alarm threshold is fallen below, this is also indicated using status bit r3405.7.
Possible causes:
- line supply voltage dip or another line supply fault.
- overload of the infeed.
- for Active Line Module: Controller incorrectly parameterized.

See also:p0279 (DC link voltage offset alarm threshold), r0296 (DC link voltage undervoltage threshold), r3405

**Remedy:** - check the line voltage and line supply quality.
- reduce the power drawn, avoid step-like load changes
- for Active Line Module: Adapt the controller parameterization (e.g. automatic line supply identification (p3410 = 4, 5)).

## 206849 <location>Infeed: Short-circuit operation active

**Drive object:** A_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The current hysteresis controller sequence control has detected a short circuit (r5452, r5522). The absolute line supply voltage (r5444[0], r5512[0]) is below the short-circuit voltage limit (p5459[2], p5529[2]), and the current limitation is active (r5402.3 = 1, r5502.3 = 1).
Note:
The effective current limit is obtained from the parameterized overcurrent (p5453) and the hysteresis width (p5454).

**Remedy:** - check the parameterization of the current hysteresis controller (p5453).
- check the line supply cables for a short-circuit.

## 206850 <location>Infeed: Short-circuit prevailing for too long

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The maximum permissible duration (p5458[1], p5528[1]) for the short-circuit has been exceeded. The short-circuit could not be cleared within this time.

**Remedy:** - check the minimum time parameter setting (p5458[1], p5528[1]).
- check the line supply and fuses.

## 206851 <location>Infeed: Distributed infeed line monitoring tripped

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The line monitoring of the distributed line infeed has tripped.
Alarm value (r2124, interpret hexadecimal):
Corresponds to status word (r5542).

**Remedy:** - check the line supply.
- check the parameterization of the line monitoring (p5540 ... p5559).

## 206855 <location>Infeed: Line filter monitor responded

**Drive object:** A_INF_840

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A threshold value parameterized in p3678 has been exceeded or undershot in the line filter.
Fault value (r0949, interpret decimal):
0: Voltage threshold, alpha/beta voltage monitoring fallen below (p3678[0]).
2: Voltage threshold value of the phase voltage monitoring fallen below (p3678[0]).
x1:
Current threshold value exceeded (p3678[1]).
The 10th position codes the power unit number of the Active Interface Module involved.
Example:
01: overcurrent in line filter 1.
11: Overcurrent in line filter 2.
See also:p3678 (Filter monitoring threshold values), p3679 (Transformer filter monitoring times)

**Remedy:** - check the parameterization of the threshold values for filter monitoring (p3678]).
- check filter.
For fault value = 0:
- check the parameterization of the voltage monitoring smoothing time (p3679[0]).
For fault value = 1:
- check the parameterization of the current monitoring minimum time (p3679[1]).

## 206860 <location>Infeed: Function module activation not possible

**Drive object:** A_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Function module activation is not possible.
The power unit used has at least one of the following features:
- gating unit with current limiting control (r0192.19).
- gating unit with all-phase current limiting (r0192.30).
The affected function module is identified in fault value r0949 (the value of r0949 corresponds to the bit of parameter p0108).
r0949 = 7 "Dynamic grid support" function module
r0949 = 12: "Line droop control" function module
See also:r0192 (Power unit firmware properties 1)
**Remedy:** - check whether the power unit used has the "gating unit with current limiting control" feature (r0192.19) or "gating unit with all-phase current limiting" feature (r0192.30).
- if necessary, use a power unit that has at least one of these features.

## 206900 <location>Braking Module: Fault (1 -> 0)

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The Braking Module signals a fault (1 -> 0) via X21.4 ("booksize" format) or X21.5 ("chassis" format).
This signal is wired to a system digital input and correspondingly interconnected using binector input p3866[0...7].
Possible causes:
- wiring of the signal or BICO interconnection of the signal source incorrect.
- overtemperature
- electronics power supply missing.
- ground fault/short-circuit.
- internal component fault.
See also:p3866 (Braking Module fault)
**Remedy:** - check binector input p3866[0...7] and the wiring from terminal X21.4 ("booksize" format) or X21.5 ("chassis" format).
- reduce the number of braking operations.
- check the 24 V power supply of the component.
- check for a ground fault or short circuit.
- replace the component if necessary.

## 206901 <location>Braking Module: Pre-alarm I2t shutdown

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The Braking Module "Booksize" format signals "Pre-alarm I2t shutdown" via terminal X21.3.
This signal is wired to a system digital input and correspondingly interconnected using binector input p3865[0...7].
Note:
This function is not supported for the "chassis" format.
**Remedy:** - reduce the number of braking operations.
- check binector input p3865[0...7] and the wiring from terminal X21.3 of the particular Braking Module.

## 206904 <location>Braking Module internal is inhibited

**Drive object:** B_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The internal Braking Module was inhibited via binector input p3680 = 1 signal.
In the inhibited state, energy cannot be dissipated using the braking resistor.
See also:p3680 (Braking Module internal inhibit)
**Remedy:** Release the internal Braking Module (BI: p3680 = 0 signal).

## 206905 <location>Braking Module internal I2t shutdown alarm

**Drive object:** B_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The internal Braking Module outputs an alarm due to the high I2t value.
80% of the maximum switch-on duration of the braking resistor has been reached.
Note:
This message is also displayed via BO: p3685.
See also:r3685 (Digital Braking Module: Pre-alarm I2t shutdown)
**Remedy:** Reduce the number of braking operations.

## 206906 <location>Braking Module internal fault

**Drive object:** B_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The internal Braking Module outputs a fault due to overcurrent or an excessively high I2t value and is therefore inhibited.
Note:
This message is also displayed via BO: p3686.
Fault value (r0949, interpret bitwise binary):
Bit 0 = 1: I2t exceeded
Bit 1 = 1: overcurrent
See also:r3686 (Digital Braking Module fault)
**Remedy:** Reduce the number of braking operations.

## 206907 <location>Braking Module internal overtemperature

**Drive object:** B_INF_840
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY

**Cause:** The temperature sensor connected to the braking resistor signals an overtemperature.
The Braking Module is still active. If the overtemperature persists for more than 60 s, fault F06908 is output, and the braking module is switched off.
See also:r3687 (Digital Braking Module pre-alarm overtemperature)
**Remedy:** - reduce the temperature at the sensor.
- check the temperature sensor connection.

## 206908 <location>Braking Module internal overtemperature shutdown

**Drive object:** B_INF_840
**Message value:** -
**Reaction:** OFF2 (OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** Braking module shut down due to overtemperature at the temperature sensor of the braking resistor.
The overtemperature is detected by the sensor for longer than 60 s.
See also:r3688 (Braking Module internal overtemperature shutdown)
**Remedy:** - reduce the temperature at the sensor.
- check the temperature sensor connection.

## 206909 <location>Braking Module internal Vce fault

**Drive object:** B_INF_840
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** In the power unit, the monitoring of the collector-emitter voltage (U_ce) of the power semiconductor to control the braking resistor has responded.
Possible causes:
- short circuit at the braking resistor terminals.
- defective power semiconductor in the braking resistor control.
Note:
Under certain circumstances, this fault is also output if a braking resistor is not connected, and the energy is fed back into the Braking Module.
See also:r3689 (Digital Braking Module Uce fault)
**Remedy:** - connect a braking resistor.
- check the braking resistor connection.
- check the braking resistor.
- carry out a POWER ON (switch-off/switch-on).
- replace the unit.

## 207011 <location>Drive: Motor overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY

**Cause:** KTY84/PT1000:
The motor temperature has exceeded the fault threshold (p0605) or the timer (p0606) after the alarm threshold was exceeded (p0604) has expired.
PTC, bimetallic NC contact:
The response threshold of 1650 Ohm was exceeded (for SME p4600 ... p4603 or for TM120 p4610 ... p4613 = 10, 30), or the timer (p0606) has expired after 1650 Ohm has been exceeded (for SME p4600 ... p4603 or for TM120 p4610 ... p4613 = 12, 32).
Motor temperature model:
The calculated motor temperature is too high.
Possible causes:
- motor overloaded.
- motor ambient temperature too high.
- PTC / bimetallic NC contact: Wire breakage or sensor not connected.
- motor temperature model incorrectly parameterized.
Hysteresis:2K
Fault value (r0949, interpret decimal):
1, 2, 3, 4:
Number of the temperature channel leading to the message (for SME/TM120 (p0601 = 10, 11)).
200:
Motor temperature model 1 (I2t): temperature too high.
300:
Motor temperature model 3: after the monitoring time has expired, the temperature is still higher than the alarm threshold.
301:
Motor temperature model 3: temperature is too high, or the model has not been parameterized.
302:
Motor temperature model 3: Encoder temperature is not within the valid range.
See also:p0351, p0604, p0605, p0606, p0612, p0613, p0617, p0618, p0619, p0625, p0626, p0627, p0628

**Remedy:** - reduce the motor load.
- check the ambient temperature and the motor ventilation.
- check the wiring and temperature sensor connection.
- check monitoring limits.
- check the encoder type (p0404).
- check the motor type (p0300, p0301).
- check activation of the motor temperature model (p0612).
- check the motor temperature model parameters.
- check the encoder (p0404).
See also:p0351, p0604, p0605, p0606, p0612, p0617, p0618, p0619, p0625, p0626, p0627, p0628, r5397

## 207012 <location>Drive: Motor temperature model 1/3 overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The motor temperature model 1/3 identified that the alarm threshold was exceeded.
Hysteresis:2K
Alarm value (r2124, interpret decimal):
200:
Motor temperature model 1 (I2t): temperature too high.
300:
Motor temperature model 3: temperature too high.
See also:r0034, p0351, p0605, p0611, p0612, p0613

**Remedy:** - check the motor load and if required, reduce.
- check the motor ambient temperature.
- check activation of the motor temperature model (p0612).
Motor temperature model 1 (I2t):
- check the thermal time constant (p0611).
- check alarm threshold.
Motor temperature model 3:
- check the motor type.
- check alarm threshold.
- check the model parameters.
See also:r0034 (Motor utilization thermal), p0351 (Piston position natural frequency minimum), p0605 (Mot_temp_mod 1/2 sensor threshold and temperature value), p0611 (I2t motor model thermal time constant), p0612 (Mot_temp_mod activation), r5397 (Mot_temp_mod 1/3 ambient temperature image p0613)

## 207013 <location>Drive: Motor temperature model configuration fault

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred in the configuration of the motor temperature model.
Fault value (r0949, interpret decimal):
300:
Motor temperature model 3: The sensor does not supply the necessary sensor temperature for the thermal model.
301:
Motor temperature model 3: The sensor type is unknown.
302:
Motor temperature model 3: At least one other temperature model was simultaneously activated.
303:
Motor temperature model unknown in the actual firmware version.
See also:p0300, p0301, p0404, p0612
**Remedy:** - check the encoder type.
- check the motor type.
- check activation of the motor temperature model (p0612).
- check the parameters of the motor temperature model (p5350 and following).
See also:p0300, p0301, p0404, p0612

## 207014 <location>Drive: Motor temperature model configuration alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A fault has occurred in the configuration of the motor temperature model.
Alarm value (r2124, interpret decimal):
1:
All motor temperature models: It is not possible to save the model temperature
300:
Motor temperature model 3: Threshold value for alarm (r5398) is higher than the threshold value for fault (r5399).
See also:p0610 (Motor overtemperature response), p5390 (Mot_temp_mod 1/3 alarm threshold), p5391 (Mot_temp_mod 1/3 fault threshold)

**Remedy:** - set the response for motor overtemperature to "Alarm and fault, no reduction of I_max" (p0610 = 2).
- check and correct the threshold values (r5398, r5399).
See also:p0610 (Motor overtemperature response), p5390 (Mot_temp_mod 1/3 alarm threshold), p5391 (Mot_temp_mod 1/3 fault threshold)

## 207015 <location>Drive: Motor temperature sensor alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error was detected when evaluating the temperature sensor set in p0600 and p0601.
With the fault, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 50 ms after alarm A07015.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm).
Alarm value (r2124, interpret decimal):
- if SME/TM120 is selected (p0601 = 10, 11),
this is the number of the temperature channel leading to the message.
**Remedy:** - make sure that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
- check the setting of the lower threshold (p4622).
See also:r0035, p0600, p0601, p0607, p4622

## 207016 <location>Drive: Motor temperature sensor fault

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** An error was detected when evaluating the temperature sensor set in p0600 and p0601.
Possible causes:
- wire breakage or sensor not connected (KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm).
- measured resistance too low (PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm).
Note:
If alarm A07015 is present, the time in p0607 is started. If the fault is still present after this time has expired, then fault F07016 is output; however, at the earliest, 50 ms after alarm A07015.
Fault value (r0949, interpret decimal):
- if SME/TM120 is selected (p0601 = 10, 11),
this is the number of the temperature channel leading to the message.
See also:p0607 (Temperature sensor fault timer)
**Remedy:** - make sure that the sensor is connected correctly.
- check the parameterization (p0600, p0601).
- induction motors: Deactivate temperature sensor fault (p0607 = 0).
- When TM120 and SMC/SME (p0601 = 10, 11) are being used, set the same sensor type on the drive (p4610 ... p4613) as for TM120.
- check the setting of the lower threshold (p4622).
See also:r0035, p0600, p0601, p0607, p4622

## 207017 <location>Additional temperature alarm threshold exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The additional temperature has exceeded the alarm threshold in p4102[0]
The time in p4103 is also started with this alarm. Fault F07018 is output if the alarm is still active after this time has expired.
- overtemperature (r4105 > p4102[0]).
See also:p4100, p4102, p4103, r4105
**Remedy:** - make sure that the sensor is connected correctly.
- check parameterization (p4100).

## 207018 <location>Additional temperature fault threshold exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (ENCODER, NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** The additional temperature has exceeded the fault threshold in p4102[1]
Fault value (r0949, interpret decimal):
0:
Overtemperature (r4105 > p4102[1] or r4105 > p4102[0] for longer than the time in p4103).
1:
Wire breakage or sensor not connected (KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm).
Measured resistance too low (KTY: R < 50 Ohm, PT1000: R < 603 Ohm).
See also:p4100, p4102, p4103, r4105
**Remedy:** - make sure that the sensor is connected correctly.
- check parameterization (p4100).

## 207080 <location>Drive: Incorrect control parameter

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The closed-loop control parameters have been parameterized incorrectly (e.g. p0356 = L_spread = 0).
Fault value (r0949, interpret decimal):
The fault value includes the parameter number involved.
See also:p0310, p0311, p0341, p0344, p0350, p0354, p0356, p0358, p0360, p0400, p0404, p0408, p0640, p1082, p1300
**Remedy:** Modify the parameter indicated in the fault value (r0949) (e.g. p0640 = current limit > 0).
See also:p0311, p0341, p0344, p0350, p0354, p0356, p0358, p0360, p0400, p0404, p0408, p0640, p1082

## 207082 <location>Macro: Execution not possible

**Drive object:** 'All objects
**Message value:** Fault cause: %1, supplementary information: %2, preliminary parameter number: %3
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** The macro cannot be executed.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex:
cccc = preliminary parameter number, bb = supplementary information, aa = fault cause
Fault causes for the trigger parameter itself:
19: Called file is not valid for the trigger parameter.
20: Called file is not valid for parameter 15.
21: Called file is not valid for parameter 700.
22: Called file is not valid for parameter 1000.
23: Called file is not valid for parameter 1500.
24: Data type of a TAG is incorrect (e.g. Index, number or bit is not U16).
Fault causes for the parameters to be set:
25: Error level has an undefined value.
26: Mode has an undefined value.
27: A value was entered as string in the tag value that is not "DEFAULT".
31: Entered drive object type unknown.
32: A device was not able to be found for the determined drive object number.
34: A trigger parameter was recursively called.
35: It is not permissible to write to the parameter via macro.
36: Check, writing to a parameter unsuccessful, parameter can only be read, not available, incorrect data type, value range or assignment incorrect.
37: Source parameter for a BICO interconnection was not able to be determined.
38: An index was set for a non-indexed (or CDS-dependent) parameter.
39: No index was set for an indexed parameter.
41: A bit operation is only permissible for parameters with the parameter format DISPLAY_BIN.
42: A value not equal to 0 or 1 was set for a BitOperation.
43: Reading the parameter to be changed by the BitOperation was unsuccessful.
51: Factory setting for DEVICE may only be executed on the DEVICE.
61: The setting of a value was unsuccessful.

**Remedy:** - check the parameter involved.
- check the macro file and BICO interconnection.
See also:p0015, p0700, p1000, p1500

## 207083 <location>Macro: ACX file not found

**Drive object:** 'All objects
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The ACX file (macro) to be executed was not able to be found in the appropriate directory.
Fault value (r0949, interpret decimal):
Parameter number with which the execution was started.
See also:p0015, p0700, p1000, p1500

**Remedy:** - check whether the file is saved in the appropriate directory on the memory card.
Example:
If p0015 is set to 1501, then the selected ACX file must be located in the following directory:
... /PMACROS/DEVICE/P15/PM001501.ACX

## 207084 <location>Macro: Condition for WaitUntil not fulfilled

**Drive object:** 'All objects
**Message value:** Parameter: %1
**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The WaitUntil condition set in the macro was not fulfilled in a certain number of attempts.
Fault value (r0949, interpret decimal):
Parameter number for which the condition was set.

**Remedy:** Check and correct the conditions for the WaitUntil loop.

## 207085 <location>Drive: Open-loop/closed-loop control parameters changed

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Open-loop/closed-loop control parameters have had to be changed.
Possible causes:
1. As a result of other parameters, they have exceeded the dynamic limits.
2. They cannot be used due to the fact that the hardware detected not having certain features.
3. The value is estimated as the thermal time constant is missing.
4. Motor temperature model 1 is activated as thermal motor protection is missing.
Fault value (r0949, interpret decimal):
Changed parameter number.
340:
The motor and control parameters were automatically calculated (p0340 = 1), because the vector control was subsequently activated as configuration (r0108.2).
611:
The time constant for thermal motor model 1 was estimated.
612:
Thermal motor model 1 was activated (p0612.0 = 1).
1800:
A more favorable pulse frequency was preassigned.
See also:p0640, p1082, p1300, p1800

**Remedy:** Not necessary.
It is not necessary to change the parameters as they have already been correctly limited.

## 207086 <location>Units changeover: Parameter limit violation due to reference value change

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A reference parameter was changed in the system. This resulted in the fact that for the parameters involved, the selected value was not able to be written in the per unit notation.
The values of the parameters were set to the corresponding violated minimum limit/maximum limit or to the factory setting.
Possible causes:
- the steady-state minimum limit/maximum limit or that defined in the application was violated.
Fault value (r0949, parameter):
Diagnostics parameter to display the parameters that were not able to be re-calculated.
See also:p0304, p0305, p0310, p0596, p2000, p2001, p2002, p2003, r2004

**Remedy:** Check the adapted parameter value and if required correct.
See also:r9450 (Reference value change parameter with unsuccessful calculation)

## 207087 <location>Drive: Encoderless operation not possible for the selected pulse frequency

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Encoderless operation is not possible for the selected pulse frequency (p1800).
Encoderless operation is activated under the following conditions:
- the changeover speed for encoderless operation (p1404) is less than the maximum speed (p0322).
- a control type with encoderless operation has been selected (p1300).
- encoder faults of the motor encoder result in a fault response with encoderless operation (p0491).
See also:p0491, p1300, p1404, p1800

**Remedy:** Increase the pulse frequency (p1800).
Note:
In encoderless operation, the pulse frequency must be at least as high as one quarter of the current controller clock cycle frequency (1/p0115[0]).

## 207088 <location>Units changeover: Parameter limit violation due to units changeover

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A changeover of units was initiated. This resulted in a violation of a parameter limit
Possible causes for the violation of a parameter limit:
- When rounding off a parameter corresponding to its decimal places, the steady-state minimum limit or maximum limit was violated.
- inaccuracies for the data type "FloatingPoint".
In these cases, when the minimum limit is violated then the parameter value is rounded up and when the maximum limited is violated the parameter value is rounded down.
Fault value (r0949, interpret decimal):
Diagnostics parameter r9451 to display all parameters whose value had to be adapted.
See also:p0100 (IEC/NEMA Standards), p0349 (System of units motor equivalent circuit diagram data), p0505 (Selecting the system of units), p0595 (Technological unit selection)

**Remedy:** Check the adapted parameter values and if required correct.
See also:r9451 (Units changeover adapted parameters)

## 207089 <location>Changing over units: Function module activation is blocked because the units have been changed over

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An attempt was made to activate a function module. This is not permissible if the units have already been changed over.
See also:p0100 (IEC/NEMA Standards), p0349 (System of units motor equivalent circuit diagram data), p0505 (Selecting the system of units)

**Remedy:** Restore units that have been changed over to the factory setting.

## 207090 <location>Drive: Upper torque limit less than the lower torque limit

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The upper torque limit is lower than the lower torque limit.

**Remedy:** P1 must be >= P2 if parameter P1 is connected to p1522 and parameter P2 to p1523.

## 207091 <location>Drive: determined current controller dynamic response invalid

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When one button tuning is activated (p5300 = 1), the current controller is measured after the pulses have been enabled. Evaluation has indicated that the current control loop was not appropriately set.
Possible causes:
- incorrectly set current controller.
- PRBS amplitude set too high (p5296).
Alarm value (r2124, interpret hexadecimal):
1: Dynamic response too low.
2: Current controller unstable.
Note:
PRBS: Pseudo Random Binary Signal (binary noise)

**Remedy:** - the measurement can be repeated with a smaller excitation amplitude (p5296).
- if required, adapt the current controller proportional gain (p1715).

## 207092 <location>Drive: moment of inertia estimator still not ready

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The moment of inertia estimator has still not determined any valid values.
The acceleration cannot be calculated.
The moment of inertia estimator has stabilized, if the frictional values (p1563, p1564) as well as the moment of inertia value (p1493) have been determined and the appropriate status signal is set (r1407.26 = 1).
The following parameters influence the response of the moment of the inertia estimator:
p1560, p1561, p1562

**Remedy:** Traverse the axis until the moment of inertia estimator has stabilized.
This alarm is automatically withdrawn after the moment of inertia estimator has stabilized.

## 207093 <location>Drive: Test signal error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF3 (NONE, OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** An error was identified when executing the "Test signal" function (p5307.1 = 1).
The function was not executed or was canceled.
Fault value (r0949, interpret decimal):
1: No distance limit has been defined (p5308 = 0).
2: The moment of inertia estimator has not stabilized in the parameterized time (p5309) (r1407.26).
3: The parameterized distance (p5308) was exceeded.
4: no motor encoder parameterized (closed-loop speed control without encoder).
5: Offset (p5297) is too high for the parameterized distance (p5308).
6: Pulse enable was withdrawn while traversing.
7: speed setpoint not equal to zero.
See also:p5307 (Activate One Button Tuning test signal), p5308 (One Button Tuning test signal distance limiting), p5309 (One Button Tuning test signal duration)

**Remedy:** For fault value = 1:
- Define distance limiting (p5308).

For fault value = 2:
- increase the duration or distance limiting (p5309, p5308).

For fault value = 3:
- check distance limiting (p5308).

For fault value = 4:
- configure speed control with encoder.

For fault value = 5:
- increase distance limit p5308 or reduce offset p5297.
- the fault can only be acknowledged after p5300 was set = 0.
- for the factory setting, a test signal duration of approximately 1.3 s is obtained. If an offset (p5297) of 60 rpm is set, for example, then this results in a distance of approximately 1.3 revolutions. As a consequence, a value must be parameterized in parameter p5308, which is longer than this distance + 10% controller reserve (e.g. p5308=515°). Further, the distance depends on the speed controller sampling time (p0115[1]) and the controller configuration (p5271).

For fault value = 6:
- keep the drive switched on until the "Test signal" function has been completely exited.

For fault value = 7:
- set the speed setpoint to zero. It is possible that the setpoint was entered from the control panel.

## 207094 <location>General parameter limit violation

**Drive object:** 'All objects

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** As a result of the violation of a parameter limit, the parameter value was automatically corrected.
Minimum limit violated --> parameter is set to the minimum value.
Maximum limit violated --> parameter is set to the maximum value.
Alarm value (r2124, interpret decimal):
Parameter number, whose value had to be adapted.

**Remedy:** Check the adapted parameter values and if required correct.

## 207095 <location>Drive: One Button Tuning activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The One Button Tuning function is active.
One Button Tuning is performed at the next switch-on command.
See also:p5300 (Autotuning selection)

**Remedy:** Not necessary.
The alarm is automatically withdrawn after One Button Tuning has been exited (p5300 = 0).

## 207097 <location>Drive: Test signal error distance limiting

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1, traversing distance: %2

**Reaction:** OFF3 (NONE, OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** An error was identified when executing the "Test signal" function (p5307.1 = 1) or auto tuning was selected (p5300 = 1).
The function was not executed or was canceled.
Fault value (r0949, interpret decimal):
yyyyxxxx hex: yyyy = error cause, xxxx = traversing distance
Fault cause = 4:
- travel distance to the EPOS software limit switch is not sufficient.
See also:p5307 (Activate One Button Tuning test signal), p5308 (One Button Tuning test signal distance limiting), p5309 (One Button Tuning test signal duration)

**Remedy:** - enter the traversing path in parameter p5308 - or deselect the function involved in p5301.
- for fault cause = 1, 2, shorter traversing paths may be possible.
For fault cause = 1:
- deselect bit 0 and bit 1 in parameter p5301.
For fault cause = 2:
- deselect bit 2 in parameter p5301.
For fault cause = 3:
- deselect bit 4 and bit 5 in parameter p5301.
For fault cause = 4:
- change the travel direction of One Button Tuning via p5308.
- increase the clearance to the EPOS software limit switch by manually traversing.

## 207098 <location>Drive: One Button Tuning configuration error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** OFF3 (NONE, OFF1, OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The requested One Button Tuning configuration (p5301) is not supported.
Fault value (r0949, interpret binary):
Bit 5:
The function requires that the "Advanced Positioning Control" function module (APC) is activated.
See also:p3700 (AVS/APC configuration), p5301 (One Button Tuning configuration)
**Remedy:** For bit 5 = 1:
- activate the "APC" function module (r0108.7 = 1).
- activate the "APC without sensor on the load side" function (p3700.2 = 1).

## 207100 <location>Drive: Sampling times cannot be reset

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** When resetting drive parameter (p0976) sampling times cannot be reset using p0111, p0112, p0115.
Fault value (r0949, interpret decimal):
Parameter whose setting prevents the sampling times being reset.
See also:r0110 (Basic sampling times)
**Remedy:** - continue to work with the set sampling times.
- before resetting the drive parameters, set the basic clock cycle p0110[0] to the original value.
See also:r0110 (Basic sampling times)

## 207110 <location>Drive: Sampling times and basic clock cycle do not match

**Drive object:** 'All objects
**Message value:** Parameter: %1

**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The parameterized sampling times do not match the basic clock cycle.
Fault value (r0949, interpret decimal):
The fault value specifies the parameter involved.
See also:r0110, r0111, p0115
**Remedy:** Enter the current controller sampling times so that they are identical to the basic clock cycle, e.g. by selecting p0112. Note which basic clock cycle is selected in p0111.
The sampling times in p0115 can only be changed manually in the sampling times pre-setting "Expert" (p0112).
See also:r0110, r0111, p0112, p0115

## 207140 <location>Drive: current controller sampling time for spindle does not match

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The parameterized current controller sampling time for the spindle has been set too high.
**Remedy:** Set the sampling time equal to or less than the value in r5034 (p0112, p0115).
See also:p0112, p0115, r5034

## 207200 <location>Drive: Master control ON command present

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The ON/OFF1 command is present (no 0 signal).
The command is either influenced via binector input p0840 (current CDS) or control word bit 0 via the master control.
**Remedy:** Switch the signal via binector input p0840 (current CDS) or control word bit 0 via the master control to 0.

## 207220 <location>Drive: Master control by PLC missing

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** The "master control by PLC" signal was missing in operation.
- interconnection of the binector input for "master control by PLC" is incorrect (p0854).
- the higher-level control has withdrawn the "master control by PLC" signal.
- data transfer via the fieldbus (master/drive) was interrupted.
**Remedy:** - check the interconnection of the binector input for "master control by PLC" (p0854).
- check the "master control by PLC" signal and, if required, switch in.
- check the data transfer via the fieldbus (master/drive).
Note:
If the drive should continue to operate after withdrawing "master control by PLC" then fault response must be parameterized to NONE or the message type should be parameterized as alarm.

## 207300 <location>Drive: Line contactor feedback signal missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -

**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:**
- the line contactor was not able to be closed within the time in p0861.
- the line contactor was not able to be opened within the time in p0861.
- the line contactor dropped out during operation
- the line contactor has closed although the drive converter is switched off.

**Remedy:**
- check the setting of p0860.
- check the feedback circuit from the line contactor.
- increase the monitoring time in p0861.
- for G150LE (power expansion)/G150HP (High Power), the following applies:

If, contrary to the appropriate specifications, the circuit breakers are monitored using the line contactor control of drive object B_INF then, for B_INF, parameter p0869.1 must be set = 0.
See also:p0860 (Line contactor feedback signal), p0861 (Line contactor monitoring time)

## 207300 <location>Drive: Line contactor feedback signal missing

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:**
- the line contactor was not able to be closed within the time in p0861.
- the line contactor was not able to be opened within the time in p0861.
- the line contactor dropped out during operation
- the line contactor has closed although the drive converter is switched off.

**Remedy:**
- check the setting of p0860.
- check the feedback circuit from the line contactor.
- increase the monitoring time in p0861.

See also:p0860 (Line contactor feedback signal), p0861 (Line contactor monitoring time)

## 207320 <location>Drive: Automatic restart interrupted

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:**
- the specified number of restart attempts (p1211) has been completely used up because within the monitoring time (p1213) the faults were not able to be acknowledged. The number of restart attempts (p1211) is decremented at each new start attempt.
- the monitoring time for the power unit has expired (p0857).
- when exiting commissioning or at the end of the motor identification routine or the speed controller optimization, the drive unit is not automatically switched on again.

Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- increase the number of restart attempts (p1211). The actual number of starting attempts is displayed in r1214.
- increase the delay time in p1212 and/or the monitoring time in p1213.
- either increase or disable the monitoring time of the power unit (p0857).

## 207321 <location>Drive: Automatic restart active

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The automatic restart (AR) is active. When the line supply returns and/or the causes of the existing faults are removed the drive is automatically restarted. The pulses are enabled and the motor starts to rotate.

**Remedy:** - the automatic restart (AR) should, if required, be inhibited (p1210 = 0).
- an automatic restart can be directly interrupted by withdrawing the switch-on command (BI: p0840).

## 207329 <location>Drive: kT estimator, kT(iq) characteristic or voltage compensation does not function

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A function of the function module "extended torque control" (r0108.1) was activated - however the (complete) function is not available.

Alarm value (r2124, interpret decimal):

1 ... 3: The kT estimator is active (p1780.3 = 1) without a functioning compensation of the voltage emulation error in the drive converter. This means that the accuracy is severely restricted.

1: The drive converter voltage emulation error "final value" is 0 (p1952).

2: The drive converter voltage emulation error "current offset" is 0 (p1953).

3: The compensation of the voltage emulation error is disabled (p1780.8 = 0).

4: The kT estimator (p1780.3 = 1), the kT(iq) characteristic (p1780.9 = 1) or the compensation of the voltage emulation error (p1780.8 = 1) was activated without activating the function module "extended torque control" (when the function module is activated, the following must apply: r0108.1 = 1).

5: the kT(iq) characteristic has been activated (p1780.9 = 1). However, the kT characteristic value kT1 is 0 (p0645). The function is not active.

**Remedy:** For alarm value = 1, 2:

- carry out an identification of the voltage emulation error in the drive converter (p1909.14 = 1, p1910 = 1).
- set the parameter to compensate the voltage emulation error in the drive converter (p1952, p1953).

For alarm value = 3:

- enable the compensation of the voltage emulation error in the drive converter (p1780.8 = 1).

For alarm value = 4:

- activate the function module "extended torque control" (r0108.1 = 1) or deactivate the corresponding functions (p1780.3 = 0, p1780.8 = 0, p1780.9 = 0).

For alarm value = 5:

- determine the parameters of the kT characteristic (p0645 ... p0648) using the rotating measurement (p1959.6, p1960).
- enter the parameters of the kT characteristic (p0645 ... p0648) (if known).
- if necessary, deactivate the kT characteristic (p1780.9 = 0).

## 207334 <location>Function not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For this configuration, the selected function is not possible.

Fault value (r0949, interpret decimal):

0:

Function "Travel to fixed end stop" (p1545) was selected, although encoderless operation or U/f operation is active.

**Remedy:** For fault value = 0:

- Operate the closed-loop speed control with an encoder.
- If necessary, deselect function "Travel to fixed stop".

## 207350 <location>Drive: Measuring probe parameterized to a digital output

**Drive object:** 'All objects

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The measuring probe is connected to a bi-directional digital input/output and the terminal is set as output.
Alarm value (r2124, interpret decimal):
8: DI/DO 8 (X122.9/X132.1)
9: DI/DO 9 (X122.10/X132.2)
10: DI/DO 10 (X122.12/X132.3)
11: DI/DO 11 (X122.13/X132.4)
12: DI/DO 12 (X132.9)
13: DI/DO 13 (X132.10)
14: DI/DO 14 (X132.12)
15: DI/DO 15 (X132.13)
Regarding the terminal designation:
The first designation is valid for CU320, the second for CU305.
**Remedy:** - set the terminal as input (p0728).
- deselect the measuring probe (p0488, p0489, p0580).

## 207351 <location>Drive: Measuring probe parameterized to a digital output

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The measuring probe is connected to a bi-directional digital input/output and the terminal is set as output.
Alarm value (r2124, interpret decimal):
0: DI/DO 0 distributed (X3.2)
1: DI/DO 1 distributed (X3.4)
**Remedy:** - set the terminal as input (p4028).
- deselect the probe (p0488, p0489).
See also:p0488, p0489, p4028

## 207354 <location>Drive: Cogging torque compensation not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1, drive data set: %2
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** Cogging torque compensation is selected and is not (completely) supported.
Alarm value (r2124, interpret hexadecimal):
yyyyxx hex: yyyy = fault cause, xx = drive data set
yyyy = 1:
The encoder evaluation does not support this function.
yyyy = 2:
The encoder has no absolute information.
yyyy = 3:
The motor has no encoder (p0187 = 99).
yyyy = 3:
The motor has no encoder (p0187 = 99).
yyyy = 4:
Learning was activated (p5251) for closed-loop control without encoder (p1300 = 20 or p1404 < 12 rpm or 12 m/min - or p1317 = 1).
yyyy = 5:
The internal table is active; however, period p5253 has not been set equal to 1.
yyyy = 6:
The setting of p0418 results in a format overflow.

**Remedy:** If required, deselect the cogging torque compensation (p5250 = 0).
For fault cause = 1:
Use an absolute encoder or an encoder evaluation that supports the function (r0459.13 = 1). If required, upgrade the firmware to a newer version (version 04.50.30.01 or higher is required).
For fault cause = 2:
Use an encoder with absolute information (absolute track, unique zero mark, resolver with one pole pair). The function cannot be tested as long as the encoder is not reset after learning (encoder fault, parking, POWER ON). Continuous use is not recommended.
For fault cause = 3:
Only select cogging torque compensation for operation with motor encoder.
For fault cause = 4:
Activate learning, only for operation with encoder (p1300, p1404, p1317).
For fault cause = 5:
- set period p5253 = 1.
- activate the external table and learning (p5250.0 = 1, p5251).
For fault cause = 6:
- reduce p0418.
- deactivate the cogging torque compensation (p5250.0 = 0).
See also:p5250 (Compensation configuration), p5251 (Activate learn cogging torque compensation)

## 207355 <location>Drive: cogging torque compensation error when learning

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** A cogging torque compensation error has occurred while learning.
Fault value (r0949, interpret decimal):
1:
The learning velocity is too high.
- rotating: absolute value greater than 5 [rpm]
- linear: absolute value greater than 0.5 [m/min]
2:
The commutation angle offset (p0431) is incorporated in the position and was changed.

**Remedy:** For fault value = 1:
Repeat learning with the lower velocity setpoint.
Recommended speeds:
- rotating 2 [rpm]
- linear 0.1 [m/min]
For fault value = 2:
New learning required, which must be saved.
See also:p5250 (Compensation configuration), p5251 (Activate learn cogging torque compensation)

## 207356 <location>Drive: Cogging torque compensation motor or encoder serial number different

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1, drive data set: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Cogging torque compensation is activated via external table (p5260, p5261) (p5250.0 = 1), not active or incorrectly parameterized.
Alarm value (r2124, interpret hexadecimal):
yyyyxx hex: yyyy = fault cause, xx = drive data set
yyyy = 1:
Motor or encoder were replaced, or external table was not learned.
yyyy = 2:
Cogging torque compensation via external table was activated for more than one motor data set, and the serial numbers do not match. There is only one external table.
yyyy = 3:
Cogging torque compensation via external table was activated for more than one motor data set, and p0826 indicates that different motors are involved. There is only one external table.
yyyy = 4:
Cogging torque compensation via external table was activated for data sets with different encoder data sets (EDS). Cogging torque compensation with external table only supports one encoder.
**Remedy:** For fault cause = 1:
Relearn cogging torque table (p5251).
For fault cause = 2:
Only activate cogging torque compensation with external table for motor data sets (MDS) with the same motor (p5250.0).
For fault cause = 3:
Only activate cogging torque compensation with external table for motor data sets (MDS) with the same motor (p5250.0). For the same motor, set p0826 to the same value.
For fault cause = 4:
Only activate cogging torque compensation with external table for data sets with the same encoder (p5250.0, p0187).
See also:p5250 (Compensation configuration), p5251 (Activate learn cogging torque compensation)

## 207400 <location>Drive: DC link voltage maximum controller active

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The DC link voltage controller has been activated because of the upper switch-in threshold (p1244).
A system deviation can occur between the setpoint and actual speed.
See also:r0056 (Status word, closed-loop control), p1240 (Vdc controller or Vdc monitoring configuration)

**Remedy:** Not necessary.
This alarm is automatically withdrawn after the upper threshold has been distinctly exceeded.
Otherwise, apply the following measures:
- use a Braking Module or regenerative feedback unit.
- increase the ramp-down times (p1121, p1135).
- shut down the Vdc_max controller (p1240 = 0).

## 207402 <location>Drive: DC link voltage minimum controller active

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The DC link voltage controller has been activated due to the lower switch-in threshold (p1248).
A system deviation can occur between the setpoint and actual speed.
A possible cause can be e.g. that the line supply has failed.
See also:r0056 (Status word, closed-loop control), p1240 (Vdc controller or Vdc monitoring configuration), p1248 (DC link voltage threshold lower)
**Remedy:** Not necessary.
This alarm is automatically withdrawn after the lower threshold has been distinctly exceeded.
Otherwise, apply the following measures:
- check the line supply and infeed.
- increase the ramp-up times (p1120).
- shut down the Vdc_min controller (p1240 = 0).

## 207403 <location>Drive: Lower DC link voltage threshold reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The DC link voltage monitoring is active (p1240 = 5, 6) and the lower DC link voltage threshold (p1248) was reached in the "Operation" state.
**Remedy:** - check the line supply voltage.
- check the infeed.
- reduce the lower DC link threshold (p1248).
- switch out (disable) the DC link voltage monitoring (p1240 = 0).

## 207404 <location>Drive: Upper DC link voltage threshold reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The DC link voltage monitoring is active (p1240 = 4, 6) and the upper DC link voltage threshold (p1244) was reached in the "Operation" state.
**Remedy:** - check the line supply voltage.
- check the infeed unit or the Braking Module.
- increase the upper DC link voltage threshold (p1244).
- if necessary, deactivate the DC link voltage monitoring (p1240 = 0).

## 207405 <location>Drive: Kinetic buffering minimum speed fallen below

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -
**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** During kinetic buffering the speed fell below minimum speed (p1257 or p1297 for vector drives with U/f control) and the line supply did not return.
**Remedy:** Check the speed threshold for the Vdc_min controller (kinetic buffering) (p1257, p1297).

## 207410 <location>Drive: Current controller output limited

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** The condition "I_act = 0 and Uq_set_1 longer than 16 ms at its limit" is present and can be caused by the following:
- motor not connected or motor contactor open.
- no DC link voltage present.
- Motor Module defective.

**Remedy:**
- connect the motor or check the motor contactor.
- check the DC link voltage (r0070).
- check the Motor Module.

## 207411 <location>Drive: Flux controller output limited

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** The specified flux setpoint cannot be reached, although the set maximum field current is specified (p1603).
- incorrect motor data.
- motor data and motor configuration (star-delta) do not match.
- the current limit has been set too low for the motor (p0640, p0323, p1603).
- induction motor (encoderless, open-loop controlled) in I2t limiting.
- the Motor Module is too small.

**Remedy:**
- correct the motor data.
- check the motor configuration.
- correct the current limits (p0640, p0323, p1603).
- reduce the induction motor load.
- if required, use a larger Motor Module.

## 207412 <location>Drive: Commutation angle incorrect (motor model)

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** ENCODER (NONE, OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** An incorrect commutation angle was detected that can result in a positive coupling in the speed controller.
Possible causes:
- the phase sequence of the output phases for the motor is incorrect (e.g. the phases are interchanged).
- the motor encoder is incorrectly adjusted with respect to the magnet position.
- the motor encoder is damaged.
- the angular commutation offset is incorrectly set (p0431).
- data to calculate the motor model has been incorrectly set (p0356 (motor-stator leakage inductance) and/or p0350 (motor-stator resistance) and/or p0352 (cable resistance)).
- the changeover speed for the motor model is too low (p1752). The monitoring function only becomes effective above the changeover speed.
- pole position identification might have calculated an incorrect value when activated (p1982 = 1).
- the motor encoder speed signal is faulted.
- the control loop is instable due to incorrect parameterization.

Fault value (r0949, interpret decimal):
SERVO:
0: The comparison of the pole position angle from the encoder and motor model resulted in an excessively high value (p1778[1] > 80 ° electrical).
1: -
VECTOR:
0: The comparison of the pole position angle from the encoder and motor model resulted in an excessively high value (> 45 ° electrical).
1: The change in the speed signal from the motor encoder has changed by > p0492 within a current controller clock cycle.

**Remedy:**
- check the phase sequence for the motor, and if required, correct (wiring, p1820).
- if the encoder mounting was changed - re-adjust the encoder.
- replace the defective motor encoder.
- correctly set the angular commutation offset (p0431). If required, determine using p1990.
- correctly set the motor stator resistance, cable resistance and motor-stator leakage inductance (p0350, p0352, p0356).

Calculate the cable resistance from the cross-section and length, check the inductance and stator resistance using the motor data sheet, measure the stator resistance, e.g. using a multimeter - and if required, again identify the values using the stationary motor data identification (p1910).
- increase the changeover speed for the motor model (p1752). The monitoring is completely deactivated for p1752 > p1082 (maximum speed).
- with pole position identification activated (p1982 = 1) check the procedure for pole position identification (p1980) and force a new pole position identification procedure by means of deselection followed by selection (p1982 = 0 -> 1).

Note:
For High Dynamic Motors (1FK7xxx-7xxx), for applications with a higher current, if necessary, the monitoring should be disabled.
See also:r1778 (Motor model flux angle difference)

## 207413 <location>Drive: Commutation angle incorrect (pole position identification)

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** ENCODER (NONE, OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** An incorrect commutation angle was detected that can result in a positive coupling in the speed controller.
Within the pole position identification routine (p1982 = 2):
- a difference of > 45 ° electrical to the encoder angle was determined.

For VECTOR, within the encoder adjustment (p1990 = 2):
- a difference of > 6 ° electrical to the encoder angle was determined.

**Remedy:** - correctly set the angular commutation offset (p0431).
- re-adjust the motor encoder after the encoder has been replaced.
- replace the defective motor encoder.
- check the pole position identification routine. If the pole position identification routine is not suitable for this motor type, then disable the plausibility check (p1982 = 0).

## 207414 <location>Drive: Encoder serial number changed

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** ENCODER (NONE, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p0300 = 401) or third-party motors (p0300 = 2).
Cause 1:
- the encoder was replaced.
Cause 2:
- a third-party, built-in or linear motor was re-commissioned.
Cause 3:
- the motor with integrated and adjusted encoder was replaced.
Cause 4:
- the firmware was updated to a version that checks the encoder serial number.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
Proceed as follows to hide serial number monitoring:
- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.
- parameterize F07414 as message type N (p2118, p2119).

**Remedy:** For causes 1, 2:
Carry out an automatic adjustment using the pole position identification routine. Acknowledge fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.
or
Set the adjustment via p0431. In this case, the new serial number is automatically accepted.
or
Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
For causes 3, 4:
Accept the new serial number with p0440 = 1.

## 207415 <location>Drive: Angular commutation offset transfer running

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** NONE

**Cause:** The angular commutation offset was automatically determined using p1990 = 1.
This fault causes the pulses to be suppressed - this is necessary to transfer the angular commutation offset to p0431.
See also:p1990 (Encoder adjustment determine angular commutation offset)

**Remedy:** The fault can be acknowledged without any additional measures.

## 207419 <location>Drive: Current setpoint filter adaptation error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred when configuring or when using the "Current setpoint filter adaptation" function.
Fault value (r0949, interpret binary):
Bit 0: a filter has still not been assigned (p5281).
Bit 1: the assigned filter belongs to the "Extended current setpoint filter" function module that has not been activated (r0108.21).
Bit 2: the assigned filter is a type or has a characteristic, which is unsuitable for adaptation.
Bit 3: the assigned filter has not been activated (p1656, p5200).
Bit 4 ... 15: internal fault occurred.
Bit 16 ... 31: number of the drive data set with fault.
See also:p5280 (Current setpoint filter adaptation configuration), p5281 (Current setpoint filter adaptation assignment)
**Remedy:** The message can always be removed by deactivating adaptation (p5280 = 0, -1).
If adaptation is to remain active, then the countermeasure should be applied depending on the particular fault value.
For bit 0:
Assign the filter (p5281).
For bit 1:
activate the "Extended current setpoint filter" function module (r0108.21).
For bit 2:
Set the filter type "General filter 2nd order" and set the characteristic of a bandstop filter.
For bit 3:
Activate filter (p1656, p5200).
For bits 4 ... 15:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
See also:p5280 (Current setpoint filter adaptation configuration), p5281 (Current setpoint filter adaptation assignment)

## 207420 <location>Drive: Current setpoint filter natural frequency > Shannon frequency

**Drive object:** A_INF_840
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
Fault value (r0949, interpret binary):
Bit 3: Filter 4 (p1673, p1675)
Bit 16: Filter 5 (p5202, p5204)
Bit 18: Filter 7 (p5212, p5214)
**Remedy:** - reduce the numerator or denominator natural frequency of the current setpoint filter involved.
- reduce the current controller sampling time (p0115[0]).
- switch out the filter involved (p1656).

## 207420 <location>Drive: Current setpoint filter natural frequency > Shannon frequency

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
Fault value (r0949, interpret binary):
Bit 0: Filter 1 (p1658, p1660)
Bit 1: Filter 2 (p1663, p1665)
Bit 2: Filter 3 (p1668, p1670)
Bit 3: Filter 4 (p1673, p1675)
Bit 8 ... 15: Data set number (starting from zero)
Bit 16: Filter 5 (p5202, p5204) - extended current setpoint filter (r0108.21)
Bit 17: Filter 6 (p5207, p5209) - extended current setpoint filter (r0108.21)
Bit 18: Filter 7 (p5212, p5214) - extended current setpoint filter (r0108.21)
Bit 19: Filter 8 (p5217, p5219) - extended current setpoint filter (r0108.21)
Bit 20: Filter 9 (p5222, p5224) - extended current setpoint filter (r0108.21)
Bit 21: Filter 10 (p5227, p5229) - extended current setpoint filter (r0108.21)

**Remedy:** - reduce the numerator or denominator natural frequency of the current setpoint filter involved.
- reduce the current controller sampling time (p0115[0]).
- switch out the filter involved (p1656).

## 207421 <location>Drive: Speed filter natural frequency > Shannon frequency

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[1]
Fault value (r0949, interpret binary):
Bit 0: Filter 1 (p1417, p1419)
Bit 1: Filter 2 (p1423, p1425)
Bit 4: Actual value filter (p1447, p1449)
Bit 8 ... 15: Data set number (starting from zero)

**Remedy:** - reduce the numerator or denominator natural frequency of the speed setpoint filter involved.
- reduce the speed controller sampling time (p0115[1]).
- switch off the filter involved (p1413, p1414).

## 207422 <location>Drive: Reference model natural frequency > Shannon frequency

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The natural filter frequency of the PT2 element for the reference model (p1433) is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[1]

**Remedy:** - reduce the natural frequency of PT2 element for reference model (p1433).
- reduce the speed controller sampling time (p0115[1]).

## 207423 <location>Drive: APC filter natural frequency > Shannon frequency

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / (p0115[1] * x)
Fault value (r0949, interpret binary):
Bit 0: Filter 1.1 (p3711, p3713), x = 1
Bit 4: Filter 2.1 (p3721, p3723), x = p3706
Bit 5: Filter 2.2 (p3726, p3728), x = p3706
Bit 8: Filter 3.1 (p3731, p3733), x = p3707
Bit 9: Filter 3.2 (p3736, p3738), x = p3707
Bit 16 ... 32: Data set number (starting from zero)

**Remedy:** - reduce the numerator or denominator natural frequency of the filter involved.
- reduce the speed controller sampling time (p0115[1]) or the sub-sampling (p3706, p3707).
- switch out the filter involved (p3704).

## 207424 <location>Drive: Operating condition for APC not valid

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The APC function (Advanced Positioning Control) has identified an invalid operating condition.
Alarm value (r2124, interpret binary):
Bit 0 = 1:
APC is operating without encoder
Bit 1 = 1:
Possible causes:
- the load measuring system for APC, selected using p3701, has a fault.
- the load measuring system selected using p3701 is in the park state (r0481[0...2].14).
The APC function is disabled.
Bit 2 = 1:
Possible causes:
- the load measuring system for APC, selected using p3701, has a fault.
- the load measuring system selected using p3701 is in the park state (r0481[0...2].14).
The pulse de-coupling is disabled, i.e. the speed of the motor measuring system is used as speed for the closed-loop motor speed control.

**Remedy:** For bit 0:
Only use the APC function in operation with an encoder.
For bit 1, 2:
Check the load measuring system.

## 207425 <location>Drive: APC monitoring time for speed limit expired

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1

**Acknowledge:** IMMEDIATELY

**Cause:** The limit value (p3778) for the speed/velocity was exceeded for a time longer than that set in the monitoring time (p3779).
Note:
APC: Advanced Positioning Control

**Remedy:** - check the measured value.
- check the limit value and monitoring time (p3778, p3779).

## 207426 <location>Technology controller actual value limited

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1
**Reaction:** OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The actual value for the technology controller, interconnected via connector input p2264, has reached a limit.
Fault value (r0949, interpret decimal):
1: upper limit reached.
2: lower limit reached.
**Remedy:** - adapt the limits to the signal level (p2267, p2268).
- check the actual value normalization (p0595, p0596).
- Deactivate evaluation of the limits (p2252.3)
See also:p0595, p0596, p2264, p2267, p2268

## 207428 <location>Technology controller parameterizing error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The technology controller has a parameterizing error.
Alarm value (r2124, interpret decimal):
1:
The upper output limit in p2291 is set lower than the lower output limit in p2292.
**Remedy:** For alarm value = 1:
Set the output limit in p2291 higher than in p2292.
See also:p2291 (Technology controller maximum limiting), p2292 (Technology controller minimum limiting)

## 207429 <location>Drive: DSC without encoder not possible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The function DSC (Dynamic Servo Control) was activated although there is no encoder.
See also:p1191 (DSC position controller gain KPC), p1192 (DSC encoder selection)
**Remedy:** Check the encoder selection configuration (p1192).
Note:
If there is no encoder and connector input p1191 (DSC position controller gain) is interconnected, then connector input p1191 must have a 0 signal.

## 207430 <location>Drive: Changeover to open-loop torque controlled operation not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** For encoderless operation, the converter cannot change over to closed-loop torque-controlled operation (BI: p1501).
**Remedy:** Do not attempt to cover over to closed-loop torque-controlled operation.

## 207431 <location>Drive: Changeover to encoderless operation not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** For closed-loop torque control, the converter cannot change over to encoderless operation (p1404).

**Remedy:** Do not attempt to change over to encoderless operation.

## 207432 <location>Drive: Motor without overvoltage protection

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** In the case of a fault at maximum speed, the motor can generate an overvoltage that can destroy the drive system.

Fault value (r0949, interpret hexadecimal):

Associated Drive Data Set (DDS).

**Remedy:** Overvoltage protection can be implemented in the following ways:

1. Limit the maximum speed (p1082) without any additional protection.

The maximum speed without protection is calculated as follows:

Rotary synchronous motors: p1082 [rpm] <= 11.695 * r0297/p0316 [Nm/A]

Linear motors: p1082 [m/min] <= 73.484 * r0297/p0316 [N/A]

Rotary synchronous motor connected to the high-frequency converter:

p1082 [rpm] <= 4.33165E9 * (-p0316 + root(p0316^2 + 4.86E-9 * (r0297 * r0313)^2 * (r0377 - p0233) [mH] * p0234 [µF]) / (r0297 * r0313^2 * (r0377 - p0233) [mH] * p0234 [µF])

Linear motor connected to the high-frequency converter:

p1082 [m/min] <= 689.403 * p0315 * (root(p0316^2 * p0315^2 + 0.191865 * r0297^2 * (r0377 - p0233) [mH] * p0234 [µF]) / (r0297 * (r0377 - p0233) [mH] * p0234 [µF])

Rotary induction motor connected to the high-frequency converter:

p1082 [rpm] <= maximum (2.11383E5 / (r0313 * root((r0377 [mH] + r0382 [mH]) * p0234 [µF])); 0.6364 * r0297 * p0311[rpm] / p0304)

2. Use a Voltage Protection Module (VPM) in conjunction with the function "Safe Torque Off" (p9601, p9801 – only for synchronous motors).

When using a synchronous motor with VPM at the high-frequency converter, the following must apply:

p1082 [rpm] <= p0348 * (r0377 + p0233) / p0233

When a fault condition exists, the VPM short-circuits the motors. During the short-circuit, the pulses must be suppressed - this means that the terminals for the function "Safe Torque Off" (STO) must be connected to the VPM.

When using a VPM, p0643 must be set to 1.

3. Activate the internal voltage protection (p1231 = 3, only for synchronous motors).

In so doing, the following hardware preconditions must be fulfilled:

- the infeed of the group must be capable of energy recovery (Active Line Module, Smart Line Module), and the energy recovery power of the infeed must not be less than the maximum utilized S1 power of the synchronous motor.
- For Control Unit and infeed, a 24 V power supply other than that for the Motor Module must be used with the voltage protection activated. The 24 V power supply of this Motor Module must be DC link buffered (e.g. CSM).
- a Braking Module with a correspondingly configured braking resistor must be available at the DC link.
- the synchronous motor must be short-circuit proof.

See also:p0643 (Overvoltage protection for synchronous motors), p1231 (Armature short-circuit / DC braking configuration)

## 207433 <location>Drive: Closed-loop control with encoder is not possible as the encoder has not been unparked

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The changeover to closed-loop control with encoder is not possible as the encoder has not been unparked.

**Remedy:** - check whether the encoder firmware supports the "parking" function (r0481.6 = 1).
- upgrade the firmware.
Note:
For long-stator motors (p3870.0 = 1), the following applies:
The encoder must have completed the unparking procedure (r3875.0 = 1) before a changeover can be made to closed-loop control with encoder. The encoder is unparked using binector input p3876 = 0/1 signal and remains until a 0 signal in this state.

## 207434 <location>Drive: It is not possible to change the direction of rotation with the pulses enabled

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A drive data set was selected - with the pulses enabled - which has a different parameterized direction of rotation (p1821).
It is only possible to change the motor direction of rotation using p1821 when the pulses are inhibited.
**Remedy:** - change over the drive data set with the pulses inhibited.
- ensure that the changeover to a drive data set does not result in the motor direction of rotation being changed (i.e. for these drive data sets, the same value must be in p1821).
See also:p1821

## 207435 <location>Drive: Setting the ramp-function generator for sensorless vector control

**Drive object:** HLA_840, HLA_DBSI
**Message value:** Parameter: %1
**Reaction:** Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** During operation with sensorless vector control (r1407.1) the ramp-function generator was stopped (p1141) or bypassed (p1122). An internal setting command of the ramp-function generator output caused the set setpoint speed to be frozen or was not able to be realized.
The drive is switched-on with flying restart activated (p1200), and at the same time the ramp-function generator is bypassed (p1122).
**Remedy:** - deactivate the holding command for the ramp-function generator (p1141).
- do not bypass the ramp-function generator (p1122).
- suppress the fault (p2101, p2119). This is necessary if the ramp-function generator is held using jogging and the speed setpoint is simultaneously inhibited (r0898.6).
Note:
For sensorless vector control it is not practical to read in the main setpoint of the speed control via p1155 or p1160 (p0922). In this case, the main setpoint should be injected before the ramp-function generator (p1070). The reason for this is that the ramp-function generator output is automatically set when transitioning from closed-loop speed controlled into open-loop speed controlled operation.

## 207439 <location>Drive: Function not supported

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY

**Cause:** The power unit does not support the selected function.
Fault value (r0949, interpret decimal):
1:
The function "Current controller dynamic response higher" is selected (p1810.11 = 1), however, this is not supported by the power unit (r0192.27 = 0).
- firmware of the booksize power unit is not up-to-date.
- blocksize power unit was used.
2:
The function "Current controller dynamic response higher" is selected (p1810.11 = 1), however, this is not supported by the safety technology without encoder (9506 = 1, 3).
3:
The function "DC link voltage compensation in the power unit" is selected (p1810.1 = 1), however, this is not supported by the power unit (r0192.28 = 0).

**Remedy:** For fault value = 1:
- if necessary, upgrade the firmware of the booksize power unit to a later version (version >= 4.4).
Note:
If the firmware has already been automatically upgraded, then only a POWER ON (switch-off/switch-on) is required.
- Use a booksize power unit (version >= 4.4).
For fault value = 2:
- if an encoder with Safety position actual values sensing is available (r0458[0...2].19 = 1), reparameterize the encoderless safety technology (p9506 = 1, 3) to safety technology with encoder (p9506 = 0).
For fault value = 1, 2:
- Deselect the function "Current controller dynamics higher" (p1810.11 = 0) and if required, set the current, speed and position controller again or calculate (p0340 = 4).
For fault value = 3:
- if necessary, upgrade the firmware of the blocksize power unit to a later version (version >= 4.6).
- deselect the "DC link voltage compensation in the power unit" function (p1810.1 = 0).
See also:r0192, p1810, p9506

## 207440 <location>EPOS: Jerk time is limited

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The calculation of the jerk time Tr = max(p2572, p2573) / p2574 resulted in an excessively high value so that the jerk time is internally limited to 1000 ms.
Note:
The alarm is also output if jerk limiting is not active.
**Remedy:** - increase the jerk limiting (p2574).
- reduce maximum acceleration or maximum deceleration (p2572, p2573).
See also:p2572 (EPOS maximum acceleration), p2573 (EPOS maximum deceleration), p2574 (EPOS jerk limiting)

## 207441 <location>LR: Save the position offset of the absolute encoder adjustment

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The status of the absolute encoder adjustment has changed.
In order to permanently save the determined position offset (p2525) and the determined number of the drive data set (p2733), they must be saved in a non-volatile fashion (p0971, p0977).
Possible causes:
- motor or encoder were replaced (applies to EQN and DQI).
- position-relevant parameters were changed.
- an encoder that was not adjusted was adjusted (save the project in a non-volatile fashion using "Copy RAM to ROM").
Note:
This message is not output when switching-on the axis after having first moved it in the switched-off state, as long as the parameterizable monitoring window was not exited.

**Remedy:** Readjust the encoder.
See also:p2507 (LR absolute encoder adjustment status), p2525 (LR encoder adjustment offset)

## 207442 <location>LR: Multiturn does not match the modulo range

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The ratio between the multiturn resolution and the modulo range (p2576) is not an integer number.
This results in the adjustment being set back, as the position actual value cannot be reproduced after switch-off/switch-on.

**Remedy:** Make the ration between the multiturn resolution and the modulo range an integer number.
The ratio v is calculated as follows:
1. Motor encoder without position tracking
v = (p0421 * p2506 * p0433 * p2505) / (p0432 * p2504 * p2576)
2. Motor encoder with position tracking for the measuring gear
v = (p0412 * p2506 * p2505) / (p2504 * p2576)
3. Motor encoder with position tracking for the load gear
v = (p2721 * p2506 * p0433) / (p0432 * p2576)
4. Motor encoder with position tracking for the load and measuring gear
v = (p2721 * p2506) / p2576
5. Direct encoder without position tracking
v = (p0421 * p2506 * p0433) / (p0432 * p2576)
6. Direct encoder with position tracking for the measuring gear
v = (p0412 * p2506) / p2576
Note:
With position tracking, it is recommended that p0412 and p2721 are changed
See also:p0412, p0432, p0433, p2504, p2505, p2506, p2576, p2721

## 207443 <location>LR: Reference point coordinate not in the permissible range

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The reference point coordinate received when adjusting the encoder via connector input p2599 lies outside the half of the encoder range and cannot be set as actual axis position.
Fault value (r0949, interpret decimal):
Maximum permissible value for the reference point coordinate.

**Remedy:** Set the reference point coordinate to a lower value than specified in the fault value.
See also:p2598 (EPOS reference point coordinate signal source), p2599 (EPOS reference point coordinate value)

## 207446 <location>Load gear: Position tracking cannot be reset

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The position tracking cannot be reset.

**Remedy:** Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- deselect encoder commissioning (p0010 = 0).

Then acknowledge the fault and, if necessary, re-adjust the absolute encoder (p2507).

## 207447 <location>Load gear: Position tracking, maximum actual value exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, encoder data set: %2, drive data set: %3

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** When the position tracking of the load gear is configured, the drive/encoder (motor encoder) identifies a maximum possible absolute position actual value (r2723) that can no longer be represented within 32 bits.

Maximum value: p0408 * p2721 * 2^p0419

Fault value (r0949, interpret hexadecimal):

ccbbaa hex

aa = encoder data set

bb = component number

cc = drive data set

See also:p0408, p0419 (Fine resolution absolute value Gx_XIST2 (in bits)), p2721 (Load gear rotary absolute encoder revolutions virtual)

**Remedy:**
- reduce the fine resolution (p0419).
- reduce the multiturn resolution (p2721).

See also:p0419 (Fine resolution absolute value Gx_XIST2 (in bits)), p2721 (Load gear rotary absolute encoder revolutions virtual)

## 207448 <location>Load gear: Position tracking, linear axis has exceeded the maximum range

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: NONE

Servo: OFF1 (NONE, OFF2, OFF3)

Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For a configured linear axis/no modulo axis, the currently effective motor encoder (encoder 1) has exceeded the maximum possible traversing range.

For the configured linear axis, the maximum traversing range is defined to be 64x (+/- 32x) of p0421. It should be read in p2721 and interpreted as the number of load revolutions.

Note:

Only the motor encoder in the currently effective drive data set is monitored here. The actual effective drive data set is displayed in x = r0051 and the corresponding motor encoder is specified in p0187[x].

**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- deselect encoder commissioning (p0010 = 0).

The fault should then be acknowledged and the absolute encoder adjusted.

## 207449 <location>Load gear: Position tracking actual position outside tolerance window

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched off, the currently effective motor encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Note:
Only the motor encoder in the currently effective drive data set is monitored here. The actual effective drive data set is displayed in x = r0051 and the corresponding motor encoder is specified in p0187[x].
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value after the measuring gear - if one is being used. The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r2724.
See also:p2722 (Load gear position tracking tolerance window), r2724 (Load gear position difference)

**Remedy:** Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset position tracking, position (p2720.2 = 1).
- deselect encoder commissioning (p0010 = 0).

The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also:p0010, p2507

## 207450 <location>LR: Standstill monitoring has responded

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** After the standstill monitoring time (p2543) expired, the drive left the standstill window (p2542).
- position actual value inversion incorrectly set (p0410).
- standstill window set too small (p2542).
- standstill monitoring time set too low (p2543).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- mechanical overload.
- Connecting cable, motor/drive converter incorrect (phase missing, interchanged).
- when selecting motor identification, select tracking mode (BI: p2655[0] = 1 signal).
- when selecting function generator, select tracking mode (BI: p2655[0] = 1 signal) and deactivate position control (BI:p2550 = 0 signal).

**Remedy:** Check the causes and resolve.

## 207451 <location>LR: Position monitoring has responded

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** When the position monitoring time (p2545) expired, the drive had still not reached the positioning window (p2544).
- positioning window parameterized too small (p2544).
- position monitoring time parameterized too short (p2545).
- position loop gain too low (p2538).
- position loop gain too high (instability/oscillation, p2538).
- drive mechanically locked.

**Remedy:** Check the causes and resolve.

## 207452 <location>LR: Following error too high

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The difference between the position setpoint position actual value (following error dynamic model, r2563) is higher than the tolerance (p2546).
- the drive torque or accelerating capacity exceeded.
- position measuring system fault.
- encoder cable interrupted.
- position control sense incorrect.
- mechanical system locked.
- excessively high traversing velocity or excessively high position reference value (setpoint) differences

**Remedy:** Check the causes and resolve.

## 207453 <location>LR: Position actual value preprocessing error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred during the position actual value preprocessing.
**Remedy:** Check the encoder for the position actual value preprocessing.
See also:p2502 (LR encoder assignment)

## 207454 <location>LR: Position actual value preprocessing does not have a valid encoder

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** One of the following problems has occurred with the position actual value preprocessing:
- an encoder is not assigned for the position actual value preprocessing (p2502 = 0).
- an encoder is assigned, but no encoder data set (p0187 = 99 or p0188 = 99 or p0189 = 99).
- an encoder and an encoder data set have been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

**Remedy:** Check the drive data sets, encoder data sets and encoder assignment.
See also:p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

## 207455 <location>EPOS: Maximum velocity limited

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The maximum velocity (p2571) is too high to correctly calculate the modulo correction.
Within the sampling time for positioning (p0115[5]), with the maximum velocity, a maximum of the half modulo length must be moved through. p2571 was limited to this value.

**Remedy:** - reduce the maximum velocity (p2571).
- increase the sampling time for positioning (p0115[5]).

## 207456 <location>EPOS: Setpoint velocity limited

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The actual setpoint velocity is greater than the parameterized maximum velocity (p2571) and is therefore limited.

**Remedy:** - check the entered setpoint velocity.
- reduce the velocity override (CI: p2646).
- increase the maximum velocity (p2571).
- check the signal source for the externally limited velocity (CI: p2594).

## 207457 <location>EPOS: Combination of input signals illegal

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An illegal combination of input signals that are simultaneously set was identified.
Alarm value (r2124, interpret decimal):
0: Jog 1 and jog 2 (p2589, p2590).
1: Jog 1 or jog 2 and direct setpoint input/MDI (p2589, p2590, p2647).
2: Jog 1 or jog 2 and start referencing (p2589, p2590, p2595).
3: Jog 1 or jog 2 and activate traversing task (p2589, p2590, p2631).
4: Direct setpoint input/MDI and starting referencing (p2647, p2595).
5: Direct setpoint input/MDI and activate traversing task (p2647, p2631).
6: Start referencing and activate traversing task (p2595, p2631).

**Remedy:** Check the appropriate input signals and correct.

## 207458 <location>EPOS: Reference cam not found

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** After starting the search for reference, the axis moved through the maximum permissible distance to search for the reference cam without actually finding the reference cam.

**Remedy:** - check the "reference cam" binector input (BI: p2612).
- check the maximum permissible distance to the reference cam (p2606).
- if axis does not have any reference cam, then set p2607 to 0.
See also:p2606 (EPOS search for reference reference cam maximum distance), p2607 (EPOS search for reference reference cam present), p2612 (EPOS search for reference reference cam)

## 207459 <location>EPOS: No zero mark

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** After leaving the reference cam, the axis has traversed the maximum permissible distance between the reference cam and zero mark without finding the zero mark.

**Remedy:** - check the encoder regarding the zero mark
- check the maximum permissible distance between the reference cam and zero mark (p2609).
- use an external encoder zero mark (equivalent zero mark) (p0495).
See also:p0495 (Equivalent zero mark input terminal), p2609 (EPOS search for reference max distance ref cam and zero mark)

## 207460 <location>EPOS: End of reference cam not found

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** During the search for reference, when the axis reached the zero mark it also reached the end of the traversing range without detecting an edge at the binector input "reference cam" (BI: p2612).
Maximum traversing range: -2147483648 [LU] ... -2147483647 [LU]

**Remedy:** - check the "reference cam" binector input (BI: p2612).
- repeat the search for reference.
See also:p2612 (EPOS search for reference reference cam)

## 207461 <location>EPOS: Reference point not set

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When starting a traversing block/direct setpoint input, a reference point is not set (r2684.11 = 0).

**Remedy:** Reference the system (search for reference, flying referencing, set reference point).

## 207462 <location>EPOS: Selected traversing block number does not exist

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A traversing block selected via binector input p2625 ... p2630 was started via binector input p2631 = 0/1 edge "Activate traversing task".
- the number of the started traversing block is not contained in p2616[0...n].
- the started traversing block is suppressed.
Alarm value (r2124, interpret decimal):
Number of the selected traversing block that is also not available.

**Remedy:** - correct the traversing program.
- select an available traversing block number.

## 207463 <location>EPOS: External block change not requested in the traversing block

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For a traversing block with the block change enable CONTINUE_EXTERNAL_ALARM, the external block change was not requested.
Alarm value (r2124, interpret decimal):
Number of the traversing block.
**Remedy:** Resolve the reason as to why the edge is missing at binector input (BI: p2632).

## 207464 <location>EPOS: Traversing block is inconsistent

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The traversing block does not contain valid information.
Alarm value (r2124, interpret decimal):
Number of the traversing block with invalid information.
**Remedy:** Check the traversing block and where relevant, take into consideration alarms that are present.

## 207465 <location>EPOS: Traversing block does not have a subsequent block

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** There is no subsequent block in the traversing block.
Alarm value (r2124, interpret decimal):
Number of the traversing block with the missing subsequent block.
**Remedy:** - parameterize this traversing block with the block change enable END.
- parameterize additional traversing blocks with a higher block number and for the last block, using the block change enable END.

## 207466 <location>EPOS: Traversing block number assigned a multiple number of times

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The same traversing block number was assigned a multiple number of times.
Alarm value (r2124, interpret decimal):
Number of the traversing block that was assigned a multiple number of times.
**Remedy:** Correct the traversing blocks.

## 207467 <location>EPOS: Traversing block has illegal task parameters

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The task parameter in the traversing block contains an illegal value.
Alarm value (r2124, interpret decimal):
Number of the traversing block with an illegal task parameter.
**Remedy:** Correct the task parameter in the traversing block.

## 207468 <location>EPOS: Traversing block jump destination does not exist

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In a traversing block, a jump was programmed to a non-existent block.
Alarm value (r2124, interpret decimal):
Number of the traversing block with a jump destination that does not exist.
**Remedy:** - correct the traversing block.
- add the missing traversing block.

## 207469 <location>EPOS: Traversing block < target position < software limit switch minus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the traversing block the specified absolute target position lies outside the range limited by the software limit switch minus.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
**Remedy:** - correct the traversing block.
- change software limit switch minus (CI: p2578, p2580).

## 207470 <location>EPOS: Traversing block> target position > software limit switch plus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the traversing block the specified absolute target position lies outside the range limited by the software limit switch plus.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
**Remedy:** - correct the traversing block.
- change software limit switch plus (CI: p2579, p2581).

## 207471 <location>EPOS: Traversing block target position outside the modulo range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the traversing block the target position lies outside the modulo range.
Alarm value (r2124, interpret decimal):
Number of the traversing block with illegal target position.
**Remedy:** - in the traversing block, correct the target position.
- change the modulo range (p2576).

## 207472 <location>EPOS: Traversing block ABS_POS/ABS_NEG not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** In the traversing block the positioning mode ABS_POS or ABS_NEG were parameterized with the modulo correction not activated.
Alarm value (r2124, interpret decimal):
Number of the traversing block with the illegal positioning mode.
**Remedy:** Correct the traversing block.

## 207473 <location>EPOS: Beginning of traversing range reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When traversing, the axis has moved to the traversing range limit.
**Remedy:** Move away in the positive direction.

## 207474 <location>EPOS: End of traversing range reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When traversing, the axis has moved to the traversing range limit.
**Remedy:** Move away in the negative direction.

## 207475 <location>EPOS: Target position < start of traversing range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The target position for relative traversing lies outside the traversing range.
**Remedy:** Correct the target position.

## 207476 <location>EPOS: Target position > end of the traversing range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The target position for relative traversing lies outside the traversing range.
**Remedy:** Correct the target position.

## 207477 <location>EPOS: Target position < software limit switch minus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the actual traversing operation, the target position is less than the software limit switch minus.
**Remedy:** - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also:p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

### 207478 <location>EPOS: Target position > software limit switch plus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the actual traversing operation, the target position is greater than the software limit switch plus.
**Remedy:** - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also:p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

### 207479 <location>EPOS: Software limit switch minus reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The axis is at the position of the software limit switch minus. An active traversing block was interrupted.
**Remedy:** - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also:p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

### 207480 <location>EPOS: Software limit switch plus reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The axis is at the position of the software limit switch plus. An active traversing block was interrupted.
**Remedy:** - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also:p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

### 207481 <location>EPOS: Axis position < software limit switch minus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The actual position of the axis is less than the position of the software limit switch minus.
**Remedy:** - correct the target position.
- change software limit switch minus (CI: p2578, p2580).
See also:p2578 (EPOS software limit switch minus signal source), p2580 (EPOS software limit switch minus), p2582 (EPOS software limit switch activation)

### 207482 <location>EPOS: Axis position > software limit switch plus

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The actual position of the axis is greater than the position of the software limit switch plus.

**Remedy:** - correct the target position.
- change software limit switch plus (CI: p2579, p2581).
See also:p2579 (EPOS software limit switch plus signal source), p2581 (EPOS software limit switch plus), p2582 (EPOS software limit switch activation)

## 207483 <location>EPOS: Travel to fixed stop clamping torque not reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The fixed stop in the traversing block was reached without the clamping torque/clamping force having been achieved.
**Remedy:** - check the maximum torque-generating current (r1533).
- check the torque limits (p1520, p1521).
- check the power limits (p1530, p1531).
- check the BICO interconnections of the torque limits (p1522, p1523, p1528, p1529).

## 207484 <location>EPOS: Fixed stop outside the monitoring window

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF3 (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** In the "fixed stop reached" state, the axis has moved outside the defined monitoring window (p2635).
**Remedy:** - check the monitoring window (p2635).
- check the mechanical system.

## 207485 <location>EPOS: Fixed stop not reached

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** In a traversing block with the task FIXED STOP, the end position was reached without detecting a fixed stop.
**Remedy:** - check the traversing block and locate the target position further into the workpiece.
- check the "fixed stop reached" control signal (p2637).
- if required, reduce the maximum following error window to detect the fixed stop (p2634).

## 207486 <location>EPOS: Intermediate stop missing

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "no intermediate stop/intermediate stop" (BI: p2640) did not have a 1 signal.
**Remedy:** Connect a 1 signal to the binector input "no intermediate stop/intermediate stop" (BI: p2640) and re-start motion.
See also:p2640 (EPOS intermediate stop (0 signal))

## 207487 <location>EPOS: Reject traversing task missing

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** In the modes "traversing blocks" or "direct setpoint input/MDI" at the start of motion, the binector input "do not reject traversing task/reject traversing task" (BI: p2641) does not have a 1 signal.

**Remedy:** Connect a 1 signal to the binector input "do not reject traversing task/reject traversing task" (BI: p2641) and restart motion.
See also:p2641 (EPOS reject traversing task (0 signal))

## 207488 <location>EPOS: Relative positioning not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** In the mode "direct setpoint input/MDI", for continuous transfer (p2649 = 1) relative positioning was selected (BI: p2648 = 0 signal).

**Remedy:** Check the control.

## 207489 <location>EPOS: Reference point correction outside the window

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For the function "flying referencing" the difference between the measured position at the measuring probe and the reference point coordinate lies outside the parameterized window.

**Remedy:** - check the mechanical system.
- check the parameterization of the window (p2602).

## 207490 <location>EPOS: Enable signal withdrawn while traversing

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** - for a standard assignment, another fault may have occurred as a result of withdrawing the enable signals.
- the drive is in the "switching on inhibited" state (for a standard assignment).

**Remedy:** - set the enable signals or check the cause of the fault that first occurred and then result (for a standard assignment).
- check the assignment to enable the basic positioning function.

## 207491 <location>EPOS: STOP cam minus reached

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF3

**Acknowledge:** IMMEDIATELY

**Cause:** A 0 signal was detected at binector input p2569, i.e. the STOP cam minus was actuated.
For a positive traversing direction, the STOP cam minus was reached - i.e. the wiring of the STOP cam is incorrect.
See also:p2569 (EPOS STOP cam minus)

**Remedy:** - leave the STOP cam minus in the positive traversing direction and return the axis to the valid traversing range.
- check the wiring of the STOP cam.

## 207492 <location>EPOS: STOP cam plus reached

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF3
**Acknowledge:** IMMEDIATELY
**Cause:** A 0 signal was detected at binector input p2570, i.e. the STOP cam plus was reached.
For a negative traversing direction, the STOP cam plus was reached - i.e. the wiring of the STOP cam is incorrect.
See also:p2570 (EPOS STOP cam plus)
**Remedy:** - leave the STOP cam plus in the negative traversing direction and return the axis to the valid traversing range.
- check the wiring of the STOP cam.

## 207493 <location>LR: Overflow of the value range for position actual value

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the "referenced" or "adjustment absolute measuring system" status is reset.
Fault value (r0949, interpret decimal):
1: The position actual value (r2521) has exceeded the value range.
2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.
3: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.
Note:
For a linear encoder, the following must be maintained:
- p0407 * p2503 / (2^p0418*10^7) < 1
- p0407 * p2503 / (2^p0419*10^7) < 1
**Remedy:** If required, reduce the traversing range or position resolution (p2506).
Increase the fine resolution of absolute position actual value (p0419).
Note for fault value = 3:
If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.
For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:
1. Motor encoder without position tracking
p2506 * p0433 * p2505 / (p0432 * p2504)
p2506 * p0433 * p2505 * p0421 / (p0432 * p2504) for multiturn encoders
2. Motor encoder with position tracking for measuring gear
p2506 * p0412 * p2505 / p2504
3. Motor encoder with position tracking for load gear
p2506 * p2721 * p0433 / p0432
4. Motor encoder with position tracking for load and measuring gear
p2506 * p2721
5. Direct encoder without position tracking
p2506 * p0433 / p0432
p2506 * p0433 * p0421 / p0432 for multiturn encoders
6. Direct encoder with position tracking for measuring gear
p2506 * p0412

## 207494 <location>LR: Drive Data Set changeover in operation

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY

**Cause:** A Drive Data Set changeover (DDS) with a change of the mechanical relationships (p2503 ... 2506), direction of rotation (p1821) or the encoder assignment (p2502) was requested in operation.
Note:
DDS: Drive Data Set

**Remedy:** To changeover the drive data set, initially, exit the "operation" mode.

## 207495 <location>LR: Reference function interrupted

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
Possible causes:
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was deactivated (BI: p2508 and BI: p2509 = 0 signal).
- the input terminal for the measuring probe is not set.

**Remedy:**
- check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.
- set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).

## 207496 <location>EPOS: Enable not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** It is not possible to enable the basic positioner because at least one condition is missing.
Alarm value (r2124, interpret decimal):
1: EPOS enable missing (BI: p2656).
2: Position actual value, valid feedback signal missing (BI: p2658).
See also:p2656 (EPOS enable basic positioner), p2658 (EPOS position actual value valid feedback signal)

**Remedy:** Check the corresponding missing condition (binector input, signal source).

## 207497 <location>LR: Position setting value activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** While the binector input p2514 has a 1 signal, the position actual value is set to the value received via connector input p2515. A possible system deviation cannot be corrected.

**Remedy:** Not necessary.
The alarm is automatically withdrawn for binector input p2514 = 0 signal.

## 207498 <location>LR: Measuring probe evaluation not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6:
The input terminal for the measuring probe is not set.
4098:
Error when initializing the measuring probe.
4100:
The measuring pulse frequency is too high.
> 50000:
The measuring clock cycle is not a multiple integer of the position controller clock cycle.

**Remedy:** Deactivate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value > 50000:
Set the clock cycle ratio of the measuring clock cycle to the position controller clock cycle to an integer multiple.
To do this, the currently effective measuring clock cycle can be determined from the alarm value as follows:
Tmeas [125 µs] = alarm value - 50000
With PROFIBUS, the measuring clock cycle corresponds to the PROFIBUS clock cycle (r2064[1]).
Without PROFIBUS, the measuring clock cycle is an internal cycle time that cannot be influenced.

## 207499 <location>EPOS: Reversing cam approached with the incorrect traversing direction

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF3

**Acknowledge:** IMMEDIATELY

**Cause:** The reversing cam MINUS was approached in the positive traversing direction or the reversing cam PLUS was approached in the negative traversing direction.
See also:p2613 (EPOS search for reference reversing cam minus), p2614 (EPOS search for reference reversing cam plus)

**Remedy:** - check the wiring of the reversing cam (BI: p2613, BI: p2614).
- check the traversing direction to approach the reversing cam.

## 207500 <location>Drive: Power unit data set PDS not configured

**Drive object:** 'All objects

**Message value:** Drive data set: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Only for controlled line supply infeed/regenerative feedback units:
The power unit data set was not configured - this means that a data set number was not entered into the drive data set.
Fault value (r0949, interpret decimal):
Drive data set number of p0185.

**Remedy:** The index of the power unit data set associated with the drive data set should be entered into p0185.

## 207501 <location>Drive: Motor Data Set MDS not configured

**Drive object:** 'All objects

**Message value:** Drive data set: %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Only for power units:
The motor data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, interpret decimal):
The fault value includes the drive data set number of p0186.

**Remedy:** The index of the motor data set associated with the drive data set should be entered into p0186.
See also:p0186 (Motor Data Sets (MDS) number)

## 207502 <location>Drive: Encoder Data Set EDS not configured

**Drive object:** 'All objects

**Message value:** Drive data set: %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Only for power units:
The encoder data set was not configured - this means that a data set number was not entered into the associated drive data set.
Fault value (r0949, interpret decimal):
The fault value includes the drive data set number of p0187, p0188 and p0189.
The fault value is increased by 100 * encoder number (e.g. for p0189: Fault value 3xx with xx = data set number).

**Remedy:** The index of the encoder data set associated with the drive data set should be entered into p0187 (1st encoder), p0188 (2nd encoder) and p0189 (3rd encoder).

## 207503 <location>EPOS: STOP cam approached with the incorrect traversing direction

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The STOP cam MINUS was approached in the positive traversing direction or the STOP cam PLUS was approached in the negative traversing direction.

**Remedy:** - check the wiring of the STOP cam (BI: p2569, BI: p2570).
- check the traversing direction to approach the STOP cam.

## 207504 <location>Drive: Motor data set is not assigned to a drive data set

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A motor data set is not assigned to a drive object.
All of the existing motor data sets in the drive data sets must be assigned using the MDS number (p0186[0...n]). There must be at least as many drive data sets as motor data sets.
Alarm value (r2124, interpret decimal):
Number of the motor data set that has not been assigned.

**Remedy:** In the drive data sets, assign the non-assigned motor data set using the MDS number (p0186[0...n]).
- check whether all of the motor data sets are assigned to drive data sets.
- if required, delete superfluous motor data sets.
- if required, set up new drive data sets and assign to the corresponding motor data sets.
See also:p0186 (Motor Data Sets (MDS) number)

## 207505 <location>EPOS: Task fixed stop not possible in the U/f/SLVC mode

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** In the U/f/SLVC mode, an attempt was made to execute a traversing block with the "fixed stop" task. This is not possible.
Alarm value (r2124, interpret decimal):
Number of the traversing block with an illegal task parameter.
**Remedy:** - check the traversing block and change the task.
- change the open-loop/closed-loop control mode (p1300).
See also:p1300 (Open-loop/closed-loop control operating mode), p2621 (EPOS traversing block task)

## 207506 <location>EPOS: check BICO interconnection between EPOS and position controller

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The BICO interconnections to transfer setpoints between EPOS and LR (position control) have not been set, although the BICO interconnections to transfer the fine resolutions have been set.
**Remedy:** 1. Disconnect BICO interconnections for the fine resolutions (CI: p2694 = 0, CI: p2695 = 0).
2. Set BICO interconnections for the setpoints (CI: p2530 = r2665, CI: p2531 = r2666).
3. Set BICO interconnections for the fine resolutions (CI: p2694 = r2696, CI: p2695 = r2697).
See also:p2530, p2531, r2665, r2666, p2694, p2695, r2696, r2697

## 207507 <location>EPOS: reference point cannot be set

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** After the reference point correction, the position setpoint lies outside the traversing range limits.
**Remedy:** - optimize the position controller.
- due to a possible position controller deviation, reference point coordinate p2599 should not be directly placed at the traversing range limits.

## 207509 <location>Drive: Component assignment missing

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** A Drive Data Set (DDS) is assigned to a Motor Data Set (MDS) or Encoder Data Set (EDS) that does not have a component number.
Fault value (r0949, interpret decimal):
nnmmmxxyyy
nn: Number of the MDS/EDS.
mmm: Parameter number of the missing component number.
xx: Number of the DDS that is assigned to the MDS/EDS.
yyy: Parameter number that references the MDS/EDS.
Example:
p0186[7] = 5: DDS 7 is assigned MDS 5.
p0131[5] = 0: There is no component number set in MDS 5.
Alarm value = 0513107186

**Remedy:** In the drive data sets, no longer assign MDS/EDS using p0186, p0187, p0188, p0189 or set a valid component number.
See also:p0131, p0141, p0142, p0186, p0187, p0188, p0189

## 207510 <location>Drive: Identical encoder in the drive data set

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** More than one encoder with identical component number is assigned to a single drive data set. In one drive data set, it is not permissible that identical encoders are operated together.
Fault value (r0949, interpret decimal):
1000 * first identical encoder + 100 * second identical encoder + drive data set.
Example:
Fault value = 1203 means:
In drive data set 3, the first (p0187[3]) and second encoder (p0188[3]) are identical.

**Remedy:** Assign the drive data set to different encoders.
See also:p0141, p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

## 207511 <location>Drive: Encoder used a multiple number of times

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Each encoder may only be assigned to one drive and within a drive must - in each drive data set - either always be encoder 1, always encoder 2 or always encoder 3. This unique assignment has been violated.
Fault value (r0949, interpret decimal):
The two parameters in coded form, that refer to the same component number.
First parameter:
Index: First and second decimal place (99 for EDS, not assigned DDS)
Parameter number: Third decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS not assigned DDS)
Drive number: Fourth and fifth decimal place
Second parameter:
Index: Sixth and seventh decimal place (99 for EDS, not assigned DDS)
Parameter number: Eighth decimal place (1 for p0187, 2 for p0188, 3 for p0189, 4 for EDS, not assigned DDS)
Drive number: Ninth and tenth decimal place
See also:p0141

**Remedy:** Correct the double use of a component number using the two parameters coded in the fault value.

## 207512 <location>Drive: Encoder data set changeover cannot be parameterized

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Using p0141, a changeover of the encoder data set is prepared that is illegal. In this firmware release, an encoder data set changeover is only permitted for the components in the actual topology.
Fault value (r0949, interpret decimal):
Incorrect EDS data set number.
See also:p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number)

**Remedy:** Every encoder data set must be assigned its own dedicated DRIVE-CLiQ socket. The component numbers of the encoder interfaces (p0141) must have different values within a drive object.
The following must apply:
p0141[0] not equal to p0141[1] not equal to ... not equal to p0141[n]

## 207514 <location>Drive: Data structure does not correspond to the interface module

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The interface mode "SIMODRIVE 611 universal" was set (p2038 = 1) and the data structure does not correspond to this mode.
The following settings are possible, depending on the number of data sets:
Number of DDS/MDS (p0180/p0130): p0186
1/1: p0186[0] = 0
2/2: p0186[0] = 0, p0186[1] = 1
4/4: p0186[0] = 0, p0186[1] = 1, p0186[2] = 2, p0186[3] = 3
8/8: p0186[0] = 0, p0186[1] = 1, p0186[2] = 2 ... p0186[7] = 7
16/16: p0186[0] = 0, p0186[1] = 1, p0186[2] = 2 ... p0186[15] = 15
32/32: p0186[0] = 0, p0186[1] = 1, p0186[2] = 2 ... p0186[31] = 31
2/1: p0186[0, 1] = 0
4/2: p0186[0, 1] = 0, p0186[1, 2] = 1
8/4: p0186[0, 1] = 0, p0186[1, 2] = 1, p0186[3, 4] = 2, p0186[5, 6] = 3
16/8: p0186[0, 1] = 0, p0186[1, 2] = 1, p0186[3, 4] = 2 ... p0186[14, 15] = 7
32/16: p0186[0, 1] = 0, p0186[1, 2] = 1, p0186[3, 4] = 2 ... p0186[30, 31] = 15
4/1: p0186[0, 1, 2, 3] = 0
8/2: p0186[0, 1, 2, 3] = 0, p0186[4, 5, 6, 7] = 1
16/4: p0186[0, 1, 2, 3] = 0, p0186[4, 5, 6, 7] = 1, p0186[8, 9, 10, 11] = 2, p0186[12, 13, 14, 15] = 3
32/8: p0186[0, 1, 2, 3] = 0, p0186[4, 5, 6, 7] = 1, p0186[8, 9, 10, 11] = 2 ... p0186[28, 29, 30, 31] = 7
8/1: p0186[0...7] = 0
16/2: p0186[0...7] = 0, p0186[8...15] = 1
32/4: p0186[0...7] = 0, p0186[8...15] = 1, p0186[16...23] = 2, p0186[24...31] = 3
16/1: p0186[0...15] = 0
32/2: p0186[0...15] = 0, p0186[16...31] = 1
32/1: p0186[0...31] = 0
9/2: p0186[0...7] = 0, p0186[8] = 1
10/2: p0186[0...7] = 0, p0186[8, 9] = 1
12/2: p0186[0...7] = 0, p0186[8...11] = 1
See also:p0180, p0186, p2038

**Remedy:** - check the data structure according to the possible settings mentioned in the cause.
- check the interface mode (p2038).

## 207515 <location>Drive: Power unit and motor incorrectly connected

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A power unit (via PDS) was assigned to a motor (via MDS) in a drive data set that is not connected in the target topology. It is possible that a motor has not been assigned to the power unit (p0131).
Fault value (r0949, interpret decimal):
Number of the incorrectly parameterized drive data set.

**Remedy:** - assign the drive data set to a combination of motor and power unit permitted by the target topology.
- adapt the target topology.
- if required, for a missing motor, recreate the component (drive Wizard).
See also:p0121 (Power unit component number), p0131 (Motor component number), p0186 (Motor Data Sets (MDS) number)

## 207516 <location>Drive: Re-commission the data set

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The assignment between the drive data set and motor data set (p0186) or between the drive data set and the encoder data set was modified (p0187). This is the reason that the drive data set must re-commissioned.
Fault value (r0949, interpret decimal):
Drive data set to be re-commissioned.

**Remedy:** Commission the drive data set specified in the fault value (r0949).

## 207517 <location>Drive: Encoder data set changeover incorrectly parameterized

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** In at least two drive data sets (DDS), the same motor data set (MDS) is assigned different encoder data sets (EDS) for the motor encoder. In various DDSs, it is not permissible for an MDS to have different motor encoders.
The following parameterization therefore results in an error:
DDS0: p0186[0] = 0, p0187[0] = 0
DDS1: p0186[1] = 0, p0187[1] = 1
Fault value (r0949, interpret decimal):
The lower 16 bits indicate the first DDS. The upper 16 bits indicate the second DDS.

**Remedy:** Create two MDS with the same motor data in order to operate one motor with different motor encoders.
Example:
DDS0: p0186[0] = 0, p0187[0] = 0
DDS1: p0186[1] = 1, p0187[1] = 1

## 207518 <location>Drive: Motor data set changeover incorrectly parameterized

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The system has identified that two motor data sets were incorrectly parameterized.
Parameter r0313 (calculated from p0314, p0310, p0311), r0315 and p1982 may only have different values if the motor data sets are assigned different motors. p0827 is used to assign the motors and/contactors.
It is not possible to toggle between motor data sets.
Fault value (r0949, interpret hexadecimal):
xxxxyyyy:
xxxx: First DDS with assigned MDS, yyyy: Second DDS with assigned MDS
**Remedy:** Correct the parameterization of the motor data sets.

## 207519 <location>Drive: Motor changeover incorrectly parameterized

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** With the setting p0833.0 = 1, a motor changeover via the application is selected. This is the reason that p0827 must have different values in the appropriate motor data set.
Alarm value (r2124, interpret hexadecimal):
xxxxyyyy:
xxxx: First MDS, yyyy: Second MDS
**Remedy:** - parameterize the appropriate motor data sets differently (p0827).
- select the setting p0833.0 = 0 (motor changeover via the drive).

## 207520 <location>Drive: Motor cannot be changed over

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The motor cannot be changed over.
Alarm value (r2124, interpret decimal):
1:
The contactor for the motor that is presently active cannot be opened, because for a synchronous motor, the speed (r0063) is greater than the speed at the start of field weakening (p0348). As long as r0063 > p0348, the current in the motor does not decay in spite of the pulses being suppressed.
2:
The "contactor opened" feedback signal was not detected within 1 s.
3:
The "contactor closed" feedback signal was not detected within 1 s.
**Remedy:** For alarm value = 1:
Set the speed lower than the speed at the start of field weakening (r0063 < p0348).
For alarm value = 2, 3:
Check the feedback signals of the contactor involved.

## 207530 <location>Drive: Drive Data Set DDS not present

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The selected drive data set is not available (p0837 > p0180). The drive data set was not changed over.
See also:p0180, p0820, p0821, p0822, p0823, p0824, r0837
**Remedy:** - select the existing drive data set.
- set up additional drive data sets.

## 207531 <location>Drive: Command Data Set CDS not present

**Drive object:** 'All objects

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The selected command data set is not available (p0836 > p0170). The command data set was not changed over.

See also:p0810, r0836

**Remedy:** - select the existing command data set.

- set up additional command data sets.

## 207532 <location>Drive: Encoderless control not commissioned

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Encoderless operation was set as fault response to encoder faults (p0491). However, the encoderless control has not yet been commissioned.

Note:

In at least one drive data set (DDS) the load moment of inertia is zero (p1498 = 0).

See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Commission the encoderless control.

Perform the following steps to facilitate a simple setting:

- the speed controller must have already been optimized for operation with encoder (e.g. the optimized P gain is in p1460).
- set the load moment of inertia (p1498, e.g. using function module "Moment of inertia estimator/OBT" or "AST" for SINUMERIK).
- set the current setpoint for open-loop controlled operation without encoder (p1612) for static loads (e.g. vertical axis without weight compensation, preset value plus torque-generating current (r0077) for the base load).
- set the speed controller.

p1470 = optimized p1460/16 for sampling time = 125 µs (P gain)

p1470 = optimized p1460/25 for sampling time = 62.5 µs (P gain)

p1470 = optimized p1460/30 for sampling time = 31.25 µs (P gain)

p1472 = 140 ms (integral time, default value).

p1451 = 10 ms (speed actual value smoothing encoderless operation).

- set encoderless operation current reduction: p0642 = 2*p0318/p0640 (for a result > 100%, 100% should be entered).
- if the motor moment of inertia changes significantly, then the moment of inertia estimator should be activated using function module "Moment of inertia estimator/OBT".
- save the set values in a non-volatile fashion (copy RAM to ROM).
- test the function while moving with p4642 = 1 (encoder fault, test function).

Note:

The following must be set if Safety Extended Functions with encoder in the 1-encoder system are enabled:

- No STOP A after encoder fault for 1-encoder Safety (p9516.4 = 1).
- Transition time STOP F to STOP B is long enough to brake the motor (p9555).

If the result is not satisfactory, then encoderless operation must be manually optimized (e.g. temporarily switch over to encoderless operation using p1300 = 20).

Information about the moment of inertia estimator and encoderless operation is provided in the following reference:

SINAMICS S120 Function Manual Drive Functions

## 207541 <location>Drive: Data set changeover not possible

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The selected drive data set changeover and the assigned motor changeover are not possible and are not carried out.
For synchronous motors, the motor contactor may only be switched for actual speeds less than the speed at the start of field weakening (r0063 < p0348).
See also:r0063, p0348

**Remedy:** Reduce the speed to below the speed at the start of field weakening (r0063 < p0348).

## 207550 <location>Drive: Not possible to reset encoder parameters

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When carrying out a factory setting (e.g. using p0970 = 1), it was not possible to reset the encoder parameters. The encoder parameters are directly read out of the encoder via DRIVE-CLiQ.
Alarm value (r2124, interpret decimal):
Component number of the encoder involved.

**Remedy:** - repeat the operation.
- check the DRIVE-CLiQ connection.

## 207551 <location>Drive encoder: No commutation angle information

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1, drive data set: %2

**Reaction:** Servo: OFF2 (IASC/DCBRK)
Hla: OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The commutation angle information is missing. This means that synchronous motors cannot be controlled (closed-loop control)
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = fault cause, xxxx = drive data set
yyyy = 1 dec:
The motor encoder used does not supply an absolute commutation angle.
yyyy = 2 dec:
The selected ratio of the measuring gear does not match the motor pole pair number.

**Remedy:** For fault cause = 1:
- check the encoder parameterization (p0404).
- use an encoder with track C/D, EnDat interface of Hall sensors.
- use an encoder with sinusoidal A/B track for which the motor pole pair number (r0313) multiplied by the gear ratio (p0432/p0433) is less than the encoder pulse number (p0408) – or is an integer multiple of the encoder pulse number (p0408).
- activate the pole position identification routine (p1982 = 1).
For fault cause = 2:
- the quotient of the pole pair number divided by the ratio of the measuring gear must be an integer number: (p0314 * p0433) / p0432.
Note:
For operation with track C/D, this quotient must be less than 8.
See also:p0402 (Gearbox type selection), p0404 (Encoder configuration effective), p0432 (Gearbox factor encoder revolutions), p0433 (Gearbox factor motor/load revolutions)

## 207552 <location>Drive encoder: Encoder configuration not supported

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1, component number: %2, encoder data set: %3

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The requested encoder configuration is not supported. Only bits may be requested in p0404 that are signaled as being supported by the encoder evaluation in r0456.
Fault value (r0949, interpret decimal):
ccccbbaa hex: cccc = fault cause, bb = component number, aa = encoder data set
cccc = 1: encoder sin/cos with absolute track (is supported by SME25).
cccc = 3: Square-wave encoder (this is supported by SMC30).
cccc = 4: sin/cos encoder (this is supported by SMC20, SMI20, SME20, SME25).
cccc = 10: DRIVE-CLiQ encoder (is supported by DQI).
cccc = 12: sin/cos encoder with reference mark (this is supported by SME20).
cccc = 15: Commutation with zero mark for separately excited synchronous motors with VECTORMV.
cccc = 23: Resolver (this is supported by SMC10, SMI10).
cccc = 65535: Other function (compare r0456 and p0404).
See also:p0404 (Encoder configuration effective), r0456 (Encoder configuration supported)

**Remedy:** - check the encoder parameterization (p0400, p0404).
- use the matching encoder evaluation (r0456).

## 207553 <location>Drive encoder: Sensor Module configuration not supported

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Encoder data set: %1, first incorrect bit: %2, incorrect parameter: %3

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The Sensor Module does not support the requested configuration.
For incorrect p0430 (cc = 0), the following applies:
- in p0430 (requested functions), at least 1 bit was set that is not set in r0458 (supported functions) (exception: Bit 19, 28, 29, 30, 31).
- p1982 > 0 (pole position identification requested), but r0458.16 = 0 (pole position identification not supported).
For incorrect p0437 (cc = 1), the following applies:
- in p0437 (requested functions), at least 1 bit was set that is not set in r0459 (supported functions).
Fault value (r0949, interpret hexadecimal):
ddccbbaa hex
aa: encoder data set number
bb: first incorrect bit
cc: incorrect parameter
cc = 0: incorrect parameter is p0430
cc = 1: incorrect parameter is p0437
cc = 2: incorrect parameter is r0459
cc = 3: incorrect parameter is p0454
dd: reserved (always 0)

**Remedy:** - check the encoder parameterization (p0430, p0437, p0454).
- check the pole position identification routine (p1982).
- use the matching encoder evaluation (r0458, r0459).
See also:p0430, p0437, r0458, r0459, p1982

## 207555 <location>Drive encoder: Configuration position tracking

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, encoder data set: %2, drive data set: %3, fault cause: %4

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For position tracking, the configuration is not supported.
Position tracking can only be activated for absolute encoders.
For linear axes, it is not possible to simultaneously activate the position tracking for load and measuring gears.
Fault value (r0949, interpret hexadecimal):
ddccbbaa hex
aa = encoder data set
bb = component number
cc = drive data set
dd = fault cause
dd = 00 hex = 0 dec
An absolute encoder is not being used.
dd = 01 hex = 1 dec
Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.
dd = 02 hex = 2 dec
For a linear axis, the position tracking was activated for the load and measuring gear.
dd = 03 hex = 3 dec
Position tracking cannot be activated because position tracking with another gear ratio, axis type or tolerance window has already been detected for this encoder data set.
dd = 04 hex = 4 dec
A linear encoder is being used.
See also:p0404 (Encoder configuration effective), p0411 (Measuring gear configuration)

**Remedy:** For fault value 0:
- use an absolute encoder.
For fault value 1:
- use a Control Unit with sufficient NVRAM.
For fault value = 2, 4:
- if necessary, deselect the position tracking (p0411 for the measuring gear, p2720 for the load gear).
For fault value 3:
- Only activate position tracking of the load gear in the same encoder data set if the gear ratio (p2504, p2505), axis type (p2720.1) and tolerance window (p2722) are also the same. These parameters must be the same in all drive data sets, which use the same motor encoder (p187).

## 207556 <location>Measuring gear: Position tracking, maximum actual value exceeded

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, encoder data set: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** When the position tracking of the measuring gear is configured, the drive/encoder identifies a maximum possible absolute position actual value (r0483) that cannot be represented within 32 bits.
Maximum value: p0408 * p0412 * 2^p0419
Fault value (r0949, interpret decimal):
aaaayyxx hex: yy = component number, xx = encoder data set
See also:p0408, p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))

**Remedy:** - reduce the fine resolution (p0419).
- reduce the multiturn resolution (p0412).
See also:p0412 (Measuring gear absolute encoder rotary revolutions virtual), p0419 (Fine resolution absolute value Gx_XIST2 (in bits))

## 207557 <location>Encoder 1: Reference point coordinate not in the permissible range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The reference point coordinate received when adjusting the encoder via connector input CI:p2599 lies outside the half of the encoder range and cannot be set as actual axis position. The maximum permissible value is displayed in the supplementary information.
**Remedy:** Set the reference point coordinate less than the value from the supplementary information.
See also:p2598 (EPOS reference point coordinate signal source)

## 207558 <location>Encoder 2: Reference point coordinate not in the permissible range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The reference point coordinate received when adjusting the encoder via connector input CI:p2599 lies outside the half of the encoder range and cannot be set as actual axis position. The maximum permissible value is displayed in the supplementary information.
**Remedy:** Set the reference point coordinate less than the value from the supplementary information.
See also:p2598 (EPOS reference point coordinate signal source)

## 207559 <location>Encoder 3: Reference point coordinate not in the permissible range

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The reference point coordinate received when adjusting the encoder via connector input CI:p2599 lies outside the half of the encoder range and cannot be set as actual axis position. The maximum permissible value is displayed in the supplementary information.
**Remedy:** Set the reference point coordinate less than the value from the supplementary information.
See also:p2598 (EPOS reference point coordinate signal source)

## 207560 <location>Drive encoder: Number of pulses is not to the power of two

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Encoder data set: %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** For rotary absolute encoders, the pulse number in p0408 must be to the power of two.
Fault value (r0949, interpret decimal):
The fault value includes the encoder data set number involved.
**Remedy:** - check the parameterization (p0408, p0404.1, r0458.5).
- upgrade the Sensor Module firmware if necessary

## 207561 <location>Drive encoder: Number of multiturn pulses is not to the power of two

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Encoder data set: %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The multiturn resolution in p0421 must be to the power of two.
Fault value (r0949, interpret decimal):
The fault value includes the encoder data set number involved.

**Remedy:** - check the parameterization (p0421, p0404.1, r0458.5).
- upgrade the Sensor Module firmware if necessary

## 207562 <location>Drive, encoder: Position tracking, incremental encoder not possible

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1, component number: %2, encoder data set: %3

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The requested position tracking for incremental encoders is not supported.
Fault value (r0949, interpret hexadecimal):
ccccbbaa hex
aa = encoder data set
bb = component number
cccc = fault cause
cccc = 00 hex = 0 dec
The encoder type does not support the "Position tracking incremental encoder" function.
cccc = 01 hex = 1 dec
Position tracking cannot be activated because the memory of the internal NVRAM is not sufficient or a Control Unit does not have an NVRAM.
cccc = 04 hex = 4 dec
A linear encoder is used that does not support the "position tracking" function.
See also:p0404 (Encoder configuration effective), p0411 (Measuring gear configuration), r0456 (Encoder configuration supported)

**Remedy:** - check the encoder parameterization (p0400, p0404).
- use a Control Unit with sufficient NVRAM.
- if required, deselect position tracking for the incremental encoder (p0411.3 = 0).

## 207563 <location>Drive encoder: XIST1_ERW configuration incorrect

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1, encoder data set: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An incorrect configuration was identified for the "Absolute position for incremental encoder" function.
Fault value (r0949, interpret decimal):
Fault cause:
1 (= 01 hex):
The "Absolute value for incremental encoder" function is not supported (r0459.13 = 0).
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
yyxx dec: yy = fault cause, xx = encoder data set
See also:r0459, p4652

**Remedy:** For fault value = 1:
- upgrade the Sensor Module firmware version.
- check the mode (p4652 = 1, 3 requires the property r0459.13 = 1).

## 207565 <location>Drive: Encoder error in PROFIdrive encoder interface 1

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An encoder error was signaled for encoder 1 via the PROFIdrive encoder interface (G1_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G1_XIST2, refer to the description regarding r0483.
Note:
This alarm is only output if p0480[0] is not equal to zero.
Encoder control word Gn_STW signal source (p0480[0...2], n = encoder 1, 2, 3)
Encoder status word Gn_ZSW (r0481[0...2], n = encoder 1, 2, 3)

**Remedy:** Acknowledge the encoder error using the encoder control word (G1_STW.15 = 1).

## 207566 <location>Drive: Encoder error in PROFIdrive encoder interface 2

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An encoder error was signaled for encoder 2 via the PROFIdrive encoder interface (G2_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G2_XIST2, refer to the description regarding r0483.
Note:
This alarm is only output if p0480[1] is not equal to zero.
Encoder control word Gn_STW signal source (p0480[0...2], n = encoder 1, 2, 3)
Encoder status word Gn_ZSW (r0481[0...2], n = encoder 1, 2, 3)

**Remedy:** Acknowledge the encoder error using the encoder control word (G2_STW.15 = 1).

## 207567 <location>Drive: Encoder error in PROFIdrive encoder interface 3

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An encoder error was signaled for encoder 3 via the PROFIdrive encoder interface (G3_ZSW.15).
Alarm value (r2124, interpret decimal):
Error code from G3_XIST2, refer to the description regarding r0483.
Note:
This alarm is only output if p0480[2] is not equal to zero.
Encoder control word Gn_STW signal source (p0480[0...2], n = encoder 1, 2, 3)
Encoder status word Gn_ZSW (r0481[0...2], n = encoder 1, 2, 3)

**Remedy:** Acknowledge the encoder error using the encoder control word (G3_STW.15 = 1).

## 207569 <location>Enc identification active

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** During encoder identification (waiting) with p0400 = 10100, the encoder could still not be identified.
Either the wrong encoder has been installed or no encoder has been installed, the wrong encoder cable has been connected or no encoder cable has been connected to the Sensor Module, or the DRIVE-CLiQ component has not been connected.
Note:
Encoder identification must be supported by the encoder and is possible in the following cases:
- Encoder with EnDat interface.
- Encoder with SSI interface.
- Motor with DRIVE-CLiQ.

**Remedy:**
- check and, if necessary, connect the encoder / encoder cable.
- check and, if necessary, establish the DRIVE-CLiQ connection.
- for SSI encoders, carry out the required operator actions (see the Function Manual).
- in the case of encoders that cannot be identified (e.g. encoders without EnDat interface), enter the correct encoder type in p0400.

## 207570 <location>Encoder identification data transfer running

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** NONE

**Cause:** The encoder type was automatically determined using p0400 = 10100.
Note:
This fault causes the pulses to be suppressed - this is necessary to transfer the encoder parameterization to p0400 and the following.
See also:p0400 (Encoder type selection)

**Remedy:** Acknowledge the fault without taking additional measures.

## 207575 <location>Drive: Motor encoder not ready

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: OFF2
Servo: OFF2 (ENCODER)
Hla: OFF2 (ENCODER)

**Acknowledge:** IMMEDIATELY

**Cause:** The motor encoder signals that it is not ready.
- initialization of encoder 1 (motor encoder) was unsuccessful.
- the function "parking encoder" is active (encoder control word G1_STW.14 = 1).
- the encoder interface (Sensor Module) is deactivated (p0145).
- the Sensor Module is defective.

**Remedy:** Evaluate other queued faults via encoder 1.

## 207576 <location>Drive: Encoderless operation due to a fault active

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Encoderless operation is active due to a fault (r1407.13 = 1).
Note:
The behavior for faults has been set to ENCODER fault response in p0491.
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:**
- remove the cause of a possible encoder fault.
- carry out a POWER ON (switch-off/switch-on) for all components.

## 207577 <location>Encoder 1: Measuring probe evaluation not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6: The input terminal for the measuring probe is not set.
4098: Error when initializing the measuring probe.
4100: The measuring pulse frequency is too high.
4200: The PROFIBUS clock cycle is not a multiple of integer of the position controller clock cycle.
**Remedy:** Deactivate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

## 207578 <location>Encoder 2: Measuring probe evaluation not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6: The input terminal for the measuring probe is not set.
4098: Error when initializing the measuring probe.
4100: The measuring pulse frequency is too high.
4200: The PROFIBUS clock cycle is not a multiple of integer of the position controller clock cycle.

**Remedy:** Deactivate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

## 207579 <location>Encoder 3: Measuring probe evaluation not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When evaluating the measuring probe, an error occurred.
Alarm value (r2124, interpret decimal):
6: The input terminal for the measuring probe is not set.
4098: Error when initializing the measuring probe.
4100: The measuring pulse frequency is too high.
4200: The PROFIBUS clock cycle is not a multiple of integer of the position controller clock cycle.

**Remedy:** Deactivate the measuring probe evaluation (BI: p2509 = 0 signal).
For alarm value = 6:
Set the input terminal for the measuring probe (p0488, p0489 or p2517, p2518).
For alarm value = 4098:
Check the Control Unit hardware.
For alarm value = 4100:
Reduce the frequency of the measuring pulses at the measuring probe.
For alarm value = 4200:
Set the clock cycle ratio between the PROFIBUS clock cycle and the position controller clock cycle to an integer multiple.

## 207580 <location>Drive: No Sensor Module with matching component number

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Encoder data set: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A Sensor Module with the component number specified in p0141 was not found.
Alarm value (r2124, interpret decimal):
Encoder data set involved (index of p0141).

**Remedy:** Correct parameter p0141.

## 207581 <location>Encoder 1: Position actual value preprocessing error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred during the position actual value preprocessing.
**Remedy:** Check the encoder for the position actual value preprocessing.
See also:p2502 (LR encoder assignment)

## 207582 <location>Encoder 2: Position actual value preprocessing error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred during the position actual value preprocessing.
**Remedy:** Check the encoder for the position actual value preprocessing.
See also:p2502 (LR encoder assignment)

## 207583 <location>Encoder 3: Position actual value preprocessing error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred during the position actual value preprocessing.
**Remedy:** Check the encoder for the position actual value preprocessing.
See also:p2502 (LR encoder assignment)

## 207584 <location>Encoder 1: Position setting value activated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** While the binector input p2514 has a 1 signal, the position actual value is set to the value received via connector input p2515. A possible system deviation cannot be corrected.
**Remedy:** Not necessary.
The alarm is automatically withdrawn with binector input p2514 = 0 signal.

## 207585 <location>Encoder 2: Position setting value activated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** While the binector input p2514 has a 1 signal, the position actual value is set to the value received via connector input p2515. A possible system deviation cannot be corrected.
**Remedy:** Not necessary.
The alarm is automatically withdrawn with binector input p2514 = 0 signal.

## 207586 <location>Encoder 3: Position setting value activated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** While the binector input p2514 has a 1 signal, the position actual value is set to the value received via connector input p2515. A possible system deviation cannot be corrected.

**Remedy:** Not necessary.
The alarm is automatically withdrawn with binector input p2514 = 0 signal.

## 207587 <location>Encoder 1: Position actual value preprocessing does not have a valid encoder

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The following problem has occurred during the position actual value preprocessing.
- an encoder data set has been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

**Remedy:** Check the drive data sets, encoder data sets.
See also:p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

## 207588 <location>Encoder 2: Position actual value preprocessing does not have a valid encoder

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The following problem has occurred during the position actual value preprocessing.
- an encoder data set has been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

**Remedy:** Check the drive data sets, encoder data sets.
See also:p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

## 207589 <location>Encoder 3: Position actual value preprocessing does not have a valid encoder

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The following problem has occurred during the position actual value preprocessing.
- an encoder data set has been assigned, however, the encoder data set does not contain any encoder data (p0400 = 0) or invalid data (e.g. p0408 = 0).

**Remedy:** Check the drive data sets, encoder data sets.
See also:p0187 (Encoder 1 encoder data set number), p0188 (Encoder 2 encoder data set number), p0189 (Encoder 3 encoder data set number), p0400 (Encoder type selection), p2502 (LR encoder assignment)

## 207590 <location>Encoder 1: Drive Data Set changeover in operation

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A Drive Data Set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

**Remedy:** To changeover the drive data set, initially, exit the "operation" mode.

## 207591 <location>Encoder 2: Drive Data Set changeover in operation

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A Drive Data Set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

**Remedy:** To changeover the drive data set, initially, exit the "operation" mode.

## 207592 <location>Encoder 3: Drive Data Set changeover in operation

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A Drive Data Set changeover (DDS) with a change of the mechanical relationships and the encoder assignment (p2502) was requested in operation.

**Remedy:** To changeover the drive data set, initially, exit the "operation" mode.

## 207593 <location>Encoder 1: Value range for position actual value exceeded

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.

When the overflow occurs, the "referenced" or "absolute encoder adjusted" status is reset.

Alarm value (r2124, interpret decimal):

1: The position actual value (r2521) has exceeded the value range.

2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.

3: The maximum encoder value multiplied by the factor to convert the absolute position (r0483, r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.

**Remedy:** If required, reduce the traversing range or position resolution.

For alarm value = 3:

Reducing the position resolution and conversion factor:

- reduce the length unit (LU) per load revolution for rotary encoders (p2506).
- increase the fine resolution of absolute position actual values (p0419).

## 207594 <location>Encoder 2: Value range for position actual value exceeded

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.

When the overflow occurs, the "referenced" or "absolute encoder adjusted" status is reset.

Alarm value (r2124, interpret decimal):

1: The position actual value (r2521) has exceeded the value range.

2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.

3: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.

**Remedy:** If required, reduce the traversing range or position resolution.
For alarm value = 3:
Reducing the position resolution and conversion factor:
- reduce the length unit (LU) per load revolution for rotary encoders (p2506).
- increase the fine resolution of absolute position actual values (p0419).

## 207595 <location>Encoder 3: Value range for position actual value exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The value range (-2147483648 ... 2147483647) for the position actual value representation was exceeded.
When the overflow occurs, the "referenced" or "absolute encoder adjusted" status is reset.
Alarm value (r2124, interpret decimal):
1: The position actual value (r2521) has exceeded the value range.
2: The encoder position actual value Gn_XIST2 (r0483) or the absolute value after the load gear (r2723) has exceeded the value range.
3: The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range for displaying the position actual value.
**Remedy:** If required, reduce the traversing range or position resolution.
For alarm value = 3:
Reducing the position resolution and conversion factor:
- reduce the length unit (LU) per load revolution for rotary encoders (p2506).
- increase the fine resolution of absolute position actual values (p0419).

## 207596 <location>Encoder 1: Reference function interrupted

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was deactivated (BI: p2508 and BI: p2509 = 0 signal).

**Remedy:** - check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

## 207597 <location>Encoder 2: Reference function interrupted

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was deactivated (BI: p2508 and BI: p2509 = 0 signal).

**Remedy:** - check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

## 207598 <location>Encoder 3: Reference function interrupted

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An activated reference function (reference mark search or measuring probe evaluation) was interrupted.
- an encoder fault has occurred (Gn_ZSW.15 = 1).
- position actual value was set during an activated reference function.
- simultaneously activate reference mark search and measuring probe evaluation (BI: p2508 and BI: p2509 = 1 signal).
- activated reference function (reference mark search or measuring probe evaluation) was deactivated (BI: p2508 and BI: p2509 = 0 signal).

**Remedy:** - check the causes and resolve.
- reset the control (BI: p2508 and BI: p2509 = 0 signal) and activate the requested function.

## 207599 <location>Encoder 1: Adjustment not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Drive data set: %1
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The maximum encoder value multiplied by the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU - Length Unit) has exceeded the value range (-2147483648 ... 2147483647) for displaying the position actual value.
Fault value (r0949, interpret decimal):
Number of the drive data set.

**Remedy:** If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.
For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:
1. Motor encoder without position tracking:
p2506 * p0433 * p2505 / (p0432 * p2504)
p2506 * p0433 * p2505 * p0421 / (p0432 * p2504) for multiturn encoders
2. Motor encoder with position tracking for measuring gear
p2506 * p0412 * p2505 / p2504
3. Motor encoder with position tracking for load gear:
p2506 * p2721 * p0433 / p0432
4. Motor encoder with position tracking for load and measuring gear:
p2506 * p2721
5. Direct encoder without position tracking:
p2506 * p0433 / p0432
p2506 * p0433 * p0421 / p0432 for multiturn encoders
6. Direct encoder with position tracking for measuring gear:
p2506 * p0412
For a linear encoder, the following must be maintained:
- p0407 * p2503 / (2^p0419 * 10^7) <= 1.0

## 207600 <location>Encoder 2: Adjustment not possible

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Drive data set: %1
**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range (-2147483648 ... 2147483647) for displaying the position actual value.

**Remedy:** If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.

For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:

1. Motor encoder without position tracking:

p2506 * p0433 * p2505 / (p0432 * p2504)

p2506 * p0433 * p2505 * p0421 / (p0432 * p2504) for multiturn encoders

2. Motor encoder with position tracking for measuring gear

p2506 * p0412 * p2505 / p2504

3. Motor encoder with position tracking for load gear:

p2506 * p2721 * p0433 / p0432

4. Motor encoder with position tracking for load and measuring gear:

p2506 * p2721

5. Direct encoder without position tracking:

p2506 * p0433 / p0432

p2506 * p0433 * p0421 / p0432 for multiturn encoders

6. Direct encoder with position tracking for measuring gear:

p2506 * p0412

For a linear encoder, the following must be maintained:

- p0407 * p2503 / (2^p0419 * 10^7) <= 1.0

## 207601 <location>Encoder 3: Adjustment not possible

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Drive data set: %1

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The maximum encoder value times the factor to convert the absolute position (r0483 and/or r2723) from increments to length units (LU) has exceeded the value range (-2147483648 ... 2147483647) for displaying the position actual value.

**Remedy:** If the value for the maximum possible absolute position (LU) is greater than 4294967296, then it is not possible to make an adjustment due to an overflow.

For rotary encoders, the maximum possible absolute position (LU) is calculated as follows:

1. Motor encoder without position tracking:

p2506 * p0433 * p2505 / (p0432 * p2504)

p2506 * p0433 * p2505 * p0421 / (p0432 * p2504) for multiturn encoders

2. Motor encoder with position tracking for measuring gear

p2506 * p0412 * p2505 / p2504

3. Motor encoder with position tracking for load gear:

p2506 * p2721 * p0433 / p0432

4. Motor encoder with position tracking for load and measuring gear:

p2506 * p2721

5. Direct encoder without position tracking:

p2506 * p0433 / p0432

p2506 * p0433 * p0421 / p0432 for multiturn encoders

6. Direct encoder with position tracking for measuring gear:

p2506 * p0412

For a linear encoder, the following must be maintained:

- p0407 * p2503 / (2^p0419 * 10^7) <= 1.0

## 207750 <location>Drive: Parameter invalid

**Drive object:** HLA_840, HLA_DBSI

**Message value:** Parameter: %1, index: %2, fault cause: %3
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A parameter value has been set that is not valid, or was not correctly entered.
Fault value (r0949, interpret hexadecimal):
ccbbaaaa hex: cc = fault cause, bb = index, aaaa = parameter
cc = 0: parameter has the value zero that is not permitted.
cc = 1: piston rod greater than piston diameter.
cc = 2: cylinder without piston rod (p0311 = 0 and p0312 = 0).
cc = 3: position overflow possible in the traversing range (check p0407 and p0313 and if required, reduce p0418).
**Remedy:** Set the specified parameters to a correct value.

## 207751 <location>Drive: valve does not respond

**Drive object:** HLA_840, HLA_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A valve with a valve feedback signal was parameterized (p0218.2 = 1), however the valve does not follow the setpoint.
**Remedy:** - correct the configuration for the valve without valve feedback signal (p0218.2 = 0).
- check the valve natural frequency (p0216).
- for the incorrect sign, invert the valve actual value (p0218.3).
- check the valve and valve connection.

## 207752 <location>Drive: Piston position not possible

**Drive object:** HLA_840, HLA_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The piston was calibrated (p0476 not equal to 0) and the absolute position is available (p1407.3 = 1). However, the piston position (r0094) is not plausible (negative or higher than the stroke in p0313).
**Remedy:** - check position inversion (p0410.1).
- check direction convention: piston position (r0094) must be zero, if the piston is located at the A side. When moving from the A to the B side, velocity and position increase must be positive.
- check the piston calibration, and if required, recalibrate the piston with the piston at the A side (p1909.1 = 1).
- when replacing the encoder, recalibrate the piston.
- when shifting the machine zero point, recalibrate the piston.
Note:
Before acknowledging the fault, set p0476 = 0. Then calibrate the piston again (p1909.1 = 1 with the piston completely retracted or set p1959.2 = 1 and p1960 = 1).
See also:r0094, p0476 (Piston zero point calibration value)

## 207753 <location>Drive: No valid pressure actual value available

**Drive object:** HLA_840, HLA_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** - the "force controller", "force limiting" or "stiction compensation" is activated (p1400), and at least one of the two required pressure sensors for pressure actual value A or B is not supplying a valid value. The two pressure actual values A and B are required for the functions listed above.
- the system pressure adaptation function for the speed controller is activated (p1400.15 = 1) and no system pressure measured value (r0069) is available. A system pressure measured value is required for this function.

**Remedy:** - check pressure sensors and wiring for pressure actual values A and B (X241 or X242).
- check offset correction values for pressure actual values A and B (p0241, p0243).
- if required, deselect the function "force controller", "force limiting" or "stiction compensation" (p1400).

## 207754 <location>Drive: Incorrect shutoff valve configuration

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An incorrect shutoff valve configuration was detected.
Fault value (r0949, interpret decimal):
100:
Enable Safety Integrated (p9601/p9801), but p0218.0 = 0 (shutoff valve not available).
101:
The manipulated variable inhibit time is set less than the wait time to evaluate the feedback signal contacts when switching on the shutoff valve (p0230 < p9625[0]/p9825[0]).
102:
The manipulated variable inhibit time is set less than the wait time to evaluate the feedback signal contacts when switching off the shutoff valve (p0230 < p9625[1]/p9825[1]).
**Remedy:** For fault value = 100:
Check the enable of Safety Integrated and the shutoff valve (p9601/p9801, p0218.0).
For fault value = 101:
Set the manipulated variable inhibit time higher than the wait time to evaluate the feedback signal contacts when switching on the shutoff valve (p0230 > p9625[0]/p9825[0]).
For fault value = 102:
Set the manipulated variable inhibit time higher than the wait time to evaluate the feedback signal contacts when switching off the shutoff valve (p0230 > p9625[1]/p9825[1]).
See also:p0230, p9625 (SI HLA shutoff valve wait time (CU)), p9825 (SI HLA shutoff valve wait time (MM))

## 207755 <location>Drive: travel to fixed end stop without force controller

**Drive object:** HLA_840, HLA_DBSI
**Message value:** -
**Reaction:** OFF3 (NONE, OFF1, OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The function "Travel to fixed end stop" (p1545) was selected, although no "Force controller" or no "Force limiting" has been activated (p1400). With these settings, the drive would be traversed with maximum force against the end stop.
**Remedy:** - if required, deactivate the "Travel to end stop" function (p1545).
- activate the force controller (p1400.14 = 1).
or
- activate force limiting, mode 1 or mode 2 (p1400.0 = 1, p1400.1 = 1).

## 207756 <location>Drive: Filter natural frequency > Shannon frequency

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** One of the filter natural frequencies is greater than the Shannon frequency.
The Shannon frequency is calculated according to the following formula: 0.5 / p0115[0]
Fault value (r0949, interpret binary):
Bit 0: Manipulated variable filter 1 (p1658, p1660)
Bit 1: Manipulated variable filter 2 (p1663, p1665)
Bit 3: Manipulated variable filter (p1800, p1805)
Bit 4: Precontrol filter (p1721, p1727)

**Remedy:** - reduce the numerator or denominator natural frequency of the current setpoint filter involved.
- reduce controller sampling time (p0115[0]).
- deactivate the filter involved

## 207800 <location>Drive: No power unit present

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The power unit parameters cannot be read or no parameters are stored in the power unit.
It is possible that the DRIVE-CLiQ cable between the Control Unit and power unit is interrupted or defective.
Note:
This fault also occurs if an incorrect topology was selected in the commissioning tool and this parameterization is then downloaded to the Control Unit.
See also:r0200 (Power unit code number actual)

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- check the DRIVE-CLiQ cable between the Control Unit and power unit.
- check the power unit and replace if necessary.
- check the Control Unit, and if required replace it.
- after correcting the topology, the parameters must be again downloaded using the commissioning tool.

## 207801 <location>Drive: Motor overcurrent

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The permissible motor limit current was exceeded.
- effective current limit set too low.
- current controller not correctly set.
- motor was braked with an excessively high stall torque correction factor.
- U/f operation: Up ramp was set too short or the load is too high.
- U/f operation: Short-circuit in the motor cable or ground fault.
- U/f operation: Motor current does not match the current of Motor Module.
Note:
Synchronous motor: Limit current= 1.3 x p0323
Induction motor: Limit current= 1.3 x r0209

**Remedy:** - check the current limits (p0323, p0640).
- check the current controller (p1715, p1717).
- reduce the stall torque correction factor (p0326).
- increase the up ramp (p1318) or reduce the load.
- check the motor and motor cables for short-circuit and ground fault.
- check the Motor Module and motor combination.

## 207802 <location>Drive: Infeed or power unit not ready

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** After an internal switch-on command, the infeed or drive does not signal ready.
- monitoring time is too short.
- DC link voltage is not present.
- associated infeed or drive of the signaling component is defective.
- supply voltage incorrectly set.

**Remedy:**
- increase the monitoring time (p0857).
- ensure that there is a DC link voltage. Check the DC link busbar. Enable the infeed.
- replace the associated infeed or drive of the signaling component.
- check the line supply voltage setting (p0210).

See also:p0857 (Power unit monitoring time)

## 207805 <location>Infeed: Power unit overload I2t

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for I2t overload (p0294) of the power unit has been exceeded.
**Remedy:**
- reduce the continuous load.
- adapt the load duty cycle.

## 207805 <location>Drive: Power unit overload I2t

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for I2t overload (p0294) of the power unit has been exceeded.
The response parameterized in p0290 becomes active.
See also:p0290 (Power unit overload response)
**Remedy:**
- reduce the continuous load.
- adapt the load duty cycle.
- check the assignment of the rated currents of the motor and Motor Module.

## 207808 <location>HF Damping Module: damping not ready

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** When switching on or in the switched-on state, the HF Damping Module does not return a ready signal.
Fault value (r0949, interpret hexadecimal):
1: Fault at switch-on identified.
2: Fault during operation identified.

**Remedy:** - check the DRIVE-CLiQ wiring to the HF Damping Module.
- check the 24 V supply voltage.
- if required, replace the HF Damping Module.
Note:
HF Damping Module

## 207810 <location>Drive: Power unit EEPROM without rated data

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** No rated data are stored in the power unit EEPROM.
See also:p0205, r0206 (Rated power unit power), r0207 (Rated power unit current), r0208 (Rated power unit line supply voltage), r0209 (Power unit maximum current)
**Remedy:** Replace the power unit or inform Siemens Customer Service.

## 207815 <location>Drive: Power unit has been changed

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The code number of the actual power unit does not match the saved number. This only occurs if the comparator in p9906 or p9908 is not at 2 (low) or 3 (minimum).
Fault value (r0949, interpret decimal):
Number of the incorrect parameter.
See also:r0200 (Power unit code number actual), p0201 (Power unit code number)
**Remedy:** Connect the original power unit and switch on the Control Unit again (POWER ON) or set p0201 to r0200 and exit commissioning with p0010 = 0.
For infeeds, the following applies:
Line reactors or line filters must be used that are specified for the new power unit. A line supply and DC link identification routine (p3410 = 5) must then be carried out. It is not possible to change the power unit without re-commissioning the system if the type of infeed (A_Infeed, B_Infeed, S_Infeed), the type of construction/design (booksize, chassis) or the voltage class differ between the old and new power units.
For inverters, the following applies:
If the new power unit is accepted, then if required, the current limit (p0640) can be reduced by a lower maximum current of the power unit (r0209) (torque limits stay the same).
If not only the power unit is changed, but also the motor, then the motor must be re-commissioned (e.g. using p0010 = 1). This is also necessary if motor data is still to be downloaded via DRIVE-CLiQ.
See also:r0200 (Power unit code number actual)

## 207815 <location>Drive: Power unit has been changed

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The code number of the actual power unit does not match the saved number. This only occurs if the comparator in p9906 or p9908 is not at 2 (low) or 3 (minimum).
Fault value (r0949, interpret decimal):
Number of the incorrect parameter.
See also:r0200 (Power unit code number actual), p0201 (Power unit code number)

**Remedy:** Connect the original power unit and switch on the Control Unit again (POWER ON) or set p0201 to r0200 and exit commissioning with p0010 = 0.

For infeeds, the following applies:

Line reactors or line filters must be used that are specified for the new power unit. A line supply and DC link identification routine (p3410 = 5) must then be carried out. It is not possible to change the power unit without re-commissioning the system if the type of infeed (A_Infeed, B_Infeed, S_Infeed), the type of construction/design (booksize, chassis) or the voltage class differ between the old and new power units.

For inverters, the following applies:

If the new power unit is accepted, then if required, the current limit (p0640) can be reduced by a lower maximum current of the power unit (r0209) (torque limits stay the same).

If not only the power unit is changed, but also the motor, then the motor must be re-commissioned (e.g. using p0010 = 1). This is also necessary if motor data is still to be downloaded via DRIVE-CLiQ.

If the comparison stage in p9906 is set to 2, 3, then commissioning can be exited (p0010 = 0) and the fault acknowledged.

See also:r0200 (Power unit code number actual)

## 207820 <location>Drive: Temperature sensor not connected

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature sensor for monitoring the motor temperature, specified in p0600, is not available.

Alarm value (r2124, interpret decimal):

1: p0601 = 10 (SME), but in p0600 - not evaluated via encoder is selected.

2: p0600 = 10 (BICO), but the signal source (p0603) is not interconnected.

3: p0601 = 11 (BICO), but in p0600 - not evaluated via BICO interconnection is selected (20 or 21).

4: p0601 = 11 (BICO) and p4610-p4613 > 0, but the associated signal source (p0608, p0609) is not interconnected.

5: Component with sensor evaluation not present or has been removed in the meantime.

6: Evaluation via Motor Module not possible (r0192.21).

**Remedy:** For alarm value = 1:

- in p0600 set an encoder with temperature sensor.

For alarm value = 2:

- interconnect p0603 with the temperature signal.

For alarm value = 3, 4:

- set the available temperature sensor (p0600, p0601).
- set p4610 ... p4613 = 0 (no sensor), or interconnect p0608 or p0609 with an external temperature signal.

For alarm value = 5:

- connect the component with the temperature sensor. Check the DRIVE-CLiQ connection.

For alarm value = 6:

- update the Motor Module firmware. Connect temperature sensor via encoder.

See also:p0600 (Motor temperature sensor for monitoring), p0601

## 207840 <location>Drive: Infeed operation missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The signal "infeed operation" is not present although the enable signals for the drive have been present for longer than the parameterized monitoring time (p0857).

- infeed not operational.
- interconnection of the binector input for the ready signal is either incorrect or missing (p0864).
- infeed is presently carrying out a line supply identification routine.

**Remedy:** - bring the infeed into an operational state.
- check the interconnection of the binector input for the signal "infeed operation" (p0864).
- increase the monitoring time (p0857).
- wait until the infeed has completed the line supply identification routine.
See also:p0857 (Power unit monitoring time), p0864

## 207841 <location>Drive: Infeed operation withdrawn

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The signal "infeed operation" was withdrawn in operation.
- interconnection of the binector input for the signal "infeed operation" is either incorrect or missing (p0864).
- the enable signals of the infeed were disabled.
- due to a fault, the infeed withdraws the signal "infeed operation".
**Remedy:** - check the interconnection of the binector input for the "infeed operation" signal (p0864).
- check the enable signals of the infeed and if required, enable.
- remove and acknowledge an infeed fault.
Note:
If this drive is intended to back up the DC link regeneratively, then the fault response must be parameterized for NONE, OFF1 or OFF3. so that the drive can continue to operate even after the infeed fails.

## 207850 <location>External alarm 1

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The condition for "External alarm 1" is satisfied.
Note:
The "External alarm 1" is initiated by a 1/0 edge via binector input p2112.
See also:p2112 (External alarm 1)
**Remedy:** Eliminate the causes of this alarm.

## 207851 <location>External alarm 2

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The condition for "External alarm 2" is satisfied.
Note:
The "External alarm 2" is initiated by a 1/0 edge via binector input p2116.
See also:p2116 (External alarm 2)
**Remedy:** Eliminate the causes of this alarm.

## 207852 <location>External alarm 3

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The condition for "External alarm 3" is satisfied.
Note:
The "External alarm 3" is initiated by a 1/0 edge via binector input p2117.
See also:p2117 (External alarm 3)
**Remedy:** Eliminate the causes of this alarm.

## 207860 <location>External fault 1

**Drive object:** 'All objects
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The condition for "External fault 1" is satisfied.
Note:
The "External fault 1" is initiated by a 1/0 edge via binector input p2106.
See also:p2106 (External fault 1)
**Remedy:** - eliminate the causes of this fault.
- acknowledge fault.

## 207861 <location>External fault 2

**Drive object:** 'All objects
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The condition for "External fault 2" is satisfied.
Note:
The "External fault 2" is initiated by a 1/0 edge via binector input p2107.
See also:p2107 (External fault 2)
**Remedy:** - eliminate the causes of this fault.
- acknowledge fault.

## 207862 <location>External fault 3

**Drive object:** 'All objects
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The condition for "External fault 3" is satisfied.
Note:
The "External fault 3" is initiated by a 1/0 edge via the following parameters.
- AND logic operation, binector input p2108, p3111, p3112.
- switch-on delay p3110.
See also:p2108, p3110, p3111, p3112
**Remedy:** - eliminate the causes of this fault.
- acknowledge fault.

## 207890 <location>Internal voltage protection / internal armature short-circuit with STO active

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The internal armature short-circuit (p1231 = 4) is not possible as Safe Torque Off (STO) is enabled. The pulses cannot be enabled.

**Remedy:** Switch out the internal armature short-circuit (p1231=0) or deactivate Safe Torque Off (p9501 = p9561 = 0).

Note:

STO: Safe Torque Off / SH: Safe standstill

## 207900 <location>Drive: Motor blocked/speed controller at its limit

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** Motor has been operating at the torque limit longer than the time specified in p2177 and below the speed threshold in p2175.

This signal can also be initiated if the speed actual value is oscillating and the speed controller output repeatedly goes to its limit.

See also:p2175, p2177

**Remedy:** - check that the motor can freely move.

- check the effective torque limit (r1538, r1539).
- check the parameter, message "Motor blocked" and if required, correct (p2175, p2177).
- check the inversion of the actual value (p0410).
- check the motor encoder connection.
- check the encoder pulse number (p0408).
- for SERVO with encoderless operation and motors with low power ratings (< 300 W), increase the pulse frequency (p1800).
- after deselecting the "Basic positioner" (EPOS) function mode, check the motoring (p1528) and regenerative (p1529) torque limit and modify again.
- blocksize device: for encoderless operation and a current controller sampling time p0115[0] < 80 µs, either set the pulse frequency of p1800 = 1 / p0115[0] or increase the switchover speed of the model p1755.

## 207901 <location>Drive: Motor overspeed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Servo: OFF2 (IASC/DCBRK)

Hla: OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The maximum permissible speed was either positively or negatively exceeded.

The maximum permissible positive speed is formed as follows: Minimum (p1082, CI: p1085) + p2162

The maximum permissible negative speed is formed as follows: Maximum (-p1082, CI: 1088) - p2162

**Remedy:** The following applies for a positive direction of rotation:

- check r1084 and if required, correct p1082, CI:p1085 and p2162.

The following applies for a negative direction of rotation:

- check r1087 and if required, correct p1082, CI:p1088 and p2162.

## 207902 <location>Drive: Motor stalled

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The system has identified that the motor has stalled for a time longer than is set in p2178.
Fault value (r0949, interpret decimal):
1: Stall detection using r1408.11 (p1744, p0492).
2: Stall detection using r1408.12 (p1745) or via the flux difference (r0083 ... r0084).
3: Stall detection using r0056.11 (only for separately excited synchronous motors).

**Remedy:** For closed-loop speed and torque control with speed encoder, the following applies:
- check the speed signal (interrupted cable, polarity, pulse number, broken encoder shaft).
- check the speed encoder, if another speed encoder was selected using the data set changeover. This must be connected to the same motor that is controlled for the data set changeover.
If there is no fault, then the fault tolerance (p1744 and p0492) can be increased.
For closed-loop speed and torque control without speed encoder, the following applies:
- check whether the drive in the open-loop controlled mode (r1750.0) stalls under load. If yes, then increase the current setpoint using p1610.
- check whether the drive stalls due to the load if the speed setpoint is still zero. If yes, then increase the current setpoint using p1610.
- if the motor excitation (magnetizing) time (r0346) was significantly reduced, then it should be increased again.
- check the current limits (p0640, r0067). If the current limits are too low, then the drive cannot be magnetized.
- check the current controller (p1715, p1717) and the speed adaptation controller (p1764, p1767). If the dynamic response was significantly reduced, then this should be increased again.
- check the speed encoder, if another speed encoder was selected using the data set changeover. This must be connected to the motor that is controlled for the data set changeover.
If there is no fault, then the fault tolerance (p1745) or the delay time (p2178) can be increased.
For separately excited synchronous motors (closed-loop control with speed encoder), the following applies:
- check the speed signal (interrupted cable, polarity, pulse number).
- ensure the correct motor parameterization (rating plate and equivalent circuit diagram parameters).
- check the excitation equipment and the interface to the closed-loop control.
- encoder the highest possible dynamic response of the closed-loop excitation current control.
- check the speed control for any tendency to oscillate and if resonance effects occur, use a bandstop filter.
- do not exceed the maximum speed (p2162).
If there is no fault, then the delay time can be increased (p2178).

## 207903 <location>Drive: Motor speed deviation

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The absolute value of the speed difference from the two setpoints (p2151, p2154) and the speed actual value (r2169) exceeds the tolerance threshold (p2163) longer than tolerated (p2164, p2166).
The alarm is only enabled for p2149.0 = 1.
Possible causes could be:
- the load torque is greater than the torque setpoint.
- when accelerating, the torque/current/power limit is reached. If the limits are not sufficient, then it is possible that the drive has been dimensioned too small.
- for closed-loop torque control, the speed setpoint does not track the speed actual value.
- for active Vdc controller.
For U/f control, the overload condition is detected as the Imax controller is active.
See also:p2149 (Monitoring configuration)

**Remedy:** - increase p2163 and/or p2166.
- increase the torque/current/power limits.
- for closed-loop torque control: The speed setpoint should track the speed actual value.
- deactivate alarm with p2149.0 = 0.

## 207904 <location>External armature short-circuit: Contactor feedback signal "Closed" missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** When closing, the contactor feedback signal (p1235) did not issue the signal "Closed" (r1239.1 = 1) within the monitoring time (p1236).

**Remedy:**
- check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "Closed", r1239.1 = 0: "Open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231 = 2).

## 207905 <location>External armature short-circuit: Contactor feedback signal "Open" missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** When opening, the contactor feedback signal (p1235) did not issue the signal "Open" (r1239.1 = 0) within the monitoring time (p1236).

**Remedy:**
- check that the contactor feedback signal is correctly connected (p1235).
- check the logic of the contactor feedback signal (r1239.1 = 1: "Closed", r1239.1 = 0: "Open").
- increase the monitoring time (p1236).
- if required, set the external armature short-circuit without contactor feedback signal (p1231 = 2).

## 207906 <location>Armature short-circuit / internal voltage protection: Parameterization error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1, motor data set: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The armature short-circuit is incorrectly parameterized.

Fault value (r0949, interpret decimal):

zzzzyyxx: zzzz = fault cause, xx = motor data set

zzzz = 0001 hex = 1 dec:

A permanent-magnet synchronous motor has not been selected.

zzzz = 0002 hex = 2 dec:

No induction motor selected.

zzzz = 0065 hex = 101 dec:

External armature short-circuit: Output (r1239.0) not wired.

zzzz = 0066 hex = 102 dec:

External armature short-circuit with contactor feedback signal: No feedback signal connected (BI:p1235). The feedback signal must be interconnected in all command data sets (CDS).

zzzz = 0067 hex = 103 dec:

External armature short-circuit without contactor feedback signal: Wait time when opening (p1237) is 0.

zzzz = 00C9 hex = 201 dec:

Internal voltage protection: The maximum output current of the Motor Module (r0209) is less than 1.8 x motor short-circuit current (r0331).

zzzz = 00CA hex = 202 dec:

Internal voltage protection: A Motor Module in booksize or chassis format is not being used.

zzzz = 00CB hex = 203 dec:

Internal voltage protection: The motor short-circuit current (p0320) is greater than the maximum motor current (p0323).

zzzz = 00CC hex = 204 dec:

Internal voltage protection: The activation (p1231 = 4) is not given for all motor data sets with synchronous motors (p0300 = 2xx, 4xx).

**Remedy:** For fault value = 1:

- an armature short-circuit / voltage protection is only permissible for permanent-magnetic synchronous motors. The highest position of the motor type in p0300 must either be 2 or 4.

For fault value = 101:

- the contactor for the external armature short-circuit configuration should be controlled using output signal r1239.0. For instance, the signal can be connected to an output terminal via binector input p0738. Before this fault can be acknowledged, p1231 must be set again.

For fault value = 102:

- if the external armature short circuit is selected with contactor feedback signal (p1231 = 1), then the feedback signal must be connected to an input terminal (e.g. r0722.x) and then interconnected to binector input p1235.

- alternatively, the external armature short-circuit without contactor feedback signal (p1231 = 2) can be selected.

For fault value = 103:

- if the external armature short-circuit without contactor feedback signal (p1231 = 2) is selected, then a delay time must be parameterized in p1237. This time must always be greater than the actual contactor opening time, as otherwise the Motor Module would be short-circuited!

For fault value = 201:

- a Motor Module with a higher maximum current or a motor with a lower short-circuit current must be used. The maximum Motor Module current must be higher than 1.8 x short-circuit current of the motor.

For fault value = 202:

- for internal voltage protection, use a Motor Module in booksize or chassis format.

For fault value = 203:

- for internal voltage protection, only use short-circuit proof motors.

For fault value = 204:

- the internal voltage protection must either be activated for all motor data sets with synchronous motors (p0300 = 2xx, 4xx) (p1231 = 3) or it must be deactivated for all motor data sets (p1231 not equal to 3). This therefore ensures that the protection cannot be accidentally withdrawn as a result of a data set changeover. The fault can only be acknowledged if this condition is fulfilled.

## 207907 <location>Internal armature short-circuit: Motor terminals are not at zero potential after pulse suppression

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The function "Internal voltage protection" (p1231 = 3) was activated.

The following must be observed:

- when the internal voltage protection is active, after pulse suppression, all of the motor terminals are at half of the DC link voltage (without an internal voltage protection, the motor terminals are at zero potential)!

- it is only permissible to use motors that are short-circuit proof (p0320 < p0323).

- the Motor Module must be able to continually conduct 180% short-circuit current (r0331) of the motor (r0289).

- the internal voltage protection cannot be interrupted due to a fault response. If an overcurrent condition occurs during the active, internal voltage protection, then this can destroy the Motor Module and/or the motor.

- if the Motor Module does not support the autonomous, internal voltage protection (r0192.10 = 0), in order to ensure safe, reliable functioning when the line supply fails, an external 24 V power supply (UPS) must be used for the components.

- if the Motor Module does support the autonomous, internal voltage protection (r0192.10 = 1), in order to ensure safe, reliable functioning when the line supply fails, the 24 V power supply for the components must be provided through a Control Supply Module.

- if the internal voltage protection is active, it is not permissible that the motor is driven by the load for a longer period of time (e.g. as a result of loads that move the motor or another coupled motor).

**Remedy:** Not necessary.

This a note for the user.

## 207908 <location>Internal armature short-circuit active

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The Motor Module signals that the motor is short-circuited through the power semiconductors (r1239.5 = 1). The pulses cannot be enabled. The internal armature short-circuit is selected (p1231 = 4):

**Remedy:** For synchronous motors, the armature short-circuit braking is activated with binector input p1230 = 1 signal.

See also:p1230 (Armature short-circuit / DC braking activation), p1231 (Armature short-circuit / DC braking configuration)

## 207909 <location>Internal voltage protection: Deactivation only effective after POWER ON

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** POWER ON

**Cause:** The deactivation of the internal voltage protection (p1231 not equal to 3) only becomes effective after POWER ON.

The status signal r1239.6 = 1 indicates that the internal voltage protection is ready.

**Remedy:** Not necessary.

This a note for the user.

## 207910 <location>Drive: Motor overtemperature

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** KTY84/PT1000:
The motor temperature has exceeded the alarm threshold (p0604, p0616).
PTC:
The response threshold of 1650 Ohm was exceeded.
Alarm value (r2124, interpret decimal):
this is the number of the temperature channel leading to the message.
See also:p0604, p0612, p0617, p0618, p0619, p0625, p0626, p0627, p0628

**Remedy:** - check the motor load.
- check the motor ambient temperature and cooling.
- check PTC or bimetallic NC contact.
- check the monitoring limits (p0604, p0605).
- activate/check the parameters of the motor temperature model (p0612, p0626 and following).
See also:p0612, p0617, p0618, p0619, p0625, p0626, p0627, p0628

## 207913 <location>Excitation current outside the tolerance range

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The difference between the excitation current actual value and setpoint has exceeded the tolerance:
abs(r1641 - r1626) > p3201 + p3202
The cause of this fault is again reset for abs(r1641 - r1626) < p3201.

**Remedy:** - check the parameterization (p1640, p3201, p3202).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.

## 207914 <location>Flux out of tolerance

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The difference between the flux actual value and setpoint has exceeded the tolerance:
abs(r0084 - r1598) > p3204 + p3205
The cause of this fault is again reset for abs(r0084 - r1598) < p3204.
The fault is only issued after the delay time in p3206 has expired.

**Remedy:** - check the parameterization (p3204, p3205).
- check the interfaces to the excitation equipment (r1626, p1640).
- check the excitation equipment.
- check the flux control (p1590, p1592, p1597).
- check the control for oscillation and take the appropriate counter measures (e.g. optimize the speed control loop, parameterize a bandstop filter).

## 207918 <location>Three-phase setpoint generator operation selected/active

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Only for separately excited synchronous motors (p0300 = 5):
The actual open-loop/closed-loop control mode is I/f control (open-loop) with a fixed current (p1300 = 18).
The speed is entered via the setpoint channel and the current setpoint is given by the minimum current (p1620).
It must be ensured that in this mode, the control dynamic performance is very limited. This is the reason that longer ramp-up times should be set for the setpoint speed than for normal operation.

**Remedy:** Select another open-loop/closed-loop control mode
See also:p1300 (Open-loop/closed-loop control operating mode)

## 207920 <location>Drive: Torque/speed too low

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The torque deviates from the torque/speed envelope characteristic (too low).
See also:p2181 (Load monitoring response)
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207921 <location>Drive: Torque/speed too high

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The torque deviates from the torque/speed envelope characteristic (too high).
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207922 <location>Drive: Torque/speed out of tolerance

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The torque deviates from the torque/speed envelope characteristic.
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207923 <location>Drive: Torque/speed too low

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The torque deviates from the torque/speed envelope characteristic (too low).
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207924 <location>Drive: Torque/speed too high

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY
**Cause:** The torque deviates from the torque/speed envelope characteristic (too high).
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207925 <location>Drive: Torque/speed out of tolerance

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The torque deviates from the torque/speed envelope characteristic.
**Remedy:** - check the connection between the motor and load.
- adapt the parameterization corresponding to the load.

## 207926 <location>Drive: Envelope curve parameter invalid

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Invalid parameter values were entered for the envelope characteristic of the load monitoring.
The following rules apply for the speed thresholds:
p2182 < p2183 < p2184
The following rules apply for the torque thresholds:
p2185 > p2186
p2187 > p2188
p2189 > p2190
Load monitoring configuration and response must match.
It is not permissible that the individual load torque monitoring areas overlap.
Alarm value (r2124, interpret decimal):
Number of the parameter with the invalid value.
Note:
The load torque monitoring has not been activated as long as the alarm is active.
**Remedy:** - set the parameters for the load monitoring according to the applicable rules.
- if necessary, deactivate the load monitoring (p2181 = 0, p2193 = 0).

## 207927 <location>DC braking active

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The motor is braked with DC current. DC braking is active.
1)
A message with response DCBRK is active. The motor is braked with the braking current set in p1232 for the duration set in p1233. If the standstill threshold p1226 is undershot, then braking is prematurely canceled.
2)
DC braking has been activated at binector input p1230 with the DC braking set (p1230 = 4). Braking current p1232 is injected until this binector input becomes inactive.
**Remedy:** Not necessary.
This alarm is automatically withdrawn after DC braking.

## 207928 <location>Internal voltage protection initiated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The Motor Module signals that the motor is short-circuited through the power semiconductors (r1239.5 = 1). The pulses cannot be enabled. The internal voltage protection is selected (p1231 = 3).

**Remedy:** If the Motor Module supports the autonomous internal voltage protection (r0192.10 = 1), then the Motor Module automatically decides - using the DC link voltage - as to whether the armature short-circuit should be activated.

The armature short-circuit is activated and response OFF2 is initiated if the DC link voltage exceeds 800 V. If the DC link voltage falls below 450 V, then the armature short-circuit is withdrawn.

If the motor is still in a critical speed range, the armature short-circuit is re-activated once the DC link voltage exceeds the threshold of 800 V.

If the autonomous (independent) internal voltage protection is active (r1239.5 = 1) and the line supply returns (450 V < DC link voltage < 800 V), the armature short-circuit is withdrawn after 3 minutes.

## 207930 <location>Drive: Brake control error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The Control Unit has detected a brake control error.

- motor cable is not shielded correctly.

- defect in the brake control circuit of the Motor Module.

Fault value (r0949, interpret decimal):

10, 11:

Fault in "open holding brake" operation.

- no brake connected or wire breakage (check whether brake opens for p1278 = 1).

- ground fault in brake cable.

- S120M: brake opened via terminal X4.1 for mounting purposes (this is only permissible when the power supply voltage is switched off).

20:

Fault in "brake open" state.

- short-circuit in brake winding.

30, 31:

Fault in "close holding brake" operation.

- no brake connected or wire breakage (check whether brake opens for p1278 = 1).

- short-circuit in brake winding.

40:

Fault in "brake closed" state.

50:

Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control diagnostics).

80:

When using the Safe Brake Adapter (SBA), a fault has occurred in the brake control of the Control Unit.

See also:p1278 (Brake control diagnostics evaluation)

**Remedy:** - check the motor holding brake connection.
- for a parallel connection, check the setting of the power unit data set to control the holding brake (p7015).
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Motor Module involved.

Operation with Safe Brake Module:
- check the Safe Brake Module connection.
- replace the Safe Brake Module.

Operation with Safe Brake Adapter (SBA):
- check the SBA connection and if required, replace the SBA.

See also:p1215 (Motor holding brake configuration), p1278 (Brake control diagnostics evaluation)

## 207931 <location>Brake does not open

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** This alarm is output for r1229.4 = 1.
See also:p1216 (Motor holding brake opening time), r1229 (Motor holding brake status word)
**Remedy:** - check the functionality of the motor holding brake.
- check the feedback signal (p1223).

## 207932 <location>Brake does not close

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** This alarm is output for r1229.5 = 1.
For r1229.5 = 1, OFF1/OFF3 are suppressed to prevent the drive accelerating by a load that drives the motor - whereby OFF2 remains effective.
See also:p1217 (Motor holding brake closing time), r1229 (Motor holding brake status word)
**Remedy:** - check the functionality of the motor holding brake.
- check the feedback signal (p1222).

## 207934 <location>Drive: S120 Combi motor holding brake configuration

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A connected motor holding brake has been detected with an S120 Combi. However, this brake has not been assigned to just one Combi feed drive and, therefore, brake control is not configured (correctly).

Fault value (r0949, interpret decimal):

0: No motor holding brake is assigned (p1215 = 0 or 3 on all S120 Combi feed drives).

1: More than one motor holding brake has been assigned (p1215 = 1 or 2 on more than one S120 Combi feed drive) - or there is more than one DRIVE-CLiQ motor with motor holding brake.

2: Brake was accidentally assigned to the spindle (p1215 = 1); this is not permitted for this software release.

3: An attempt was made to enable the function "Safe Brake Control" (SBC, p9602 = p9802 = 1) for the spindle. This is not permitted for this software release.

**Remedy:** Check whether the motor holding brake has been assigned to one S120 Combi feed drive exclusively (p1215 = 1 or 2).

The fault will only be withdrawn once the motor holding brake has been assigned to just one of the S120 Combi feed drives (p1215 = 1 or 2 for this one drive). From this point, the motor holding brake will be controlled by this drive.

See also:p1215 (Motor holding brake configuration)

## 207935 <location>Drive: Incorrect motor holding brake configuration

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** An incorrect motor holding brake configuration was detected.

Fault value (r0949, interpret decimal):

0:

A motor holding brake was detected where the brake control has not been configured (p1215 = 0).

The brake control configuration was set to "motor holding brake the same as sequence control" (p1215 = 1) (only when commissioning for the first time).

For a chassis unit with Safe Brake Adapter (SBA), the interconnection p9621 = r9872.3 was established (only when commissioning for the first time).

For a parallel connection, the power unit was set in p7015, to which the motor holding brake is connected (only when commissioning for the first time).

1:

A motor holding brake was detected where the brake control has not been configured (p1215 = 0).

The brake control configuration was left at "No motor holding brake available" (p1215 = 0).

11:

The identification had detected more than one motor holding brake for a parallel connection.

12:

For the parallel connection, in p0121 there is no valid component number for the power unit data set that is set in p7015.

13:

With the "Safe Brake Control" (SBC) function activated, an attempt was made to change the value in p7015.

14:

For a parallel connection, the power units set in p7015 cannot be addressed.

**Remedy:** For fault value = 0:
- no remedy required.

For fault value = 1:
- if required change the motor holding brake configuration (p1215 = 1, 2).
- if this fault value unexpectedly occurs, then the motor connections should be checked in order to rule out that they have been interchanged.

For fault value = 11:
For a parallel connection, only connect one motor holding brake.
For fault value = 12:
Check the setting of the power unit data set for a parallel connection (p7015).
For fault value = 13:
Before changing p7015, deactivate the "Safe Brake Control" function (SBC) (p9602).
For fault value = 14:
Check whether the power unit supports the brake control for a parallel connection (r9771.14).
Check whether there is a DRIVE-CLiQ communication error between the Control Unit and the power unit involved and, if required, carry out a diagnostics routine for the faults identified.
See also:p1215 (Motor holding brake configuration)

## 207950 <location>Drive: Incorrect motor parameter

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** - the motor parameters were incorrectly entered while commissioning (e.g. p0300 = 0, no motor)
- the braking resistor has still not been parameterized - commissioning cannot be completed.

Fault value (r0949, interpret decimal):
Parameter number involved.
300 (CU250S-2):
For this control mode, the motor type is not supported.
307:
The following motor parameters could be incorrect:
p0304, p0305, p0307, p0308, p0309
See also:p0300, p0301, p0304, p0305, p0307, p0310, p0311, p0314, p0315, p0316, p0320, p0322, p0323

**Remedy:** Compare the motor data with the rating plate data and if required, correct.
For fault value = 300 (CU250S-2):
Operate a motor type supported by the selected control mode.

## 207955 <location>Drive: Motor has been changed

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The code number of the actual motor with DRIVE-CLiQ does not match the saved number. The code numbers of the bearings, gearbox or brake do not match the saved numbers.
Fault value (r0949, interpret decimal):
Number of the incorrect parameter
See also:p0301 (Motor code number selection), r0302 (Motor code number of motor with DRIVE-CLiQ)

**Remedy:** Connect the original motor, switch on the Control Unit again (POWER ON) and exit quick commissioning with p0010 = 0.
Or: set p0300 = 10100, without recommissioning (only if the motor data have not changed)
Or: set p0300 = 10000 (load the parameters from the motor with DRIVE-CLiQ) and re-commission. The data for bearings, gearbox and brake are reloaded.
Quick commissioning (p0010 = 1) is automatically exited with p3900 > 0.
If quick commissioning was exited with p0010 = 0, then an automatic controller calculation (p0340 = 1) is not carried out.

## 207956 <location>Drive: Motor code does not match the list (catalog) motor

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The motor code of the connected motor with DRIVE-CLiQ does not match the possible list motor types (see selection in p0300).
The connected motor with DRIVE-CLiQ might not be supported by this firmware version.
Fault value (r0949, interpret decimal):
Motor code of the connected motor with DRIVE-CLiQ.
Note:
The first three digits of the motor code generally correspond to the list motor type.
**Remedy:** Use a motor with DRIVE-CLiQ and the matching motor code.

## 207960 <location>Drive: Incorrect friction characteristic

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The friction characteristic is incorrect.
Alarm value (r2124, interpret decimal):
1:
Incorrect parameter format.
1538:
The friction torque is greater than the maximum from the upper effective torque limit (p1538) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.
1539:
The friction torque is less than the minimum from the lower effective torque limit (p1539) and zero. This is the reason that the output of the friction characteristic (r3841) is limited to this value.
3820 ... 3829:
Incorrect parameter number. The speeds entered in the parameters for the friction characteristic do not correspond to the following condition:
0.0 < p3820 < p3821 < ... < p3829 <= p0322 or p1082, if p0322 = 0
Therefore the output of the friction characteristic (r3841) is set to zero.
3830 ... 3839:
Incorrect parameter number. The torques entered in the parameters for the friction characteristic do not correspond to the following condition:
0 <= p3830, p3831 ... p3839 <= p0333
Therefore the output of the friction characteristic (r3841) is set to zero.
See also:r3840 (Friction characteristic status word)

**Remedy:** Fulfill the conditions for the friction characteristic.
For alarm value = 1538:
Check the upper effective torque limit (e.g. in the field weakening range).
For alarm value = 1539:
Check the lower effective torque limit (e.g. in the field weakening range).
For alarm value = 3820 ... 3839:
Fulfill the conditions to set the parameters of the friction characteristic.
If the motor data (e.g. the maximum speed p0322) are changed during commissioning (p0010 = 1, 3), then the technological limits and threshold values, dependent on this, must be re-calculated by selecting p0340= 5.

## 207961 <location>Drive: Record friction characteristic activated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The automatic friction characteristic record is activated.
The friction characteristic is recorded at the next switch-on command.
When plotting the friction characteristic, it is not possible to save the parameters (p0971, p0977).
**Remedy:** Not necessary.
The alarm is automatically withdrawn after the friction characteristic recording has been successfully completed or recording has been deactivated (p3845 = 0).

## 207963 <location>Drive: Record friction characteristic canceled

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY
**Cause:** The conditions to record the friction characteristic are not fulfilled.
Fault value (r0949, interpret decimal):
0046: Missing enable signals (r0046).
1082: The highest speed value to be approached (p3829) is greater than the maximum speed (p1082).
1084: The highest speed value to be approached (p3829) is greater than the maximum speed (r1084, p1083, p1085).
1087: The highest speed value to be approached (p3829) is greater than the maximum speed (r1087, p1086, p1088).
1110: Friction characteristic record, negative direction selected (p3845) and negative direction inhibited (p1110).
1111: Friction characteristic record, positive direction selected (p3845) and positive direction inhibited (p1111).
1198: Friction characteristic record selected (p3845 > 0) and negative (p1110) and positive directions (p1111) inhibited (r1198).
1300: The control mode (p1300) has not been set to closed-loop speed control.
1755: For encoderless closed-loop control (p1300 = 20), the lowest speed value to be approached (p3820) is less than or equal to the changeover speed, open-loop controlled operation (p1755).
1910: Motor data identification activated.
1960: Speed controller optimization activated.
3820 ... 3829: speed (p382x) cannot be approached.
3840: Friction characteristic incorrect.
3845: Friction characteristic record deselected.

**Remedy:** Fulfill the conditions to record the friction characteristic.
For fault value = 0046:
- establish missing enable signals.
For fault value = 1082, 1084, 1087:
- Select the highest speed value to be approached (p3829) less than or equal to the maximum speed (p1082, r1084, r1087).
- Re-calculate the speed points along the friction characteristic (p0340 = 5).
For fault value = 1110:
- Select the friction characteristic record, positive direction (p3845).
For fault value = 1111:
- Select the friction characteristic record, negative direction (p3845).
For fault value = 1198:
- Enable the permitted direction (p1110, p1111, r1198).
For fault value = 1300:
- set the control mode (p1300) on the closed-loop speed control (p1300 = 20, 21).
For fault value = 1755:
- For encoderless closed-loop speed control (p1300 = 20) select the lowest speed value to be approached (p3820) greater than the changeover speed of open-loop controlled operation (p1755).
- Re-calculate the speed points along the friction characteristic (p0340 = 5).
For fault value = 1910:
- Exit the motor data identification routine (p1910).
For fault value = 1960:
- Exit the speed controller optimization routine (p1960).
For fault value 3820 ... 3829:
- check the load at speed p382x.
- check the speed signal (r0063) for oscillation at speed p382x. Check the settings of the speed controller if applicable.
For fault value = 3840:
- Make the friction characteristic error-free (p3820 ... p3829, p3830 ... p3839, p3840).
For fault value = 3845:
- Activate the friction characteristic record (p3845).

## 207965 <location>Drive: Save required

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The angular commutation offset (p0431) was re-defined and has still not been saved.
In order to permanently accept the new value, it must be saved in a non-volatile fashion (p0971, p0977).
See also:p0431 (Angular commutation offset), p1990 (Encoder adjustment determine angular commutation offset)
**Remedy:** Not necessary.
This alarm is automatically withdrawn after the data has been saved.
See also:p0971 (Save drive object parameters), p0977 (Save all parameters)

## 207966 <location>Drive: Check the commutation angle

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** The speed actual value was inverted and the associated angular commutation offset is not equal to zero and is therefore possibly incorrect.
**Remedy:** Angular commutation offset after the actual value inversion or determine it again (p1990=1).

## 207971 <location>Drive: Angular commutation offset determination activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The automatic determination of the angular commutation offset (encoder adjustment) is activated (p1990 = 1).
Note:
The automatic determination is carried out at the next switch-on command.
For SERVO and fault F07414 present, the following applies:
The determination of the angular commutation offset is automatically activated (p1990 = 1), if a pole position identification technique is set in p1980.
See also:p1990 (Encoder adjustment determine angular commutation offset)

**Remedy:** Not necessary.
The alarm is automatically withdrawn after successful determination or for the setting p1990 = 0.

## 207979 <location>Drive: pole position identification calibration required

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The pole position identification was not successful as the calibration values for the current measurement are not correct.

**Remedy:** Replace the Motor Module involved.

## 207980 <location>Drive: Rotating measurement activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The rotating measurement is activated. For the rotating measurement, the motor can accelerate up to the maximum speed and with maximum torque. Only the parameterized current limit (p0640) and the maximum speed (p1082) are effective. The behavior of the motor can be influenced using the direction inhibit (p1959.14, p1959.15) and the ramp-up/ramp-down time (p1958).
The rotating measurement is carried out at the next switch-on command.
See also:p1960

**Remedy:** Not necessary.
The alarm is automatically withdrawn after the rotating measurement has been successfully completed or for the setting p1960 = 0.
Note:
If a POWER ON or a warm restart is performed with motor data identification selected, the motor data identification request will be lost. If motor data identification is required, it will need to be selected again manually following ramp-up.

## 207990 <location>Drive: Identification incorrect

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF1 (NONE, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A fault has occurred during the identification routine.
Fault value (r0949, interpret decimal):
1: piston calibration without absolute position (p1407.3 = 0).
2: determining the control sense without moving in both directions.
3: determining the control sense without a clear result.
4: determining the valve offset without moving.
5: traversing range identification without absolute position or piston calibration.
6: the measured piston stroke differs from the parameterized piston stroke (p0313) by more than 20 %.
7: For the characteristic measurement, the drive comes to a standstill before reaching the parameterized free distance.
8: The loop gain of the force controller is incorrect. At the positive end stop, pA (r0067) < pB (r0068).
10: There are less than 10 measuring points not equal to zero on one of the two characteristic sides (r1962). The measured characteristic is not evaluated.
100: Position and speed actual value inversion differ (p0410).
101: Start of measuring range > end of measuring range (p1955[0] > p1955[1]).
102: Minimum measuring travel > maximum measuring travel (p1956[0] > p1956[1]).
190: Velocity setpoint is not zero.

**Remedy:** For fault value = 1:

- reference (home) the drive before calibrating the piston (p1407.3 must be = 1).

For fault value = 2, 3:

- drive must be able to be moved.
- check system pressure and shutoff valves.
- increase the settling time (p1958[1]).

For fault value = 4:

- drive must be able to be moved.
- check system pressure and shutoff valves.

For fault value = 5:

- reference (home) the drive before the traversing range identification (p1407.3 must be = 1) and calibrate the piston (p1909.1 = 1 or p1959.2 = 1 and p1960 = 1).

For fault value = 6:

- there is an obstruction in the traversing range. If necessary, remove the obstruction. If the measuring travel with obstruction is sufficient, no measure has to be applied.
- the piston stroke was incorrectly parameterized. If the actual piston stroke is less than the parameterized stroke, correct it (p0313). A piston stroke that has been parameterized too low, is automatically corrected.
- the selected search voltage is not sufficient for one direction in order to overcome the existing piston or guide friction. Check the setting of the search voltage to identify the valve characteristic, and if required, increase (p1955[2, 3]).

For fault value = 7:

- piston calibration was incorrectly carried out. Correct the piston calibration or automatically calibrate it (p1959.2 = 1 and p1960 = 1).
- the minimum or maximum parameterized measuring travel cannot be traversed as there is an obstruction in the path or the piston stroke was incorrectly parameterized. If required, correct the measuring travel (p1956[0], p1956[1]), correct the piston stroke or automatically calibrate it (p1959.x = 1 and p1960 = 1).
- drive cannot be traversed, because the shutoff valve does not open, the system pressure is not available, encoder or valve are not connected. Check the shutoff valve, system pressure, encoder and valve connection.

For fault value = 8:

- interchange the connectors of pressure sensors A and B or invert the direction of motion (p1820, p0410) and repeat the complete moving measurement.
- check the reference values for pressure sensors (p0240, p0242).

For fault value = 10:

- check the connection between the encoder and cylinder.
- measuring distance too short, if required lengthen (p1956[0], p1956[1]).
- measuring time too long, if required shorten (p1958[0], p1958[1], p1958[2]).
- increase the number of measuring points to a minimum of 20 (p1957[0]).

For fault value = 100:

- set the position and speed actual value inversion the same (p0410 = 0 or p0410 = 3).

For fault value = 101:

- start of measuring range must be parameterized less than the end of measuring range (p1955[0] > p1955[1]).

For fault value = 102:

- minimum measuring distance must be parameterized less than the maximum measuring distance (p1956[0] > p1956[1]).

For fault value = 190:

- during the identification, the velocity setpoint must be zero.

## 207990 <location>Drive: Incorrect motor data identification

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY

**Cause:** A fault has occurred during the identification routine.
Fault value (r0949, interpret decimal):
10: Data set changeover during motor data identification.
101: Voltage amplitude even at 30% maximum current amplitude is too low to measure the inductance.
102, 104: Voltage limiting while measuring the inductance.
103: Maximum frequency exceeded during the rotating inductance measurement.
110: Motor not finely synchronized before the rotating measurement.
111: The zero mark is not received within 2 revolutions.
112:Fine synchronization is not realized within 8 seconds after the zero mark has been passed.
113: The power, torque or current limit is zero.
115: U/f control is active.
120: Error when evaluating the magnetizing inductance.
125: Cable resistance greater than the total resistance.
126: Series inductance greater than the total leakage inductance.
127: Identified leakage inductance negative.
128: Identified stator resistance negative.
129: Identified rotor resistance negative.
130: Drive data set changeover during the motor data identification routine.
140: The setpoint channel inhibits both directions.
150: The holding brake is closed using command "Unconditionally close holding brake" (p0858).
151: The determined force due to weight is higher than the rated motor torque (p0333).
152: The torque precontrol channel (CI: p1511) is already interconnected.
153: The saturation characteristic cannot be approximated and evaluated.
154: The optimum flux characteristic cannot be determined from the saturation characteristic.
160: Accelerating time when determining kT, moment of inertia or reluctance torque too short or too long.
161: When measuring the kT characteristic, constants kT1, kT3, kT5 and kT7 were not able to be determined (p0645 ... p0648), as too few points were measured.
165: The current limit was reduced below the measurement current while determining the reluctance torque.
173: Internal problem.
180: identification speed (maximum speed, rated speed, 0.9 x p0348) less than p1755 or no DC link voltage available.
181: Zero speed at the end of the measurement of periodic position errors.
182: No complete mechanical revolution at to the end of the measurement of periodic position errors.
190: Speed setpoint not equal to zero.
191: An actual speed of zero is not reached.
192: Speed setpoint not reached.
193: Inadmissible motion of the motor when identifying the voltage emulation error.
194: Supplementary torque (r1515) not equal to zero.
195: Closed-loop torque control active.
200, 201: Not possible to identify the voltage emulation error characteristic of the drive converter (p1952, p1953).

**Remedy:** For fault value = 10:
- do not initiate a data set changeover during the motor data identification.

For fault value = 101:
- increase current limit (p0640) or torque limit (p1520, p1521).
- check current controller gain (p1715).
- reduce current controller sampling time (p0115).

It may be impossible to completely identify the L characteristic, as required current amplitude is too high.
- suppress meas. (p1909, p1959).

For fault value = 102, 104:
- reduce current limit (p0640).
- check current controller P gain.
- suppress meas. (p1909, p1959).

For fault value = 103:
- increase external moment of inertia (if possible).
- reduce current controller sampling time (p0115).
- suppress meas. (p1909, p1959).

For fault value = 110:
- before rotating measurement, traverse motor over zero mark.

For fault value = 111:
- it is possible that encoder does not have zero mark. Correct setting in p0404.15.
- encoder pulse number was incorrectly entered. Correct setting in p0408.
- if zero mark signal is defective, replace encoder.

For fault value = 112:
- upgrade encoder software.

For fault value = 113:
- check the limits (p0640, p1520, p1521, p1530, p1531), correct the zero values.

For fault value = 115:
- deselect U/f control (p1317 = 0).

For fault value = 120:
- check current controller P gain (p1715) and if required, reduce.
- increase the pulse frequency (p1800).

For fault value = 125:
- reduce cable resistance (p0352).

For fault value = 126:
- reduce series inductance (p0353).

For fault = 127, 128, 129:
- it is possible that current controller is oscillating. Reduce the P gain (p1715).
- if required, reduce the current limit (p0640).

For fault value = 130:
- do not initiate a drive data set changeover during motor ident. routine.

For fault value = 140:
- before the measurement, enable at least one direction (p1110 = 0 or p1111 = 0 or p1959.14 = 1 or p1959.15 = 1).

For fault value = 150:
- if necessary withdraw command "Unconditionally close holding brake" (BI: p0858 = 0 signal).

For fault value = 151:
- the motor cannot continuously hold the force due to weight. Either reduce the force due to weight or use a motor with a higher rated torque.

For fault value = 152:
- add the measured force due to weight (p1532) to the signal source of p1511.
- if necessary withdraw the BICO interconnection from p1511 (p1511 = 0), and repeat the measurement.

For fault value = 153/154:
- optimum characteristic was not able to be evaluated and activated. If necessary contact the service department, and attach the values of r1962[0...9] and r1963[0...9].

For fault value = 160:

- extend accelerating time when determining kT, moment of inertia and reluctance torque, e.g. by increasing max. speed (p1082), increasing moment of inertia or reducing max. current (p0640).
- in encoderless operation with load moment of inertia, parameterize the load moment of inertia (p1498).
- reduce the ramp-up time (p1958).
- increase speed controller P gain (p1460).
- suppress meas. (p1959).

For fault value = 161:

- reduce the ramp-up time (p1958).
- increase max. speed (p1082).
- reduce current limit (p0640).
- if required, do not activate the kT characteristic (p1780.9 = 0).

For fault value = 165:

- decrease max. current (p0640).

For fault value = 173:

-

For fault value = 180:

- switch-on the infeed
- increase max. speed (p1082).
- reduce p1755.
- suppress meas. (p1909, p1959).

For fault value = 181, 182:

- increase max. speed (p1082).
- if required, deactivate the measurement (p1959.0 = 0).

Note:

- to measure periodic position errors, the encoder must have absolute position information (unique zero mark, distance-coded zero marks, absolute encoder, 1-pole resolver p5263.10).

For fault value = 190:

- set speed setpoint to zero.

For fault value = 191:

- do not start motor data identification routine while motor is still rotating.

For fault value = 192:

- check closed-loop speed control (motor rotor may be locked or closed-loop speed control is not functioning).
- for p1215 = 1, 3 (brake the same as the sequence control) check the control sense (p0410.0).
- ensure that enable signals are present during measurement.
- remove any pulling loads from motor.
- increase max. current (p0640).
- reduce max. speed (p1082).
- suppress meas. (p1959).

For fault value = 193:

- the motor has moved through more than 5 ° electrical (r0093). Lock motor rotor at one of these pole position angles (r0093): 90 °, 210 ° or 330 ° (+/-5 °) and then start identification.

For fault value = 194:

- switch out all supplementary torques (e.g. CI: p1511).
- for hanging/suspended axes: Lock motor rotor at one of these pole position angles (r0093): 90 °, 210 ° or 330 ° (+/-1 °) and then start identification.

For fault value = 195:

- deselect closed-loop torque control (p1300 = 21 or 20, or set the signal source in p1501 to a 0 signal).

For fault value = 200, 201:

- set pulse frequency to 0.5 x current controller frequency (e.g. 4 kHz for a current controller sampling time = 125 us).
- reduce cable length between Motor Module and motor.
- read-out measured values (r1950, r1951) and therefore determine suitable values for p1952, p1953 according to your own estimation.

## 207991 <location>Drive: Data identification activated

**Drive object:** HLA_840, HLA_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Data identification is activated.
Data identification is performed at the next switch-on command. When doing this, the drive moves.
See also:p1910, p1960

**Remedy:** Not necessary.
The alarm is automatically withdrawn after the data identification routine has been successfully completed or for the setting p1910 = 0 or p1960 = 0.
If a POWER ON or a warm restart is performed with motor data identification selected, the motor data identification request will be lost. If motor data identification is required, it will need to be selected again manually following ramp-up.

## 207991 <location>Drive: Motor data identification activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The motor data identification routine is activated.
The motor data identification routine is carried out at the next switch-on command.
See also:p1910, p1960

**Remedy:** Not necessary.
The alarm is automatically withdrawn after the motor data identification routine has been successfully completed or for the setting p1910 = 0 or p1960 = 0.
If a POWER ON or a warm restart is performed with motor data identification selected, the motor data identification request will be lost. If motor data identification is required, it will need to be selected again manually following ramp-up.

## 207993 <location>Drive: Incorrect direction of rotation of the field or encoder actual value inversion

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Either the direction of the rotating field or the encoder actual value has an incorrect sign. The motor data identification automatically changed the actual value inversion (p0410) in order to correct the control sense. This can result in a direction of rotation change.
Note:
To acknowledge this fault, the correctness of the direction of rotation must first be acknowledged with p1910 = -2.

**Remedy:** Check the direction of rotation (also for the position controller, if one is being used).
If the direction of rotation is correct, the following applies:
No additional measures are required (except set p1910 = -2 and acknowledge fault).
If the direction of rotation is incorrect, the following applies:
To change the direction of rotation, two phases must be interchanged and the motor identification routine must be repeated.

## 207995 <location>Drive: Pole position identification not successful

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The pole position identification routine was unsuccessful.

Fault value (r0949, interpret decimal):

1: No current is established.

2: The starting current is not zero.

3: The selected max. distance was exceeded (p1981).

4x: The measuring signal does not permit a clear evaluation.

5: The max. current was exceeded during the measurement.

6: The current measurement must be re-calibrated.

7x: The Sensor Module does not support the pole position identification routine.

8: The pole position identification routine current required is greater than the max. current.

9: The set pole position identification routine current is zero.

10: Data set changeover during the pole position identification.

11: The encoder adjustment to determine the commutation angle is active (p1990 = 1) and the encoder without zero mark is not finely synchronized or does not have any valid data.

100: motion-based pole position identification, 1st and 2nd Measurements differ. Motor blocked or current (p1993) too low.

101: Motion-based pole position identification, insufficient motion, motor blocked or current (p1993) too low.

102: Motion-based pole position identification, brake is being used and is closed. The motion-based pole position identification in conjunction with the brake is not permitted.

103: Motion-based pole position identification without encoder.

104: Motion-based pole position identification, speed actual value not zero after stabilizing time.

200: Elasticity-based pole position identification, internal error in the arctan calculation (0/0).

201: Elasticity-based pole position identification, too few measuring points that can be evaluated.

202: Elasticity-based pole position identification, outliers in the measurement series.

203: Elasticity-based pole position identification, maximum rotation without current.

204: Elasticity-based pole position identification, no positive edge found.

205: Elasticity-based pole position identification, the result of the Fourier transformation differs by more than 480 ° electrical / p3093 from the rough estimate.

206: Elasticity-based pole position identification, plausibility test unsuccessful.

207: Elasticity-based pole position identification, no negative measured value found.

It is possible that all measured values are identical. The expected deflection was not able to be reached, either because the expectation is too high or not enough current was able to be established.

208: Elasticity-based pole position identification, measuring current is 0.

209: Elasticity-based pole position identification, the selected max. distance was exceeded (p3095).

210: Elasticity-based pole position identification without encoder.

250 ... 260:

Elasticity-based pole position identification, more than 3 attempts have been made and fault value 200 ... 210 output.

Example:

Fault value= 253 --> more than 3 attempts have been made and fault value 203 output.

**Remedy:** For fault value = 1:

- check the motor connection and DC link voltage.
- for the following parameters, set practical values that are not zero (p0325, p0329).

For fault value = 1, 2:

- in the case of a large computing time load (e.g. 6 drives with Safety Integrated), set the computing dead time of the current controller to late transfers (p0117 = 3).

For fault value = 3:

- increase the max. distance (p1981).
- reduce the currents for the pole position identification routine (p0325, p0329).
- stop the motor in order to carry out the pole position identification routine.

For fault value = 5:

- reduce the currents for the pole position identification routine (p0325, p0329).

For fault value = 6:

- re-calibrate the Motor Module.

For fault value = 8:

- reduce the currents for the pole position identification routine (p0329, p0325, p1993).
- the power unit cannot provide the necessary pole position identification routine current (p0209 < p0329, p0325, p1993), replace the power unit with a power unit with a higher max. current.

For fault value = 9:

- enter a value not equal to zero in the pole position identification routine current (p0329, p0325, p1993).

For fault value = 10:

- do not initiate a data set changeover during the pole position identification.

For fault value = 11:

- for incremental encoders without commutation with zero mark (p0404.15 = 0), it does not make sense to adjust the encoder to determine the commutation angle (p1990 = 1). In this case, the function should be deselected (p1990 = 0) or, for an encoder with suitable zero mark, commutation with zero mark should be selected (p0404.15 = 1).
- for absolute encoders, only adjust the encoder to determine the commutation angle (p1990 = 1) if the encoder supplies commutation information and is finely synchronized (p1992.8 = 1 and p1992.10 = 1). The encoder is possibly parked, deactivated (p0145), not ready for operation or signals a fault condition.
- deselect the encoder adjustment to determine the commutation angle (set p1990 to 0).

For fault value = 40 ... 49:

- increase the currents for the pole position identification routine (p0325, p0329).
- stop the motor in order to carry out the pole position identification routine.
- select another technique for pole position identification routine (p1980).
- use another motor, absolute encoder or Hall sensors.

For fault value = 70 ... 79:

- upgrade the software in the Sensor Module.

For fault value = 100, 101:

- check and ensure that the motor is free to move.
- increase the current for motion-based pole position identification (p1993).

For fault value = 102:

- if the motor is to be operated with a brake: Select a different technique to identify the pole position (p1980).
- if the motor can be operated without a brake: Open the brake (p1215 = 2).

For fault value = 103:

- the motion-based pole position identification can only be carried out using an encoder. Connect an encoder or select another technique for pole position identification routine (p1980).

For fault value = 104:

- pole position identification, increase the smoothing time, motion-based (p1997).
- pole position identification, increase the rise time, motion-based (p1994).
- pole position identification, check the gain, motion-based (p1995).
- pole position identification, check the integral time, motion-based (p1996).
- for motor encoders with track A/B sq-wave (p0404.3 = 1) and flank time measurement (p0430.20 = 0), disable the integral time (p1996 = 0).

For fault value = 200:

- check parameter setting (p3090 ... p3096).

For fault value = 201:

- check parameter setting (p3090 ... p3096).
- reduce p3094.

For fault value = 202:

- check parameter setting (p3090 ... p3096).
- fault has occurred during the identification. Repeat the measurement.
- check the brake or brake control.

For fault value = 203:

- check the brake or brake control.
- check the measuring current (p3096).
- increase p3094.

For fault value = 204:

- check parameter setting (p3090 ... p3096).

For fault value = 205:

- check parameter setting (p3090 ... p3096).

For fault value = 206:

- check parameter setting (p3090 ... p3096).
- fault has occurred during the identification. Repeat the measurement.
- check the brake or brake control.

For fault value = 207:

- reduce the expected deflection (p3094).
- increase the measuring current (p3096).

For fault value = 208:

- set the measuring current (p3096).

For fault value = 209:

- check parameter setting p3095.
- check the brake or brake control.

For fault value = 210:

- the elasticity-based pole position identification can only be carried out using an encoder. Connect an encoder or select another technique for pole position identification routine (p1980).

For fault value = 250 ... 260:

- check parameter setting (p3090 ... p3096, p1980).

## 207996 <location>Drive: Pole position identification routine not carried out

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** ENCODER (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** In operation, the operating mode that requires a pole position identification was changed over, which is not possible in this state.

- the drive was changed over, flying, from encoderless operation to operation with encoder without having previously carried out a pole position identification for the encoder. p1404 is then at a value between zero and the max. speed and the pulses in the speed range above p1404 were enabled without a pole position ident. routine having been previously carried out in operation with encoder.
- in operation, an EDS changeover was made to an encoder where it is necessary to carry out a pole position identification. However, this has still not been carried out (p1982 = 1 or 2 and p1992.7 = 0).

**Remedy:**

- for a flying changeover between operation with and without encoder with pole position identification after POWER ON or commissioning (p0010 not equal to zero) enable the pulses once at zero speed. This means that the pole position identification routine is carried out and the result is available for operation.
- carry out the EDS changeover with the pulses inhibited, or, before the changeover, carry out a pole position identification using this data set.

## 207998 <location>Drive: Motor data identification active on another drive

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The motor data identification is activated on the drive object specified in the alarm value, and interlocks the other drive objects so they cannot be switched on.
Alarm value (r2124, interpret decimal):
Drive object with the active motor data identification.
See also:p1910, p1960

**Remedy:** - wait for the complete execution of the motor data identification of the drive object designated in the alarm value.
- deselect the motor data identification for the drive object designated in the alarm value (p1910 = 0 or p1960 = 0).

## 207999 <location>Drive: Motor data identification cannot be activated

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Closed-loop control is enabled on a SERVO drive object type. To select motor data identification, pulses must be suppressed for all SERVO drive objects.
Alarm value (r2124, interpret decimal):
Drive object with enabled closed-loop control.

**Remedy:** Withdraw the pulse enable on all drives and re-activate the motor data identification.

## 208000 <location>TB: +/-15 V power supply faulted

**Drive object:** 'All objects

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Terminal Board 30 detects an incorrect internal power supply voltage.
Fault value (r0949, interpret decimal):
0: Error when testing the monitoring circuit.
1: Fault in normal operation.

**Remedy:** - replace Terminal Board 30.
- replace Control Unit.

## 208010 <location>TB: Analog-digital converter

**Drive object:** 'All objects

**Message value:** -

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The analog/digital converter on Terminal Board 30 has not supplied any converted data.

**Remedy:** - check the power supply.
- replace Terminal Board 30.

## 208500 <location>COMM BOARD: Monitoring time configuration expired

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: OFF1 (OFF2)
Servo: OFF1 (OFF2, OFF3)
Hla: OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The monitoring time for the configuration has expired.
Fault value (r0949, interpret decimal):
0: The transfer time of the send configuration data has been exceeded.
1: The transfer time of the receive configuration data has been exceeded.

**Remedy:** Check communications link.

## 208501 <location>PN/COMM BOARD: Setpoint timeout

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF1 (OFF2)
Servo: OFF3 (IASC/DCBRK, NONE, OFF1, OFF2, STOP2)
Hla: OFF3 (NONE, OFF1, OFF2, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The reception of setpoints from the COMM BOARD has been interrupted.
- bus connection interrupted.
- controller switched off.
- controller set into the STOP state.
- COMM BOARD defective.

**Remedy:** - Restore the bus connection and set the controller to RUN.
- if the error is repeated, check the update time set in the bus configuration (HW Config).

## 208502 <location>PN/COMM BOARD: Monitoring time sign-of-life expired

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF1 (OFF2)
Servo: OFF1 (OFF2, OFF3)
Hla: OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The monitoring time for the sign-of-life counter has expired.
The connection to the COMM BOARD was interrupted.

**Remedy:** - check communications link.
- check COMM BOARD.

## 208504 <location>PN/COMM BOARD: Internal cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The cyclic actual and/or setpoint values were not transferred within the specified times.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** Check the parameterizing telegram (Ti, To, Tdp, etc.).

## 208510 <location>PN/COMM BOARD: Send configuration data invalid

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** Infeed: OFF1 (OFF2)
Servo: OFF1 (OFF2, OFF3)
Hla: OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** COMM BOARD did not accept the send-configuration data.
Fault value (r0949, interpret decimal):
Return value of the send-configuration data check.
**Remedy:** Check the send configuration data.

## 208511 <location>PN/COMM BOARD: Receive configuration data invalid

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The drive unit did not accept the receive configuration data.
Alarm value (r2124, interpret decimal):
Return value of the receive configuration data check.
1: Connection established to more drive objects than configured in the device. The drive objects for process data exchange and their sequence are defined in p0978.
2: Too many PZD data words for output or input to a drive object. The number of possible PZD items in a drive object is determined by the number of indices in r2050/p2051 for PZD IF1, and in r8850/p8851 for PZD IF2.
3: Uneven number of bytes for input or output.
4: Setting data for synchronization not accepted. For more information, see A01902.
5: Cyclic operation not active.
17: CBE20 Shared Device: Configuration of the F-CPU has been changed.
223: Illegal clock synchronization for the PZD interface set in p8815[0].
257: PN Shared Device: Too many PZD data words for output or input in the overall device.
500: Illegal PROFIsafe configuration for the interface set in p8815[1].
501: PROFIsafe parameter error (e.g. F_dest).
503: PROFIsafe connection is rejected as long as there is no isochronous connection (p8969).
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** Check the receive configuration data.
For alarm value = 1, 2:
- check the list of the drive objects with process data exchange (p0978). With p0978[x] = 0, all of the following drive objects in the list are excluded from the process data exchange.
For alarm value = 2:
- check the number of data words for output and input to a drive object.
For alarm value = 17:
- CBE20 Shared Device: Unplug/plug A-CPU.
For alarm value = 223, 500:
- check the setting in p8839 and p8815.
- ensure that only one PZD interface is operated in clock synchronism or with PROFIsafe.
For alarm value = 257:
- check the number of data words for output and input to the complete device.
For alarm value = 501:
- check the set PROFIsafe address (p9610).

## 208520 <location>PN/COMM BOARD: Non-cyclic channel error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The memory or the buffer status of the non-cyclic channel has an error.
Alarm value (r2124, interpret decimal):
0: Error in the buffer status.
1: Error in the memory.

**Remedy:** Check communications link.

## 208526 <location>PN/COMM BOARD: No cyclic connection

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** There is no cyclic connection to the control.

**Remedy:** Establish the cyclic connection and activate the control with cyclic operation.
For PROFINET, check the parameters "Name of Station" and "IP of Station" (r61000, r61001).
If a CBE20 is inserted and PROFIBUS is to communicate via PZD Interface 1, then this must be parameterized using the STARTER commissioning tool or directly using p8839.

## 208530 <location>PN/COMM BOARD: Message channel error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The memory or the buffer status of the message channel has an error.
Alarm value (r2124, interpret decimal):
0: Error in the buffer status.
1: Error in the memory.

**Remedy:** Check communications link.

## 208531 <location>CBE20 POWER ON required

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** At least one parameter of the CBE20 (e.g. a parameter associated with SINAMICS Link) was changed as a result of a project download. A POWER ON is required to activate the values.

Note:

CBE20: Communication Board Ethernet 20

**Remedy:** Back up the parameters and carry out a POWER ON (switch-off/switch-on).

## 208550 <location>PZD Interface Hardware assignment error

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The assignment of the hardware to the PZD interface has been incorrectly parameterized.

Alarm value (r2124, interpret decimal):

1: Only one of the two indices is not equal to 99 (automatic).

2: Both PZD interfaces are assigned to the same hardware.

3: Assigned COMM BOARD missing.

4: CBC10 is assigned to interface 1.

**Remedy:** Check the parameterization and if required, correct (p8839).

## 208560 <location>IE: Syntax error in configuration file

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A syntax error has been detected in the ASCII configuration file for the Industrial Ethernet interface (X127). The saved configuration file has not been loaded.

Note:

IE: Industrial Ethernet

**Remedy:** - Check the interface configuration (p8900 and following), correct if necessary, and activate (p8905 = 1).

- Save the parameters for interface configuration (e.g. p8905 = 2)

or

- reinitialize the station using the "Edit Ethernet node" screen form (e.g. with STARTER commissioning tool).

## 208561 <location>IE: Consistency error affecting adjustable parameters

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A consistency error was detected when activating the configuration (p8905) for the Industrial Ethernet interface (X127).
Alarm value (r2124, interpret decimal):
0: general consistency error
1: error in the IP configuration (IP address, subnet mask or standard gateway).
2: Error in the station names.
5: standard gateway is also set at the PROFINET onboard interface.
6: the station name is also set at the PROFINET onboard interface.
7: IP address is located in the same subnet as the IP address of the PROFINET onboard interface.
Note:
For alarm value = 0, 1, 2, 5, 7 the following applies: the configuration was not changed.
For alarm value = 6 the following applies: The new configuration was however activated.
IE: Industrial Ethernet

**Remedy:** - check the required interface configuration (p8900 and following), correct if necessary, and activate (p8905).
or
- reinitialize the station using the "Edit Ethernet node" screen form (e.g. with STARTER commissioning tool).

## 208562 <location>PROFINET: Syntax error in configuration file

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A syntax error has been detected in the ASCII configuration file for the onboard PROFINET interface. The saved configuration file has not been loaded.

**Remedy:** - Check the interface configuration (p8920 and following), correct if necessary, and activate (p8925 = 1).
- Save the parameters for interface configuration (e.g. p8925 = 2).
or
- reinitialize the station using the "Edit Ethernet node" screen form (e.g. with STARTER commissioning tool).

## 208563 <location>PROFINET: Consistency error affecting adjustable parameters

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A consistency error was detected when activating the configuration (p8925) for the PROFINET interface.
Alarm value (r2124, interpret decimal):
0: general consistency error
1: error in the IP configuration (IP address, subnet mask or standard gateway).
2: Name of station error.
3: DHCP was not able to be activated, as a cyclic PROFINET connection already exists.
4: a cyclic PROFINET connection is not possible as DHCP is activated.
5: standard gateway is also set at the Industrial Ethernet interface (X127).
6: standard station name is also set at the Industrial Ethernet interface (X127).
7: IP address is located in the same subnet as the IP address of the Industrial Ethernet interface (X127).
Note:
For alarm value = 0, 1, 2, 3, 4, 5, 7, the following applies: the configuration was not changed.
For alarm value = 6 the following applies: The new configuration was however activated.
DHCP: Dynamic Host Configuration Protocol

**Remedy:** - check the required interface configuration (p8940 and following), correct if necessary, and activate (p8945).
or
- reinitialize the station using the "Edit Ethernet node" screen form (e.g. with STARTER commissioning tool).

## 208564 <location>PN/COMM BOARD: syntax error in the configuration file

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A syntax error has been detected in the ASCII configuration file for the Communication Board Ethernet 20/25/41 (CBE20/CBE25/CBE41). The saved configuration file has not been loaded.

**Remedy:** - Correct and activate the CBExx configuration (p8940 and following) (p8945 = 2).
- Reinitialize the CBExx (e.g. using the STARTER commissioning tool)
Note:
The configuration is not applied until the next POWER ON!

## 208565 <location>PNCOMM BOARD: Consistency error affecting adjustable parameters

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A consistency error was detected when activating the configuration (p8945) for the Communication Board Ethernet 20/25/41 (CBE20/CBE25/CBE41).
Alarm value (r2124, interpret decimal):
0: general consistency error
1: error in the IP configuration (IP address, subnet mask or standard gateway).
2: Error in the station names.
3: DHCP was not able to be activated, as a cyclic PROFINET connection already exists.
4: a cyclic PROFINET connection is not possible as DHCP is activated.
Note:
For all alarm values, the following applies: currently set configuration has not been activated.
DHCP: Dynamic Host Configuration Protocol

**Remedy:** - check the required interface configuration (p8940 and following), correct if necessary, and activate (p8945).
or
- reinitialize the station using the "Edit Ethernet node" screen form (e.g. with STARTER commissioning tool).

## 208700 <location>CAN: Communications error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: OFF3 (NONE, OFF1, OFF2)
Hla: OFF3 (NONE, OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A CAN communications error has occurred.
Fault value (r0949, interpret decimal):
1: The error counter for the send telegrams has exceeded the BUS OFF value 255. The bus disables the CAN controller.
- bus cable short circuit.
- incorrect baud rate.
- incorrect bit timing.
2: The master no longer interrogated the CAN node status longer than for its "life time". The "life time" is obtained from the "guard time" (p8604[0]) multiplied by the "life time factor" (p8604[1]).
- bus cable interrupted.
- bus cable not connected.
- incorrect baud rate.
- incorrect bit timing.
- master fault.
See also r8843.2 IF2 PZD status - fieldbus running.
Note:
The fault response can be set as required using p8641.

**Remedy:** - check the bus cable
- check the baud rate (p8622).
- check the bit timing (p8623).
- check the master.
The CAN controller must be manually restarted with p8608 = 1 after the cause of the fault has been resolved!

## 208701 <location>CAN: NMT state change

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2
Servo: OFF3
Hla: OFF3

**Acknowledge:** IMMEDIATELY

**Cause:** A CANopen NMT state transition from "operational" to "pre-operational" or after "stopped".
Fault value (r0949, interpret decimal):
1: CANopen NMT state transition from "operational" to "pre-operational".
2: CANopen NMT state transition from "operational" to "stopped".
Note:
In the NMT state "pre-operational", process data cannot be transferred and in the NMT state "stopped", no process data and no service data can be transferred.

**Remedy:** Not necessary.
Acknowledge the fault and continue operation.

## 208702 <location>CAN: RPDO Timeout

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF3 (NONE, OFF1, OFF2)
Hla: OFF3 (NONE, OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The monitoring time of the CANopen RPDO telegram has expired because the bus connection was either interrupted or the CANopen Master was switched-off.
See also r8843.0 IF2 PZD status - setpoint failure or r8843.2 IF2 PZD status - fieldbus running.

**Remedy:** - check the bus cable
- check the master.
- If required, increase the monitoring time (p8699).

## 208703 <location>CAN: Maximum number of drive objects exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF3 (NONE, OFF1, OFF2)
Hla: OFF3 (NONE, OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The maximum number of 8 drive objects with the "CAN" function module was exceeded.
Note:
In the CANopen standard, a maximum of 8 CANopen device modules (drive objects with function module "CAN") are defined for each CANopen slave.

**Remedy:** - New commissioning of maximum 8 drive objects with the "CAN" function module in the topology.
- For the drive objects, if required, deselect the "CAN" function module (r0108.29).

## 208751 <location>CAN: Telegram loss

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The CAN controller has lost a receive message.
Alarm value (r2124, interpret decimal):
Hardware channel in the CAN controller.
0: Firmware version < 5.2 (no reference to the original hardware channel).
1: NMT command message
2: SYNC message
3: NMT error control message
7 ... 31: RPDO message
32: SDO message

**Remedy:** - increase the cycle times of the received messages.
- CANopen reduce sampling time (p8848).
See also:p8848 (IF2 PZD sampling time)

## 208752 <location>CAN: Error counter for error passive exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The error counter for the send or receive telegrams has exceeded the value 127.

**Remedy:** - check the bus cable
- set a higher baud rate (p8622).
- check the bit timing and if required optimize (p8623).

## 208753 <location>CAN: Message buffer overflow

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A message buffer overflow.
Alarm value (r2124, interpret decimal):
1: Non-cyclic send buffer (SDO response buffer) overflow.
2: Non-cyclic receive buffer (SDO receive buffer) overflow.
3: Cyclic send buffer (PDO send buffer) overflow.

**Remedy:** - check the bus cable.
- set a higher baud rate (p8622).
- check the bit timing and if required optimize (p8623).
For alarm value = 2:
- reduce the cycle times of the SDO receive messages.
- SDO request from master only after SDO feedback for previous SDO request.

## 208754 <location>CAN: Incorrect communications mode

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** In the "operational" mode, an attempt was made to change parameters p8700 ... p8737.

**Remedy:** Change to the "pre-operational" or "stopped" mode.

## 208755 <location>CAN: Object cannot be mapped

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The CANopen object is not provided for the Process Data Object (PDO) Mapping.

**Remedy:** Use a CANopen object intended for the PDO mapping or enter 0.
The following objects can be mapped in the Receive Process Data Object (RPDO) or Transmit Process Data Object (TPDO):
- RPDO: 6040 hex, 6060 hex, 60FF hex, 6071 hex; 5800 hex - 580F hex; 5820 hex - 5827 hex
- TPDO: 6041 hex, 6061 hex, 6063 hex, 6069 hex, 606B hex, 606C hex, 6074 hex; 5810 hex - 581F hex; 5830 hex - 5837 hex
Only sub-index 0 of the specified objects can be mapped.
Note:
As long as A08755 is present, the COB-ID cannot be set to valid.

## 208756 <location>CAN: Number of mapped bytes exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The number of bytes of the mapped objects exceeds the telegram size for net data. A max. of 8 bytes is permissible.

**Remedy:** Map fewer objects or objects with a smaller data type.

## 208757 <location>CAN: Set COB-ID invalid

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For online operation, the appropriate COB-ID must be set invalid before mapping.
Example:
Mapping for RPDO 1 should be changed (p8710[0]).
--> set p8700[0] = C00006E0 hex (invalid COB-ID)
--> set p8710[0] as required.
--> p8700[0] enter a valid COB-ID

**Remedy:** Set the COB-ID to invalid.

## 208758 <location>CAN: Maximum number of valid PDO exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An attempt was made to exceed the maximum number of valid PDO.
Alarm value (r2124, interpret decimal):
1:
An attempt was made to exceed the total number of valid RPDO of all CANopen supported drive objects.
As a result of the hardware, the limit is 25 valid RPDO.
2:
An attempt was made to exceed the total number of valid TPDO of all CANopen supported drive objects.
The limit is defined by the following ratio:
CAN sampling time (p8848) / CAN minimum processing time (r8739)
Note:
RPDO: Receive Process Data Object
TPDO: Transmit Process Data Object

**Remedy:** Comply with the limit for the maximum number of valid RPDO or TPDO.
Apply one of the following options to delete the alarm:
- successfully write to the COB ID index of a PDO communication parameter (p870x[0], p872x[0]).
- change CANopen NMT state.
- execute CANopen NMT command reset node.
- execute CANopen NMT command reset communication.
- carry out a warm restart (p0009 = 30, p0976 = 2).
- carry out a POWER ON (switch-off/switch-on).

Note:
The remaining available RPDO or TPDO are indicated in r8742.

## 208759 <location>CAN: PDO COB-ID already available

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Parameter: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An existing PDO COB-ID was allocated.
Alarm value (r2124, interpret decimal):
Parameter number.
Note:
The COB-ID is included in index zero (p870x[0], p872x[0]).
**Remedy:** Select another PDO COB-ID.

## 208760 <location>CAN: maximum size of the IF PZD exceeded

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The maximum size of the IF PZD was exceeded.
Alarm value (r2124, interpret decimal):
1: error for IF PZD receive.
2: error for IF PZD send.
Note:
IF: interface
**Remedy:** Map fewer process data in PDO.
Apply one of the following options to delete the alarm:
- POWER ON (switch-off/switch-on).
- carry out a warm restart (p0009 = 30, p0976 = 2).
- execute CANopen NMT command reset node.
- change CANopen NMT state.
- delete alarm buffer [0...7] (p2111 = 0).

## 208800 <location>PROFIenergy energy-saving mode active

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The PROFIenergy energy-saving mode is active
Alarm value (r2124, interpret decimal):
Mode ID of the active PROFIenergy energy-saving mode.
**Remedy:** The alarm is automatically withdrawn when the energy-saving mode is exited.
Note:
The energy-saving mode is exited after the following events:
- the PROFIenergy command end_pause is received from the higher-level control.
- the higher-level control has changed into the STOP operating state.
- the PROFINET connection to the higher-level control has been disconnected.

## 209000 <location>Web server user incorrectly configured

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** An error occurred when configuring the web server user.
Fault value (r0949, interpret decimal):
0: No admin password
1: Invalid admin password
2: Invalid SINAMICS password
**Remedy:** Correct the user configuration, enter a correct password.

## 213000 <location>License not adequate

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** - For the converter, the options that require a license are being used but the licenses are not sufficient.
- an error occurred when checking the existing licenses.
Fault value (r0949, interpret decimal):
0:
The existing license is not sufficient.
1:
An adequate license was not able to be determined as the memory card with the required licensing data was withdrawn in operation.
2:
An adequate license was not able to be determined as there is no licensing data available on the memory card.
3:
An adequate license was not able to be determined as there is a checksum error in the license key.
4:
An internal error occurred when checking the license.
**Remedy:** For fault value = 0:
Additional licenses are required and these must be activated (p9920, p9921).
For fault value = 1:
With the system powered down, re-insert the memory card that matches the system.
For fault value = 2:
Enter and activate the license key (p9920, p9921).
For fault value = 3:
Compare the license key (p9920) entered with the license key on the Certificate of License.
Re-enter the license key and activate (p9920, p9921).
For fault value = 4:
- carry out a POWER ON.
- upgrade firmware to later version.
- contact Technical Support.
Note:
An overview of the converter functions requiring a license can be displayed using a commissioning tool in the online mode. Depending on the commissioning tool, you can obtain the necessary licenses (serial number, license Key, Trial License Mode).

## 213001 <location>Error in license checksum

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When checking the checksum of the license key, an error was detected.

**Remedy:** Compare the license key (p9920) entered with the license key on the Certificate of License.
Re-enter the license key and activate (p9920, p9921).

## 213009 <location>Licensing Technology Extension not licensed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY
**Cause:** At least one Technology Extension that requires a license does not have a license.
Note:
Refer to r4955 and p4955 for information about the installed Technology Extensions.
**Remedy:** - enter and activate the license key for Technology Extensions that require a license (p9920, p9921).
- if necessary, deactivate Technology Extensions that are not licensed (p4956).

## 213010 <location>Licensing function module not licensed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY
**Cause:** At least one function module requiring a license is not licensed.
Fault value (r0949, interpret hexadecimal):
Bit x = 1: The corresponding function module does not have a license.
Note:
Assigning bit number to function module, see p0108 or r0108.
**Remedy:** - enter and activate the license key for function modules that require a license (p9920, p9921).
- if necessary, deactivate unlicensed function modules (p0108, r0108).

## 213020 <location>Licensing not sufficient in the control

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY
**Cause:** For the drive unit, the options that require a license are being used but the licenses are not sufficient.
**Remedy:** - enter and activate the license key for options that require a license.
- if necessary, deactivate unlicensed options.

## 213021 <location>Licensing for output frequencies > 550 Hz missing

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Configuring the converter results in an output frequency greater than 550 Hz. This function requires a license. The "High Output Frequency" license is required.
Note:
- in this specific case, the output frequency is limited to 550 Hz.
- the "Trial License" function is not effective for license "High Output Frequency".

**Remedy:** - enter and activate the license key for "High Output Frequency" and activate (p9920, p9921).
- if necessary operate the motor below the output frequency of 550 Hz.

## 213030 <location>Trial License activated

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The "Trial License" function was activated. One of the available periods is expiring.
**Remedy:** Not necessary.
The alarm is automatically withdrawn after the periods have expired.

## 213031 <location>Trial License period expired

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** One of the available periods of the "Trial License" function has expired.
**Remedy:** - if required, start an additional period (p9918 = 1).
- deactivate functions requiring a license.
- appropriately license the drive unit.
Note:
A license that is not adequate will only become evident after the next time the system runs up.

## 213032 <location>Trial License last period activated

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The "Trial License" function was activated. The last of the available periods is expiring.
**Remedy:** Not necessary.
The alarm is automatically withdrawn after the last period has expired.

## 213033 <location>Trial License last period expired

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The last period of the "Trial License" function has expired. No additional periods available.
**Remedy:** - deactivate functions requiring a license.
- appropriately license the drive unit.
Note:
A license that is not adequate will only become evident after the next time the system runs up.

## 213100 <location>Know-how protection: Copy protection error

**Drive object:** 'All objects

**Message value:** %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY
**Cause:** The know-how protection with copy protection for the memory card is active.
An error has occurred when checking the memory card.
Fault value (r0949, interpret decimal):
0: A memory card is not inserted.
2: An invalid memory card is inserted.
3: The memory card is being used in another Control Unit.
12: An invalid memory card is inserted (OEM input incorrect, p7769).
13: The memory card is being used in another Control Unit (OEM input incorrect, p7759).
**Remedy:** For fault value = 0:
- insert the correct memory card and carry out POWER ON.
For fault value = 2, 3, 12, 13:
- contact the responsible OEM.
- Deactivate copy protection (p7765) and acknowledge the fault (p3981).
- Deactivate know-how protection (p7766 ... p7768) and acknowledge the fault (p3981).
Note:
In general, the copy protection can only be changed when know-how protection is deactivated.
KHP: Know-How Protection
See also:p3981 (Acknowledge drive object faults)

## 213101 <location>Know-how protection: Copy protection cannot be activated

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An error occurred when attempting to activate the copy protection for the memory card.
Fault value (r0949, interpret decimal):
0: A memory card is not inserted.
Note:
KHP: Know-How Protection
**Remedy:** - insert the memory card and carry out POWER ON.
- Try to activate copy protection again (p7765).

## 213102 <location>Know-how protection: Consistency error of the protected data

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF1
**Acknowledge:** IMMEDIATELY

**Cause:** An error was identified when checking the consistency of the protected files. As a consequence, the project on the memory card cannot be run.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = object number, xxxx = fault cause
xxxx = 1:
A file has a checksum error.
xxxx = 2:
The files are not consistent with one another.
xxxx = 3:
The project files, which were loaded into the file system via load (download from the memory card), are inconsistent.
Note:
KHP: Know-How Protection

**Remedy:** - Replace the project on the memory card or replace project files for download from the memory card.
- Restore the factory setting and download again.

## 230001 <location>Power unit: Overcurrent

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has detected an overcurrent condition.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: Rated motor current is significantly greater than that of the Motor Module.
- infeed: High discharge and post-charging currents for line voltage dip.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at switch-on as there is no commutating reactor.
- power cables are not correctly connected.
- the power cables exceed the maximum permissible length.
- power unit defective.
- line phase interrupted.
Additional causes for a parallel switching device (r0108.15 = 1):
- a power unit has tripped (switched off) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.
Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.
Bit 3: Overcurrent in the DC link.
Note:
Fault value = 0 means that the phase with overcurrent is not recognized (e.g. for blocksize device).

**Remedy:** - check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star/delta).
- U/f operation: Increase up ramp.
- U/f operation: Check the assignment of the rated currents of the motor and Motor Module.
- infeed: Check the line supply quality.
- infeed: Reduce the motor load.
- infeed: Check the correct connection of the line filter and the line commutating reactor.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.
- check the line supply phases.

For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

## 230002 <location>Power unit: DC link voltage overvoltage

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has detected overvoltage in the DC link.
- motor regenerates too much energy.
- device supply voltage too high.
- when operating with a Voltage Sensing Module (VSM), the phase assignment L1, L2, L3 at the VSM differs from the phase assignment at the power unit.
- line phase interrupted.

Fault value (r0949, interpret decimal):
DC link voltage at the time of trip [0.1 V].

**Remedy:** - increase the ramp-down time
- activate the DC link voltage controller (p1240)
- use a brake resistor or Active Line Module
- increase the current limit of the infeed or use a larger component (for the Active Line Module)
- check the device supply voltage
- check and correct the phase assignment at the VSM and at the power unit
- check the line supply phases.

See also:p0210 (Drive unit line supply voltage), p1240 (Vdc controller or Vdc monitoring configuration)

## 230003 <location>Power unit: DC link voltage undervoltage

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has detected an undervoltage condition in the DC link.
- line supply failure
- line supply voltage below the permissible value.
- line supply infeed failed or interrupted.
- line phase interrupted.

Note:
The monitoring threshold for undervoltage in the DC link is indicated in r0296.

**Remedy:** - check the line supply voltage
- check the line supply infeed and observe the fault messages relating to it (if there are any)
- check the line supply phases.
- check the line supply voltage setting (p0210).
- booksize units: check the setting of p0278.
Note:
The ready signal for the infeed (r0863) must be interconnected to the associated drive inputs (p0864).
See also:p0210 (Drive unit line supply voltage)

## 230004 <location>Power unit: Overtemperature heat sink AC inverter

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature of the power unit heat sink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.
Fault value (r0949, interpret decimal):
Temperature [0.01 °C].
**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05000 has been undershot.
See also:p1800

## 230005 <location>Power unit: Overload I2t

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The power unit was overloaded (r0036 = 100 %).
- the permissible rated power unit current was exceeded for an inadmissibly long time.
- the permissible load duty cycle was not maintained.
Fault value (r0949, interpret decimal):
I2t [100 % = 16384].
**Remedy:** - reduce the continuous load.
- adapt the load duty cycle.
- check the motor and power unit rated currents.
See also:r0036, r0206, p0307

## 230006 <location>Power unit: Thyristor Control Board

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The Thyristor Control Board (TCB) of the Basic Line Module signals a fault.
- there is no line supply voltage.
- the line contactor is not closed.
- the line supply voltage is too low.
- line supply frequency outside the permissible range (45 ... 66 Hz).
- there is a DC link short-circuit.
- there is a DC link short-circuit (during the precharging phase).
- the motor either has a short-circuit or insulation fault (from an inverter connected to the DC link).
- voltage supply for the Thyristor Control Board outside the nominal range (5 ... 18 V) and line voltage >30 V.
- there is an internal fault in the Thyristor Control Board.

**Remedy:** The faults must be saved in the Thyristor Control Board and must be acknowledged. To do this, the supply voltage of the Thyristor Control Board must be switched out for at least 10 s!
- check the line supply voltage
- check or energize the line contactor.
- check the monitoring time and, if required, increase (p0857).
- if required, observe additional power unit messages/signals.
- check the DC link regarding short-circuit or ground fault.
- check the motor regarding short-circuit or ground fault.
- evaluate diagnostic LEDs for the Thyristor Control Board.

## 230008 <location>Power unit: Sign-of-life error cyclic data

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The Control Unit has not punctually updated the cyclic setpoint telegram to the power unit. The number of consecutive tolerated sign of life errors has exceeded the fault threshold (p7789) set in the power unit.

**Remedy:**
- for projects with the VECTOR drive object, check whether p0117 = 6 has been set on the Control Unit.
- increase the fault threshold (p7789).
- check the Motor Module, and if required replace.

See also:p0117 (Current controller computing dead time mode)

## 230010 <location>Power unit: Sign-of-life error cyclic data

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A DRIVE-CLiQ communication error has occurred between the Control Unit and the power unit involved.
The cyclic setpoint telegrams of the Control Unit were not received on time by the power unit for at least one clock cycle.

**Remedy:** Check the Motor Module and if required, replace.

## 230011 <location>Power unit: Line phase failure in main circuit

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2 (OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** At the power unit, the DC link voltage ripple has exceeded the permissible limit value.
Possible causes:
- a line phase has failed.
- the 3 line phases are inadmissibly asymmetrical.
- the capacitance of the DC link capacitor forms a resonance frequency with the line inductance and the reactor integrated in the power unit.
- the fuse of a phase of a main circuit has ruptured.
- a motor phase has failed.
- for power units operated on a single phase, the permissible active power was exceeded.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- check the main circuit fuses.
- check whether a single-phase load is distorting the line voltages.
- Detune the resonant frequency with the line inductance by using an upstream line reactor.
- Dampen the resonant frequency with the line inductance by switching over the DC link voltage compensation in the software (see p1810) – or increase the smoothing (see p1806). However, this can have a negative impact on the torque ripple at the motor output.
- check the motor feeder cables.

## 230012 <location>Power unit: Temperature sensor wire breakage

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** The connection to a temperature sensor in the power unit is interrupted.
Fault value (r0949, interpret binary):
Bit 0: Module slot (electronics slot)
Bit 1: Air intake
Bit 2: Inverter 1
Bit 3: Inverter 2
Bit 4: Inverter 3
Bit 5: Inverter 4
Bit 6: Inverter 5
Bit 7: Inverter 6
Bit 8: Rectifier 1
Bit 9: Rectifier 2
Bit 14: Capacitor air discharge
Bit 15: Liquid intake

**Remedy:** Contact Technical Support.

## 230013 <location>Power unit: Temperature sensor short circuit

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** A temperature sensor in the power unit is short-circuited.
Fault value (r0949, interpret binary):
Bit 0: Module slot (electronics slot)
Bit 1: Air intake
Bit 2: Inverter 1
Bit 3: Inverter 2
Bit 4: Inverter 3
Bit 5: Inverter 4
Bit 6: Inverter 5
Bit 7: Inverter 6
Bit 8: Rectifier 1
Bit 9: Rectifier 2
Bit 14: Capacitor air discharge
Bit 15: Liquid intake

**Remedy:** Contact Technical Support.

## 230015 <location>Power unit: Phase failure motor cable

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A phase failure in the motor feeder cable was detected.
The signal can also be output in the following case:
- the motor is correctly connected, however the closed-speed control is instable and therefore an oscillating torque is generated.
Note:
Chassis power units do not feature phase failure monitoring.

**Remedy:** - check the motor feeder cables.
- check the speed controller settings.

## 230016 <location>Power unit: Load supply switched off

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The DC link voltage is too low.
Alarm value (r2124, interpret decimal):
DC link voltage at the time of the trip [V].

**Remedy:** - switch on load supply.
- check the line supply if necessary.

## 230017 <location>Power unit: 26.5 V supply voltage fault

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** For a drive that has been enabled, it has been identified that the 26.5 V supply voltage for the Hydraulic Module has a fault (X271).
Permissible range: 26.0 ... 27.0 V
Fault value (r0949, interpret decimal):
Voltage value [0.1 V].

**Remedy:** - check the 26.5 V supply voltage (X271).

## 230017 <location>Power unit: Hardware current limit has responded too often

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The hardware current limitation in the relevant phase (see A30031, A30032, A30033) has responded too often. The number of times the limit has been exceeded depends on the design and type of power unit.
For infeed units, the following applies:
- closed-loop control is incorrectly parameterized.
- load on the infeed is too high.
- Voltage Sensing Module incorrectly connected.
- line reactor missing or the incorrect type.
- power unit defective.

The following applies to Motor Modules:
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Fault value (r0949, interpret binary):
Bit 3: phase U
Bit 4: phase V
Bit 5: phase W
Additional bits:
Only for internal Siemens troubleshooting.
Note:
Fault value = 0 means that the phase with current limiting is not recognized (e.g. for blocksize device).

**Remedy:** For infeed units, the following applies:
- check the controller settings and reset and identify the controller if necessary (p0340 = 2, p3410 = 5)
- reduce the load and increase the DC link capacitance or use a higher-rating infeed if necessary
- check the connection of the optional Voltage Sensing Module
- check the connection and technical data of the commutating reactor.
- check the power cables for short-circuit or ground fault.
- replace power unit.

The following applies to Motor Modules:
- check the motor data and if required, recalculate the controller parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star-delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

## 230020 <location>Power unit: Configuration not supported

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** fault cause: %1, additional information: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A configuration is requested that is not supported by the power unit.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: xxxx = fault cause, yyyy = additional information (internal Siemens)
xxxx = 0: Autonomous operation is requested but is not supported.
xxxx = 1: The requested DRIVE-CLiQ timing is not permissible.
xxxx = 2: A PM260 has been detected with PS-ASIC version 2. This combination is not supported.
xxxx = 3: Initialization was not able to be successfully completed. It is possible that the Control Unit was withdrawn from the Power Module before or during power up.
xxxx = 4: The combination of power unit and Control Unit or Control Unit Adapter is not supported.
xxxx = 5: The higher current controller dynamic performance is not supported.
xxxx = 6: it is not permitted to operate the Motor Module with this Control Unit and firmware version.

**Remedy:** For fault cause = 0:
If required, deactivate an active internal voltage protection (p1231).
For fault cause = 1:
Update the Control Unit firmware or change the DRIVE-CLiQ topology.
For fault cause = 2:
Replace the power unit with a PM260 with PS-ASIC version 3 (or higher).
For fault cause = 3, 4:
Insert a Control Unit or Control Unit Adapter (CUAxx) on an appropriate Power Module and perform a POWER ON for the Control Unit or the Control Unit Adapter.
For fault cause = 5:
- use a booksize format power unit.
- for a Double Motor Module operate the two drive controls with the same current controller sampling time (p0115[0]). Otherwise, the higher current controller dynamics can only be activated on the drive with the longer sampling time.
- if required, deselect the higher current controller dynamic performance (p1810.11 = 0). After deselecting the computing dead time, recalculate the controller gains (p0340 = 4). If required, optimize the speed controller.
For fault cause = 6:
- use a suitable Motor Module.
- use a Control Unit with approved firmware version.
See also:p0115, p1231, p1810

## 230021 <location>Power unit: Ground fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The power has detected a ground fault.
Possible causes:
- ground fault in the power cables.
- ground fault at the motor.
- CT defective.
- when the brake closes, this causes the hardware DC current monitoring to respond.
- short-circuit at the braking resistor.
- the closed-loop circulating current control for devices connected in parallel (r0108.15 = 1) is either too slow or has been set too fast.

Note:
For power units, a ground fault is also emulated in r3113.5.
Fault value (r0949, interpret decimal):
0:
- the hardware DC current monitoring has responded.
- short-circuit at the braking resistor.

> 0:
Absolute value, total current amplitude [20479 = r0209 * 1.4142].

**Remedy:**
- check the power cable connections.
- check the motor.
- check the CT.
- check the cables and contacts of the brake connection (a wire is possibly broken).
- check the braking resistor.

For parallel switching devices (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

See also:p0287 (Ground fault monitoring shutdown threshold)

## 230022 <location>Power unit: Monitoring U_ce

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** In the power unit, the monitoring of the collector-emitter voltage (U_ce) of the semiconductor has responded.
Possible causes:
- fiber-optic cable interrupted.
- power supply of the IGBT gating module missing.
- short-circuit at the power unit output.
- defective semiconductor in the power unit.

Fault value (r0949, interpret binary):
Bit 0: Short-circuit in phase U
Bit 1: Short circuit in phase V
Bit 2: Short-circuit in phase W
Bit 3: Light transmitter enable defective
Bit 4: U_ce group fault signal interrupted
See also:r0949 (Fault value)

**Remedy:**
- check the fiber-optic cable and if required, replace.
- check the power supply of the IGBT gating module (24 V).
- check the power cable connections.
- select the defective semiconductor and replace.

## 230024 <location>Power unit: Overtemperature thermal model

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature difference between the heat sink and chip has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

See also:r0037
**Remedy:**
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

## 230025 <location>Power unit: Chip overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The chip temperature of the semiconductor has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949, interpret decimal):
Temperature difference between the heat sink and chip [0.01 °C].
**Remedy:**
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05001 has been undershot.
See also:r0037

## 230027 <location>Power unit: Precharging DC link time monitoring

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Enable signals: %1, Status: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The power unit DC link was not able to be precharged within the expected time.
1) There is no line supply voltage connected.
2) The line contactor/line side switch has not been closed.
3) The line supply voltage is too low.
4) Line supply voltage incorrectly set (p0210).
5) The precharging resistors are overheated as there were too many precharging operations per time unit.
6) The precharging resistors are overheated as the DC link capacitance is too high.
7) The precharging resistors are overheated because when there is no "ready for operation" (r0863.0) of the infeed unit, power is taken from the DC link.
8) The precharging resistors are overheated as the line contactor was closed during the DC link fast discharge through the Braking Module.
9) The DC link has either a ground fault or a short-circuit.
10) The precharging circuit is possibly defective (only for chassis units).
11) Infeed is defective and/or fuse has ruptured in the Motor Module (only Booksize units).
Fault value (r0949, interpret binary):
yyyyxxxx hex:
yyyy = power unit state
0: Fault status (wait for OFF and fault acknowledgment).
1: Restart inhibit (wait for OFF).
2: Overvoltage condition detected -> change into the fault state.
3: Undervoltage condition detected -> change into the fault state.
4: Wait for bridging contactor to open -> change into the fault state.
5: Wait for bridging contactor to open -> change into restart inhibit.
6: Wait for bypass contactor to open
7: Commissioning.
8: Ready for precharging.
9: Precharging started, DC link voltage lower than the minimum switch-on voltage
10: Precharging, DC link voltage end of precharging still not detected
11: Wait for the end of the de-bounce time of the main contactor after precharging has been completed.
12: Precharging completed, ready for pulse enable.
13: It was detected that the STO terminal was energized at the power unit
xxxx = Missing internal enable signals, power unit (inverted bit-coded, FFFF hex -> all internal enable signals available)
Bit 0: Power supply of the IGBT gating shut down.
Bit 1: Ground fault detected.
Bit 2: Peak current intervention.
Bit 3: I2t exceeded.
Bit 4. Thermal model overtemperature calculated.
Bit 5: (heat sink, gating module, power unit) overtemperature measured.
Bit 6: Reserved.
Bit 7: Overvoltage detected.
Bit 8: Power unit has completed precharging, ready for pulse enable.
Bit 9: STO terminal missing.
Bit 10: Overcurrent detected.
Bit 11: Armature short-circuit active.
Bit 12: DRIVE-CLiQ fault active.
Bit 13: Vce fault detected, transistor de-saturated due to overcurrent/short-circuit.
Bit 14: Undervoltage detected.
See also:p0210 (Drive unit line supply voltage)

**Remedy:** In general:
- check the line supply voltage at the input terminals.
- check the line supply voltage setting (p0210).

For booksize drive units, the following applies:
- wait (approx. 8 minutes) until the precharging resistors have cooled down. For this purpose, preferably disconnect the infeed unit from the line supply.

For 5):
- carefully observe the permissible precharging frequency (refer to the appropriate Manual).

For 6):
- check the total capacitance of the DC link and reduce in accordance with the maximum permissible DC link capacitance if necessary (refer to the appropriate Manual).

For 7):
- interconnect the ready-for-operation signal from the infeed unit (r0863.0) in the enable logic of the drives connected to this DC link

For 8):
- check the connections of the external line contactor. The line contactor must be open during DC link fast discharge.

For 9):
- check the DC link for ground faults or short circuits.

For 11):
- check the DC link voltage of the infeed (r0070) and Motor Modules (r0070).

If the DC link voltage generated by the infeed (or external) is not displayed for the Motor Modules (r0070), then a fuse has ruptured in the Motor Module.

See also:p0210 (Drive unit line supply voltage)

## 230030 <location>Power unit: Internal overtemperature alarm

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature inside the drive converter has exceeded the permissible temperature limit.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.

Alarm value (r2124, interpret decimal):

Only for internal Siemens troubleshooting.

**Remedy:**
- possibly use an additional fan.
- check whether the ambient temperature is in the permissible range.

Notice:

This alarm is automatically withdrawn once the permissible temperature limit value has been fallen below minus 5 K.

## 230031 <location>Power unit: Hardware current limiting in phase U

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Hardware current limit for phase U responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

**Remedy:**
- check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

## 230032 <location>Power unit: Hardware current limiting in phase V

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Hardware current limit for phase V responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

**Remedy:** Check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

## 230033 <location>Power unit: Hardware current limiting in phase W

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Hardware current limit for phase W responded. The pulsing in this phase is inhibited for one pulse period.
- closed-loop control is incorrectly parameterized.
- fault in the motor or in the power cables.
- the power cables exceed the maximum permissible length.
- motor load too high
- power unit defective.

Note:
Alarm A30031 is always output if, for a Power Module, the hardware current limiting of phase U, V or W responds.

**Remedy:** - check the motor data and if required, recalculate the control parameters (p0340 = 3). As an alternative, run a motor data identification (p1910 = 1, p1960 = 1).
- check the motor circuit configuration (star/delta).
- check the motor load.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.

## 230034 <location>Power unit: Internal overtemperature

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for internal overtemperature has been reached.
If the temperature inside the power unit increases up to the fault threshold, then fault F30036 is triggered.
- ambient temperature might be too high.
- insufficient cooling, fan failure.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Overtemperature in the control electronics area.
Bit 1 = 1: Overtemperature in the power electronics area.
Bit 2 = 1: Overtemperature in the processor area.
Bit 3 = 1: Overtemperature in the processor area.
Bit 4 = 1: Overtemperature when the internal fan is defective.
Bit 5 = 1: Intake air overtemperature.
**Remedy:** - check the ambient temperature.
- check the fan for the inside of the unit.

## 230035 <location>Power unit: Air intake overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The air intake in the power unit has exceeded the permissible temperature limit.
For air-cooled power units, the temperature limit is at 55 °C.
- ambient temperature too high.
- insufficient cooling, fan failure.
Fault value (r0949, interpret decimal):
Temperature [0.01 °C].
**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05002 has been undershot.

## 230036 <location>Power unit: Internal overtemperature

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The temperature inside the converter has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
Fault value (r0949, interpret binary):
Bit 0 = 1: Overtemperature in the control electronics area.
Bit 1 = 1: Overtemperature in the power electronics area.
Bit 2 = 1: Overtemperature in the processor area.
Bit 3 = 1: Overtemperature in the processor area.
Bit 4 = 1: Overtemperature when the internal fan is defective.
Bit 5 = 1: Intake air overtemperature.

**Remedy:**
- check the internal fan.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged once the permissible temperature limit minus 5 K has been fallen below.

## 230037 <location>Power unit: Rectifier overtemperature

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The temperature in the rectifier of the power unit has exceeded the permissible temperature limit.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- line supply phase failure.
Fault value (r0949, interpret decimal):
Temperature [0.01 °C].

**Remedy:**
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- check the line supply phases.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05004 has been undershot.

## 230038 <location>Power unit: Capacitor fan monitoring

**Drive object:** B_INF_840

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The capacitor fan signals a fault.

**Remedy:** Replace the capacitor fan in the power unit.

## 230039 <location>Power unit: Failure capacitor fan

**Drive object:** B_INF_840

**Message value:** %1

**Reaction:** OFF1

**Acknowledge:** IMMEDIATELY

**Cause:** The capacitor fan has failed.
**Remedy:** Replace the capacitor fan in the power unit.

## 230040 <location>Power unit: Undervolt 24 V

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The undervoltage threshold of the 24 V power supply for the power unit was fallen below for longer than 3 ms.
Note:
- for booksize power units, the undervoltage threshold is 15 V.
- for all other power units, the undervoltage threshold depends on the power unit, and is not displayed.
Fault value (r0949, interpret decimal):
24 V voltage [0.1 V].
**Remedy:** - check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.

## 230040 <location>Power unit: Undervolt 24/48 V

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Channel: %1, voltage: %2 [0.1 V]
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The undervoltage threshold of the 24 V power supply for the power unit was fallen below for longer than 3 ms.
Note:
- for booksize power units, the undervoltage threshold is 15 V.
- for CU310-2, CUA31 and CUA32 the undervoltage threshold is 16 V.
- for all other power units (e.g. S120M), the undervoltage threshold depends on the power unit, and is not displayed.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]
yy = 0: 24 V power supply
yy = 1: 48 V power supply
**Remedy:** - check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.

## 230041 <location>Power unit: Undervoltage 24 V alarm

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the power unit power supply, the lower threshold has been violated.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.

## 230041 <location>Power unit: Undervolt 24/48 V alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Channel: %1, voltage: %2 [0.1 V]
**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For the power unit power supply, the lower threshold has been violated.
Alarm value (r2124, interpret hexadecimal):
yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]
yy = 0: 24 V power supply
yy = 1: 48 V power supply

**Remedy:** - check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.

## 230042 <location>Power unit: Fan has reached the maximum operating hours

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The maximum operating time of at least one fan will soon be reached, or has already been exceeded.
Alarm value (r2124, interpret binary):
Bit 0 = 1:
The operating hours counter of the heat sink fan will reach the maximum operating time in 500 hours. After 500 hours has elapsed, bit 0 is cleared and bit 2 is set in the alarm value.
Bit 1 = 1:
The wear counter of the heat sink fan has reached 99 %. The remaining service life is 1%. After this 1% has elapsed, bit 1 is cleared and bit 2 is set in the alarm value.
Bit 2 = 1:
The operating hours counter of the heat sink fan has exceeded the maximum operating time - and/or the wear counter has exceeded 100%.
Bit 8 = 1:
The operating hours counter of the fan inside the device will reach the maximum operating time in 500 hours. After 500 hours has elapsed, bit 8 is cleared and bit 10 is set in the alarm value.
Bit 10 = 1:
The operating hours counter of the fan inside the device has exceeded the maximum operating time.

**Remedy:** For the fan involved, carry out the following:
- replace the fan.
- reset the operating hours counter (p0251, p0254).
See also:p0251 (Power unit heat sink fan operating hours counter), p0252 (Power unit heat sink fan operating time maximum), p0254 (Operating hours counter power unit fan inside the converter), r0277 (Power unit heat sink fan wear counter)

## 230043 <location>Power unit: Overvolt 24 V

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** For the power unit power supply, the upper threshold has been violated.
Fault value (r0949, interpret decimal):
24 V voltage [0.1 V].

**Remedy:** Check the power supply of the power unit.

## 230043 <location>Power unit: Overvolt 24/48 V

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Channel: %1, voltage: %2 [0.1 V]

**Reaction:** OFF2

**Acknowledge:** POWER ON
**Cause:** For the power unit power supply, the upper threshold has been violated.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]
yy = 0: 24 V power supply
yy = 1: 48 V power supply
**Remedy:** Check the power supply of the power unit.

## 230044 <location>Power unit: Overvoltage 24 V alarm

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the power unit power supply, the upper threshold has been violated.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** Check the power supply of the power unit.

## 230044 <location>Power unit: Overvolt 24/48 V alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Channel: %1, voltage: %2 [0.1 V]
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the power unit power supply, the upper threshold has been violated.
Alarm value (r2124, interpret hexadecimal):
yyxxxx hex: yy = channel, xxxx = voltage [0.1 V]
yy = 0: 24 V power supply
yy = 1: 48 V power supply
**Remedy:** Check the power supply of the power unit.

## 230045 <location>Power unit: Supply undervoltage

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Power supply fault in the power unit.
- the voltage monitor signals an undervoltage fault on the module.
The following applies for CU31x:
- the voltage monitoring on the DAC board signals an undervoltage fault on the module.
**Remedy:**
- check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.
- replace the module if necessary.

## 230045 <location>Power unit: Supply undervoltage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** Power supply fault in the power unit.
- the voltage monitor signals an undervoltage fault on the module.
The following applies for CU31x:
- the voltage monitoring on the DAC board signals an undervoltage fault on the module.
For S120M, the following applies:
- this message is displayed for undervoltage or overvoltage.

**Remedy:**
- check the power supply of the power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.
- replace the module if necessary.

## 230046 <location>Power unit: Undervoltage alarm

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Before the last restart, a problem occurred at the power unit power supply.
The voltage monitor in the internal FPGA of the PSA signals an undervoltage fault on the module.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:**
- check the 24 V DC voltage supply to power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.
- replace the module if necessary.

## 230046 <location>Power unit: Undervoltage alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Before the last restart, a problem occurred at the power unit power supply.
The voltage monitor in the internal FPGA of the PSA signals an undervoltage fault on the module.
Alarm value (r2124, interpret decimal):
Register value of the voltage fault register.
**Remedy:**
- check the 24 V DC voltage supply to power unit.
- carry out a POWER ON (switch-off/switch-on) for the component.
- replace the module if necessary.

## 230047 <location>Cooling unit: Cooling medium flow rate too low

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The flow rate of the cooling unit has fallen below the fault threshold.
**Remedy:**
- check the feedback signals and parameter assignment (p0260 ... p0267).
- check the coolant feed.
- check the thermal conductivity of the coolant.
- check the coolant concentration.

## 230048 <location>Power unit: fan defective

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The feedback signal from a fan indicates a fault.
- fan defective.
- fan blocked.
- feedback signal inaccurate.
- fan power supply interrupted (only for r0193.13 = 1 and heat sink fan)

Alarm value (r2124, interpret binary):
Bit 0 = 1: heat sink fan
Bit 1 = 1: fan inside the device
Note:
- for firmware version < 5.1 of the power unit, the alarm value is always 0. The alarm then refers to the heat sink fan.
- for r0193.13 = 1, fault F30058 is output instead of this alarm for heat sink fans, if the pulses are inhibited or the fault occurs within 10 s after the fan runs up when the pulses are enabled.
- for r0193.13 = 1, fault F30059 is output instead of this alarm for fans inside the unit, if the air intake temperature (r0037[3]) has exceeded a specific threshold.

**Remedy:**
- check the fan involved.
- if required, replace the fan.
- check the fan power supply and if required switch on (only for r0193.13 = 1 and heat sink fan).

Note:
If the alarm has been withdrawn, this does not necessarily mean that the cause of the fault has been resolved. It is also possible that the software switched off the fan, and therefore can no longer evaluate the feedback signal.

## 230049 <location>Power unit: Internal fan faulty

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The internal fan has failed.

**Remedy:** Check the internal fan and replace if necessary.

## 230050 <location>Power unit: 24 V supply overvoltage

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** The voltage monitor signals an overvoltage fault on the module.

**Remedy:**
- check the 24 V power supply.
- replace the module if necessary.

## 230051 <location>Power unit: Motor holding brake short circuit detected

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A short-circuit at the motor holding brake terminals has been detected.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- check the motor holding brake for a short-circuit.
- check the connection and cable for the motor holding brake.

## 230052 <location>EEPROM data error

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** EEPROM data error of the power unit module.
Fault value (r0949, interpret decimal):
0, 2, 3, 4:
The EEPROM data read in from the power unit module are incorrect.
1:
EEPROM data is not compatible to the firmware of the power unit application.
Additional values:
Only for internal Siemens troubleshooting.
**Remedy:** For fault value = 0, 2, 3, 4:
Replace the power unit module or update the EEPROM data.
For fault value = 1:
The following applies for CU31x and CUA31:
Update the firmware \SIEMENS\SINAMICS\CODE\SAC\cu31xi.ufw (cua31.ufw)

## 230053 <location>FPGA data faulty

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** POWER ON
**Cause:** The FPGA data of the power unit are faulty. This can be caused, for example, if a firmware update is interrupted.
**Remedy:** Replace the power unit or update of the FPGA data by updating the firmware.
Note:
If this fault occurs after a firmware update, then update the firmware again.

## 230054 <location>Power unit: Undervoltage when opening the brake

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When the brake is being opened, it is detected that the power supply voltage is less than 21.4 V
Alarm value (r2124, interpret decimal):
Supply voltage fault [0.1 V].
Example:
Alarm value = 195 --> voltage = 19.5 V
**Remedy:** Check the 24 V voltage for stability and value.

## 230055 <location>Power unit: Braking chopper overcurrent

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** An overcurrent condition has occurred in the braking chopper.

**Remedy:** - check whether the braking resistor has a short circuit.
- for an external braking resistor, check whether the resistor may have been dimensioned too small.
Note:
The braking chopper is only enabled again at pulse enable after the fault has been acknowledged.

## 230057 <location>Power unit: Line asymmetry

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Frequencies have been detected on the DC link voltage that would suggest line asymmetry or failure of a line phase.
It is also possible that a motor phase has failed.
Fault F30011 is output if the alarm is present and at the latest after 5 minutes.
The precise duration depends on the power unit type and the particular frequencies. For booksize and chassis power units, the duration also depends on how long the alarm has been active.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - check the line phase connection.
- check the motor feeder cable connections.
If there is no phase failure of the line or motor, then line asymmetry is involved.
- reduce the power in order to avoid fault F30011.

## 230058 <location>Power unit: heat sink fan defective

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** The feedback signal from the heat sink fan signals a fault.
- fan defective.
- fan blocked.
- feedback signal inaccurate.
- fan power supply interrupted (only for r0193.13 = 1)
**Remedy:** - check the heat sink fan and replace if necessary.
- check the fan power supply and if required switch on (only for r0193.13 = 1)
- if, for an S120 Combi, a separately driven fan with feedback signal is used, then check its wiring (X12.2 or X13.2).
Note:
- if a separately driven fan without feedback signal is used for an S120 Combi, instead of the feedback signal of the fan, a connection to ground must be established (X12.1/2 or X13.1/2).
- if the fault can be acknowledged, this does not necessarily mean that the cause of the fault has been resolved. It is also possible that the software switched off the fan, and therefore can no longer evaluate the feedback signal.

## 230059 <location>Power unit: Internal fan faulty

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The internal power unit fan has failed and is possibly defective.
**Remedy:** Check the internal fan and replace if necessary.
Note:
If the fault can be acknowledged, this does not necessarily mean that the cause of the fault has been resolved. It is also possible that the software switched off the fan, and therefore can no longer evaluate the feedback signal.

## 230060 <location>Precharge contactor state monitoring

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A feedback signal for the precharging contactor (ALM, SLM, BLM diode) or the line contactor (BLM thyristor) interconnected and the monitoring activated.
After switching-in/switching-out the contactor, a correct feedback signal was not received within the monitoring time set in p0255[0, 2].
Fault value (r0949, interpret binary):
Bit 0: The time set in p0255[0, 2] was exceeded when switching-in/switching-out the contactor.
Bit 1: The precharging contactor was opened while precharging or in the infeed mode (BLM thyristor).
Bit 2: The precharging contactor was switched-in in the OFF state or during infeed operation.

**Remedy:** - check the monitoring time setting (p0255[0, 2]).
- check the contactor wiring and activation.
- replace the contactor.
See also:p0255 (Power unit contactor monitoring time)

## 230061 <location>Bridging contactor monitoring

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A feedback signal for the bypass contactor is interconnected and the monitoring activated.
After switching-in/switching-out the contactor, a correct feedback signal was not received within the monitoring time set in p0255[1, 3].
Fault value (r0949, interpret binary):
Bit 0: The time set in p0255[1, 3] was exceeded when switching-in/switching-out the contactor.
Bit 1: The bypass contactor was opened in operation.
Bit 2: The bypass contactor was switched-in in the OFF state or during precharging.

**Remedy:** - check the monitoring time setting (p0255[1, 3]).
- check the contactor wiring and activation.
- replace the contactor.
See also:p0255 (Power unit contactor monitoring time)

## 230066 <location>Power unit: overtemperature, alarm capacitor air discharge

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The air discharged from the DC link capacitor has exceeded the alarm threshold.
- ambient temperature too high.
- insufficient cooling, fan failure.
Alarm value (r2124, interpret decimal):
Temperature when reaching the alarm threshold [0.01 °C].
Note:
If operation is unchanged, then the permissible limit value can be exceeded. In this case, fault F30067 is output and the pulses inhibited.

**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Note:
This alarm is only withdrawn after the alarm threshold has been fallen below - and the corresponding hysteresis.

## 230067 <location>Power unit: overtemperature, fault capacitor air discharge

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The air discharged from the DC link capacitor has exceeded the permissible limit.
- ambient temperature too high.
- insufficient cooling, fan failure.
Fault value (r0949, interpret decimal):
Temperature when reaching the limit value [0.01 °C].
**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Note:
This fault can only be acknowledged after the limit value has been fallen below, and the corresponding hysteresis (5 K).

## 230068 <location>Power unit: undertemperature inverter heat sink

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The actual inverter heat sink temperature is below the permissible minimum value.
Possible causes:
- the power unit is being operated at an ambient temperature that lies below the permissible range.
- the temperature sensor evaluation is defective.
Fault value (r0949, interpret decimal):
Inverter heat sink temperature [0.1 °C].
**Remedy:** - ensure that higher ambient temperatures prevail.
- replace the power unit.

## 230070 <location>Cycle requested by the power unit module not supported

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A cycle is requested that is not supported by the power unit.
Fault value (r0949, interpret hexadecimal):
0: The current control cycle is not supported.
1: The DRIVE-CLiQ cycle is not supported.
2: Internal timing problem (clearance between RX and TX instants too low).
3: Internal timing problem (TX instant too early).

**Remedy:** The power unit only supports the following cycles:
62.5 µs, 125 µs, 250 µs and 500 µs
For fault value = 0:
Set a permitted current control cycle.
For fault value = 1:
Set a permitted DRIVE-CLiQ cycle.
For fault value = 2, 3:
Contact the manufacturer (you may have an incompatible firmware version).

## 230071 <location>No new actual values received from the power unit

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The number of actual value telegrams from the power unit module that have failed has exceeded the permissible number.
**Remedy:** Check the interface (adjustment and locking) to the power unit module.

## 230072 <location>Setpoints can no longer be transferred to the power unit

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The following applies for CU31x and CUA31:
More than one setpoint telegram was not able to be transferred to the power unit module.
**Remedy:** The following applies for CU31x and CUA31:
Check the interface (adjustment and locking) to the power unit module.

## 230073 <location>Actual value/setpoint preprocessing no longer synchronous

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Communication with the power unit module is no longer in synchronism with the current control cycle.
**Remedy:** Wait until synchronization is re-established.

## 230074 <location>Communication error between the Control Unit and Power Module

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** Communications between the Control Unit (CU) and Power Module (PM) via the interface no longer possible. The CU may have been withdrawn or is incorrectly inserted.
Fault value (r0949, interpret hexadecimal):
0 hex:
- a Control Unit with external 24 V supply was withdrawn from the Power Module during operation.
- with the Power Module switched off, the external 24 V supply for the Control Unit was interrupted for some time.
1 hex:
The Control Unit was withdrawn from the Power Module during operation, although the encoderless safe motion monitoring functions are enabled. This is not supported. After re-inserting the Control Unit in operation, communications to the Power Module no longer possible.
20A hex:
The Control Unit was inserted on a Power Module, which has another code number.
20B hex:
The Control Unit was inserted on a Power Module, which although it has the same code number, has a different serial number.
601 hex:
The Control Unit was inserted on a Power Module, whose power/performance class (chassis unit) is not supported.

**Remedy:** Reinsert the Control Unit (CU) or the Control Unit Adapter (CUAxx) onto the original Power Module and continue operation. If required, carry out a POWER ON for the CU and/or the CUA.

## 230075 <location>Configuration of the power unit unsuccessful

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A communication error has occurred while configuring the power unit using the Control Unit. The cause is not clear.
Fault value (r0949, interpret decimal):
0:
The output filter initialization was unsuccessful.
1:
Activation/deactivation of the regenerative feedback functionality was unsuccessful.
2:
Activation/deactivation of the chopper function was unsuccessful.
**Remedy:** - acknowledge the fault and continue operation.
- if the fault reoccurs, carry out a POWER ON (switch-off/switch-on).
- if required, replace the power unit.

## 230076 <location>Power unit: thermal overload internal braking resistor alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The energy absorbed by the internal braking resistor has exceeded the alarm threshold of 80 %. If the power unit is still operated in the generator mode, then this can reach the shutdown threshold. To avoid overheating of the braking resistor, use of the braking resistor is inhibited and alarm A30077 is output.
Alarm value (r2124, interpret decimal):
Energy absorbed by the braking resistor [Ws].
**Remedy:** Reduce the power when generating.
Note:
For a DC link coupling, the generating power of all of the coupled power units must be taken into consideration.

## 230077 <location>Power unit: thermal overload internal braking resistor

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The internal braking resistor is thermally overloaded. This is the reason that its use was inhibited.
Alarm value (r2124, interpret decimal):
Energy absorbed by the braking resistor [Ws].
**Remedy:** Reduce the power when generating.
Note:
- once the internal braking resistor has thermally recovered, it is enabled for further use.
- for a DC link coupling, the generating power of all the coupled power units must be taken into consideration.

## 230078 <location>Power unit: defective fan or line reactor has overheated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature monitoring of the internal braking resistor or the line reactor has responded. In addition to the OFF2 response, the use of the internal braking resistor was inhibited.
Note:
- an overtemperature condition of the internal braking resistor can only be initiated as a result of a defective fan.
- an overtemperature condition of the line reactor can occur when a DC link coupling is used – and if the power when motoring, which is fed into the DC link - is not evenly distributed across the rectifiers of the power units.
**Remedy:** - check the converter fan and replace if necessary.
- reduce the motoring power.

## 230079 <location>Power unit: referred to the supply voltage, the DC link voltage is too high

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm is output if the following conditions are simultaneously satisfied:
1. The device supply voltage (p0210) was reduced.
2. A DC link voltage is present, which is too high when referred to the new supply voltage.
DC link precharging cannot be completed as this could place some converter components at risk.
Alarm value (r2124, interpret decimal):
Voltage value to which the DC link voltage must, in the meantime, be reduced in order to complete precharging [V].
See also:p0210 (Drive unit line supply voltage)
**Remedy:** As a minimum, reduce the DC link voltage to the voltage specified in the alarm value.
Note:
The alarm is automatically withdrawn if the DC link voltage drops below the voltage specified in the alarm value.
Fault F07802 is output if an attempt is made to enable the pulses even though an alarm is active.

## 230080 <location>Power unit: Current increasing too quickly

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has detected an excessive rate of rise in the overvoltage range.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- infeed: High discharge and post-charging currents for line voltage dip.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at switch-on as there is no commutating reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Additional causes for a parallel switching device (r0108.15 = 1):
- a power unit has tripped (switched off) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.

Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

**Remedy:**
- check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star-delta)
- U/f operation: Increase up ramp.
- U/f operation: Check assignment of rated currents of motor and power unit.
- infeed: Check the line supply quality.
- infeed: Reduce the motor load.
- infeed: Correct connection of the line reactor.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

## 230081 <location>Power unit: Switching operations too frequent

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has executed too many switching operations for current limitation.
- closed-loop control is incorrectly parameterized.
- motor has a short-circuit or fault to ground (frame).
- U/f operation: Up ramp set too low.
- U/f operation: rated current of motor much greater than that of power unit.
- infeed: High discharge and post-charging currents for line voltage dip.
- infeed: High post-charging currents for overload when motoring and DC link voltage dip.
- infeed: Short-circuit currents at switch-on as there is no commutating reactor.
- power cables are not correctly connected.
- power cables exceed the maximum permissible length.
- power unit defective.

Additional causes for a parallel switching device (r0108.15 = 1):
- a power unit has tripped (switched off) due to a ground fault.
- the closed-loop circulating current control is either too slow or has been set too fast.

Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

**Remedy:**
- check the motor data - if required, carry out commissioning.
- check the motor circuit configuration (star-delta)
- U/f operation: Increase up ramp.
- U/f operation: Check assignment of rated currents of motor and power unit.
- infeed: Check the line supply quality.
- infeed: Reduce the motor load.
- infeed: Correct connection of the line reactor.
- check the power cable connections.
- check the power cables for short-circuit or ground fault.
- check the length of the power cables.
- replace power unit.

For a parallel switching device (r0108.15 = 1) the following additionally applies:
- check the ground fault monitoring thresholds (p0287).
- check the setting of the closed-loop circulating current control (p7036, p7037).

## 230082 <location>Power unit: cooling medium flow rate too low alarm threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The flow rate is too low, and has fallen below the specified alarm threshold. If the flow rate is still too low after the specified time has expired, then fault F30083 is output.
**Remedy:**
- check the coolant flow rate.
- check the thermal conductivity of the coolant.
- check the coolant concentration.

## 230083 <location>Power unit: cooling medium flow rate too low fault threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The flow rate is too low, and has fallen below the specified fault threshold.

**Remedy:** - check the coolant flow rate.
- check the thermal conductivity of the coolant.
- check the coolant concentration.

## 230086 <location>Power unit: coolant temperature has exceeded the alarm threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The coolant temperature has exceeded the specified alarm threshold.
If the coolant temperature increases up to the specified fault threshold, then fault F30087 is output.
Alarm value (r2124, interpret decimal):
Coolant temperature.
**Remedy:** Check the cooling system and the ambient conditions.

## 230087 <location>Power unit: coolant temperature has exceeded the fault threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The coolant temperature has exceeded the specified fault threshold.
Fault value (r0949, interpret decimal):
Coolant temperature.
**Remedy:** Check the cooling system and the ambient conditions.

## 230105 <location>PU: Actual value sensing fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** At least one incorrect actual value channel was detected on the Power Stack Adapter (PSA).
The incorrect actual value channels are displayed in the following diagnostic parameters.
**Remedy:** Evaluate the diagnostic parameters.
If the actual value channel is incorrect, check the components and if required, replace.

## 230314 <location>Power unit: 24 V power supply overloaded by PM

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The 24 V power supply through the Power Module (PM) is overloaded.
An external 24 V power supply via X124 on the Control Unit is not connected.
**Remedy:** Connect an external 24 V power supply via X124 at the Control Unit.

## 230315 <location>Power unit: 24 V power supply overloaded by PM

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The 24 V power supply through the Power Module (PM) is overloaded.
An external 24 V power supply via X124 on the Control Unit is not connected.
**Remedy:** Connect an external 24 V power supply via X124 at the Control Unit.

## 230502 <location>Power unit: DC link overvoltage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The power unit has detected overvoltage in the DC link on a pulse inhibit.
- device supply voltage too high.
- line reactor incorrectly dimensioned.
Alarm value (r0949, interpret decimal):
DC link voltage [1 bit = 100 mV].
See also:r0070
**Remedy:** - check the device supply voltage (p0210).
- check the dimensioning of the line reactor.
See also:p0210 (Drive unit line supply voltage)

## 230600 <location>SI P2: STOP A initiated

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive-integrated "Safety Integrated" function in monitoring channel 2 has detected a fault and initiated a STOP A (STO via the safety switch-off signal path of monitoring channel 2).
- forced checking procedure (test stop) of the safety switch-off signal path of monitoring channel 2 unsuccessful.
- subsequent response to fault F30611 (defect in a monitoring channel).
Fault value (r0949, interpret decimal):
0: stop request from the Control Unit.
1005: STO active although STO not selected and there is no internal STOP A present.
1010: STO inactive although STO is selected or an internal STOP A is present.
9999: Subsequent response to fault F30611.
**Remedy:** - select Safe Torque Off and deselect again.
- carry out a POWER ON (switch-off/switch-on) for all components.
- replace Hydraulic Module involved.
For fault value = 9999:
- carry out diagnostics for fault F30611.
Note:
CU: Control Unit
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 230600 <location>SI P2: STOP A initiated

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function in monitoring channel 2 has detected a fault and initiated a STOP A (STO via the safety switch-off signal path of monitoring channel 2).

- forced checking procedure (test stop) of the safety switch-off signal path of monitoring channel 2 unsuccessful.
- subsequent response to fault F30611 (defect in a monitoring channel).

Fault value (r0949, interpret decimal):

0: Stop request from the Control Unit.

1005:

- STO active, although STO not selected and there is no internal STOP A active.
- For a Power Module with "STO via terminals at the Power Module" (STO_A/STO_B), these terminals are active (DIP switch to "ON"). However, the "STO via terminals at the Power Module" function has not been enabled (p9601.7 = p9801.7 = 0).

1010: STO inactive although STO is selected or an internal STOP A is present.

1011: internal error for STO deselected in monitoring channel 2.

1020: Internal software error in the "Internal voltage protection" function. The "internal voltage protection" function is withdrawn. A STOP A that cannot be acknowledged is initiated.

9999: Subsequent response to fault F30611.

**Remedy:**

- select Safe Torque Off and deselect again.
- carry out a POWER ON (switch-off/switch-on) for all components.
- replace the Motor Module involved.

For fault value = 1005:

- deactivate terminals STO_A/STO_B on the Power Module (set both DIP-switches to "OFF") or enable the "STO via terminals at the Power Module" function.

For fault value = 9999:

- carry out diagnostics for fault F30611.

Note:

CU: Control Unit

MM: Motor Module

SI: Safety Integrated

STO: Safe Torque Off / SH: Safe standstill

## 230611 <location>SI P2: Defect in a monitoring channel

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** NONE (OFF1, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on processor 2 has detected a fault in the data cross-check between the two monitoring channels and has initiated a STOP F.

As a result of this fault, after the parameterized transition has expired (p9858), fault F30600 is output (SI MM: STOP A initiated).

Fault value (r0949, interpret decimal):

0: Stop request from the other monitoring channel.

1 ... 999:

Number of the cross-compared data that resulted in this fault. This number is also displayed in r9895.

1: SI monitoring clock cycle (r9780, r9880).

2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.

3: SI SGE changeover discrepancy time (p9650, p9850).

4: SI transition period STOP F to STOP A (p9658, p9858).

6: SI Motion enable, safety-relevant functions (p9501, internal value).

7: SI delay time of STO for Safe Stop 1 (p9652, p9852).

8: SI PROFIsafe address (p9610, p9810).

9: SI debounce time for STO/SBC/SS1 (p9651, p9851).

10: SI delay time for initiating STO for ESR (p9697, p9897).

11: SI HLA shutoff valve feedback signal contact configuration (p9626, p9826).

12: SI HLA shutoff valve wait time switch-on (p9625[0], p9825[0]).

13: SI HLA shutoff valve wait time switch-off (p9625[1], p9825[1]).

14: SI PROFIsafe telegram selection (p9611, p9811).

15: SI PROFIsafe bus failure response (p9612, p9812).

1000: Watchdog timer has expired.

Within the time of approx. 5 x p9650, alternatively, the following was defined:

- the signal at terminal STO of the Hydraulic Module continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).

- via PROFIsafe/TM54F, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

1001, 1002: Initialization error, change timer / check timer.

1950: Module temperature outside the permissible temperature range.

1951: Module temperature not plausible.

2000: Status of the STO selection for both monitoring channels different.

2001: Feedback signal of STO shutdown for both monitoring channels different.

2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).

2003: Status of the STO terminal for both monitoring channels different.

6000 ... 6999:

Error in the PROFIsafe control.

For these fault values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "STOP B after failure of the PROFIsafe communication" (p9812) is parameterized, the transfer of the Failsafe Values is delayed.

The significance of the individual message values is described in safety message C01611.

**Remedy:** For fault value = 1 ... 5 and 7 ... 999:
- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 6:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 1000:
- check the wiring of the safety-relevant inputs (SGE) on the Control Unit (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the wiring of the failsafe inputs at the TM54F (contact problems).
- check the discrepancy time, and if required, increase the value (p9650/p9850).

For fault value = 1001, 1002:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 1950:
- operate the module in the permissible range.
- check the module fan, replace the Hydraulic Module involved.

For fault value = 1951:
- operate the module in the permissible range.
- replace Hydraulic Module involved.

For fault value = 2000, 2001, 2002, 2003:
- check the discrepancy time, and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- check why STO was selected in r9872. When the SMM functions are active (p9501 = 1), STO can also be selected using these functions.
- replace Hydraulic Module involved.

Note:
This fault can be acknowledged after removing the cause of the error and after correct selection/deselection of STO.

For fault value = 6000 ... 6999:
Refer to the description of the message values in safety message C01611.

Note:
CU: Control Unit
ESR: Extended Stop and Retract
HM: Hydraulic Module.
SGE: Safety-relevant input
SI: Safety Integrated
SMM: Safe Motion Monitoring
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill

## 230611 <location>SI P2: Defect in a monitoring channel

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on processor 2 has detected a fault in the data cross-check between the two monitoring channels and has initiated a STOP F.

As a result of this fault, after the parameterized transition has expired (p9858), fault F30600 is output (SI MM: STOP A initiated).

Fault value (r0949, interpret decimal):

0: Stop request from another monitoring channel.

1 ... 999:

Number of the cross-compared data that resulted in this fault. This number is also displayed in r9895.

1: SI monitoring clock cycle (r9780, r9880).

2: SI enable safety functions (p9601, p9801). Crosswise data comparison is only carried out for the supported bits.

3: SI SGE changeover discrepancy time (p9650, p9850).

4: SI transition period STOP F to STOP A (p9658, p9858).

5: SI enable Safe Brake Control (p9602, p9802).

6: SI Motion enable, safety-relevant functions (p9501, internal value).

7: SI delay time of STO for Safe Stop 1 (p9652, p9852).

8: SI PROFIsafe address (p9610, p9810).

9: SI debounce time for STO/SBC/SS1 (p9651, p9851).

10: SI delay time for initiating STO for ESR (p9697, p9897).

11: SI Safe Brake Adapter mode, BICO interconnection (p9621, p9821).

12: SI Safe Brake Adapter relay ON time (p9622[0], p9822[0]).

13: SI Safe Brake Adapter relay OFF time (p9622[1], p9822[1]).

14: SI PROFIsafe telegram selection (p9611, p9811).

15: SI PROFIsafe bus failure response (p9612, p9812).

1000: Watchdog timer has expired.

Within the time of approx. 5 x p9650, alternatively, the following was defined:

- the signal at terminal EP of the Motor Module continually changed with time intervals less than or equal to the discrepancy time (p9650/p9850).

- via PROFIsafe/TM54F, STO (also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

- safe pulse cancellation (r9723.9 - also as subsequent response) was continually selected and deselected with time intervals less than or equal to the discrepancy time (p9650/p9850).

1001, 1002: Initialization error, change timer / check timer.

1950: Module temperature outside the permissible temperature range.

1951: Module temperature not plausible.

1952: S120M: hardware access fault.

1953: Module temperature outside the permissible temperature range.

1954: Module temperature not plausible.

2000: Status of the STO selection for both monitoring channels different.

2001: Feedback signal of STO shutdown for both monitoring channels different. This value can also subsequently occur as a result of other faults.

2002: Status of the delay timer SS1 for both monitoring channels different (status of the timer in p9650/p9850).

2003: Status of the STO terminal for both monitoring channels different.

2004: Forced checking procedure of the switch-off signal path of the second channel unsuccessful.

2005: Forced checking procedure of the switch-off signal path of the second channel unsuccessful.

6000 ... 6999:

Error in the PROFIsafe control.

For these fault values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "STOP B after failure of the PROFIsafe communication" (p9812) is parameterized, the transfer of the Failsafe Values is delayed.

The significance of the individual message values is described in safety message C01611.

**Remedy:** For fault value = 1 ... 5 and 7 ... 999:
- check the cross data comparison that resulted in a STOP F.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 6:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 1000:
- check the wiring of the safety-relevant inputs (SGE) on the Control Unit (contact problems).
- PROFIsafe: Remove contact problems/faults at the PROFIBUS master/PROFINET controller.
- check the wiring of the failsafe inputs at the TM54F (contact problems).
- check the discrepancy time, and if required, increase the value (p9650/p9850).

For fault value = 1001, 1002:
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 1950:
- operate the module in the permissible range.
- check the module fan, replace the Motor Module involved.

For fault value = 1951:
- operate the module in the permissible range.
- replace the Motor Module involved.

For fault value = 1952:
- replace the Motor Module involved.

For fault value = 2000, 2001, 2002, 2003:
- check the discrepancy time, and if required, increase the value (p9650/p9850, p9652/p9852).
- check the wiring of the safety-relevant inputs (SGE) (contact problems).
- check why STO was selected in r9872. When the SMM functions are active (p9501 = 1), STO can also be selected using these functions.

For fault value 2004, 2005:
- replace the Motor Module involved.

- replace the Motor Module involved.
- diagnose the other active faults and resolve the causes.

Note:
This fault can be acknowledged after removing the cause of the error and after correct selection/deselection of STO.

For fault value = 6000 ... 6999:
Refer to the description of the message values in safety message C01611.

Note:
CU: Control Unit
EP: Enable Pulses (pulse enable)
ESR: Extended Stop and Retract
MM: Motor Module
SGE: Safety-relevant input
SI: Safety Integrated
SMM: Safe Motion Monitoring
SS1: Safe Stop 1
STO: Safe Torque Off / SH: Safe standstill

## 230620 <location>SI P2: Safe Torque Off active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The "Safe Torque Off" (STO) function of the basic functions has been selected in monitoring channel 2 using the input terminal and is active.
Note:
- this message does not result in a safety stop response.
- this message is not output when STO is selected using the Extended Functions.

**Remedy:** Not necessary.
Note:
MM: Motor Module
SI: Safety Integrated
STO: Safe Torque Off / SH: Safe standstill

## 230621 <location>SI P2: Safe Stop 1 active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The "Safe Stop 1" function (SS1) was selected in monitoring channel 2 and is active.
Note:
This message does not result in a safety stop response.

**Remedy:** Not necessary.
Note:
MM: Motor Module
SI: Safety Integrated
SS1: Safe Stop 1

## 230625 <location>SI P2: Sign-of-life error in safety data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function in monitoring channel 2 has detected an error in the sign-of-life of the safety data between the two monitoring channels and initiated a STOP A.
- there is either a DRIVE-CLiQ communication error or communication has failed.
- a time slice overflow of the safety software has occurred.
- the enable of the safety functions in both monitoring channels is inconsistent (p9601 = 0, p9801 <> 0).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - select Safe Torque Off and deselect again.
- carry out a POWER ON (switch-off/switch-on) for all components.
- check whether there is a DRIVE-CLiQ communication error between the two monitoring channels and, if required, carry out a diagnostics routine for the faults identified.
- deselect all drive functions that are not absolutely necessary.
- reduce the number of drives.
- check the electrical cabinet design and cable routing for EMC compliance
- check the enable of the safety functions for both of the monitoring channels and if required, correct (p9601, p9801).

Note:
P2: processor 2
SI: Safety Integrated

## 230630 <location>SI P2: Brake control error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The "Safety Integrated" function integrated in the drive on the Motor Module (MM) has detected a brake control error and initiated a STOP A.
- motor cable is not shielded correctly.
- defect in the brake control circuit of the Motor Module.

Fault value (r0949, interpret decimal):
10:
Fault in "open holding brake" operation.
- parameter p1278 incorrectly set.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC deactivated)).
- ground fault in brake cable.

30:
Fault in "close holding brake" operation.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC deactivated)).
- short-circuit in brake winding.

40:
Fault in "brake closed" state.
60, 70:
Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control).
81: Safe Brake Adapter: Fault in "brake closed" state.
82: Safe Brake Adapter: Fault for the operation "open brake".
83: Safe Brake Adapter: Fault for the operation "close brake".
84, 85:
Safe Brake Adapter:
Fault in the brake control circuit of the Control Unit or communication fault between the Control Unit and Motor Module (brake control).
90:
Brake released for service purposes (X4).
91:
Fault in "open holding brake" operation.
- no brake connected or wire breakage (check whether brake releases for p1278 = 1 and p9602/p9802 = 0 (SBC deactivated)).

**Remedy:** - check parameter p1278 (for SBC, only p1278 = 0 is permissible).
- select Safe Torque Off and deselect again.
- check the motor holding brake connection.
- check the function of the motor holding brake.
- check whether there is a DRIVE-CLiQ communication error between the Control Unit and the Motor Module involved and, if required, carry out a diagnostics routine for the faults identified.
- check that the electrical cabinet design and cable routing are in compliance with EMC regulations (e.g. shield of the motor cable and brake conductors are connected with the shield connecting plate and the motor connectors are tightly screwed to the housing).
- replace the Motor Module involved.

Operation with Safe Brake Module or Safe Brake Adapter:
- check the Safe Brake Module or Safe Brake Adapter connection.
- Replace the Safe Brake Module or Safe Brake Adapter.

Note:
MM: Motor Module
SBC: Safe Brake Control
SI: Safety Integrated

## 230631 <location>Brake control: External release active

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** For mounting purposes, the brake is supplied with voltage via terminal X4.1 and released.
**Remedy:** If required, again remove the power supply at X4.1.

## 230632 <location>SI P2: shutoff valve control/feedback signal error

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive-integrated "Safety Integrated" function on the Hydraulic Module (monitoring channel 2) has detected a fault for the control/feedback signal of the shutoff valve and initiated a STOP A.

Possible causes:

- shutoff valve either not connected or not correctly connected (X272).
- feedback signal of the shutoff valve either not connected or not correctly connected (X281/X282).
- feedback signal of the shutoff valve incorrectly set (p9626/p9826).
- shutoff valve defective.
- Hydraulic Module defective.

Fault value (r0949, interpret decimal):

10:

Fault in the "Open shutoff valve" operation.

30:

Fault in the "Close shutoff valve" operation.

40:

Fault in the "Shutoff valve closed" state.

60, 70:

Fault in the control of the cutoff valve or communication error between the Control Unit and the Hydraulic Module.

81:

Feedback signal of the shutoff valve: Fault in the "Shutoff valve closed" state.

82:

Feedback signal of the shutoff valve: Fault when "Opening shutoff valve".

83:

Feedback signal of the shutoff valve: Fault when "Closing shutoff valve".

84:

Feedback signal of the shutoff valve: Fault in the control of the shutoff valve or communication error between the Control Unit and the Hydraulic Module.

**Remedy:**

- check the shutoff valve connection (X272).
- check the feedback signals of the shutoff valve (X281, X282).
- check the configuration of the feedback signals of the shutoff valve (p9626/p9826).
- check for EMC-compliant control cabinet design and cable routing (e.g. use shielded cables and connect the shield).
- if necessary, replace the shutoff valve.
- if necessary, replace the Hydraulic Module.

See also:p9626 (SI HLA shutoff valve feedback signal contact configuration (CU)), p9826 (SI HLA shutoff valve feedback signal contact configuration (MM))

## 230640 <location>SI P2: Fault in the switch-off signal path of the second channel

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The Hydraulic Module has detected a communications error with the higher-level control or the TM54F to transfer the safety-relevant information.

Note:

This fault results in a STOP A that can be acknowledged.

Alarm value (r2124, interpret decimal):

Only for internal Siemens troubleshooting.

**Remedy:** For the higher-level control, the following applies:
- check the PROFIsafe address in the higher-level control and Hydraulic Module and if required, align.
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

For TM54F, carry out the following steps:
- start the copy function for the node identifier (p9700 = 1D hex).
- acknowledge hardware CRC (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

For a parallel connection, the following applies:
- check the PROFIsafe address in both monitoring channels and if required, align.
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following generally applies:
- upgrade the Hydraulic Module software.

Note:
MM: Motor Module
SI: Safety Integrated
See also:p9810 (SI PROFIsafe address (Motor Module))

## 230640 <location>SI P2: Fault in the switch-off signal path of the second channel

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The Motor Module has detected a communication error with the higher-level control or the TM54F to transfer the safety-relevant information or there is a communication error between Motor Modules connected in parallel.

Note:
This fault results in a STOP A that can be acknowledged.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** For the higher-level control, the following applies:
- check the PROFIsafe address in the higher-level control and Motor Modules and if required, align.
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

For TM54F, carry out the following steps:
- start the copy function for the node identifier (p9700 = 1D hex).
- acknowledge hardware CRC (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

For a parallel connection, the following applies:
- check the PROFIsafe address in both monitoring channels and if required, align.
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following generally applies:
- upgrade the Motor Module software.

Note:
MM: Motor Module
SI: Safety Integrated
See also:p9810 (SI PROFIsafe address (Motor Module))

## 230649 <location>SI P2: Internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An internal error in the Safety Integrated software in monitoring channel 2 has occurred.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- re-commission the Safety Integrated Function and carry out a POWER ON.
- upgrade the Motor Module/Hydraulic Module software.
- contact Technical Support.
- replace the Motor Module/Hydraulic Module.

Note:
MM: Motor Module
SI: Safety Integrated

## 230650 <location>SI P2: Acceptance test required

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The "Safety Integrated" function on monitoring channel 2 requires an acceptance test.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
130: Safety parameters for monitoring channel 2 not available.
Note:
This fault value is always output when Safety Integrated is commissioned for the first time.
1000: Reference and actual checksum in monitoring channel 2 are not identical (booting).
- as a result of the changed current controller sampling time (p0115[0]), the clock cycle time for the Safety Integrated Basic Functions (r9880) was adapted.
- safety parameters set offline and loaded into the Control Unit.
- a download was made to the SINAMICS, whose firmware versions in monitoring channel 2 did not correspond to the latest version. The request to switch off the DRIVE-CLiQ component A1007 was present after the download.
- at least one checksum-checked piece of data is defective.

2000: Reference and actual checksum in monitoring channel 2 are not identical (commissioning mode).
- reference checksum on monitoring channel 2 incorrectly entered (p9899 not equal to r9898).

2003: Acceptance test is required as a safety parameter has been changed.
2005: The safety logbook has identified that the safety checksums have changed. An acceptance test is required.
3003: Acceptance test is required as a hardware-related safety parameter has been changed.
9999: Subsequent response of another safety-related fault that occurred when booting that requires an acceptance test.

**Remedy:** For fault value = 130:
- carry out safety commissioning routine.

For fault value = 1000:
- check the Safety Integrated Basic Functions (r9880) and adapt the reference checksum (p9899).
- again carry out safety commissioning routine.
- Using STARTER, activate the safety parameters for the drive involved (change settings, copy parameters, activate settings).
- switch off and switch on the drive unit and DRIVE-CLiQ components. If A30650 is still present, repeat the download.
- replace the memory card or Control Unit.

For fault value = 2000:
- check the safety parameters on monitoring channel 2 and adapt the reference checksum (p9899).

For fault value = 2003, 2005:
- carry out an acceptance test and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated

For fault value = 3003:
- carry out the function checks for the modified hardware and generate an acceptance report.

The procedure when carrying out an acceptance test as well as an example of the acceptance report are provided in the following literature:
SINAMICS S120 Function Manual Safety Integrated

For fault value = 9999:
- carry out diagnostics for the other safety-related fault that is present.

Note:
MM: Motor Module
SI: Safety Integrated
See also:p9799 (SI reference checksum SI parameters (Control Unit)), p9899 (SI reference checksum SI parameters (Motor Module))

## 230651 <location>SI P2: Synchronization with Control Unit unsuccessful

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive-integrated "Safety Integrated" function requires synchronization of the safety time slices in both monitoring channels. This synchronization routine was unsuccessful.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module/Hydraulic Module software.
- upgrade the Control Unit software.

Note:
MM: Motor Module
SI: Safety Integrated

## 230652 <location>SI P2: Illegal monitoring clock cycle

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The Safety Integrated monitoring clock cycle cannot be maintained due to the communication conditions requested in the system.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - if fault F01652 simultaneously occurs, apply the remedy/countermeasure described there.
- upgrade the firmware of the Motor Module/Hydraulic Module to a later version.
Note:
MM: Motor Module
P2: processor 2
SI: Safety Integrated

## 230655 <location>SI P2: Align monitoring functions

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** An error has occurred when aligning the Safety Integrated monitoring functions of both monitoring channels. No common set of supported SI monitoring functions was able to be determined.
- there is either a DRIVE-CLiQ communication error or communication has failed.
- Safety Integrated software releases on the Control Unit and Motor Module/Hydraulic Module are not compatible with one another.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade the Motor Module/Hydraulic Module software.
- upgrade the Control Unit software.
- check the electrical cabinet design and cable routing for EMC compliance
Note:
CU: Control Unit
MM: Motor Module
SI: Safety Integrated

## 230656 <location>SI P2: Motor Module parameter error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When accessing the Safety Integrated parameters for monitoring channel 2 in the non-volatile memory, an error has occurred.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
129:
- safety parameters for monitoring channel 2 corrupted.
- drive with enabled safety functions was possibly copied offline using the commissioning tool and the project downloaded.
131: Internal software error on the Control Unit.
255: Internal Motor Module/Hydraulic Module software error.

**Remedy:** - re-commission the safety functions.
- upgrade the Control Unit software.
- upgrade the Motor Module/Hydraulic Module software.
- replace the memory card or Control Unit.
For fault value = 129:
- activate the safety commissioning mode (p0010 = 95).
- adapt the PROFIsafe address (p9610).
- start the copy function for SI parameters (p9700 = D0 hex).
- acknowledge data change (p9701 = DC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0977 = 1 or "copy RAM to ROM").
- carry out a POWER ON (switch-off/switch-on) for all components.
Note:
MM: Motor Module
SI: Safety Integrated

## 230657 <location>SI P2: PROFIsafe telegram number invalid

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** The PROFIsafe telegram number set in p9811 is not valid.
When PROFIsafe is enabled (p9801.3 = 1), then a telegram number greater than zero must be entered in p9811.
Note:
This fault does not result in a safety stop response.
See also:p9611 (SI PROFIsafe telegram selection (Control Unit)), p60022 (PROFIsafe telegram selection)
**Remedy:** Check the telegram number setting (p9811).

## 230659 <location>SI P2: Write request for parameter rejected

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The write request for one or several Safety Integrated parameters in monitoring channel 2 was rejected.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
10: An attempt was made to enable the STO function although this cannot be supported.
13: An attempt was made to enable the SS1 function although this cannot be supported.
14: An attempt was made to enable the safe motion monitoring function with the higher-level control, although this cannot be supported.
15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.
16: An attempt was made to enable the PROFIsafe communication - although this cannot be supported or the version of the PROFIsafe driver used on both monitoring channels is different.
18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.
19: For ESR, an attempt was made to enable the delay for pulse suppression, although this cannot be supported.
27: An attempt was made to activate the Basic Functions by controlling via TM54F although this is not supported.
29: An attempt was made to parameterize the fault response for PROFIsafe failure to STOP B although this cannot be supported.
33: Safety functions without selection are not supported (p9601.5, p9801.5).
See also:r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module))

**Remedy:** For fault value = 10, 13, 14, 15, 16, 18, 19:
- check whether there are faults in the safety function alignment between the two monitoring channels (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Hydraulic Module that supports the required function.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

For fault value = 29:
- check whether p9612 and p9812 are set; if required, correct the settings.
- use a Hydraulic Module that supports the required function.
- upgrade the Hydraulic Module software.
- upgrade the Control Unit software.

Note:
SI: Safety Integrated
SS1: Safe Stop 1 (corresponds to Stop Category 1 acc. to EN60204)
STO: Safe Torque Off / SH: Safe standstill

## 230659 <location>SI P2: Write request for parameter rejected

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The write request for one or several Safety Integrated parameters in monitoring channel 2 was rejected.

Note:
This fault does not result in a safety stop response.

Fault value (r0949, interpret decimal):
10: An attempt was made to enable the STO function although this cannot be supported.
11: An attempt was made to enable the SBC function although this cannot be supported.
13: An attempt was made to enable the SS1 function although this cannot be supported.
14: An attempt was made to enable the safe motion monitoring function with the higher-level control, although this cannot be supported.
15: An attempt was made to enable the motion monitoring functions integrated in the drive although these cannot be supported.
16: An attempt was made to enable the PROFIsafe communication - although this cannot be supported or the version of the PROFIsafe driver used on both monitoring channels is different.
18: An attempt was made to enable the PROFIsafe function for Basic Functions although this cannot be supported.
19: For ESR, an attempt was made to enable the delay for pulse suppression, although this cannot be supported.
27: An attempt was made to activate the Basic Functions by controlling via TM54F although this is not supported.
28: An attempt was made to enable the "STO via terminals at the Power Module" function although this cannot be supported.
29: An attempt was made to parameterize the STOP B as stop response for PROFIsafe failure, although this cannot be supported.

See also:r9771 (SI common functions (Control Unit)), r9871 (SI common functions (Motor Module))

**Remedy:** For fault value = 10, 11, 13, 14, 15, 16, 18, 19, 27:
- check whether there are faults in the safety function alignment between the two monitoring channels (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Motor Module that supports the required function.
- upgrade the Motor Module software.
- upgrade the Control Unit software.

For fault value = 28:
- use the power unit with the feature "STO via terminals at the Power Module".

For fault value = 29:
- use a Motor Module that supports the required function.
- upgrade the Motor Module software.
- upgrade the Control Unit software.
- If required, parameterize the stop response for PROFIsafe failure to STOP A (p9612 = p9812 = 0).

Note:
CU: Control Unit
ESR: Extended Stop and Retract
MM: Motor Module
SBC: Safe Brake Control
SI: Safety Integrated
SS1: Safe Stop 1
STO: Safe Torque Off / SH: Safe standstill

## 230664 <location>Error while booting

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** POWER ON

**Cause:** An error has occurred during booting.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.

## 230665 <location>SI P2: System is defective

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A system defect was detected before the last boot or in the actual one. The system might have been rebooted (reset).
Fault value (r0949, interpret hexadecimal):
2 hex:
- parameters p9500 and p9300 are not the same (if Safety message C30711 is displayed at the same time).

200000 hex, 400000 hex:
- fault in the actual booting/operation.

Additional values:
- defect before the last time that the system booted.

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version.
- contact Technical Support.
For fault value = 2:
- check parameters p9500 and p9300 to see if they are the same (if Safety message C30711 is displayed at the same time).
For fault value = 400000 hex:
- ensure that the Control Unit is connected to the Power Module.

## 230666 <location>SI Motion P2: Steady-state (static) 1 signal at the F-DI for safe acknowledgment

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A logical 1 signal is present at the F-DI configured in p10106 for more than 10 seconds.
If, at the F-DI no acknowledgment was performed for safe acknowledgment, then a steady-state logical and 0 signal must be present. This avoids unintentional safety-relevant acknowledgment (or the "Internal Event Acknowledge" signal) if a wire breaks or one of the two digital inputs bounces.
**Remedy:** Set the failsafe digital input (F-DI) to a logical 0 signal (p10106).
Note:
F-DI: Failsafe Digital Input

## 230672 <location>SI P2: Control Unit software incompatible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The existing Control Unit software does not support the safe drive-based motion monitoring function.
Note:
This fault results in a STOP A that cannot be acknowledged.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - check whether there are faults in the safety function alignment between the two monitoring channels (F01655, F30655) and if required, carry out diagnostics for the faults involved.
- use a Control Unit that supports the safe motion monitoring function.
- upgrade the Control Unit software.
Note:
SI: Safety Integrated

## 230674 <location>SI Motion P2: Safety function not supported by PROFIsafe telegram

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON

**Cause:** The monitoring function enabled in p9301 and p9801 is not supported by the currently set PROFIsafe telegram (p9811).
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret bitwise binary):
Bit 4 = 1:
SS2ESR via PROFIsafe is not supported (p9301.4).
Bit 18 = 1:
SS2E via PROFIsafe is not supported (p9301.18).
Bit 24 = 1:
Transfer SLS limit value via PROFIsafe not supported (p9301.24).
Bit 25 = 1:
Transfer safe position (SP) via PROFIsafe is not supported (p9301.25).
Bit 26 = 1:
Gearbox stage switchover via PROFIsafe is not supported (p9301.26).
Bit 28 = 1:
SCA via PROFIsafe is not supported (p9301.28).

**Remedy:** - deselect the monitoring function involved (p9301, p9801).
- set the matching PROFIsafe telegram (p9811).
Note:
SCA: Safe Cam
SI: Safety Integrated
SLS: Safely-Limited Speed
SP: Safe Position
SS2E: Safe Stop 2 External (Safe Stop 2 with external stop, external STOP D)
SS2ESR: Safe Stop 2 Extended Stop and Retract

## 230680 <location>SI Motion P2: Checksum error safety monitoring functions

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The actual checksum calculated by the Motor Module/Hydraulic Module and entered in r9398 via the safety-relevant parameters does not match the reference checksum saved in p9399 at the last machine acceptance.
Safety-relevant parameters have been changed or a fault is present.
Note:
This fault results in a STOP A that can be acknowledged.
Fault value (r0949, interpret decimal):
0: Checksum error for SI parameters for motion monitoring.
1: Checksum error for SI parameters for component assignment.

**Remedy:** - check the safety-relevant parameters and if required, correct.
- set the reference checksum to the actual checksum.
- execute the function "Copy RAM to ROM".
- perform a POWER ON if safety parameters requiring a POWER ON have been modified.
- carry out an acceptance test.

## 230681 <location>SI Motion P1: Incorrect parameter value

**Drive object:** HLA_840, HLA_DBSI

**Message value:** Parameter: %1, supplementary information: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be parameterized with this value.

Note:

This message does not result in a safety stop response.

Fault value (r0949, interpret decimal):

yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter

yyyy = 0:

No additional information available.

xxxx = 9301:

It is not permissible to enable the function "n < nx hysteresis and filtering" (p9301.16) in conjunction with the function "Extended functions without selection" (p9801.5).

xxxx = 9301 and yyyy = 8:

Referencing via SCC (p9301.27 = 1) is enabled without enabling absolute motion monitoring functions (p9301.1 or p9301.2).

xxxx = 9301 and yyyy = 11:

Safe function SS2E (p9301.18 = 1) is enabled without enabling PROFIsafe.

xxxx = 9301 and yyyy = 14:

"Synchronous safe position via PROFIsafe" is enabled (p9301.29 = 1), without enabling "Safe position via PROFIsafe" (p9301.25).

xxxx = 9301 and yyyy = 17:

"Synchronous safe position via PROFIsafe" is enabled (p9301.29 = 1) and "Safety without encoder" is enabled (p9306).

xxxx = 9301 and yyyy = 19:

SLA (p9301.20 = 1) is enabled with encoderless actual value sensing (p9306 equal to 1 or 3).

xxxx = 9301 and yyyy = 20:

SLA (p9301.20 = 1) is enabled with a 2-encoder system (p9326 not equal to 1).

xxxx = 9801 and yyyy = 12: SCA (p9301.28 = 1) is enabled without enabling PROFIsafe.

xxxx = 9334 or 9335:

The limit values of SLP have been set too high (absolute values).

xxxx = 9378:

SLA is enabled (p9301.20 = 1). Acceleration limit is too low (p9378). Acceleration resolution is no longer sufficient (r9790) (the minimum limit is 3x the acceleration resolution r9790[0] in v5.1 / 10x the acceleration resolution r9790[1] from v5.2 and higher).

xxxx = 9801 and yyyy = 1:

If motion monitoring functions integrated in the drive (p9801.2 = 1) and extended functions without selection (p9801.5 = 1) are activated, then PROFIsafe (p9801.3 = 1) is not possible.

xxxx = 9801 and yyyy = 2:

Extended functions without selection (p9801.5 =1) are enabled without enabling motion monitoring functions integrated in the drive (p9801.2).

xxxx = 9801 and yyyy = 5:

Transfer of the SLS limit value via PROFIsafe (p9301.24) has been enabled, without enabling PROFIsafe.

xxxx = 9801 and yyyy = 6:

Transfer of the safe position via PROFIsafe (p9301.25) has been enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 7:

Safe switchover of the gearbox stages (p9301.26 = 1) has been enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 18:

SLA (p9301.20 = 1) is enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 21:

SS2ESR (p9301.4 = 1) is enabled without enabling PROFIsafe.

**Remedy:** Correct parameter (if required, also on another monitoring channel, p9601).
Note:
For different values in the two monitoring channels, start the copy function for SI parameters on the drive (p9700 = 57 hex).
For xxxx = 9301:
Correct parameters p9501.16 and p9301.16 or deselect the extended functions without selection (p9801.5).
For xxxx = 9301 and yyyy = 14:
Inhibit "Synchronous safe position via PROFIsafe" function (p9301.29 = 0), or enable "Safe position via PROFIsafe" (p9301.25).
For xxxx = 9301 and yyyy = 17:
Inhibit "Synchronous safe position via PROFIsafe" function (p9301.29 = 0), or set "Safety with encoder" (p9306).
For xxxx = 9301 and yyyy = 19:
Inhibit SLA (p9301.20) or activate actual value sensing with encoder (p9306 equal to 0 or 2).
For xxxx = 9301 and yyyy = 20:
Inhibit SLA (p9301.20) or activate a single-encoder system (p9326 equal to 1).
If xxxx = 9501 and yyyy = 8:
Inhibit referencing via SCC (p9501.27 = 1) or enable an absolute motion monitoring function (p9501.1 or p9501.2).
For xxxx = 9501 and yyyy = 11: inhibit SS2E (p9501.18) or enable PROFIsafe.
For xxxx = 9501 and yyyy = 12: inhibit SCA (p9501.28) or enable PROFIsafe.
For xxxx = 9317:
Further, p9316.0 should be checked.
If xxxx = 9334 or 9335:
Reduce the limit values (absolute values) of SLP.
For xxxx = 9378:
- observe the information in r9790.
For xxxx = 9801:
yyyy = 1:
Only enable motion monitoring functions integrated in the drive (p9801.2 = 1) and extended functions without selection (p9801.5 = 1) – or only PROFIsafe (p9801.3 = 1).
yyyy = 2:
Enable motion monitoring functions integrated in the drive (p9801.2 = 1).
yyyy = 5:
To transfer the SLS limit values via PROFIsafe (p9301.24 = 1), also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).
yyyy = 6:
For the safe position via PROFIsafe (p9301.25 = 1), also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).
yyyy = 7:
For safe switchover of gearbox stages (p9301.26 = 1) also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).
yyyy = 18:
For Safely-Limited Acceleration monitoring (p9301.20 = 1), also enable PROFIsafe (p9801.3 = 1) and the motion monitoring functions integrated in the drive (p9801.2 = 1).
yyyy = 21:
For Safe Stop 2 Extended Stop and Retract (p9301.4), also enable PROFIsafe (p9801.3 = 1) and motion monitoring functions integrated in the drive (p9801.2 = 1).

## 230681 <location>SI Motion P1: Incorrect parameter value

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be parameterized with this value.

Note:

This message does not result in a safety stop response.

Fault value (r0949, interpret decimal):

yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter

yyyy = 0:

No additional information available.

xxxx = 9301:

It is not permissible to enable the function "n < nx hysteresis and filtering" (p9301.16) in conjunction with the function "Extended functions without selection" (p9801.5).

xxxx = 9301 and yyyy = 8:

Referencing via SCC (p9301.27 = 1) is enabled without enabling absolute motion monitoring functions (p9301.1 or p9301.2).

xxxx = 9301 and yyyy = 14:

"Synchronous safe position via PROFIsafe" is enabled (p9301.29 = 1), without enabling "Safe position via PROFIsafe" (p9301.25).

xxxx = 9301 and yyyy = 17:

"Synchronous safe position via PROFIsafe" is enabled (p9301.29 = 1) and "Safety without encoder" is enabled (p9306).

xxxx = 9301 and yyyy = 19:

SLA (p9301.20 = 1) is enabled with encoderless actual value sensing (p9306 equal to 1 or 3).

xxxx = 9301 and yyyy = 20:

SLA (p9301.20 = 1) is enabled with a 2-encoder system (p9326 not equal to 1).

xxxx = 9334 or 9335:

The limit values of SLP have been set too high (absolute values).

xxxx = 9347:

The hysteresis tolerance is not permissible.

xxxx = 9378:

SLA is enabled (p9301.20 = 1). Acceleration limit is too low (p9378). The acceleration resolution is no longer sufficient (r9790). The minimum limit is 3x the acceleration resolution r9790[0] in v5.1 / 10x the acceleration resolution r9790[1] from v5.2 and higher.

xxxx = 9385:

For Safety without encoder and synchronous motor, p9385 must be set to 4.

xxxx = 9801 and yyyy = 1:

If motion monitoring functions integrated in the drive (p9801.2 = 1) and extended functions without selection (p9801.5 = 1) are activated, then PROFIsafe (p9801.3 = 1) is not possible.

xxxx = 9801 and yyyy = 2:

Extended functions without selection (p9801.5 =1) are enabled without enabling motion monitoring functions integrated in the drive (p9801.2).

xxxx = 9801 and yyyy = 3:

Onboard F-DI are enabled without enabling motion monitoring functions integrated in the drive (p9801.2).

xxxx = 9801 and yyyy = 5:

Transfer of the SLS limit value via PROFIsafe (p9301.24) has been enabled, without enabling PROFIsafe.

xxxx = 9801 and yyyy = 6:

Transfer of the safe position via PROFIsafe (p9301.25) has been enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 7:

Safe switchover of the gearbox stages (p9301.26 = 1) has been enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 11:

SS2E (p9301.18 = 1) is enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 12:

SCA (p9301.28 = 1) is enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 18:

SLA (p9301.20 = 1) is enabled without enabling PROFIsafe.

xxxx = 9801 and yyyy = 21:

SS2ESR (p9301.4 = 1) is enabled without enabling PROFIsafe.

**Remedy:** Correct parameter (if required, also on another monitoring channel, p9601).

Note:

For different values in the two monitoring channels, start the copy function for SI parameters on the drive (p9700 = 57 hex).

For xxxx = 9301:

Correct parameters p9501.16 and p9301.16 or deselect the extended functions without selection (p9801.5).

For xxxx = 9301 and yyyy = 14:

Inhibit "Synchronous safe position via PROFIsafe" function (p9301.29 = 0), or enable "Safe position via PROFIsafe" (p9301.25).

For xxxx = 9301 and yyyy = 17:

Inhibit "Synchronous safe position via PROFIsafe" function (p9301.29 = 0), or set "Safety with encoder" (p9306).

For xxxx = 9301 and yyyy = 19:

Inhibit SLA (p9301.20) or activate actual value sensing with encoder (p9306 equal to 0 or 2).

For xxxx = 9301 and yyyy = 20:

Inhibit SLA (p9301.20) or activate a single-encoder system (p9326 equal to 5).

If xxxx = 9501 and yyyy = 8:

Inhibit referencing via SCC (p9501.27 = 1) or enable an absolute motion monitoring function (p9501.1 or p9501.2).

For xxxx = 9317:

Further, p9316.0 should be checked.

If xxxx = 9334 or 9335:

Reduce the limit values (absolute values) of SLP.

For xxxx = 9347:

With hysteresis/filtering enabled (p9301.16 = 1), the following applies:

- set parameters p9346 and p9347 according to the following rule: p9347 <= 0.75 x p9346;
- the following rule must also be adhered to when actual value synchronization (p9301.3 = 1) is enabled: p9347 >= p9349;

For xxxx = 9378:

- observe the information in r9790.

For xxxx = 9801:

yyyy = 1:

Only enable motion monitoring functions integrated in the drive (p9801.2 = 1) and extended functions without selection (p9801.5 = 1) – or only PROFIsafe (p9801.3 = 1).

yyyy = 2, 3:

Enable motion monitoring functions integrated in the drive (p9801.2 = 1).

yyyy = 5:

To transfer the SLS limit values via PROFIsafe (p9301.24 = 1), also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).

yyyy = 6:

For the safe position via PROFIsafe (p9301.25 = 1), also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).

yyyy = 7:

For safe switchover of gearbox stages (p9301.26 = 1) also enable PROFIsafe (p9801.3 =1) and motion monitoring functions integrated in the drive (p9801.2 = 1).

yyyy = 18:

For Safely-Limited Acceleration monitoring (p9301.20 = 1), also enable PROFIsafe (p9801.3 = 1) and the motion monitoring functions integrated in the drive (p9801.2 = 1).

yyyy = 21:

For Safe Stop 2 Extended Stop and Retract (p9301.4), also enable PROFIsafe (p9801.3 = 1) and motion monitoring functions integrated in the drive (p9801.2 = 1).

## 230682 <location>SI Motion P2: Monitoring function not supported

**Drive object:** HLA_840, HLA_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The monitoring function enabled in p9301, p9501, p9601 or p9801 is not supported in this firmware version.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
2: Monitoring function SCA not supported (p9301.7 and p9301.8 ... 15).
3: Monitoring function SLS override not supported (p9301.5).
6: Enable actual value synchronization not supported (p9301.3).
9: Monitoring function not supported by the firmware or enable bit not used.
12: This Control Unit does not support operation of safety functions with a higher-level control (e.g. SINUMERIK).
14: Monitoring function SLA and ncSI not supported.
30: The firmware version of the Hydraulic Module is older than the version of the Control Unit.
50: Shortening the switchover times for SOS (p9569/p9369, p9567/p9367) is not supported.
53: Function SS2E not supported (p9306 = 18).
54: SCA function not supported (p9301.28).
57: "Synchronous transfer safe position" function not supported (p9301.29).
58: "Safety limited acceleration" function (SLA) not supported (p9301.20).

**Remedy:** - deselect the monitoring function involved (p9301, p9501, p9601, p9801).
- upgrade the Hydraulic Module firmware.
Note:
SCA: Safe Cam / SN: Safe software cam
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SS2E: Safety Stop 2 external (external STOP D)
See also:p9301, p9501, p9503, p9601, p9801, r9871

## 230682 <location>SI Motion P2: Monitoring function not supported

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The monitoring function enabled in p9301, p9501, p9601, p9801, p9306, p9506, p9307 or p9507 is not supported in this firmware version.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
1: Monitoring function SLP not supported (p9301.1).
2: Monitoring function SCA not supported (p9301.7 and p9301.8 ... 15).
3: Monitoring function SLS override not supported (p9301.5).
4: Monitoring function external ESR activation not supported (p9301.4).
5: Monitoring function F-DI in PROFIsafe not supported (p9301.30).
6: Enable actual value synchronization not supported (p9301.3).
9: Monitoring function not supported by the firmware or enable bit not used.
12: This Control Unit does not support operation of safety functions with a higher-level control (e.g. SINUMERIK).
14: Monitoring function SLA and ncSI not supported.
24: Monitoring function SDI not supported.
26: Hysteresis and filtering for SSM monitoring function without an encoder not supported (p9301.16).
27: This hardware does not support onboard F-DI and F-DO.
30: The firmware version of the Motor Module is older than the version of the Control Unit.
33: Safety functions without selection not supported (p9601.5, p9801.5).
34: This module does not support safe position via PROFIsafe.
36: Function "SS1E" not supported.
39: This module or software version of the CU/MM does not support safe gearbox stage switchover (p9501.26).
44: this module/this software version does not support referencing via the Safety Control Channel (p9501.27).
45: Deactivating SOS/SLS during an external STOP A is not supported (p9301.23).
50: Shortening the switchover times for SOS (p9569/p9369, p9567/p9367) is not supported.
52: "SBR with encoder" function is not supported (p9306 = 2).
53: function SS2E not supported (p9301.18).
54: SCA function not supported (p9301.28).
57: "Synchronous transfer safe position via PROFIsafe" function not supported (p9301.29).
58: "SLA" function not supported (p9301.20).

**Remedy:** - deselect monitoring function involved (p9301, p9501, p9601, p9801, p9307, p9507, p9506, p9306).
- Upgrade the Motor Module firmware.
Note:
ESR: Extended Stop and Retract
F-DI: Failsafe Digital Input
SBR: Safe Brake Ramp (safe brake ramp monitoring)
SCA: Safe Cam / SN: Safe software cam
SDI: Safe Direction (safe motion direction)
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
SLS: Safely-Limited Speed / SG: Safely reduced speed
SP: Safe Position
SS1E: Safe Stop 1 External (Safe Stop 1 with external stop)
SS2E: Safe Stop 2 External (Safe Stop 2 with external stop, external STOP D)
See also:p9301, p9501, p9503, p9601, p9801, r9871

## 230683 <location>SI Motion P2: SOS/SLS enable missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The safety-relevant basic function "SOS/SLS" is not enabled in p9301 although other safety-relevant monitoring functions are enabled.
Note:
This message does not result in a safety stop response.
**Remedy:** Enable the function "SOS/SLS" (p9301.0) and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
SOS: Safe Operating Stop / SBH: Safe operating stop
See also:p9301 (SI Motion enable safety functions (Motor Module))

## 230684 <location>SI Motion P2: Safely-Limited Position limit values interchanged

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** For the function "Safely-Limited Position" (SLP), a lower value is in p9334 than in p9335.
Note:
This fault does not result in a safety stop response.
Fault value (r0949, interpret decimal):
1: Limit values SLP1 interchanged.
2: Limit values SLP2 interchanged.
See also:p9334, p9335
**Remedy:** - correct the lower and upper limit values (p9335, p9334).
- carry out a POWER ON (switch-off/switch-on).
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches

## 230685 <location>SI Motion P2: Safely-Limited Speed limit value too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The limit value for the function "Safely-Limited Speed" (SLS) is greater than the speed that corresponds to an encoder limit frequency of 500 kHz.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Maximum permissible speed.
**Remedy:** Correct the limit values for SLS and carry out a POWER ON.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also:p9331 (SI Motion SLS limit values (Motor Module))

## 230686 <location>SI Motion: Illegal parameterization cam position

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** At least one enabled "Safety Cam" (SCA) is parameterized in p9336 or p9337 too close to the tolerance range around the modulo position.
- the minus position value of a cam must be greater than the lower modulo limit + cam tolerance (p9340) + position tolerance (p9342).
- the plus position value of a cam must be less than the upper modulo limit - cam tolerance (p9340) - position tolerance (p9342).
- when the modulo position is parameterized (p9305 > 0), the lower modulo limit = 0, the upper modulo limit = p9305.
- the cam length of cam x = p9336[x] - p9337[x] is less than the cam tolerance + position tolerance (= p9340 + p9342).

This also means that cams of the minus position value must be less than the plus position value.

Note:

This fault does not result in a safety stop response.

Fault value (r0949, interpret decimal):

Number of the "Safe Cam" with an illegal position.

See also:p9501 (SI Motion enable safety functions (Control Unit))

**Remedy:** Correct the cam position and carry out a POWER ON.

Note:

SCA: Safe Cam

SI: Safety Integrated

See also:p9536, p9537

## 230688 <location>SI Motion P2: Actual value synchronization not permissible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:**
- it is not permissible to enable actual value synchronization for a 1-encoder system.
- it is not permissible to simultaneously enable actual value synchronization and a monitoring function with absolute reference (SCA/SLP).
- it is not permissible to simultaneously enable actual value synchronization and safe position via PROFIsafe.

Note:

This fault results in a STOP A that cannot be acknowledged.

**Remedy:**
- either deselect the "actual value synchronization" function or parameterize a 2-encoder system.
- either deselect the function "actual value synchronization" or the monitoring functions with absolute reference (SCA/SLP) and carry out a POWER ON.
- either deselect the "actual value synchronization" function or do not enable "Safe position via PROFIsafe".

Note:

SCA: Safe Cam / SN: Safe software cam

SI: Safety Integrated

SLP: Safely-Limited Position / SE: Safe software limit switches

SP: Safe Position

See also:p9501, p9526

## 230692 <location>SI Motion P2: Parameter value not permitted for encoderless

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The parameter cannot be parameterized with this value if encoderless motion monitoring functions have been parameterized in p9306.
Note:
This message does not result in a safety stop response.
Fault value (r0949, interpret decimal):
Parameter number with the incorrect value.
See also:p9301 (SI Motion enable safety functions (Motor Module))

**Remedy:** - correct the parameter specified in the fault value.
- if necessary, deselect encoderless motion monitoring functions (p9306).
See also:p9301, p9501

## 230693 <location>SI P2: Safety parameter settings changed, warm restart/POWER ON required

**Drive object:** HLA_840, HLA_DBSI, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Safety parameters have been changed; these will only take effect following a warm restart or POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a warm restart or POWER ON.
**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).
- carry out a POWER ON (switch-off/switch-on) for all components.
Note:
Before performing an acceptance test, a POWER ON must be carried out for all components.

## 230693 <location>SI P2: Safety parameter settings changed, warm restart/POWER ON required

**Drive object:** SERVO_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Safety parameters have been changed; these will only take effect following a warm restart or POWER ON.
Notice:
All changed parameters of the safety motion monitoring functions will only take effect following a warm restart or POWER ON.
Alarm value (r2124, interpret decimal):
Parameter number of the safety parameter which has changed, necessitating a warm restart or POWER ON.
**Remedy:** - carry out a warm restart (p0009 = 30, p0976 = 2, 3).
- carry out a POWER ON (switch-off/switch-on) for all components.
Note:
Before performing an acceptance test, a POWER ON must be carried out for all components.

## 230700 <location>SI Motion P2: STOP A initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP A (STO via the safety switch-off signal path of the Control Unit).
Possible causes:
- stop request from the Control Unit.
- STO not active after parameterized time (p9357) after test stop selection.
- subsequent response to the message C30706 "SI Motion MM: SAM/SBR limit exceeded".
- subsequent response to the message C30714 "SI Motion MM: Safely-Limited Speed exceeded".
- subsequent response to the message C30701 "SI Motion MM: STOP B initiated".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C30716 "SI Motion MM: tolerance for safe motion direction exceeded".

**Remedy:**
- remove the cause to the fault on the Control Unit.
- check the value in p9357, if required, increase the value.
- check the switch-off signal path of the Control Unit (check DRIVE-CLiQ communication).
- carry out a diagnostics routine for message C30706.
- carry out a diagnostics routine for message C30714.
- carry out a diagnostics routine for message C30701.
- carry out a diagnostics routine for message C30715.
- carry out a diagnostics routine for message C30716.
- replace the Motor Module, Power Module or Hydraulic Module.
- replace Control Unit.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe brake ramp monitoring)
SI: Safety Integrated

## 230701 <location>SI Motion P2: STOP B initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE (OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive is stopped via a STOP B (braking along the OFF3 ramp).
As a result of this fault, after the time parameterized in p9356 has expired or after the speed threshold parameterized in p9360 has been fallen below, message C30700 "SI Motion MM: STOP A initiated" is output.
Possible causes:
- stop request from the Control Unit.
- subsequent response to the message C30714 "SI Motion MM: Safely-Limited Speed exceeded".
- subsequent response to the message C30711 "SI Motion MM: Defect in a monitoring channel".
- subsequent response to the message C30707 "SI Motion MM: tolerance for safe operating stop exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C30716 "SI Motion MM: tolerance for safe motion direction exceeded".

**Remedy:** - remove the cause to the fault on the Control Unit.
- carry out a diagnostics routine for message C30714.
- carry out a diagnostics routine for message C30711.
- carry out a diagnostics routine for message C30707.
- carry out a diagnostics routine for message C30715.
- carry out a diagnostics routine for message C30716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated

## 230706 <location>SI Motion P2: SAM/SBR limit exceeded

**Drive object:** HLA_840, HLA_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Motion monitoring functions with encoder (p9306 = 0):
- after initiating STOP B (SS1) or STOP C (SS2), the speed has exceeded the selected tolerance.
The drive is shut down by the message C30700 "SI Motion MM: STOP A initiated".
**Remedy:** Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe ramp monitoring)
SI: Safety Integrated
See also:p9348, p9381, p9382, p9383, p9548

## 230706 <location>SI Motion P2: SAM/SBR limit exceeded

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Motion monitoring functions with encoder (p9306 = 0) or encoderless with set acceleration monitoring (SAM, p9306 = 3):
- after initiating STOP B (SS1) or STOP C (SS2), the speed has exceeded the selected tolerance.
Motion monitoring functions encoderless with set brake ramp monitoring (SBR p9306 = 1):
- after initiating STOP B (SS1) or SLS changeover to the lower speed level, the speed has exceeded the selected tolerance.
The drive is shut down by the message C30700 "SI Motion MM: STOP A initiated".

**Remedy:** Check the braking behavior and, if necessary, adapt the parameterization of the parameter settings of the "SAM" or the "SBR" function.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

Note:
SAM: Safe Acceleration Monitor (safe acceleration monitoring)
SBR: Safe Brake Ramp (safe ramp monitoring)
SI: Safety Integrated
See also:p9348, p9381, p9382, p9383, p9548

## 230707 <location>SI Motion P2: Tolerance for safe operating stop exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The actual position has distanced itself further from the target position than the standstill tolerance.
The drive is shut down by the message C30701 "SI Motion MM: STOP B initiated".
**Remedy:** - check whether safety faults are present and if required carry out the appropriate diagnostic routines for the particular faults.
- check whether the standstill tolerance matches the accuracy and control dynamic performance of the axis.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop
See also:p9530

## 230708 <location>SI Motion P2: STOP C initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** STOP2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive is stopped via a STOP C (braking along the OFF3 ramp).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C30714 "SI Motion MM: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C30716 "SI Motion MM: tolerance for safe motion direction exceeded".

See also:p9552 (SI Motion transition time STOP C to SOS (SBH) (Control Unit))

**Remedy:** - remove the cause of the fault at the control.
- carry out a diagnostics routine for messages C30714, C30715, C30716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 230709 <location>SI Motion P2: STOP D initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive is stopped via a STOP D (braking along the path).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the Control Unit.
- subsequent response to the message C30714 "SI Motion MM: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C30716 "SI Motion MM: tolerance for safe motion direction exceeded".
See also:p9353 (SI Motion transition time STOP D to SOS (Motor Module)), p9553 (SI Motion transition time STOP D to SOS (SBH) (Control Unit))
**Remedy:** - remove the cause of the fault at the control.
- carry out a diagnostics routine for messages C30714, C30715, C30716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 230710 <location>SI Motion P2: STOP E initiated

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The drive is stopped via a STOP E (retraction motion).
"Safe Operating Stop" (SOS) is activated after the parameterized time has expired.
Possible causes:
- stop request from the higher-level control.
- subsequent response to the message C30714 "SI Motion MM: Safely-Limited Speed exceeded".
- subsequent response to the message C01715 "SI Motion CU: Safely-Limited Position exceeded".
- subsequent response to the message C30716 "SI Motion MM: tolerance for safe motion direction exceeded".
See also:p9354 (SI Motion transition time STOP E to SOS (Motor Module)), p9554 (SI Motion transition time STOP E to SOS (SBH) (Control Unit))

**Remedy:** - remove the cause of the fault at the control.
- carry out a diagnostics routine for messages C30714, C30715, C30716.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SOS: Safe Operating Stop / SBH: Safe operating stop

## 230711 <location>SI Motion P2: Defect in a monitoring channel

**Drive object:** HLA_840, HLA_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

If at least one monitoring function is active, then after the parameterized timer has expired, the message C30701 "SI Motion: STOP B initiated" is output. The message is output with message value 1031 when the Sensor Module hardware is replaced.

The following message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:

- differently parameterized cycle times (p9500/p9300, p9511/p9311).
- excessively fast cycle times (p9500/p9300, p9511/p9311).
- incorrect synchronization.

Message value (r9749, interpret decimal):

0 ... 999:

Number of the cross-compared data that resulted in this message.

The significance of the individual message values is described in safety message C01711 of the Control Unit.

1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.

1001: Initialization error of watchdog timer.

1002:

User agreement after the timer has expired different.

The user agreement is not consistent. After a time of 4 s has expired, the status of the user agreement is different in both monitoring channels.

1003: Reference tolerance exceeded. When the user agreement is set, the difference between the new reference point that has been determined after power up (absolute encoder) or reference point approach (distance-coded or incremental measuring system) and the safe actual position (saved value + traversing distance) is greater than the reference tolerance (p9344). In this case, the user agreement is withdrawn.

1004:

Plausibility error for user agreement.

1. If the user agreement has already been set, then the setting is initiated again. In this case, the user agreement is withdrawn.

2. The user agreement was set, although the axis has still not been referenced.

1005: STO already active for test stop selection.

1011: Acceptance test status between the monitoring channels differ.

1012: Plausibility violation of the encoder actual value.

1014: fault when synchronizing the SGA for the "Safe cam" function

1015: Gearbox switchover (bit 27 in PROFIsafe telegram) takes longer than 2 min.

1020: Cyc. communication failure between the monit. channels.

1021: Cyc. communication failure between the monit. channel and Sensor Module.

1023: Error in the effectiveness test in the DRIVE-CLiQ encoder.

1024: Sign-of-life error for HTL/TTL encoders.

1030: Encoder fault detected from another monitoring channel.

1031:

- data transfer error between the monitoring channel and the Sensor Module (p9526/p9326).
- the Sensor Module for the second channel was replaced.
- the encoder for the second channel has been incorrectly parameterized.

1045: CRC of the standstill position incorrect.

5000 ... 5140:

PROFIsafe message values.

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions.

The significance of the individual message values is described in safety message C01711 of the Control Unit.

6000 ... 6166:

PROFIsafe message values (PROFIsafe driver for PROFIBUS DP V1/V2 and PROFINET).

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions.

The significance of the individual message values is described in safety fault F01611 of the Control Unit.

7000 ... 7002:

Message values of the "Safe position via PROFIsafe" function.

See also:p9555 (SI Motion transition time STOP F to STOP B (Control Unit)), r9725 (SI Motion diagnostics STOP F)

**Remedy:** For message value = 1002:

- perform safe acknowledgment, set the user agreement in both monitoring channels simultaneously (within 4 s).

For message value = 1003:

- check the mechanical system of the axis. It is possible that the axis was shifted when switched-off, and the last saved actual position no longer corresponds with the new actual position after the system has been powered up again.
- increase the tolerance for the actual value comparison when referencing (p9344).

Then check the actual values, perform a POWER ON and set the user agreement again.

For message value = 1004:

For 1., the following applies: Perform safe acknowledgment. Set the user agreement again.

For 2., the following applies: Perform safe acknowledgment. Only set the user agreement again if the axis has been referenced.

For message value = 1005:

- check the conditions for deselecting STO.

For message value = 1012:

- upgrade the Sensor Module firmware to a more recent version.
- for 1-encoder systems, the following applies: check the encoder parameters for equality (p9515/p9315, p9519/p9319, p9523/p9323, p9524/p9324, p9525/p9325, p9529/p9329).
- for a 1-encoder system and 2-encoder system the following applies: in order to correctly copy the encoder parameters from p04xx, p9700 must be set to 46 and p9701 must be set to 172.
- for DQI encoders the following applies: If required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.
- the parameterized encoder does not correspond to the connected encoder - replace the encoder.
- check the electrical cabinet design and cable routing for EMC compliance
- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).
- replace the hardware.

For message value = 1014:

- check the encoder actual values. If required, increase the position tolerance (p9342) and/or the cam tolerance (p9340).

For message value = 1024:

- check the communication link.
- increase the monitoring cycle clock settings (p9500, p9511).
- carry out a POWER ON (switch-off/switch-on) for all components.
- replace the hardware.

For message value = 1030:

- check the encoder connection.
- if required, replace the encoder.

For message value = 1031:

When replacing a Sensor Module, carry out the following steps:

- start the copy function for the node identifier on the drive (p9700 = 1D hex).
- acknowledge the hardware CRC on the drive (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

Adapt the encoder parameterization for the second channel as follows:

- set the encoder type (p0400).
- activate the safety commissioning mode (p0010 = 95).
- start the copy function for encoder parameters (p9700 = 46).
- exit the safety commissioning mode (p0010 = 0).
- save the parameters in a non-volatile fashion (copy RAM to ROM).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following always applies:

- check the encoder connection.
- if required, replace the encoder.

For message value = 6000 ... 6999:

- the significance of the individual message values is described in safety fault F01611 of the Control Unit.

For other message values:
- the significance of the individual message values is described in safety message C01711.
Note:
This message can be acknowledged via the Terminal Module 54F (TM54F) or PROFIsafe.
See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 230711 <location>SI Motion P2: Defect in a monitoring channel

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross-comparing the two monitoring channels, the drive detected a difference between the input data or results of the monitoring functions and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

If at least one monitoring function is active, then after the parameterized timer has expired, the message C30701 "SI Motion: STOP B initiated" is output. The message is output with message value 1031 when the Sensor Module hardware is replaced.

The following message values may also occur in the following cases if the cause that is explicitly mentioned does not apply:

- differently parameterized cycle times (p9500/p9300, p9511/p9311).
- differently parameterized axis types (p9502/p9302).
- excessively fast cycle times (p9500/p9300, p9511/p9311).
- incorrect synchronization.

Message value (r9749, interpret decimal):

0 ... 999:

Number of the cross-compared data that resulted in this message.

The significance of the individual message values is described in safety message C01711 of the Control Unit.

1000: Watchdog timer has expired. Too many signal changes have occurred at safety-relevant inputs.

1001: Initialization error of watchdog timer.

1002:

User agreement after the timer has expired different.

The user agreement is not consistent. After a time of 4 s has expired, the status of the user agreement is different in both monitoring channels.

1003: Reference tolerance exceeded. When the user agreement is set, the difference between the new reference point that has been determined after power up (absolute encoder) or reference point approach (distance-coded or incremental measuring system) and the safe actual position (saved value + traversing distance) is greater than the reference tolerance (p9344). In this case, the user agreement is withdrawn.

1004:

Plausibility error for user agreement.

1. If the user agreement has already been set, then the setting is initiated again. In this case, the user agreement is withdrawn.

2. The user agreement was set, although the axis has still not been referenced.

1005:

- for safe motion monitoring functions without encoder: pulses already suppressed for test stop selection.
- for safe motion monitoring functions with encoder: STO already active for test stop selection.

1011: Acceptance test status between the monitoring channels differ.

1012: Plausibility violation of the encoder actual value.

1014: fault when synchronizing the SGA for the "Safe cam" function

1015: Gearbox switchover (bit 27 in PROFIsafe telegram) takes longer than 2 min.

1020: Cyc. communication failure between the monit. channels.

1021: Cyc. communication failure between the monit. channel and Sensor Module.

1023: Error in the effectiveness test in the DRIVE-CLiQ encoder.

1024: Sign-of-life error for HTL/TTL encoders.

1030: Encoder fault detected from another monitoring channel.

1031:

- data transfer error between the monitoring channel and the Sensor Module (p9526/p9326).
- the Sensor Module for the second channel was replaced.
- the encoder for the second channel has been incorrectly parameterized.

1040: Pulses suppressed with active encoderless monitoring functions.

1041: Current absolute value too low (encoderless)

1042: Current/voltage plausibility error

1043: Too many acceleration phases

1044: Current actual values plausibility error.

1045: CRC of the standstill position incorrect.

5000 ... 5140:

PROFIsafe message values.

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions.

The significance of the individual message values is described in safety message C01711 of the Control Unit.

6000 ... 6166:

PROFIsafe message values (PROFIsafe driver for PROFIBUS DP V1/V2 and PROFINET).

For these message values, the failsafe control signals (Failsafe Values) are transferred to the safety functions. If "STOP B after failure of the PROFIsafe communication" (p9812) is parameterized, the transfer of the Failsafe Values is delayed.

The significance of the individual message values is described in safety fault F01611 of the Control Unit.

7000: Difference of the safe position is greater than the parameterized tolerance (p9542/p9342).

7001: Scaling value for the safe position in the 16 bit notation, too low (p9574/p9374).

7002: Cycle counter for transferring the safe position is different in both monitoring channels.

See also:p9555 (SI Motion transition time STOP F to STOP B (Control Unit)), r9725 (SI Motion diagnostics STOP F)

**Remedy:** For message value = 1002:

- perform safe acknowledgment, set the user agreement in both monitoring channels simultaneously (within 4 s).

For message value = 1003:

- check the mechanical system of the axis. It is possible that the axis was shifted when switched-off, and the last saved actual position no longer corresponds with the new actual position after the system has been powered up again.
- increase the tolerance for the actual value comparison when referencing (p9344).

Then check the actual values, perform a POWER ON and set the user agreement again.

For message value = 1004:

For 1., the following applies: Perform safe acknowledgment. Set the user agreement again.

For 2., the following applies: Perform safe acknowledgment. Only set the user agreement again if the axis has been referenced.

For message value = 1005:

- for safe motion monitoring functions without encoder: check the conditions for pulse enable.
- for safe motion monitoring functions with encoder: check the conditions for STO deselection.

Note:

For a Power Module, the test stop should always be performed when the pulses are enabled (independent of whether with encoder or without encoder).

For message value = 1012:

- upgrade the Sensor Module firmware to a more recent version.
- for 1-encoder systems, the following applies: check the encoder parameters for equality (p9515/p9315, p9519/p9319, p9523/p9323, p9524/p9324, p9525/p9325, p9529/p9329).
- for a 1-encoder system and 2-encoder system the following applies: in order to correctly copy the encoder parameters from p04xx, p9700 must be set to 46 and p9701 must be set to 172.
- for DQI encoders the following applies: If required, upgrade the firmware version of the Control Unit to a more recent version, which is released for DQI encoders.
- the parameterized encoder does not correspond to the connected encoder - replace the encoder.
- check the electrical cabinet design and cable routing for EMC compliance
- carry out a POWER ON (switch-off/switch-on) for all components or a warm restart (p0009 = 30, p0976 = 2, 3).
- replace the hardware.

For message value = 1014:

- check the encoder actual values. If required, increase the position tolerance (p9342) and/or the cam tolerance (p9340).

For message value = 1024:

- check the communication link.
- if required, increase the monitoring cycle clock settings (p9500, p9511).
- carry out a POWER ON (switch-off/switch-on) for all components.
- replace the hardware.

For message value = 1030:

- check the encoder connection.
- if required, replace the encoder.

For message value = 1031:

When replacing a Sensor Module, carry out the following steps:

- start the copy function for the node identifier on the drive (p9700 = 1D hex).
- acknowledge the hardware CRC on the drive (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

Adapt the encoder parameterization for the second channel as follows:

- set the encoder type (p0400).
- activate the safety commissioning mode (p0010 = 95).
- start the copy function for encoder parameters (p9700 = 46).
- exit the safety commissioning mode (p0010 = 0).
- save the parameters in a non-volatile fashion (copy RAM to ROM).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following always applies:

- check the encoder connection.
- if required, replace the encoder.

For message value = 1040:

- deselect encoderless monitoring functions, select and deselect STO.
- if monitoring function "SLS" is active, issue a pulse enable within 5 s of deselecting STO.

For message value = 6000 ... 6999:

- the significance of the individual message values is described in safety fault F01611 of the Control Unit.

For other message values:

- the significance of the individual message values is described in safety message C01711.

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):

- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 230712 <location>SI Motion P2: Defect in F-IO processing

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** When cross checking and comparing the two monitoring channels, the drive detected a difference between parameters or results of the F-IO processing and initiated a STOP F. One of the monitoring functions no longer reliably functions - i.e. safe operation is no longer possible.

The safety message C30711 with message value 0 is also displayed due to initiation of STOP F.

If at least one monitoring function is active, the safety message C30701 "SI Motion: STOP B initiated" is output after the parameterized timer has expired.

Message value (r9749, interpret decimal):

Number of the cross-compared data that resulted in this message.

Refer to the description of the message values in safety message C01712.

**Remedy:**

- check parameterization in the parameters involved and correct if required.
- ensure equality by copying the SI data to the second channel and then carry out an acceptance test.
- check monitoring clock cycle for equality (p9500, p9300).

This message can be acknowledged without a POWER ON as follows (safe acknowledgment):

- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.

See also:p9300 (SI Motion monitoring clock cycle (Motor Module)), p9500 (SI Motion monitoring clock cycle (Control Unit))

## 230714 <location>SI Motion P2: Safely-Limited Speed exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The drive had moved faster than that specified by the velocity limit value (p9331). The drive is stopped as a result of the configured stop response (p9363).

Message value (r9749, interpret decimal):

100: SLS1 exceeded.

200: SLS2 exceeded.

300: SLS3 exceeded.

400: SLS4 exceeded.

1000: Encoder limit frequency exceeded.

**Remedy:** - check the traversing/motion program in the control.
- check the limits for "SLS" function and if required, adapt (p9331).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed / SG: Safely reduced speed
See also:p9331 (SI Motion SLS limit values (Motor Module)), p9363 (SI Motion SLS stop response (Motor Module))

## 230715 <location>SI Motion P2: Safely-Limited Position exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The axis has moved past a parameterized position that is monitored by the "SLP" function.
Message value (r9749, interpret decimal):
10: SLP1 violated.
20: SLP2 violated.
**Remedy:** - check the traversing/motion program in the control.
- check the limits for "SLP" function and if required, adapt (p9534, p9535).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
Prerequisite:
- deselect "SLP" function and retract the axis into the permitted position range.
Carry out a safe acknowledgment using one of the following options:
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SI: Safety Integrated
SLP: Safely-Limited Position / SE: Safe software limit switches
See also:p9334, p9335

## 230716 <location>SI Motion P2: Tolerance for safe motion direction exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The tolerance for the "safe motion direction" function was exceeded. The drive is stopped as a result of the configured stop response (p9366).
Message value (r9749, interpret decimal):
0: Tolerance for the "safe motion direction positive" function exceeded.
1: Tolerance for the "safe motion direction negative" function exceeded.

**Remedy:** - check the traversing/motion program in the control.
- check the tolerance for "SDI" function and if required, adapt (p9364).
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
Prerequisite:
- deselect the "SDI" function and if required select again.
Carry out a safe acknowledgment using one of the following options:
- Terminal Module 54F (TM54F).
- onboard F-DI (only CU310-2).
- PROFIsafe.
- machine control panel.
Note:
SDI: Safe Direction (safe motion direction)
SI: Safety Integrated
See also:p9364, p9365, p9366

## 230717 <location>SI Motion P2: SLA limit exceeded

**Drive object:** HLA_DBSI, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The acceleration limit for the "Safely-Limited Acceleration" function was exceeded. The drive is stopped as a result of the configured stop response (p9379).
Message value (r9749, interpret decimal):
0: The monitoring of the coarsely resolved acceleration has violated the acceleration limit.
1: The monitoring of the finely resolved acceleration and possibly filtered acceleration has violated the acceleration limit.
**Remedy:** - check the traversing/motion program in the control.
- check the acceleration limit for the "SLA" function and if required, adapt (p9378).
- carry out a safe acknowledgment.
For message value = 0:
Analyze the causes using r9714[0] and r9714[3].
For message value = 1:
Analyze the causes using r9789[0], r9789[1] and r9789[2].
Note:
SI: Safety Integrated
SLA: Safely-Limited Acceleration
See also:p9378 (SI Motion SLA acceleration limit (MM)), p9379 (SI Motion SLA stop response (Motor Module))

## 230730 <location>SI Motion P2: Reference block for dynamic Safely-Limited Speed invalid

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The reference block transferred via PROFIsafe is negative.
A reference block is used to generate a referred velocity limit value based on the reference quantity "Velocity limit value SLS1" (p9331[0]).
The drive is stopped as a result of the configured stop response (p9363[0]).
Message value (r9749, interpret decimal):
requested, invalid reference block.

**Remedy:** In the PROFIsafe telegram, input data S_SLS_LIMIT_IST must be corrected.
This message can be acknowledged without a POWER ON as follows (safe acknowledgment):
- PROFIsafe.
Note:
SI: Safety Integrated
SLS: Safely-Limited Speed

## 230788 <location>Automatic test stop: wait for STO deselection via SMM

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The automatic test stop was not able to be carried out after powering up.
Possible causes:
- the STO function is selected via Safety Extended Functions.
- a safety message is present, that resulted in a STO.
Note:
STO: Safe Torque Off
**Remedy:** - Deselect STO via Safety Extended Functions.
- remove the cause of the safety messages and acknowledge the messages.
Note:
The automatic test stop is performed after removing the cause.

## 230797 <location>SI Motion P2: Axis not safely referenced

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The standstill position saved before switching off does not match the actual position determined at switch-on.
Message value (r9749, interpret decimal):
1: Axis not safely referenced.
2: User agreement missing.
**Remedy:** If safe automatic referencing is not possible the user must issue a user agreement for the new position using the softkey. This mean that this position is then designated as safety-relevant.
Note:
SI: Safety Integrated

## 230798 <location>SI Motion P2: Test stop for motion monitoring functions running

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The forced checking procedure (test stop) for the safe motion monitoring functions is currently in progress.
**Remedy:** Not necessary.
The message is automatically withdrawn when the test stop has been completed.
Note:
SI: Safety Integrated

## 230799 <location>SI Motion P2: Acceptance test mode active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The acceptance test mode is active.
This means the following:
- the setpoint velocity limiting is deactivated (r9733).
- the standard limit switches are deactivated during the acceptance test for function SLP (for EPOS internal, otherwise via r10234).
**Remedy:** Not necessary.
The message is automatically withdrawn when exiting the acceptance test mode.
Note:
SI: Safety Integrated
SLP: Safely-Limited Position

## 230800 <location>Power unit: Group signal

**Drive object:** 'All objects
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** NONE
**Cause:** The power unit has detected at least one fault.
**Remedy:** Evaluate the other messages that are presently available.

## 230801 <location>Power unit DRIVE-CLiQ: Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned.
The computing time load might be too high.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - deselect functions that are not required.
- if required, increase the sampling times (p0112, p0115).
- replace the component involved (power unit, Control Unit).

## 230802 <location>Power unit: Time slice overflow

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred.
Fault value (r0949, interpret decimal):
xx: time slice number
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 230804 <location>Power unit: CRC

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Infeed: OFF2 (OFF1)
Servo: OFF2 (OFF1, OFF3)
Hla: OFF2 (OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A checksum error (CRC error) has occurred for the power unit.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 230805 <location>Power unit: EEPROM checksum error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** Internal parameter data is corrupted.
Fault value (r0949, interpret decimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
03: Safety EEPROM data error.
...
20: Safety EEPROM data error.
**Remedy:** Replace the power unit involved.

## 230809 <location>Power unit: Switching information not valid

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** For 3P gating unit, the following applies:
The last switching status word in the setpoint telegram is identified by the end ID. Such an end ID was not found.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 230810 <location>Power unit: Watchdog timer

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When booting it was detected that the cause of the previous reset was an SAC watchdog timer overflow.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 230820 <location>Power unit DRIVE-CLiQ: Telegram error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 230835 <location>Power unit DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - carry out a POWER ON.
- replace the component involved (power unit, Control Unit).

## 230836 <location>Power unit DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 230837 <location>Power unit DRIVE-CLiQ: Component fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 230845 <location>Power unit DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the power unit concerned.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 230850 <location>Power unit: Internal software error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred in the power unit.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - replace power unit.
- if required, upgrade the firmware in the power unit.
- contact Technical Support.

## 230851 <location>Power unit DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - deselect functions that are not required.
- if required, increase the sampling times (p0112, p0115).
- replace the component involved (power unit, Control Unit).

## 230853 <location>Power unit: Sign-of-life error cyclic data

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The power unit has detected that the cyclic setpoint telegrams of the Control Unit have not been updated on time. At least two sign-of-life errors have occurred within the window set in p7788.
**Remedy:** - reduce the size of the window (p7788) for monitoring.
- check the Motor Module, and if required replace.

## 230860 <location>Power unit DRIVE-CLiQ (CU): Telegram error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 230875 <location>Power unit: power supply voltage failed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 230885 <location>CU DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

## 230886 <location>PU DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 230887 <location>Power unit DRIVE-CLiQ (CU): Component fault

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component (power unit) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 230895 <location>PU DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the power unit to the Control Unit involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 230896 <location>Power unit DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (power unit), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 230899 <location>Power unit: Unknown fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** New message: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the power unit that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

## 230903 <location>Power unit: I2C bus error occurred

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** Communications error with an EEPROM or an analog/digital converter.
Fault value (r0949, interpret hexadecimal):
80000000 hex:
- internal software error.
00000001 hex ... 0000FFFF hex:
- module fault.

**Remedy:** For fault value = 80000000 hex:
- upgrade firmware to later version.
For fault value = 00000001 hex ... 0000FFFF hex:
- replace the module.

## 230907 <location>Power unit: FPGA configuration unsuccessful

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** During initialization within the power unit, an internal software error has occurred.

**Remedy:** - if required, upgrade the firmware in the power unit.
- replace power unit.
- contact Technical Support.

## 230919 <location>Power unit: Temperature monitoring failed

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature monitoring in the power unit has failed.
Fault-free operation of the drive system is no longer guaranteed.
Alarm value (r2124, interpret binary):
Bit 0: Sensor 1 for the internal temperature can no longer be evaluated.
Bit 1: Sensor 2 for the internal temperature can no longer be evaluated.
**Remedy:** Replace the power unit immediately.

## 230920 <location>Power unit: Temperature sensor fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT100: R > 375 Ohm, PT1000: R > 1720 Ohm
2: Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT100: R < 30 Ohm, PT1000: R < 603 Ohm
Note:
A temperature sensor is connected to the following terminals:
- "Booksize" format: X21.1/.2 or X22.1/.2
- "Chassis" format: X41.4/.3
Information on temperature sensors is provided in the following literature for example:
SINAMICS S120 Function Manual Drive Functions
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 230930 <location>Power unit: Component trace has saved data

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Trace data was saved in the component.
**Remedy:** Not necessary.
Note:
For p7792= 1, the trace data of the component can be written to the memory card.

## 230950 <location>Power unit: Internal software error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2

**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.
**Remedy:** - if necessary, upgrade the firmware in the power unit to a later version.
- contact Technical Support.

## 230999 <location>Power unit: Unknown alarm

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm occurred on the power unit that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
**Remedy:** - replace the firmware on the power unit by an older firmware version (r0128).
- upgrade the firmware on the Control Unit (r0018).

## 231100 <location>Encoder 1: Zero mark distance error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)
**Acknowledge:** PULSE INHIBIT
**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- replace the encoder or encoder cable.

## 231101 <location>Encoder 1: Zero mark failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

## 231103 <location>Encoder 1: Signal level zero mark (track R) outside tolerance

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** R track: %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The zero mark signal level (track R) does not lie within the tolerance bandwidth for encoder 1.
The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)
The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.
The response threshold for the differential signal level of the encoder is < -1600 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.
The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly (not connected with the incorrect polarity).
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 231110 <location>Encoder 1: Serial communications error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** There is an error in the transfer of the serial communication protocol between the encoder and internal or external evaluation module.
Fault value (r0949, interpret binary):
For an EnDat 2.1 encoder, the significance of the fault value is as follows:
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 7: Timeout for the register communication.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Bit 13: Data line incorrect.
Bit 14: Fault for the register communication.
Bit 15: Internal communication error.
Note:
For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

**Remedy:** For fault value, bit 0 = 1:
- Enc defect F31111 may provide additional details.

For fault value, bit 1 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable.

For fault value, bit 4 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 5 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 6 = 1:
- Update Sensor Module firmware.

For fault value, bit 7 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 8 = 1:
- check parameterization (p0429.2).

For fault value, bit 9 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 10 = 1:
- check parameterization (p0429.2, p0449).

For fault value, bit 11 = 1:
- check parameterization (p0436).

For fault value, bit 12 = 1:
- check parameterization (p0429.6).

For fault value, bit 13 = 1:
- check data line.

For fault value, bit 14 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

## 231111 <location>Encoder 1: Encoder signals an internal error (detailed information)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder error word provides detailed information (error bit).
For p0404.8 = 0, the following applies:
Fault value for internal Siemens troubleshooting.
For p0404.8 = 1, the following applies:
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** For yyyy = 0:
For fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
For fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
For fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).
For yyyy = 1:
Encoder is defective. Replace encoder.

## 231112 <location>Encoder 1: Encoder signals an internal error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder signals an internal error via serial protocol.
Fault value (r0949, interpret binary):
Bit 0: Fault bit in the position protocol.

**Remedy:** For fault value, bit 0 = 1:
In the case of an EnDat encoder, F31111 may provide further details.

## 231115 <location>Encoder 1: Signal level track A or B too low

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** A track: %1, B-track: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (root from A^2 + B^2) of the encoder falls below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 170 mV (input frequency <= 256 kHz) or < 120 mV (input frequency > 256 kHz).
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
The following applies to measuring systems without their own bearing system:
- adjust the scanning head and check the bearing system of the measuring wheel.
The following applies for measuring systems with their own bearing system:
- ensure that the encoder housing is not subject to any axial force.

## 231116 <location>Encoder 1: Signal level track A or B too low

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** A track: %1, B-track: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The signal level of the rectified encoder signals A and B of the encoder fall below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 130 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).

## 231117 <location>Encoder 1: Inversion error signals A/B/R

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.
Fault value (r0949, interpret binary):
Bits 0 ... 15: Only for internal Siemens troubleshooting.
Bit 16: Error track A.
Bit 17: Error track B.
Bit 18: Error track R.
Note:
For SMC30 (only Article No. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), CUA32 and CU310-2, the following applies:
A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check the encoder/cable.
- Does the encoder supply signals and the associated inverted signals?
Note:
For SMC30 (only Article Number 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), the following applies:
- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).
For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30), X220 (CUA32) or X23 (CU310-2):
- pin 10 (reference signal R) <--> pin 7 (encoder power supply, ground)
- pin 11 (reference signal R inverted) <--> pin 4 (encoder power supply)

## 231118 <location>Encoder 1: Speed change not plausible

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Encoder 1 is used as motor encoder and can be effective has fault response to change over to encoderless operation.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0491, p0492

**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

## 231120 <location>Encoder 1: Encoder power supply fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** An encoder power supply fault was detected.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line.
Bit 1: Overcurrent condition for the encoder power supply.
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.
Bit 5: Overcurrent at the EnDat connection of the converter.
Bit 6: Overvoltage at the EnDat connection of the converter.
Bit 7: Hardware fault at the EnDat connection of the converter.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 2 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 3 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 5 = 1:
- Measuring unit correctly connected at the converter?
- Replace the measuring unit or the cable to the measuring unit.
For fault value, bit 6, 7 = 1:
- Replace the defective EnDat 2.2 converter.

## 231121 <location>Encoder 1: Determined commutation position incorrect

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: NONE
Servo: ENCODER (NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** A commutation position actual value sensing error was detected.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 231122 <location>Encoder 1: Sensor Module hardware fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER
Hla: ENCODER

**Acknowledge:** IMMEDIATELY

**Cause:** An internal Sensor Module hardware fault was detected.
Fault value (r0949, interpret decimal):
1: Reference voltage error.
2: Internal undervoltage.
3: Internal overvoltage.

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 231123 <location>Encoder 1: Signal level A/B outside tolerance

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The unipolar level (AP/AN or BP/BN) for encoder 1 is outside the permissible tolerance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Either AP or AN outside the tolerance.
Bit 16 = 1: Either BP or BN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

## 231125 <location>Encoder 1: Signal level track A or B too high

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** A track: %1, B-track: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (root from A^2 + B^2) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms).
The response threshold is > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 231126 <location>Encoder 1: Signal level track A or B too high

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (|A| + |B|) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold for (|A| + |B|) is > 1120 mV or the root of (A^2 + B^2) > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 231129 <location>Encoder 1: Position difference hall sensor/track C/D and A/B too large

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A31429.
Fault value (r0949, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 231130 <location>Encoder 1: Zero mark and position error from the coarse synchronization

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Angular deviation, electrical: %1, angle, mechanical: %2

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.
When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Determined mechanical zero mark position (can only be used for track C/D).
xxxx: Deviation of the zero mark from the expected position as electrical angle.
Scaling: 32768 dec = 180 °
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check p0431 and, if necessary, correct (trigger via p1990 = 1 if necessary).
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

## 231131 <location>Encoder 1: Position deviation incremental/absolute too high

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Absolute encoder:

When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.

Limit value for the deviation:

- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.

Incremental encoder:

When the zero pulse is passed, a deviation in the incremental position was detected.

For equidistant zero marks, the following applies:

- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.

For distance-coded zero marks, the following applies:

- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.

Fault value (r0949, interpret decimal):

Deviation in quadrants (1 pulse = 4 quadrants).

See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).

## 231135 <location>Encoder 1: Fault when determining the position (single turn)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE

Servo: ENCODER (IASC/DCBRK, NONE)

Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (singleturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 231136 <location>Encoder 1: Fault when determining the position (multiturn)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (multiturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 231137 <location>Encoder 1: Fault when determining the position (single turn)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 18: Single-step capability monitoring singleturn from the Safety channel.
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 12 (0000 1100 bin), the following applies:
Bit 8: encoder fault.
Bit 10: error in the internal position data transport.
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).

Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).
Bit 23: Position word 2 internal error (self-test/software).
---
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 231138 <location>Encoder 1: Fault when determining the position (multiturn)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Fault cause: %1 bin
**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).
Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).

Bit 23: Position word 2 internal error (self-test/software).

---

Note:

For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 231142 <location>Encoder 1: Battery voltage fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: ENCODER (NONE, OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.

**Remedy:** Replace battery.

## 231150 <location>Encoder 1: Initialization error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Encoder functionality selected in p0404 cannot be executed.
Fault value (r0949, interpret hexadecimal):
Encoder malfunction.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).
See also:p0404 (Encoder configuration effective), p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that p0404 is correctly set.
- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.
- if relevant, note additional fault messages that describe the fault in detail.

## 231151 <location>Encoder 1: Encoder speed for initialization AB too high

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder speed is too high while initializing the Sensor Module.

**Remedy:** Reduce the speed of the encoder accordingly during initialization.
If necessary, deactivate monitoring (p0437.29).
See also:p0437 (Sensor Module configuration extended)

## 231152 <location>Encoder 1: Max. signal frequency (track A/B) exceeded

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: ENCODER (NONE, OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)
**Acknowledge:** PULSE INHIBIT
**Cause:** The maximum signal frequency of the encoder evaluation has been exceeded.
Fault value (r0949, interpret decimal):
Actual signal frequency in Hz.
See also:p0408
**Remedy:** - reduce the speed.
- Use an encoder with a lower pulse number (p0408).

## 231153 <location>Encoder 1: Identification error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred when identifying the encoder (waiting) p0400 = 10100.
The connected encoder was not able to be identified.
Fault value (r0949, interpret binary):
Bit 0: Data length incorrect.
See also:p0400 (Encoder type selection)
**Remedy:** Manually configure the encoder according to the data sheet.

## 231160 <location>Encoder 1: Analog sensor channel A failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: ENCODER (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4673).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4673).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 231161 <location>Encoder 1: Analog sensor channel B failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: ENCODER (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** PULSE INHIBIT

**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4675).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 231163 <location>Encoder 1: Analog sensor position value exceeds limit value

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: ENCODER (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Fault value (r0949, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.

**Remedy:** For fault value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For fault value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 231400 <location>Encoder 1: Zero mark distance error (alarm threshold exceeded)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 231401 <location>Encoder 1: Zero mark failed (alarm threshold exceeded)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The 1.5x parameterized zero mark distance was exceeded without a zero mark being detected.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).
**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

## 231405 <location>Encoder 1: Temperature in the encoder evaluation exceeded

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** temperature: [0.1 degrees C] %1, temperature sensor number: %2
**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An inadmissibly high temperature was detected in the encoder electronics or the encoder evaluation.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = temperature sensor number, xxxx = measured module temperature in 0.1 °C.
**Remedy:** Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

## 231407 <location>Encoder 1: Function limit reached

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The encoder has reached one of its function limits. A service is recommended.
Alarm value (r2124, interpret decimal):
1: Incremental signals
3: Absolute track
4: Code connection
**Remedy:** Perform service. Replace the encoder if necessary.
Note:
The actual functional reserve of an encoder can be displayed via r4651.
See also:p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)

## 231410 <location>Encoder 1: Communication error (encoder and Sensor Module)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 231411 <location>Encoder 1: Encoder signals an internal alarm (detailed information)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The absolute encoder fault word includes alarm bits that have been set.
Alarm value (r2124, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR_converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Replace encoder.

## 231412 <location>Encoder 1: Encoder signals an internal alarm

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The encoder signals an internal alarm via serial protocol.
Alarm value (r2124, interpret binary):
Bit 0: Fault bit in the position protocol.
Bit 1: Alarm bit in the position protocol.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 231414 <location>Encoder 1: Signal level track C or D out of tolerance

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** C track: %1, D track: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track D (16 bits with sign).
xxxx = Signal level, track C (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

## 231415 <location>Encoder 1: Signal level track A or B outside tolerance (alarm)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (root from A^2 + B^2) of the encoder is outside the permissible tolerance.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 230 mV (observe the frequency response of the encoder).
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 231418 <location>Encoder 1: Speed change not plausible (alarm)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0492

**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

## 231419 <location>Encoder 1: Track A or B outside tolerance

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The amplitude/phase/offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxxx1: Minimum of the offset correction, track B
xxxx2: Maximum of the offset correction, track B
xxx1x: Minimum of the offset correction, track A
xxx2x: Maximum of the offset correction, track A
xx1xx: Minimum of the amplitude correction, track B/A
xx2xx: Maximum of the amplitude correction, track B/A
x1xxx: Minimum of the phase error correction
x2xxx: Maximum of the phase error correction
1xxxx: Minimum of the cubic correction
2xxxx: Maximum of the cubic correction
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

## 231421 <location>Encoder 1: Determined commutation position incorrect (alarm)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A commutation position actual value sensing error was detected.
Alarm value (r2124, interpret decimal):
3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

**Remedy:** For alarm value = 3:
- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.

## 231422 <location>Encoder 1: Pulses per revolution square-wave encoder outside tolerance bandwidth

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.
The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).
Alarm value (r2124, interpret decimal):
accumulated differential pulses in encoder pulses.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 231429 <location>Encoder 1: Position difference hall sensor/track C/D and A/B too large

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
Alarm value (r2124, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 231431 <location>Encoder 1: Position deviation incremental/absolute too high (alarm)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.
For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.
Alarm value (r2124, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- Clean coding disk or remove strong magnetic fields.

## 231432 <location>Encoder 1: Rotor position adaptation corrects deviation

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** On track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.
Alarm value (r2124, interpret decimal):
Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

## 231442 <location>Encoder 1: Battery voltage alarm threshold reached

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.
**Remedy:** Replace battery.

## 231443 <location>Encoder 1: Signal level track C/D outside tolerance (alarm)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The unipolar level (CP/CN or DP/DN) for encoder 1 is outside the permissible tolerance.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Either CP or CN outside the tolerance.
Bit 16 = 1: Either DP or DN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- are the C/D tracks connected correctly (have the signal cables CP and CN or DP and DN been interchanged)?
- replace the encoder cable.

## 231460 <location>Encoder 1: Analog sensor channel A failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside measuring range set in p4673.
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4673).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 231461 <location>Encoder 1: Analog sensor channel B failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4675).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 231462 <location>Encoder 1: Analog sensor no channel active

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Channel A and B are not activated for the analog sensor.

**Remedy:** - activate channel A and/or channel B (p4670).
- check the encoder configuration (p0404.17).
See also:p4670 (Analog sensor configuration)

## 231463 <location>Encoder 1: Analog sensor position value exceeds limit value

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Alarm value (r2124, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.

**Remedy:** For alarm value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.

For alarm value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 231470 <location>Encoder 1: Encoder signals an internal error (X521.7)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** For the Sensor Module Cabinet 30 (SMC30), a dirty encoder is signaled via a 0 signal at terminal X521.7.

**Remedy:**
- check the plug connections.
- replace the encoder or encoder cable.

## 231500 <location>Encoder 1: Position tracking traversing range exceeded

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.
For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.
For p0411.3 = 1, the maximum traversing range for the configured linear axis is preset (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).

**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).

The fault should then be acknowledged and the absolute encoder adjusted.

## 231501 <location>Encoder 1: Position tracking encoder position outside tolerance window

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched off, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value.
The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r0477.
See also:p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)

**Remedy:** Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also:p0010, p2507

## 231502 <location>Encoder 1: Encoder with measuring gear without valid signals

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** Infeed: OFF1 (OFF2)
Servo: OFF1 (OFF2, OFF3)
Hla: OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The encoder with measuring gear no longer provides any valid signals.
**Remedy:** It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

## 231503 <location>Encoder 1: Position tracking cannot be reset

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The position tracking for the measuring gear cannot be reset.
**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

## 231700 <location>Encoder 1: Functional safety monitoring initiated

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Functional safety was activated. Self-test of the DRIVE-CLiQ encoder has detected a fault.
Alarm value (r2124, interpret binary):
Bit x = 1: Effectivity test x unsuccessful.
**Remedy:** Replace encoder.

## 231800 <location>Encoder 1: Group signal

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** NONE

**Cause:** The motor encoder has detected at least one fault.
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** Evaluate the other messages that are presently available.

## 231801 <location>Encoder 1 DRIVE-CLiQ: Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.

## 231802 <location>Encoder 1: Time slice overflow

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred in encoder 1.
Fault value (r0949, interpret hexadecimal):
yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved
x = 9:
Time slice overflow of the fast (current controller clock cycle) time slice.
x = A:
Time slice overflow of the average time slice.
x = C:
Time slice overflow of the slow time slice.
yx = 3E7:
Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** Increase the current controller sampling time
Note:
For a current controller sampling time = 31.25 µs, use an SMx20 with Article No. 6SL3055-0AA00-5xA3.

## 231804 <location>Encoder 1: Sensor Module checksum error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** POWER ON (IMMEDIATELY)

**Cause:** A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version (>= V2.6 HF3, >= V4.3 SP2, >= V4.4).
- check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.

## 231805 <location>Encoder 1: EEPROM checksum error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Data in the EEPROM corrupted .
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Replace the module.

## 231806 <location>Encoder 1: Initialization error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder was not successfully initialized.
Fault value (r0949, interpret binary):
Bit 0, 1: Encoder initialization with the motor rotating has failed (deviation involving coarse and fine position in encoder pulses/4).
Bit 2: Mid-voltage matching for track A unsuccessful.
Bit 3: Mid-voltage matching for track B unsuccessful.
Bit 4: Mid-voltage matching for acceleration input unsuccessful.
Bit 5: Mid-voltage matching for track safety A unsuccessful.
Bit 6: Mid-voltage matching for track safety B unsuccessful.
Bit 7: Mid-voltage matching for track C unsuccessful.
Bit 8: Mid-voltage matching for track D unsuccessful.
Bit 9: Mid-voltage matching for track R unsuccessful.
Bit 10: The difference in mid-voltages between A and B is too great (> 0.5 V)
Bit 11: The difference in mid-voltages between C and D is too great (> 0.5 V)
Bit 12: The difference in mid-voltages between safety A and safety B is too great (> 0.5 V)
Bit 13: The difference in mid-voltages between A and safety B is too great (> 0.5 V)
Bit 14: The difference in mid-voltages between B and safety A is too great (> 0.5 V)
Bit 15: The standard deviation of the calculated mid-voltages is too great (> 0.3 V)
Bit 16: Internal fault - fault when reading a register (CAFE)
Bit 17: Internal fault - fault when writing a register (CAFE)
Bit 18: Internal fault: No mid-voltage matching available
Bit 19: Internal error - ADC access error.
Bit 20: Internal error - no zero crossover found.
Bit 28: Error while initializing the EnDat 2.2 measuring unit.
Bit 29: Error when reading out the data from the EnDat 2.2 measuring unit.
Bit 30: EEPROM checksum of the EnDat 2.2 measuring unit incorrect.
Bit 31: Data of the EnDat 2.2 measuring unit inconsistent.
Note:
Bit 0, 1: Up to 6SL3055-0AA00-5*A0
Bits 2 ... 20: 6SL3055-0AA00-5*A1 and higher
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Acknowledge fault.
If the fault cannot be acknowledged:
Bits 2 ... 9: Check encoder power supply.
Bits 2 ... 14: Check the corresponding cable.
Bit 15 with no other bits: Check track R, check settings in p0404.
Bit 28: Check the cable between the EnDat 2.2 converter and the measuring unit.
Bit 29 ... 31: Replace the defective measuring unit.

## 231811 <location>Encoder 1: Encoder serial number changed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The serial number of the motor encoder of a synchronous motor has changed. The change was only checked for encoders with serial number (e.g. EnDat encoders) and build-in motors (e.g. p0300 = 401) or third-party motors (p0300 = 2).
Cause 1:
- the encoder was replaced.
Cause 2:
- a third-party, built-in or linear motor was re-commissioned.
Cause 3:
- the motor with integrated and adjusted encoder was replaced.
Cause 4:
- the firmware was updated to a version that checks the encoder serial number.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
Proceed as follows to hide serial number monitoring:
- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.
- parameterize F07414 as message type N (p2118, p2119).
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** For causes 1, 2:
Carry out an automatic adjustment using the pole position identification routine. Acknowledge fault. Initiate the pole position identification routine with p1990 = 1. Then check that the pole position identification routine is correctly executed.
SERVO:
If a pole position identification technique is selected in p1980, and if p0301 does not contain a motor type with an encoder adjusted in the factory, then p1990 is automatically activated.
or
Set the adjustment via p0431. In this case, the new serial number is automatically accepted.
or
Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.
For causes 3, 4:
Accept the new serial number with p0440 = 1.

## 231812 <location>Encoder 1: Requested cycle or RX-/TX timing not supported

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A cycle requested from the Control Unit or RX/TX timing is not supported.
Fault value (r0949, interpret decimal):
0: Application cycle is not supported.
1: DRIVE-CLiQ cycle is not supported.
2: Distance between RX and TX instants in time too low.
3: TX instant in time too early.
**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components.

## 231813 <location>Encoder 1: Hardware logic unit failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Fault cause: %1 bin
**Reaction:** Infeed: NONE
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** PULSE INHIBIT

**Cause:** The logic unit of the DRIVE-CLiQ encoder has failed.
Fault value (r0949, interpret binary):
Bit 0: ALU watchdog has responded.
Bit 1: ALU has detected a sign-of-life error.
**Remedy:** When the error reoccurs, replace the encoder.

## 231820 <location>Encoder 1 DRIVE-CLiQ: Telegram error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 231835 <location>Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 231836 <location>Encoder 1 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Carry out a POWER ON.

## 231837 <location>Encoder 1 DRIVE-CLiQ: Component fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 231845 <location>Encoder 1 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 231850 <location>Encoder 1: Encoder evaluation internal software error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred in the Sensor Module of encoder 1.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
11000 ... 11499: Descriptive data from EEPROM incorrect.
11500 ... 11899: Calibration data from EEPROM incorrect.
11900 ... 11999: Configuration data from EEPROM incorrect.
12000 ... 12008: communication with analog/digital converter faulted.
16000: DRIVE-CLiQ encoder initialization application error.
16001: DRIVE-CLiQ encoder initialization ALU error.
16002: DRIVE-CLiQ encoder HISI / SISI initialization error.
16003: DRIVE-CLiQ encoder safety initialization error.
16004: DRIVE-CLiQ encoder internal system error.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 231851 <location>Encoder 1 DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - Upgrade the firmware of the component involved.
- carry out a POWER ON (switch-off/switch-on) for the component involved.

## 231860 <location>Encoder 1 DRIVE-CLiQ (CU): Telegram error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**
- carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 231875 <location>Encoder 1: power supply voltage failed

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 231885 <location>Encoder 1 DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 231886 <location>Encoder 1 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- check whether the firmware version of the encoder (r0148) matches the firmware version of Control Unit (r0018).

## 231887 <location>Encoder 1 DRIVE-CLiQ (CU): Component fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 1). Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 231895 <location>Encoder 1 DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 1) involved to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 231896 <location>Encoder 1 DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: OFF2 (ENCODER, IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (ENCODER, NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (Sensor Module for encoder 1), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 231899 <location>Encoder 1: Unknown fault

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** New message: %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 231902 <location>Encoder 1: SPI-BUS error occurred

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Error when operating the internal SPI bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 231903 <location>Encoder 1: I2C-BUS error occurred

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error when operating the internal I2C bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 231905 <location>Encoder 1: Encoder parameterization error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY

**Cause:** An error was identified in the encoder parameterization.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
xxxx = 421:
For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.
yyyy = 0:
No additional information available.
yyyy = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
yyyy = 2:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.
yyyy = 3:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number < 10000.
yyyy = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
yyyy = 5:
For SQW encoder, value in p4686 greater than in p0425.
yyyy = 6:
DRIVE-CLiQ encoder cannot be used with this firmware version.
yyyy = 7:
For an SQW encoder, the XIST1 correction (p0437.2) is only permitted for equidistant zero marks.
yyyy = 8:
The motor pole pair width is not supported by the linear scale being used.
yyyy = 9:
The length of the position in the EnDat protocol may be a maximum of 32 bits.
yyyy = 10:
The connected encoder is not supported.
yyyy = 11:
The hardware does not support track monitoring.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- re parameter number = 314:
- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

## 231912 <location>Encoder 1: Device combination is not permissible

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** Infeed: ENCODER (NONE)
Servo: ENCODER (IASC/DCBRK, NONE)
Hla: ENCODER (NONE)
**Acknowledge:** PULSE INHIBIT

**Cause:** The selected device combination is not supported.
Fault value (r0949, interpret decimal):
1003:
The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of 2^n.
1005:
The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter.
1006:
The maximum duration of the EnDat transfer (31.25 µs) was exceeded.
2001:
The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter.
2002:
The resolution of the linear measuring unit does not match the pole pair width of the linear motor
Pole pair width, minimum = p0422 * 2^20

**Remedy:** For fault value = 1003, 1005, 1006:
- Use a measuring unit that is permissible.
For fault value = 2001:
- set a permissible cycle combination (if required, use standard settings).
For fault value = 2002:
- Use a measuring unit with a lower resolution (p0422).

## 231915 <location>Encoder 1: Encoder configuration error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The configuration for encoder 1 is incorrect.
Alarm value (r2124, interpret decimal):
1:
Re-parameterization between fault/alarm is not permissible.
2:
The cyclic DQ receive telegram is too long and is limited.
3:
The cyclic DQ send telegram is too long and is limited.
419:
When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.

**Remedy:** For alarm value = 1:
No re-parameterization between fault/alarm.
For alarm value = 419:
Reduce the fine resolution (p0419) or deactivate the monitoring (p0437.25), if the complete multiturn range is not required.

## 231916 <location>Encoder 1: Encoder parameterization error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: ENCODER (IASC/DCBRK, NONE, OFF1, OFF2, OFF3, STOP2)
Hla: ENCODER (NONE, OFF1, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY

**Cause:** An encoder parameter was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
Parameter number.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:**
- check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.

## 231916 <location>Encoder 1: Encoder parameterization error

**Drive object:** ENC_840

**Message value:** Parameter: %1, supplementary information: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A parameter of encoder 1 was detected as being incorrect.
In the case of the ENCODER drive object, the selected encoder type (rotary/linear) might not match the function module setting (r0108.12).
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
Parameter number.
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:**
- check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- if a linear encoder has been selected in parameter p0400/p0404, the "linear encoder" function module has to be activated (r0108.12 = 1)
- if a rotary encoder has been selected in parameter p0400/p0404, the "linear encoder" function module should not be activated (r0108.12 = 0)

## 231920 <location>Encoder 1: Temperature sensor fault (motor)

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1, channel number: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The motor detected a fault when evaluating the temperature sensor.
Fault cause:
1 (= 01 hex):
Wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm
2 (= 02 hex):
Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm
Additional values:
Only for internal Siemens troubleshooting.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = channel number, xx = error cause
See also:p0491 (Motor encoder fault response ENCODER)

**Remedy:** - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

## 231930 <location>Encoder 1: Data logger has saved data

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.
The diagnostics data is saved in the following folder:
/USER/SINAMICS/DATA/SMTRC00.BIN
...
/USER/SINAMICS/DATA/SMTRC07.BIN
/USER/SINAMICS/DATA/SMTRCIDX.TXT
The following information is contained in the TXT file:
- Display of the last written BIN file.
- Number of write operations that are still possible (from 10000 downwards).
Note:
Only Siemens can evaluate the BIN files.
**Remedy:** Not necessary.
This alarm is automatically withdrawn.
The data logger is ready to record the next fault case.

## 231940 <location>Encoder 1: Spindle sensor S1 voltage incorrect

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The voltage of analog sensor S1 is outside the permissible range.
Alarm value (r2124, interpret decimal):
Signal level from sensor S1.
Note:
A signal level of 500 mV corresponds to the numerical value 500 dec.
**Remedy:** - check the clamped tool.
- check the tolerance and if required, adapt (p5040).
- check the thresholds and if required, adapt (p5041).
- check analog sensor S1 and connections.
See also:p5040 (Spindle voltage threshold values tolerance), p5041 (Spindle voltage threshold values)

## 231950 <location>Encoder 1: Internal software error

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** ENCODER (OFF2)
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
The fault value contains information regarding the fault source.
Only for internal Siemens troubleshooting.

**Remedy:** - if necessary, upgrade the firmware in the Sensor Module to a later version.
- contact Technical Support.

## 231999 <location>Encoder 1: Unknown alarm

**Drive object:** A_INF_840, B_INF_840, ENC_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A alarm has occurred on the Sensor Module for encoder 1 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
See also:p0491 (Motor encoder fault response ENCODER)
**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 232100 <location>Encoder 2: Zero mark distance error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** PULSE INHIBIT
**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- replace the encoder or encoder cable.

## 232101 <location>Encoder 2: Zero mark failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** PULSE INHIBIT
**Cause:** The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

## 232103 <location>Encoder 2: Signal level zero track (track R) outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** R track: %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The zero mark signal level (track R) does not lie within the tolerance bandwidth for encoder 2.
The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)
The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.
The response threshold for the differential signal level of the encoder is < -1600 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.
The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:**
- check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly (not connected with the incorrect polarity).
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 232110 <location>Encoder 2: Serial communications error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** There is an error in the transfer of the serial communication protocol between the encoder and internal or external evaluation module.
Fault value (r0949, interpret binary):
For an EnDat 2.1 encoder, the significance of the fault value is as follows:
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 7: Timeout for the register communication.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Bit 13: Data line incorrect.
Bit 14: Fault for the register communication.
Bit 15: Internal communication error.
Note:
For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

**Remedy:** For fault value, bit 0 = 1:
- Enc defect F31111 may provide additional details.

For fault value, bit 1 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable.

For fault value, bit 4 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 5 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 6 = 1:
- Update Sensor Module firmware.

For fault value, bit 7 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 8 = 1:
- check parameterization (p0429.2).

For fault value, bit 9 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 10 = 1:
- check parameterization (p0429.2, p0449).

For fault value, bit 11 = 1:
- check parameterization (p0436).

For fault value, bit 12 = 1:
- check parameterization (p0429.6).

For fault value, bit 13 = 1:
- check data line.

For fault value, bit 14 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

## 232111 <location>Encoder 2: Encoder signals an internal error (detailed information)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder error word provides detailed information (error bit).
For p0404.8 = 0, the following applies:
Fault value for internal Siemens troubleshooting.
For p0404.8 = 1, the following applies:
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.

**Remedy:** For yyyy = 0:
For fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
For fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
For fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).
For yyyy = 1:
Encoder is defective. Replace encoder.

## 232112 <location>Encoder 2: Encoder signals an internal error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder signals a set error bit via the serial protocol.
Fault value (r0949, interpret binary):
Bit 0: Fault bit in the position protocol.

**Remedy:** For fault value, bit 0 = 1:
In the case of an EnDat encoder, F31111 may provide further details.

## 232115 <location>Encoder 2: Signal level track A or B too low

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** A track: %1, B-track: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT
**Cause:** The signal level (root from A^2 + B^2) of the encoder falls below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 170 mV (input frequency <= 256 kHz) or < 120 mV (input frequency > 256 kHz).
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
The following applies to measuring systems without their own bearing system:
- adjust the scanning head and check the bearing system of the measuring wheel.
The following applies for measuring systems with their own bearing system:
- ensure that the encoder housing is not subject to any axial force.

## 232116 <location>Encoder 2: Signal level track A or B too low

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** A track: %1, B-track: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The signal level of the rectified encoder signals A and B of the encoder fall below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 130 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).

## 232117 <location>Encoder 2: Inversion error signals A/B/R

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.
Fault value (r0949, interpret binary):
Bits 0 ... 15: Only for internal Siemens troubleshooting.
Bit 16: Error track A.
Bit 17: Error track B.
Bit 18: Error track R.
Note:
For SMC30 (only Article No. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), CUA32 and CU310-2, the following applies:
A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.

**Remedy:** - check the encoder/cable.
- Does the encoder supply signals and the associated inverted signals?
Note:
For SMC30 (only Article Number 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), the following applies:
- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).
For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30), X220 (CUA32) or X23 (CU310-2):
- pin 10 (reference signal R) <--> pin 7 (encoder power supply, ground)
- pin 11 (reference signal R inverted) <--> pin 4 (encoder power supply)

## 232118 <location>Encoder 2: Speed change not plausible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0492

**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

## 232120 <location>Encoder 2: Encoder power supply fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** An encoder power supply fault was detected.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line.
Bit 1: Overcurrent condition for the encoder power supply.
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.
Bit 5: Overcurrent at the EnDat connection of the converter.
Bit 6: Overvoltage at the EnDat connection of the converter.
Bit 7: Hardware fault at the EnDat connection of the converter.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.

**Remedy:** For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 2 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 3 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 5 = 1:
- Measuring unit correctly connected at the converter?
- Replace the measuring unit or the cable to the measuring unit.
For fault value, bit 6, 7 = 1:
- Replace the defective EnDat 2.2 converter.

## 232121 <location>Encoder 2: Determined commutation position incorrect

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** A commutation position actual value sensing error was detected.

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 232122 <location>Encoder 2: Sensor Module hardware fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1

**Acknowledge:** IMMEDIATELY

**Cause:** An internal Sensor Module hardware fault was detected.
Fault value (r0949, interpret decimal):
1: Reference voltage error.
2: Internal undervoltage.
3: Internal overvoltage.

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 232123 <location>Encoder 2: Signal level A/B outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The unipolar level (AP/AN or BP/BN) for encoder 2 is outside the permissible tolerance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Either AP or AN outside the tolerance.
Bit 16 = 1: Either BP or BN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:** - make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

## 232125 <location>Encoder 2: Signal level track A or B too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** A track: %1, B-track: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (root from A^2 + B^2) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms).
The response threshold is > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 232126 <location>Encoder 2: Signal level track A or B too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (|A| + |B|) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold for (|A| + |B|) is > 1120 mV or the root of (A^2 + B^2) > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 232129 <location>Encoder 2: Position difference hall sensor/track C/D and A/B too large

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A32429.
Fault value (r0949, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

**Remedy:** - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 232130 <location>Encoder 2: Zero mark and position error from the coarse synchronization

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Angular deviation, electrical: %1, angle, mechanical: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.
When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Determined mechanical zero mark position (can only be used for track C/D).
xxxx: Deviation of the zero mark from the expected position as electrical angle.
Scaling: 32768 dec = 180 °

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

## 232131 <location>Encoder 2: Position deviation incremental/absolute too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Absolute encoder:
When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.
Incremental encoder:
When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.
For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).

## 232135 <location>Encoder 2: Fault when determining the position (single turn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (singleturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 232136 <location>Encoder 2: Fault when determining the position (multiturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (multiturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 232137 <location>Encoder 2: Fault when determining the position (single turn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 18: Single-step capability monitoring singleturn from the Safety channel.
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 12 (0000 1100 bin), the following applies:
Bit 8: encoder fault.
Bit 10: error in the internal position data transport.
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).

Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).
Bit 23: Position word 2 internal error (self-test/software).
---
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 232138 <location>Encoder 2: Fault when determining the position (multiturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).
Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).

Bit 23: Position word 2 internal error (self-test/software).

---

Note:

For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 232142 <location>Encoder 2: Battery voltage fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.

**Remedy:** Replace battery.

## 232150 <location>Encoder 2: Initialization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Encoder functionality selected in p0404 cannot be executed.
Fault value (r0949, interpret hexadecimal):
Encoder malfunction.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).

**Remedy:** - check that p0404 is correctly set.
- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.
- if relevant, note additional fault messages that describe the fault in detail.

## 232151 <location>Encoder 2: Encoder speed for initialization AB too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder speed is too high while initializing the Sensor Module.

**Remedy:** Reduce the speed of the encoder accordingly during initialization.
If necessary, deactivate monitoring (p0437.29).
See also:p0437 (Sensor Module configuration extended)

## 232152 <location>Encoder 2: Max. signal frequency (track A/B) exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The maximum signal frequency of the encoder evaluation has been exceeded.
Fault value (r0949, interpret decimal):
Actual input frequency in Hz.
See also:p0408
**Remedy:** - reduce the speed.
- Use an encoder with a lower pulse number (p0408).

## 232153 <location>Encoder 2: Identification error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred when identifying the encoder (waiting) p0400 = 10100.
The connected encoder was not able to be identified.
Fault value (r0949, interpret binary):
Bit 0: Data length incorrect.
See also:p0400 (Encoder type selection)
**Remedy:** Manually configure the encoder according to the data sheet.

## 232160 <location>Encoder 2: Analog sensor channel A failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4673).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4673).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 232161 <location>Encoder 2: Analog sensor channel B failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4675).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 232163 <location>Encoder 2: Analog sensor position value exceeds limit value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Fault value (r0949, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.
**Remedy:** For fault value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For fault value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 232400 <location>Encoder 2: Zero mark distance error (alarm threshold exceeded)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.
**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 232401 <location>Encoder 2: Zero mark failed (alarm threshold exceeded)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The 1.5x parameterized zero mark distance was exceeded without a zero mark being detected.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

## 232405 <location>Encoder 2: Temperature in the encoder evaluation exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** temperature: [0.1 degrees C] %1, temperature sensor number: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An inadmissibly high temperature was detected in the encoder electronics or the encoder evaluation.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = temperature sensor number, xxxx = measured module temperature in 0.1 °C.
**Remedy:** Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

## 232407 <location>Encoder 2: Function limit reached

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The encoder has reached one of its function limits. A service is recommended.
Alarm value (r2124, interpret decimal):
1: Incremental signals
3: Absolute track
4: Code connection
**Remedy:** Perform service. Replace the encoder if necessary.
Note:
The actual functional reserve of an encoder can be displayed via r4651.
See also:p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)

## 232410 <location>Encoder 2: Communication error (encoder and Sensor Module)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 232411 <location>Encoder 2: Encoder signals an internal alarm (detailed information)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The absolute encoder fault word includes alarm bits that have been set.
Alarm value (r2124, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.

**Remedy:** Replace encoder.

## 232412 <location>Encoder 2: Encoder signals an internal alarm

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The encoder signals an internal alarm via serial protocol.
Alarm value (r2124, interpret binary):
Bit 0: Fault bit in the position protocol.
Bit 1: Alarm bit in the position protocol.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 232414 <location>Encoder 2: Signal level track C or D out of tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** C track: %1, D track: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track D (16 bits with sign).
xxxx = Signal level, track C (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

## 232415 <location>Encoder 2: Signal level track A or B outside tolerance (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (root from A^2 + B^2) of the encoder is outside the permissible tolerance.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 230 mV (observe the frequency response of the encoder).
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 232418 <location>Encoder 2: Speed change not plausible (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0492
**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

## 232419 <location>Encoder 2: Track A or B outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The amplitude/phase/offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxxx1: Minimum of the offset correction, track B
xxxx2: Maximum of the offset correction, track B
xxx1x: Minimum of the offset correction, track A
xxx2x: Maximum of the offset correction, track A
xx1xx: Minimum of the amplitude correction, track B/A
xx2xx: Maximum of the amplitude correction, track B/A
x1xxx: Minimum of the phase error correction
x2xxx: Maximum of the phase error correction
1xxxx: Minimum of the cubic correction
2xxxx: Maximum of the cubic correction
**Remedy:** - check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

## 232421 <location>Encoder 2: Determined commutation position incorrect (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A commutation position actual value sensing error was detected.

Alarm value (r2124, interpret decimal):

3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

**Remedy:** For alarm value = 3:

- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.

## 232422 <location>Encoder 2: Pulses per revolution square-wave encoder outside tolerance bandwidth

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.

This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.

The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).

Alarm value (r2124, interpret decimal):

accumulated differential pulses in encoder pulses.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 232429 <location>Encoder 2: Position difference hall sensor/track C/D and A/B too large

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.

One period of track C/D corresponds to 360 ° mechanical.

One period of the Hall signal corresponds to 360 ° electrical.

The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.

Alarm value (r2124, interpret decimal):

For track C/D, the following applies:

Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

For Hall signals, the following applies:

Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

**Remedy:**
- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 232431 <location>Encoder 2: Position deviation incremental/absolute too high (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.

For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.

Alarm value (r2124, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- Clean coding disk or remove strong magnetic fields.

## 232432 <location>Encoder 2: Rotor position adaptation corrects deviation

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** On track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.
Alarm value (r2124, interpret decimal):
Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

## 232442 <location>Encoder 2: Battery voltage alarm threshold reached

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.

**Remedy:** Replace battery.

## 232443 <location>Encoder 2: Signal level track C/D outside tolerance (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The unipolar level (CP/CN or DP/DN) for encoder 2 is outside the permissible tolerance.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Either CP or CN outside the tolerance.
Bit 16 = 1: Either DP or DN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- are the C/D tracks connected correctly (have the signal cables CP and CN or DP and DN been interchanged)?
- replace the encoder cable.

## 232460 <location>Encoder 2: Analog sensor channel A failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside measuring range set in p4673.
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4673).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 232461 <location>Encoder 2: Analog sensor channel B failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4675).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 232462 <location>Encoder 2: Analog sensor no channel active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Channel A and B are not activated for the analog sensor.
**Remedy:** - activate channel A and/or channel B (p4670).
- check the encoder configuration (p0404.17).
See also:p4670 (Analog sensor configuration)

## 232463 <location>Encoder 2: Analog sensor position value exceeds limit value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Alarm value (r2124, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.
**Remedy:** For alarm value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For alarm value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 232470 <location>Encoder 2: Encoder signals an internal error (X521.7)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the Sensor Module Cabinet 30 (SMC30), a dirty encoder is signaled via a 0 signal at terminal X521.7.
**Remedy:** - check the plug connections.
- replace the encoder or encoder cable.

## 232500 <location>Encoder 2: Position tracking traversing range exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.
For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.
For p0411.3 = 1, the maximum traversing range for the configured linear axis is preset (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).
**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

## 232501 <location>Encoder 2: Position tracking encoder position outside tolerance window

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched off, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value.
The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r0477.
See also:p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)

**Remedy:** Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also:p0010, p2507

## 232502 <location>Encoder 2: Encoder with measuring gear without valid signals

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The encoder with measuring gear no longer provides any valid signals.

**Remedy:** It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

## 232503 <location>Encoder 2: Position tracking cannot be reset

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The position tracking for the measuring gear cannot be reset.

**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

## 232700 <location>Encoder 2: Effectivity test does not supply the expected value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The DRIVE-CLiQ encoder fault word supplies fault bits that have been set.
Alarm value (r2124, interpret binary):
Bit x = 1: Effectivity test x unsuccessful.

**Remedy:** Replace encoder.

## 232800 <location>Encoder 2: Group signal

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** NONE
**Cause:** The motor encoder has detected at least one fault.
**Remedy:** Evaluates other actual messages.

## 232801 <location>Encoder 2 DRIVE-CLiQ: Sign-of-life missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.

## 232802 <location>Encoder 2: Time slice overflow

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred in encoder 2.
Fault value (r0949, interpret hexadecimal):
yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved
x = 9:
Time slice overflow of the fast (current controller clock cycle) time slice.
x = A:
Time slice overflow of the average time slice.
x = C:
Time slice overflow of the slow time slice.
yx = 3E7:
Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).
**Remedy:** Increase the current controller sampling time
Note:
For a current controller sampling time = 31.25 µs, use an SMx20 with Article No. 6SL3055-0AA00-5xA3.

## 232804 <location>Encoder 2: Sensor Module checksum error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** POWER ON (IMMEDIATELY)
**Cause:** A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version (>= V2.6 HF3, >= V4.3 SP2, >= V4.4).
- check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.

## 232805 <location>Encoder 2: EEPROM checksum error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** Data in the EEPROM corrupted .
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** Replace the module.

## 232806 <location>Encoder 2: Initialization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder was not successfully initialized.
Fault value (r0949, interpret binary):
Bit 0, 1: Encoder initialization with the motor rotating has failed (deviation involving coarse and fine position in encoder pulses/4).
Bit 2: Mid-voltage matching for track A unsuccessful.
Bit 3: Mid-voltage matching for track B unsuccessful.
Bit 4: Mid-voltage matching for acceleration input unsuccessful.
Bit 5: Mid-voltage matching for track safety A unsuccessful.
Bit 6: Mid-voltage matching for track safety B unsuccessful.
Bit 7: Mid-voltage matching for track C unsuccessful.
Bit 8: Mid-voltage matching for track D unsuccessful.
Bit 9: Mid-voltage matching for track R unsuccessful.
Bit 10: The difference in mid-voltages between A and B is too great (> 0.5 V)
Bit 11: The difference in mid-voltages between C and D is too great (> 0.5 V)
Bit 12: The difference in mid-voltages between safety A and safety B is too great (> 0.5 V)
Bit 13: The difference in mid-voltages between A and safety B is too great (> 0.5 V)
Bit 14: The difference in mid-voltages between B and safety A is too great (> 0.5 V)
Bit 15: The standard deviation of the calculated mid-voltages is too great (> 0.3 V)
Bit 16: Internal fault - fault when reading a register (CAFE)
Bit 17: Internal fault - fault when writing a register (CAFE)
Bit 18: Internal fault: No mid-voltage matching available
Bit 19: Internal error - ADC access error.
Bit 20: Internal error - no zero crossover found.
Bit 28: Error while initializing the EnDat 2.2 measuring unit.
Bit 29: Error when reading out the data from the EnDat 2.2 measuring unit.
Bit 30: EEPROM checksum of the EnDat 2.2 measuring unit incorrect.
Bit 31: Data of the EnDat 2.2 measuring unit inconsistent.
Note:
Bit 0, 1: Up to 6SL3055-0AA00-5*A0
Bits 2 ... 20: 6SL3055-0AA00-5*A1 and higher

**Remedy:** Acknowledge fault.
If the fault cannot be acknowledged:
Bits 2 ... 9: Check encoder power supply.
Bits 2 ... 14: Check the corresponding cable.
Bit 15 with no other bits: Check track R, check settings in p0404.
Bit 28: Check the cable between the EnDat 2.2 converter and the measuring unit.
Bit 29 ... 31: Replace the defective measuring unit.

## 232811 <location>Encoder 2: Encoder serial number changed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The encoder serial number has changed. The change is only checked for encoders with serial number (e.g. EnDat encoders).
- the encoder was replaced.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
Proceed as follows to hide serial number monitoring:
- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.

**Remedy:** Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.

## 232812 <location>Encoder 2: Requested cycle or RX-/TX timing not supported

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A cycle requested from the Control Unit or RX/TX timing is not supported.
Fault value (r0949, interpret decimal):
0: Application cycle is not supported.
1: DRIVE-CLiQ cycle is not supported.
2: Distance between RX and TX instants in time too low.
3: TX instant in time too early.
**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components.

## 232813 <location>Encoder 2: Hardware logic unit failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT
**Cause:** The logic unit of the DRIVE-CLiQ encoder has failed.
Fault value (r0949, interpret binary):
Bit 0: ALU watchdog has responded.
Bit 1: ALU has detected a sign-of-life error.
**Remedy:** When the error reoccurs, replace the encoder.

## 232820 <location>Encoder 2 DRIVE-CLiQ: Telegram error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 232835 <location>Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 232836 <location>Encoder 2 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 232837 <location>Encoder 2 DRIVE-CLiQ: Component fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 232845 <location>Encoder 2 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 232850 <location>Encoder 2: Encoder evaluation internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred in the Sensor Module of encoder 2.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
11000 ... 11499: Descriptive data from EEPROM incorrect.
11500 ... 11899: Calibration data from EEPROM incorrect.
11900 ... 11999: Configuration data from EEPROM incorrect.
12000 ... 12008: communication with analog/digital converter faulted.
16000: DRIVE-CLiQ encoder initialization application error.
16001: DRIVE-CLiQ encoder initialization ALU error.
16002: DRIVE-CLiQ encoder HISI / SISI initialization error.
16003: DRIVE-CLiQ encoder safety initialization error.
16004: DRIVE-CLiQ encoder internal system error.
**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 232851 <location>Encoder 2 DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - Upgrade the firmware of the component involved.
- carry out a POWER ON (switch-off/switch-on) for the component involved.

## 232860 <location>Encoder 2 DRIVE-CLiQ (CU): Telegram error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 232875 <location>Encoder 2: power supply voltage failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 232885 <location>Encoder 2 DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 232886 <location>Encoder 2 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 232887 <location>Encoder 2 DRIVE-CLiQ (CU): Component fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 2). Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 232895 <location>Encoder 2 DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 2) involved to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 232896 <location>Encoder 2 DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1

**Reaction:** Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (Sensor Module for encoder 2), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 232899 <location>Encoder 2: Unknown fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** New message: %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 232902 <location>Encoder 2: SPI-BUS error occurred

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Error when operating the internal SPI bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 232903 <location>Encoder 2: I2C-BUS error occurred

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Error when operating the internal I2C bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 232905 <location>Encoder 2: Encoder parameterization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Parameter: %1, supplementary information: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** An error was identified in the encoder parameterization.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
xxxx = 421:
For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.
yyyy = 0:
No additional information available.
yyyy = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
yyyy = 2:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.
yyyy = 3:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number < 10000.
yyyy = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
yyyy = 5:
For SQW encoder, value in p4686 greater than in p0425.
yyyy = 6:
DRIVE-CLiQ encoder cannot be used with this firmware version.
yyyy = 7:
For an SQW encoder, the XIST1 correction (p0437.2) is only permitted for equidistant zero marks.
yyyy = 8:
The motor pole pair width is not supported by the linear scale being used.
yyyy = 9:
The length of the position in the EnDat protocol may be a maximum of 32 bits.
yyyy = 10:
The connected encoder is not supported.
yyyy = 11:
The hardware does not support track monitoring.

**Remedy:** - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- re parameter number = 314:
- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

## 232912 <location>Encoder 2: Device combination is not permissible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The selected device combination is not supported.
Fault value (r0949, interpret decimal):
1003:
The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of 2^n.
1005:
The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter.
1006:
The maximum duration of the EnDat transfer (31.25 µs) was exceeded.
2001:
The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter.
2002:
The resolution of the linear measuring unit does not match the pole pair width of the linear motor
Pole pair width, minimum = p0422 * 2^20
**Remedy:** For fault value = 1003, 1005, 1006:
- Use a measuring unit that is permissible.
For fault value = 2001:
- set a permissible cycle combination (if required, use standard settings).
For fault value = 2002:
- Use a measuring unit with a lower resolution (p0422).

## 232915 <location>Encoder 2: Encoder configuration error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The configuration for encoder 2 is incorrect.
Alarm value (r2124, interpret decimal):
1:
Re-parameterization between fault/alarm is not permissible.
2:
The cyclic DQ receive telegram is too long and is limited.
3:
The cyclic DQ send telegram is too long and is limited.
419:
When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.

**Remedy:** For alarm value = 1:
No re-parameterization between fault/alarm.
For alarm value = 419:
Reduce the fine resolution (p0419) or deactivate the monitoring (p0437.25), if the complete multiturn range is not required.

## 232916 <location>Encoder 2: Encoder parameterization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** An encoder parameter was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
Parameter number.
**Remedy:** - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.

## 232920 <location>Encoder 2: Temperature sensor fault (motor)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1, channel number: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The motor detected a fault when evaluating the temperature sensor.
Fault cause:
1 (= 01 hex):
Wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm
2 (= 02 hex):
Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm
Additional values:
Only for internal Siemens troubleshooting.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = channel number, xx = error cause
**Remedy:** - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

## 232930 <location>Encoder 2: Data logger has saved data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.
The diagnostics data is saved in the following folder:
/USER/SINAMICS/DATA/SMTRC00.BIN
...
/USER/SINAMICS/DATA/SMTRC07.BIN
/USER/SINAMICS/DATA/SMTRCIDX.TXT
The following information is contained in the TXT file:
- Display of the last written BIN file.
- Number of write operations that are still possible (from 10000 downwards).
Note:
Only Siemens can evaluate the BIN files.

**Remedy:** Not necessary.
This alarm is automatically withdrawn.
The data logger is ready to record the next fault case.

## 232940 <location>Encoder 2: Spindle sensor S1 voltage incorrect

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The voltage of analog sensor S1 is outside the permissible range.
Alarm value (r2124, interpret decimal):
Signal level from sensor S1.
Note:
A signal level of 500 mV corresponds to the numerical value 500 dec.

**Remedy:** - check the clamped tool.
- check the tolerance and if required, adapt (p5040).
- check the thresholds and if required, adapt (p5041).
- check analog sensor S1 and connections.
See also:p5040 (Spindle voltage threshold values tolerance), p5041 (Spindle voltage threshold values)

## 232950 <location>Encoder 2: Internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.

**Remedy:** - if necessary, upgrade the firmware in the Sensor Module to a later version.
- contact Technical Support.

## 232999 <location>Encoder 2: Unknown alarm

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** A alarm has occurred on the Sensor Module for encoder 2 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 233100 <location>Encoder 3: Zero mark distance error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- replace the encoder or encoder cable.

## 233101 <location>Encoder 3: Zero mark failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The 1.5 x parameterized zero mark distance was exceeded.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Fault value (r0949, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).
- when p0437.1 is active, check p4686.
- replace the encoder or encoder cable.

## 233103 <location>Encoder 3: Signal level zero track (track R) outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** R track: %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The zero mark signal level (track R) does not lie within the tolerance bandwidth for encoder 1.
The fault can be initiated when the unipolar voltage level is exceeded (RP/RN) or if the differential amplitude is undershot.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex: yyyy = 0, xxxx = Signal level, track R (16 bits with sign)
The response thresholds of the unipolar signal levels of the encoder are between < 1400 mV and > 3500 mV.
The response threshold for the differential signal level of the encoder is < -1600 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog value of the amplitude error is not measured at the same time with the hardware fault output by the Sensor Module.
The fault value can only be represented between -32768 ... 32767 dec (-770 ... 770 mV).
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:** - check the speed range; frequency characteristic (amplitude characteristic) of the measuring equipment might not be sufficient for the speed range
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- check the encoder type (encoder with zero marks).
- check whether the zero mark is connected and the signal cables RP and RN have been connected correctly (not connected with the incorrect polarity).
- replace the encoder cable.
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 233110 <location>Encoder 3: Serial communications error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** There is an error in the transfer of the serial communication protocol between the encoder and internal or external evaluation module.
Fault value (r0949, interpret binary):
For an EnDat 2.1 encoder, the significance of the fault value is as follows:
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 7: Timeout for the register communication.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.
Bit 13: Data line incorrect.
Bit 14: Fault for the register communication.
Bit 15: Internal communication error.
Note:
For an EnDat 2.2 encoder, the significance of the fault value for F3x135 (x = 1, 2, 3) is described.

**Remedy:** For fault value, bit 0 = 1:
- Enc defect F31111 may provide additional details.

For fault value, bit 1 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 2 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 3 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable.

For fault value, bit 4 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 5 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 6 = 1:
- Update Sensor Module firmware.

For fault value, bit 7 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

For fault value, bit 8 = 1:
- check parameterization (p0429.2).

For fault value, bit 9 = 1:
- EMC / connect the cable shield, replace the encoder or encoder cable, replace the Sensor Module.

For fault value, bit 10 = 1:
- check parameterization (p0429.2, p0449).

For fault value, bit 11 = 1:
- check parameterization (p0436).

For fault value, bit 12 = 1:
- check parameterization (p0429.6).

For fault value, bit 13 = 1:
- check data line.

For fault value, bit 14 = 1:
- incorrect encoder type / replace the encoder or encoder cable.

## 233111 <location>Encoder 3: Encoder signals an internal error (detailed information)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder error word provides detailed information (error bit).
For p0404.8 = 0, the following applies:
Fault value for internal Siemens troubleshooting.
For p0404.8 = 1, the following applies:
Fault value (r0949, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Lighting system failed.
Bit 1: Signal amplitude too low.
Bit 2: Position value incorrect.
Bit 3: Encoder power supply overvoltage condition.
Bit 4: Encoder power supply undervoltage condition.
Bit 5: Encoder power supply overcurrent condition.
Bit 6: The battery must be changed.

**Remedy:** For yyyy = 0:
For fault value, bit 0 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 1 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 2 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 3 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When a motor encoder with a direct DRIVE-CLiQ connection is used: Replace the motor.
For fault value, bit 4 = 1:
5 V power supply voltage fault.
When using an SMC: Check the plug-in cable between the encoder and SMC or replace the SMC.
When using a motor with DRIVE-CLiQ: Replace the motor.
For fault value, bit 5 = 1:
Encoder is defective. Replace the encoder, where the motor encoder has a direct DRIVE-CLiQ socket: Replace the motor.
For fault value, bit 6 = 1:
The battery must be changed (only for encoders with battery back-up).
For yyyy = 1:
Encoder is defective. Replace encoder.

## 233112 <location>Encoder 3: Encoder signals an internal error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder signals a set error bit via the serial protocol.
Fault value (r0949, interpret binary):
Bit 0: Fault bit in the position protocol.

**Remedy:** For fault value, bit 0 = 1:
In the case of an EnDat encoder, F31111 may provide further details.

## 233115 <location>Encoder 3: Signal level track A or B too low

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** A track: %1, B-track: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT
**Cause:** The signal level (root from A^2 + B^2) of the encoder falls below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 170 mV (input frequency <= 256 kHz) or < 120 mV (input frequency > 256 kHz).
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1070 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.
**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
The following applies to measuring systems without their own bearing system:
- adjust the scanning head and check the bearing system of the measuring wheel.
The following applies for measuring systems with their own bearing system:
- ensure that the encoder housing is not subject to any axial force.

## 233116 <location>Encoder 3: Signal level track A or B too low

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** A track: %1, B-track: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The signal level of the rectified encoder signals A and B of the encoder fall below the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 130 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).

## 233117 <location>Encoder 3: Inversion error signals A/B/R

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** For a square-wave encoder (bipolar, double ended) signals A*, B* and R* are not inverted with respect to signals A, B and R.
Fault value (r0949, interpret binary):
Bits 0 ... 15: Only for internal Siemens troubleshooting.
Bit 16: Error track A.
Bit 17: Error track B.
Bit 18: Error track R.
Note:
For SMC30 (only Article No. 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), CUA32 and CU310-2, the following applies:
A square-wave encoder without track R is used and track monitoring (p0405.2 = 1) is activated.

**Remedy:** - check the encoder/cable.
- Does the encoder supply signals and the associated inverted signals?
Note:
For SMC30 (only Article Number 6SL3055-0AA00-5CA0 and 6SL3055-0AA00-5CA1), the following applies:
- check the setting of p0405 (p0405.2 = 1 is only possible if the encoder is connected at X520).
For a square-wave encoder without track R, the following jumpers must be set for the connection at X520 (SMC30), X220 (CUA32) or X23 (CU310-2):
- pin 10 (reference signal R) <--> pin 7 (encoder power supply, ground)
- pin 11 (reference signal R inverted) <--> pin 4 (encoder power supply)

## 233118 <location>Encoder 3: Speed change not plausible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0492

**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the maximum speed difference per sampling cycle (p0492).

## 233120 <location>Encoder 3: Encoder power supply fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** An encoder power supply fault was detected.
Fault value (r0949, interpret binary):
Bit 0: Undervoltage condition on the sense line.
Bit 1: Overcurrent condition for the encoder power supply.
Bit 2: Overcurrent condition for encoder power supply on cable resolver excitation negative.
Bit 3: Overcurrent condition for encoder power supply on cable resolver excitation positive.
Bit 4: The 24 V power supply through the Power Module (PM) is overloaded.
Bit 5: Overcurrent at the EnDat connection of the converter.
Bit 6: Overvoltage at the EnDat connection of the converter.
Bit 7: Hardware fault at the EnDat connection of the converter.
Note:
If the encoder cables 6FX2002-2EQ00-.... and 6FX2002-2CH00-.... are interchanged, this can result in the encoder being destroyed because the pins of the operating voltage are reversed.

**Remedy:** For fault value, bit 0 = 1:
- correct encoder cable connected?
- check the plug connections of the encoder cable.
- SMC30: Check the parameterization (p0404.22).
For fault value, bit 1 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 2 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 3 = 1:
- correct encoder cable connected?
- replace the encoder or encoder cable.
For fault value, bit 5 = 1:
- Measuring unit correctly connected at the converter?
- Replace the measuring unit or the cable to the measuring unit.
For fault value, bit 6, 7 = 1:
- Replace the defective EnDat 2.2 converter.

## 233121 <location>Encoder 3: Determined commutation position incorrect

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** A commutation position actual value sensing error was detected.

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 233122 <location>Encoder 3: Sensor Module hardware fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF1

**Acknowledge:** IMMEDIATELY

**Cause:** An internal Sensor Module hardware fault was detected.
Fault value (r0949, interpret decimal):
1: Reference voltage error.
2: Internal undervoltage.
3: Internal overvoltage.

**Remedy:** Replace the motor with DRIVE-CLiQ or the appropriate Sensor Module.

## 233123 <location>Encoder 3: Signal level A/B outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The unipolar level (AP/AN or BP/BN) for encoder 3 is outside the permissible tolerance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Either AP or AN outside the tolerance.
Bit 16 = 1: Either BP or BN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:** - make sure that the encoder cables and shielding are installed in an EMC-compliant manner.
- check the plug connections and contacts of the encoder cable.
- check the short-circuit of a signal cable with mass or the operating voltage.
- replace the encoder cable.

## 233125 <location>Encoder 3: Signal level track A or B too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** A track: %1, B-track: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (root from A^2 + B^2) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track B (16 bits with sign).
xxxx = Signal level, track A (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms).
The response threshold is > 3582 mV.
A signal level of 2900 mV peak value corresponds to the numerical value 6666 hex = 26214 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 233126 <location>Encoder 3: Signal level track A or B too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The signal level (|A| + |B|) of the encoder exceeds the permissible limit value.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold for (|A| + |B|) is > 1120 mV or the root of (A^2 + B^2) > 955 mV.
A signal level of 500 mV peak value corresponds to the numerical value of 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- replace the encoder or encoder cable.

## 233129 <location>Encoder 3: Position difference hall sensor/track C/D and A/B too large

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.
One period of track C/D corresponds to 360 ° mechanical.
One period of the Hall signal corresponds to 360 ° electrical.
The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.
After the fine synchronization using one reference mark or 2 reference marks for distance-coded encoders, this fault is no longer initiated, but instead, Alarm A33429.
Fault value (r0949, interpret decimal):
For track C/D, the following applies:
Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).
For Hall signals, the following applies:
Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

**Remedy:** - track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 233130 <location>Encoder 3: Zero mark and position error from the coarse synchronization

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Angular deviation, electrical: %1, angle, mechanical: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** After initializing the pole position using track C/D, Hall signals or pole position identification routine, the zero mark was detected outside the permissible range. For distance-coded encoders, the test is carried out after passing 2 zero marks. Fine synchronization was not carried out.
When initializing via track C/D (p0404) then it is checked whether the zero mark occurs in an angular range of +/-18 ° mechanical.
When initializing via Hall sensors (p0404) or pole position identification (p1982) it is checked whether the zero mark occurs in an angular range of +/-60 ° electrical.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Determined mechanical zero mark position (can only be used for track C/D).
xxxx: Deviation of the zero mark from the expected position as electrical angle.
Scaling: 32768 dec = 180 °

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- if the Hall sensor is used as an equivalent for track C/D, check the connection.
- check the connection of track C or D.
- replace the encoder or encoder cable.

## 233131 <location>Encoder 3: Position deviation incremental/absolute too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Absolute encoder:
When cyclically reading the absolute position, an excessively high difference to the incremental position was detected. The absolute position that was read is rejected.
Limit value for the deviation:
- EnDat encoder: Is supplied from the encoder and is a minimum of 2 quadrants (e.g. EQI 1325 > 2 quadrants, EQN 1325 > 50 quadrants).
- other encoders: 15 pulses = 60 quadrants.
Incremental encoder:
When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.
For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.
Fault value (r0949, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check whether the coding disk is dirty or there are strong ambient magnetic fields.
- adapt the parameter for the clearance between zero marks (p0425).
- if message output above speed threshold, reduce filter time if necessary (p0438).

## 233135 <location>Encoder 3: Fault when determining the position (singleturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (singleturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 233136 <location>Encoder 3: Fault when determining the position (multiturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder has identified a position determination fault (multiturn) and supplies status information bit by bit in an internal status/fault word.
Some of these bits cause this fault to be triggered. Other bits are status displays. The status/fault word is displayed in the fault value.
Note regarding the bit designation:
The first designation is valid for DRIVE-CLiQ encoders, the second for EnDat 2.2 encoders.
Fault value (r0949, interpret binary):
Bit 0: F1 (safety status display).
Bit 1: F2 (safety status display).
Bit 2: Reserved (lighting).
Bit 3: Reserved (signal amplitude).
Bit 4: Reserved (position value).
Bit 5: Reserved (overvoltage).
Bit 6: Reserved (undervoltage)/hardware fault EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 7: Reserved (overcurrent)/EnDat encoder withdrawn when not in the parked state (--> F3x110, x = 1, 2, 3).
Bit 8: Reserved (battery)/overcurrent EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 9: Reserved/overvoltage EnDat supply (--> F3x110, x = 1, 2, 3).
Bit 11: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 12: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 13: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 14: Reserved/internal communication error (--> F3x110, x = 1, 2, 3).
Bit 15: Internal communication error (--> F3x110, x = 1, 2, 3).
Bit 16: Lighting (--> F3x135, x = 1, 2, 3).
Bit 17: Signal amplitude (--> F3x135, x = 1, 2, 3).
Bit 18: Singleturn position 1 (--> F3x135, x = 1, 2, 3).
Bit 19: Overvoltage (--> F3x135, x = 1, 2, 3).
Bit 20: Undervoltage (--> F3x135, x = 1, 2, 3).
Bit 21: Overcurrent (--> F3x135, x = 1, 2, 3).
Bit 22: Temperature exceeded (--> F3x405, x = 1, 2, 3).
Bit 23: Singleturn position 2 (safety status display).
Bit 24: Singleturn system (--> F3x135, x = 1, 2, 3).
Bit 25: Singleturn power down (--> F3x135, x = 1, 2, 3)
Bit 26: Multiturn position 1 (--> F3x136, x = 1, 2, 3).
Bit 27: Multiturn position 2 (--> F3x136, x = 1, 2, 3).
Bit 28: Multiturn system (--> F3x136, x = 1, 2, 3).
Bit 29: Multiturn power down (--> F3x136, x = 1, 2, 3).
Bit 30: Multiturn overflow/underflow (--> F3x136, x = 1, 2, 3).
Bit 31: Multiturn battery (reserved).

**Remedy:** - determine the detailed cause of the fault using the fault value.
- replace the encoder if necessary.
Note:
An EnDat 2.2 encoder may only be removed and inserted in the "Park" state.
If an EnDat 2.2 encoder was removed when not in the "Park" state, then after inserting the encoder, a POWER ON (switch-off/switch-on) is necessary to acknowledge the fault.

## 233137 <location>Encoder 3: Fault when determining the position (singleturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 18: Single-step capability monitoring singleturn from the Safety channel.
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 12 (0000 1100 bin), the following applies:
Bit 8: encoder fault.
Bit 10: error in the internal position data transport.
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).

Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).
Bit 23: Position word 2 internal error (self-test/software).
---
Note:
For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 233138 <location>Encoder 3: Fault when determining the position (multiturn)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** A position determination fault has occurred in the DRIVE-CLiQ encoder.
Fault value (r0949, interpret binary):
yyxxxxxx hex: yy = encoder version, xxxxxx = bit coding of the fault cause
---
For yy = 8 (0000 1000 bin), the following applies:
Bit 1: Signal monitoring (sin/cos).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: LED monitoring.
Bit 17: Fault when determining the position (multiturn).
Bit 19: ECRC, configuration error in the safety channel.
Bit 23: Temperature outside the limit values.
---
For yy = 11 (0000 1011 bin), the following applies:
Bit 0: Position word 1 difference between rotation counter and software counter (XC_ERR).
Bit 1: Position word 1 track error of the incremental signals (LIS_ERR).
Bit 2: Position word 1 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 3: Maximum permissible temperature exceeded (TEMP_ERR).
Bit 4: Power supply overvoltage (MON_OVR_VOLT).
Bit 5: Power supply overcurrent (MON_OVR_CUR).
Bit 6: Power supply undervoltage (MON_UND_VOLT).
Bit 7: Rotation error counter (MT_ERR).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 11: Position word 1 status bit: singleturn position OK (ADC_ready).
Bit 12: Position word 1 status bit: rotation counter OK (MT_ready).
Bit 13: Position word 1 memory error (MEM_ERR).
Bit 14: Position word 1 absolute position error (MLS_ERR).
Bit 15: position word 1 LED error, lighting unit error (LED_ERR).
Bit 18: Position word 2 error when aligning between incremental track signals and absolute value (ST_ERR).
Bit 21: Position word 2 memory error (MEM_ERR).
Bit 22: Position word 2 absolute position error (MLS_ERR).
Bit 23: position word 2 LED error, lighting unit error (LED_ERR).
---
For yy = 14 (0000 1110 bin), the following applies:
Bit 0: Position word 1 temperature outside limit value.
Bit 1: Position word 1 position determination error (multiturn).
Bit 2: Position word 1 FPGA error.
Bit 3: Position word 1 velocity error.
Bit 4: Position word 1 communication error between FPGAs/error in the incremental signal.
Bit 5: Position word 1 timeout absolute value/error when determining the position (singleturn).
Bit 6: Position word 1 internal hardware fault (clock/power monitor IC/power).
Bit 7: Position word 1 internal error (FPGA communication/FPGA parameterization/self-test/software).
Bit 8: F1 (safety status display) error position word 1.
Bit 9: F2 (safety status display) error position word 2.
Bit 16: Position word 2 temperature outside limit value.
Bit 17: Position word 2 position determination error (multiturn).
Bit 18: Position word 2 FPGA error.
Bit 19: Position word 2 velocity error.
Bit 20: Position word 2 communication error between FPGAs.
Bit 21: Position word 2 position determination error (singleturn).
Bit 22: Position word 2 internal hardware fault (clock/power monitor IC/power).

Bit 23: Position word 2 internal error (self-test/software).

---

Note:

For an encoder version that is not described here, please contact the encoder manufacturer for more detailed information on the bit coding.

**Remedy:** - determine the detailed cause of the fault using the fault value.
- if required, replace the DRIVE-CLiQ encoder.

## 233142 <location>Encoder 3: Battery voltage fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The battery voltage is no longer sufficient to check the multiturn information.

**Remedy:** Replace battery.

## 233150 <location>Encoder 3: Initialization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** Encoder functionality selected in p0404 cannot be executed.
Fault value (r0949, interpret hexadecimal):
Encoder malfunction.
The bit assignment corresponds to that of p0404 (e.g. bit 5 set: Error track C/D).

**Remedy:** - check that p0404 is correctly set.
- check the encoder type used (incremental/absolute) and for SMCxx, the encoder cable.
- if relevant, note additional fault messages that describe the fault in detail.

## 233151 <location>Encoder 3: Encoder speed for initialization AB too high

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder speed is too high while initializing the Sensor Module.

**Remedy:** Reduce the speed of the encoder accordingly during initialization.
If necessary, deactivate monitoring (p0437.29).
See also:p0437 (Sensor Module configuration extended)

## 233152 <location>Encoder 3: Max. signal frequency (track A/B) exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** PULSE INHIBIT

**Cause:** The maximum signal frequency of the encoder evaluation has been exceeded.
Fault value (r0949, interpret decimal):
Actual input frequency in Hz.
See also:p0408
**Remedy:** - reduce the speed.
- Use an encoder with a lower pulse number (p0408).

## 233153 <location>Encoder 3: Identification error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred when identifying the encoder (waiting) p0400 = 10100.
The connected encoder was not able to be identified.
Fault value (r0949, interpret binary):
Bit 0: Data length incorrect.
See also:p0400 (Encoder type selection)
**Remedy:** Manually configure the encoder according to the data sheet.

## 233160 <location>Encoder 3: Analog sensor channel A failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the measuring range set in (p4673).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4673).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 233161 <location>Encoder 3: Analog sensor channel B failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)
**Acknowledge:** PULSE INHIBIT
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Fault value (r0949, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).

**Remedy:** For fault value = 1:
- check the output voltage of the analog sensor.
For fault value = 2:
- check the voltage setting for each encoder period (p4675).
For fault value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 233163 <location>Encoder 3: Analog sensor position value exceeds limit value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Fault value (r0949, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.

**Remedy:** For fault value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For fault value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 233400 <location>Encoder 3: Zero mark distance error (alarm threshold exceeded)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.
For distance-coded encoders, the zero mark distance is determined from zero marks detected pairs. This means that if a zero mark is missing, depending on the pair generation, this cannot result in a fault and also has no effect in the system.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Last measured zero mark distance in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 233401 <location>Encoder 3: Zero mark failed (alarm threshold exceeded)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The 1.5x parameterized zero mark distance was exceeded without a zero mark being detected.
The zero mark distance for the zero mark monitoring is set in p0425 (rotary encoder) or p0424 (linear encoder).
Alarm value (r2124, interpret decimal):
Number of increments after POWER ON or since the last zero mark that was detected (4 increments = 1 encoder pulse).

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the clearance between zero marks (p0425).
- replace the encoder or encoder cable.

## 233405 <location>Encoder 3: Temperature in the encoder evaluation exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** temperature: [0.1 degrees C] %1, temperature sensor number: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An inadmissibly high temperature was detected in the encoder electronics or the encoder evaluation.
Fault value (r0949, interpret hexadecimal):
yyxxxx hex: yy = temperature sensor number, xxxx = measured module temperature in 0.1 °C.
**Remedy:** Reduce the ambient temperature for the DRIVE-CLiQ connection of the motor.

## 233407 <location>Encoder 3: Function limit reached

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The encoder has reached one of its function limits. A service is recommended.
Alarm value (r2124, interpret decimal):
1: Incremental signals
3: Absolute track
4: Code connection
**Remedy:** Perform service. Replace the encoder if necessary.
Note:
The actual functional reserve of an encoder can be displayed via r4651.
See also:p4650 (Encoder functional reserve component number), r4651 (Encoder functional reserve)

## 233410 <location>Encoder 3: Communication error (encoder and Sensor Module)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** Serial communication protocol transfer error between the encoder and evaluation module.
Alarm value (r2124, interpret binary):
Bit 0: Alarm bit in the position protocol.
Bit 1: Incorrect quiescent level on the data line.
Bit 2: Encoder does not respond (does not supply a start bit within 50 ms).
Bit 3: CRC error: The checksum in the protocol from the encoder does not match the data.
Bit 4: Encoder acknowledgment error: The encoder incorrectly understood the task (request) or cannot execute it.
Bit 5: Internal error in the serial driver: An illegal mode command was requested.
Bit 6: Timeout when cyclically reading.
Bit 8: Protocol is too long (e.g. > 64 bits).
Bit 9: Receive buffer overflow.
Bit 10: Frame error when reading twice.
Bit 11: Parity error.
Bit 12: Data line signal level error during the monoflop time.

**Remedy:** - check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 233411 <location>Encoder 3: Encoder signals an internal alarm (detailed information)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin, additional information: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The absolute encoder fault word includes alarm bits that have been set.
Alarm value (r2124, interpret binary):
yyyyxxxx hex: yyyy = supplementary information, xxxx = fault cause
yyyy = 0:
Bit 0: Frequency exceeded (speed too high).
Bit 1: Temperature exceeded.
Bit 2: Control reserve, lighting system exceeded.
Bit 3: Battery discharged.
Bit 4: Reference point passed.
yyyy = 1:
Bit 0: Signal amplitude outside the control range.
Bit 1: Error multiturn interface
Bit 2: Internal data error (singleturn/multiturn not with single steps).
Bit 3: Error EEPROM interface.
Bit 4: SAR converter error.
Bit 5: Fault for the register data transfer.
Bit 6: Internal error identified at the error pin (nErr).
Bit 7: Temperature threshold exceeded or fallen below.

**Remedy:** Replace encoder.

## 233412 <location>Encoder 3: Encoder signals an internal alarm

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The encoder signals an internal alarm via serial protocol.
Alarm value (r2124, interpret binary):
Bit 0: Fault bit in the position protocol.
Bit 1: Alarm bit in the position protocol.

**Remedy:**
- carry out a POWER ON (switch-off/switch-on) for all components.
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace encoder.

## 233414 <location>Encoder 3: Signal level track C or D out of tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** C track: %1, D track: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (C^2 + D^2) of track C or D of the encoder or from the Hall signals, is not within the tolerance bandwidth.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Signal level, track D (16 bits with sign).
xxxx = Signal level, track C (16 bits with sign).
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response thresholds are < 230 mV (observe the frequency response of the encoder) and > 750 mV.
A signal level of 500 mV peak value corresponds to the numerical value 5333 hex = 21299 dec.
Note:
If the amplitude is not within the tolerance bandwidth, then it cannot be used to initialize the start position.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- check the Hall sensor box.

## 233415 <location>Encoder 3: Signal level track A or B outside tolerance (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Amplitude: %1, Angle: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The signal level (root from A^2 + B^2) of the encoder is outside the permissible tolerance.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex:
yyyy = Angle
xxxx = amplitude, i.e. root of A^2 + B^2 (16 bits without sign)
The nominal signal level of the encoder must lie in the range 375 mV to 600 mV (500 mV -25/+20 %).
The response threshold is < 230 mV (observe the frequency response of the encoder).
A signal level of 500 mV peak value corresponds to the numerical value 299A hex = 10650 dec.
The angle 0 ... FFFF hex corresponds to 0 ... 360 degrees of the fine position. Zero degrees is present at the negative zero crossover of track B.
Note for Sensor Modules for resolvers (e.g. SMC10):
The nominal signal level is at 2900 mV (2.0 Vrms). The response threshold is < 1414 mV (1.0 Vrms).
A signal level of 2900 mV peak value corresponds to the numerical value 3333 hex = 13107 dec.
Note:
The analog values of the amplitude error are not measured at the same time with the hardware fault output by the Sensor Module.

**Remedy:** - check the speed range, frequency characteristic (amplitude characteristic) of the measuring equipment is not sufficient for the speed range.
- check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check the Sensor Module (e.g. contacts).
- if the coding disk is soiled or the lighting aged, replace the encoder.

## 233418 <location>Encoder 3: Speed change not plausible (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For an HTL/TTL encoder, the speed change has exceeded the value in p0492 over several sampling cycles.
The change to the averaged speed actual value - if applicable - is monitored in the current controller sampling time.
Alarm value (r2124, interpret decimal):
Only for internal Siemens troubleshooting.
See also:p0492
**Remedy:** - check the tachometer feeder cable for interruptions.
- check the grounding of the tachometer shielding.
- if required, increase the setting of p0492.

## 233419 <location>Encoder 3: Track A or B outside tolerance

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The amplitude/phase/offset correction for track A or B is at the limit.
Amplitude error correction: Amplitude B / Amplitude A = 0.78 ... 1.27
Phase: <84 degrees or >96 degrees
SMC20: Offset correction: +/-140 mV
SMC10: Offset correction: +/-650 mV
Alarm value (r2124, interpret hexadecimal):
xxxx1: Minimum of the offset correction, track B
xxxx2: Maximum of the offset correction, track B
xxx1x: Minimum of the offset correction, track A
xxx2x: Maximum of the offset correction, track A
xx1xx: Minimum of the amplitude correction, track B/A
xx2xx: Maximum of the amplitude correction, track B/A
x1xxx: Minimum of the phase error correction
x2xxx: Maximum of the phase error correction
1xxxx: Minimum of the cubic correction
2xxxx: Maximum of the cubic correction
**Remedy:** - check mechanical mounting tolerances for encoders without their own bearings (e.g. toothed-wheel encoders).
- check the plug connections (also the transition resistance).
- check the encoder signals.
- replace the encoder or encoder cable.

## 233421 <location>Encoder 3: Determined commutation position incorrect (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A commutation position actual value sensing error was detected.

Alarm value (r2124, interpret decimal):

3: The absolute position of the serial protocol and track A/B differ by half an encoder pulse. The absolute position must have its zero position in the quadrants in which both tracks are negative. In the case of a fault, the position can be incorrect by one encoder pulse.

**Remedy:** For alarm value = 3:

- For a standard encoder with cable, contact the manufacturer where relevant.
- correct the assignment of the tracks to the position value that is serially transferred. To do this, the two tracks must be connected, inverted, at the Sensor Module (interchange A with A* and B with B*) or, for a programmable encoder, check the zero offset of the position.

## 233422 <location>Encoder 3: Pulses per revolution square-wave encoder outside tolerance bandwidth

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The measured zero mark distance does not correspond to the parameterized zero mark distance.

This alarm is triggered with active square-wave encoder PPR correction and re-parameterized fault 31131 if the accumulator contains larger values than p4683 or p4684.

The zero mark distance for zero mark monitoring is set in p0425 (rotary encoder).

Alarm value (r2124, interpret decimal):

accumulated differential pulses in encoder pulses.

**Remedy:**

- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- check the encoder type (encoder with equidistant zero marks).
- adapt the parameter for the distance between zero marks (p0424, p0425).
- replace the encoder or encoder cable.

## 233429 <location>Encoder 3: Position difference hall sensor/track C/D and A/B too large

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The error for track C/D is greater than +/-15 ° mechanical or +/-60 ° electrical or the error for the Hall signals is greater than +/-60 ° electrical.

One period of track C/D corresponds to 360 ° mechanical.

One period of the Hall signal corresponds to 360 ° electrical.

The monitoring responds if, for example, Hall sensors are connected as equivalent for the C/D tracks with the incorrect rotational sense or supply values that are not accurate enough.

Alarm value (r2124, interpret decimal):

For track C/D, the following applies:

Measured deviation as mechanical angle (16 bits with sign, 182 dec corresponds to 1 °).

For Hall signals, the following applies:

Measured deviation as electrical angle (16 bits with sign, 182 dec corresponds to 1 °).

**Remedy:**

- track C or D not connected.
- correct the direction of rotation of the Hall sensor possibly connected as equivalent for track C/D.
- check that the encoder cables are routed in compliance with EMC.
- check the adjustment of the Hall sensor.

## 233431 <location>Encoder 3: Position deviation incremental/absolute too high (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When the zero pulse is passed, a deviation in the incremental position was detected.
For equidistant zero marks, the following applies:
- the first zero mark passed supplies the reference point for all subsequent checks. The other zero marks must have n times the distance referred to the first zero mark.

For distance-coded zero marks, the following applies:
- the first zero mark pair supplies the reference point for all subsequent checks. The other zero mark pairs must have the expected distance to the first zero mark pair.

Alarm value (r2124, interpret decimal):
Deviation in quadrants (1 pulse = 4 quadrants).

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- Clean coding disk or remove strong magnetic fields.

## 233432 <location>Encoder 3: Rotor position adaptation corrects deviation

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** On track A/B, pulses have been lost or too many have been counted. These pulses are presently being corrected.
Alarm value (r2124, interpret decimal):
Last measured deviation of zero mark in increments (4 increments = 1 encoder pulse).
The sign designates the direction of motion when detecting the zero mark distance.

**Remedy:**
- check that the encoder cables are routed in compliance with EMC.
- check the plug connections.
- replace the encoder or encoder cable.
- check encoder limit frequency.
- adapt the parameter for the distance between zero marks (p0424, p0425).

## 233442 <location>Encoder 3: Battery voltage alarm threshold reached

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When switched-off, the encoder uses a battery to back up the multiturn information. The multiturn information can no longer be buffered if the battery voltage drops even further.

**Remedy:** Replace battery.

## 233443 <location>Encoder 3: Signal level track C/D outside tolerance (alarm)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The unipolar level (CP/CN or DP/DN) for encoder 3 is outside the permissible tolerance.
Alarm value (r2124, interpret binary):
Bit 0 = 1: Either CP or CN outside the tolerance.
Bit 16 = 1: Either DP or DN outside the tolerance.
The unipolar nominal signal level of the encoder must lie in the range 2500 mV +/- 500 mV.
The response thresholds are < 1700 mV and > 3300 mV.
Note:
The signal level is not evaluated unless the following conditions are satisfied:
- Sensor Module properties available (r0459.31 = 1).
- monitoring active (p0437.31 = 1).

**Remedy:** - check that the encoder cables and shielding are routed in compliance with EMC.
- check the plug connections and contacts of the encoder cable.
- are the C/D tracks connected correctly (have the signal cables CP and CN or DP and DN been interchanged)?
- replace the encoder cable.

## 233460 <location>Encoder 3: Analog sensor channel A failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside measuring range set in p4673.
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4673).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 233461 <location>Encoder 3: Analog sensor channel B failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The input voltage of the analog sensor is outside the permissible limits.
Alarm value (r2124, interpret decimal):
1: Input voltage outside detectable measuring range.
2: Input voltage outside the selected measuring range (p4675).
3: The absolute value of the input voltage has exceeded the range limit (p4676).
**Remedy:** For alarm value = 1:
- check the output voltage of the analog sensor.
For alarm value = 2:
- check the voltage setting for each encoder period (p4675).
For alarm value = 3:
- check the range limit setting and increase it if necessary (p4676).

## 233462 <location>Encoder 3: Analog sensor no channel active

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Channel A and B are not activated for the analog sensor.
**Remedy:** - activate channel A and/or channel B (p4670).
- check the encoder configuration (p0404.17).
See also:p4670 (Analog sensor configuration)

## 233463 <location>Encoder 3: Analog sensor position value exceeds limit value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The position value has exceeded the permissible range of -0.5 ... +0.5.
Alarm value (r2124, interpret decimal):
1: Position value from the LVDT sensor.
2: Position value from the encoder characteristic.
**Remedy:** For alarm value = 1:
- check the LVDT ratio (p4678).
- check the reference signal connection at track B.
For alarm value = 2:
- check the coefficients of the characteristic (p4663 ... p4666).

## 233470 <location>Encoder 3: Encoder signals an internal error (X521.7)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** For the Sensor Module Cabinet 30 (SMC30), a dirty encoder is signaled via a 0 signal at terminal X521.7.
**Remedy:** - check the plug connections.
- replace the encoder or encoder cable.

## 233500 <location>Encoder 3: Position tracking traversing range exceeded

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** For a configured linear axis without modulo correction, the drive/encoder has exceeded the maximum possible traversing range. The value should be read in p0412 and interpreted as the number of motor revolutions.
For p0411.0 = 1, the maximum traversing range for the configured linear axis is defined to be 64x (+/- 32x) of p0421.
For p0411.3 = 1, the maximum traversing range for the configured linear axis is preset (default value) to the highest possible value and is +/-p0412/2 (rounded off to complete revolutions). The highest possible value depends on the pulse number (p0408) and the fine resolution (p0419).
**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

## 233501 <location>Encoder 3: Position tracking encoder position outside tolerance window

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** When switched off, the drive/encoder was moved through a distance greater than was parameterized in the tolerance window. It is possible that there is no longer any reference between the mechanical system and encoder.
Fault value (r0949, interpret decimal):
Deviation (difference) to the last encoder position in increments of the absolute value.
The sign designates the traversing direction.
Note:
The deviation (difference) found is also displayed in r0477.
See also:p0413 (Measuring gear position tracking tolerance window), r0477 (Measuring gear position difference)
**Remedy:** Reset the position tracking as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and, if necessary, the absolute encoder adjusted (p2507).
See also:p0010, p2507

## 233502 <location>Encoder 3: Encoder with measuring gear without valid signals

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The encoder with measuring gear no longer provides any valid signals.
**Remedy:** It must be ensured that all of the encoders, with mounted measuring gear, provide valid actual values in operation.

## 233503 <location>Encoder 3: Position tracking cannot be reset

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** The position tracking for the measuring gear cannot be reset.
**Remedy:** The fault should be resolved as follows:
- select encoder commissioning (p0010 = 4).
- reset the position tracking as follows (p0411.2 = 1).
- deselect encoder commissioning (p0010 = 0).
The fault should then be acknowledged and the absolute encoder adjusted.

## 233700 <location>Encoder 3: Effectivity test does not supply the expected value

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The DRIVE-CLiQ encoder fault word supplies fault bits that have been set.
Alarm value (r2124, interpret binary):
Bit x = 1: Effectivity test x unsuccessful.
**Remedy:** Replace encoder.

## 233800 <location>Encoder 3: Group signal

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** NONE
**Cause:** The motor encoder has detected at least one fault.
**Remedy:** Evaluate the other messages that are presently available.

## 233801 <location>Encoder 3 DRIVE-CLiQ: Sign-of-life missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the electrical cabinet design and cable routing for EMC compliance
- replace the component involved.

## 233802 <location>Encoder 3: Time slice overflow

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred in encoder 3.
Fault value (r0949, interpret hexadecimal):
yx hex: y = function involved (Siemens-internal fault diagnostics), x = time slice involved
x = 9:
Time slice overflow of the fast (current controller clock cycle) time slice.
x = A:
Time slice overflow of the average time slice.
x = C:
Time slice overflow of the slow time slice.
yx = 3E7:
Timeout when waiting for SYNO (e.g. unexpected return to non-cyclic operation).
**Remedy:** Increase the current controller sampling time
Note:
For a current controller sampling time = 31.25 µs, use an SMx20 with Article No. 6SL3055-0AA00-5xA3.

## 233804 <location>Encoder 3: Sensor Module checksum error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** POWER ON (IMMEDIATELY)
**Cause:** A checksum error has occurred when reading-out the program memory on the Sensor Module.
Fault value (r0949, interpret hexadecimal):
yyyyxxxx hex
yyyy: Memory area involved.
xxxx: Difference between the checksum at POWER ON and the actual checksum.
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- upgrade firmware to later version (>= V2.6 HF3, >= V4.3 SP2, >= V4.4).
- check whether the permissible ambient temperature for the component is maintained.
- replace the Sensor Module.

## 233805 <location>Encoder 3: EEPROM checksum error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** Data in the EEPROM corrupted .
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** Replace the module.

## 233806 <location>Encoder 3: Initialization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT

**Cause:** The encoder was not successfully initialized.
Fault value (r0949, interpret binary):
Bit 0, 1: Encoder initialization with the motor rotating has failed (deviation involving coarse and fine position in encoder pulses/4).
Bit 2: Mid-voltage matching for track A unsuccessful.
Bit 3: Mid-voltage matching for track B unsuccessful.
Bit 4: Mid-voltage matching for acceleration input unsuccessful.
Bit 5: Mid-voltage matching for track safety A unsuccessful.
Bit 6: Mid-voltage matching for track safety B unsuccessful.
Bit 7: Mid-voltage matching for track C unsuccessful.
Bit 8: Mid-voltage matching for track D unsuccessful.
Bit 9: Mid-voltage matching for track R unsuccessful.
Bit 10: The difference in mid-voltages between A and B is too great (> 0.5 V)
Bit 11: The difference in mid-voltages between C and D is too great (> 0.5 V)
Bit 12: The difference in mid-voltages between safety A and safety B is too great (> 0.5 V)
Bit 13: The difference in mid-voltages between A and safety B is too great (> 0.5 V)
Bit 14: The difference in mid-voltages between B and safety A is too great (> 0.5 V)
Bit 15: The standard deviation of the calculated mid-voltages is too great (> 0.3 V)
Bit 16: Internal fault - fault when reading a register (CAFE)
Bit 17: Internal fault - fault when writing a register (CAFE)
Bit 18: Internal fault: No mid-voltage matching available
Bit 19: Internal error - ADC access error.
Bit 20: Internal error - no zero crossover found.
Bit 28: Error while initializing the EnDat 2.2 measuring unit.
Bit 29: Error when reading out the data from the EnDat 2.2 measuring unit.
Bit 30: EEPROM checksum of the EnDat 2.2 measuring unit incorrect.
Bit 31: Data of the EnDat 2.2 measuring unit inconsistent.
Note:
Bit 0, 1: Up to 6SL3055-0AA00-5*A0
Bits 2 ... 20: 6SL3055-0AA00-5*A1 and higher

**Remedy:** Acknowledge fault.
If the fault cannot be acknowledged:
Bits 2 ... 9: Check encoder power supply.
Bits 2 ... 14: Check the corresponding cable.
Bit 15 with no other bits: Check track R, check settings in p0404.
Bit 28: Check the cable between the EnDat 2.2 converter and the measuring unit.
Bit 29 ... 31: Replace the defective measuring unit.

## 233811 <location>Encoder 3: Encoder serial number changed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The encoder serial number has changed. The change is only checked for encoders with serial number (e.g. EnDat encoders).
- the encoder was replaced.
Note:
With closed-loop position control, the serial number is accepted when starting the adjustment (p2507 = 2).
When the encoder is adjusted (p2507 = 3), the serial number is checked for changes and if required, the adjustment is reset (p2507 = 1).
Proceed as follows to hide serial number monitoring:
- set the following serial numbers for the corresponding Encoder Data Set: p0441= FF, p0442 = 0, p0443 = 0, p0444 = 0, p0445 = 0.

**Remedy:** Mechanically adjust the encoder. Accept the new serial number with p0440 = 1.

## 233812 <location>Encoder 3: Requested cycle or RX-/TX timing not supported

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A cycle requested from the Control Unit or RX/TX timing is not supported.
Fault value (r0949, interpret decimal):
0: Application cycle is not supported.
1: DRIVE-CLiQ cycle is not supported.
2: Distance between RX and TX instants in time too low.
3: TX instant in time too early.
**Remedy:** Carry out a POWER ON (switch-off/switch-on) for all components.

## 233813 <location>Encoder 3: Hardware logic unit failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1 bin
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** PULSE INHIBIT
**Cause:** The logic unit of the DRIVE-CLiQ encoder has failed.
Fault value (r0949, interpret binary):
Bit 0: ALU watchdog has responded.
Bit 1: ALU has detected a sign-of-life error.
**Remedy:** When the error reoccurs, replace the encoder.

## 233820 <location>Encoder 3 DRIVE-CLiQ: Telegram error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 233835 <location>Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder concerned. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 233836 <location>Encoder 3 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 233837 <location>Encoder 3 DRIVE-CLiQ: Component fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 233845 <location>Encoder 3 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the encoder involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 233850 <location>Encoder 3: Encoder evaluation internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred in the Sensor Module of encoder 3.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.
10000: OEM memory of the EnDat encoder contains data that cannot be interpreted.
11000 ... 11499: Descriptive data from EEPROM incorrect.
11500 ... 11899: Calibration data from EEPROM incorrect.
11900 ... 11999: Configuration data from EEPROM incorrect.
12000 ... 12008: communication with analog/digital converter faulted.
16000: DRIVE-CLiQ encoder initialization application error.
16001: DRIVE-CLiQ encoder initialization ALU error.
16002: DRIVE-CLiQ encoder HISI / SISI initialization error.
16003: DRIVE-CLiQ encoder safety initialization error.
16004: DRIVE-CLiQ encoder internal system error.

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 233851 <location>Encoder 3 DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 3) involved to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - Upgrade the firmware of the component involved.
- carry out a POWER ON (switch-off/switch-on) for the component involved.

## 233860 <location>Encoder 3 DRIVE-CLiQ (CU): Telegram error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 3) involved to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 233875 <location>Encoder 3: power supply voltage failed

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 233885 <location>Encoder 3 DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 3) involved to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 233886 <location>Encoder 3 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 3) involved to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 233887 <location>Encoder 3 DRIVE-CLiQ (CU): Component fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component involved (Sensor Module for encoder 3). Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 233895 <location>Encoder 3 DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Sensor Module (encoder 3) involved to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 233896 <location>Encoder 3 DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Component number: %1

**Reaction:** Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (Sensor Module for encoder 3), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 233899 <location>Encoder 3: Unknown fault

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** New message: %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 233902 <location>Encoder 3: SPI-BUS error occurred

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Error when operating the internal SPI bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 233903 <location>Encoder 3: I2C-BUS error occurred

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Error when operating the internal I2C bus.
Alarm value (r2124, interpret hexadecimal):
Only for internal Siemens troubleshooting.
**Remedy:** - replace the Sensor Module.
- if required, upgrade the firmware in the Sensor Module.
- contact Technical Support.

## 233905 <location>Encoder 3: Encoder parameterization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** An error was identified in the encoder parameterization.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
yyyyxxxx dec: yyyy = supplementary information, xxxx = parameter
xxxx = 421:
For an EnDat/SSI encoder, the absolute position in the protocol must be less than or equal to 30 bits.
yyyy = 0:
No additional information available.
yyyy = 1:
The component does not support HTL level (p0405.1 = 0) combined with track monitoring A/B <> -A/B (p0405.2 = 1).
yyyy = 2:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please start a new encoder identification.
yyyy = 3:
A code number for an identified encoder has been entered into p0400, however, no identification was carried out. Please select a listed encoder in p0400 with a code number < 10000.
yyyy = 4:
This component does not support SSI encoders (p0404.9 = 1) without track A/B.
yyyy = 5:
For SQW encoder, value in p4686 greater than in p0425.
yyyy = 6:
DRIVE-CLiQ encoder cannot be used with this firmware version.
yyyy = 7:
For an SQW encoder, the XIST1 correction (p0437.2) is only permitted for equidistant zero marks.
yyyy = 8:
The motor pole pair width is not supported by the linear scale being used.
yyyy = 9:
The length of the position in the EnDat protocol may be a maximum of 32 bits.
yyyy = 10:
The connected encoder is not supported.
yyyy = 11:
The hardware does not support track monitoring.

**Remedy:** - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.
- re parameter number = 314:
- check the pole pair number and measuring gear ratio. The quotient of the "pole pair number" divided by the "measuring gear ratio" must be less than or equal to 1000 ((r0313 * p0433) / p0432 <= 1000).

## 233912 <location>Encoder 3: Device combination is not permissible

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE)
Hla: OFF1 (NONE)

**Acknowledge:** PULSE INHIBIT

**Cause:** The selected device combination is not supported.
Fault value (r0949, interpret decimal):
1003:
The connected measuring unit cannot be operated with the EnDat 2.2 converter. For instance, the measuring unit has a pulse number/resolution of 2^n.
1005:
The type of measuring unit (incremental) is not supported by the EnDat 2.2 converter.
1006:
The maximum duration of the EnDat transfer (31.25 µs) was exceeded.
2001:
The set combination of current controller cycle, DP cycle and Safety cycle is not supported by the EnDat 2.2 converter.
2002:
The resolution of the linear measuring unit does not match the pole pair width of the linear motor
Pole pair width, minimum = p0422 * 2^20

**Remedy:** For fault value = 1003, 1005, 1006:
- Use a measuring unit that is permissible.
For fault value = 2001:
- set a permissible cycle combination (if required, use standard settings).
For fault value = 2002:
- Use a measuring unit with a lower resolution (p0422).

## 233915 <location>Encoder 3: Encoder configuration error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The configuration for encoder 3 is incorrect.
Alarm value (r2124, interpret decimal):
1:
Re-parameterization between fault/alarm is not permissible.
2:
The cyclic DQ receive telegram is too long and is limited.
3:
The cyclic DQ send telegram is too long and is limited.
419:
When the fine resolution Gx_XIST2 is configured, the encoder identifies a maximum possible absolute position actual value (r0483) that can no longer be represented within 32 bits.

**Remedy:** For alarm value = 1:
No re-parameterization between fault/alarm.
For alarm value = 419:
Reduce the fine resolution (p0419) or deactivate the monitoring (p0437.25), if the complete multiturn range is not required.

## 233916 <location>Encoder 3: Encoder parameterization error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Parameter: %1, supplementary information: %2
**Reaction:** Servo: OFF1 (IASC/DCBRK, NONE, OFF2, OFF3, STOP2)
Hla: OFF1 (NONE, OFF2, OFF3, STOP2)
**Acknowledge:** IMMEDIATELY
**Cause:** An encoder parameter was detected as being incorrect.
It is possible that the parameterized encoder type does not match the connected encoder.
The parameter involved can be determined as follows:
- determine the parameter number using the fault value (r0949).
- determine the parameter index (p0187).
Fault value (r0949, interpret decimal):
Parameter number.
**Remedy:** - check whether the connected encoder type matches the encoder that has been parameterized.
- correct the parameter specified by the fault value (r0949) and p0187.

## 233920 <location>Encoder 3: Temperature sensor fault (motor)

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** Fault cause: %1, channel number: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The motor detected a fault when evaluating the temperature sensor.
Fault cause:
1 (= 01 hex):
Wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm
2 (= 02 hex):
Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 603 Ohm
Additional values:
Only for internal Siemens troubleshooting.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = channel number, xx = error cause
**Remedy:** - check that the encoder cable is the correct type and is correctly connected.
- check the temperature sensor selection in p0600 to p0603.
- replace the Sensor Module (hardware defect or incorrect calibration data).

## 233930 <location>Encoder 3: Data logger has saved data

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** For the activated function "Data logger" (p0437.0 = 1) a fault has occurred with the Sensor Module. This alarm indicates that the diagnostics data corresponding to the fault was saved on the memory card.
The diagnostics data is saved in the following folder:
/USER/SINAMICS/DATA/SMTRC00.BIN
...
/USER/SINAMICS/DATA/SMTRC07.BIN
/USER/SINAMICS/DATA/SMTRCIDX.TXT
The following information is contained in the TXT file:
- Display of the last written BIN file.
- Number of write operations that are still possible (from 10000 downwards).
Note:
Only Siemens can evaluate the BIN files.

**Remedy:** Not necessary.
This alarm is automatically withdrawn.
The data logger is ready to record the next fault case.

## 233940 <location>Encoder 3: Spindle sensor S1 voltage incorrect

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The voltage of analog sensor S1 is outside the permissible range.
Alarm value (r2124, interpret decimal):
Signal level from sensor S1.
Note:
A signal level of 500 mV corresponds to the numerical value 500 dec.

**Remedy:** - check the clamped tool.
- check the tolerance and if required, adapt (p5040).
- check the thresholds and if required, adapt (p5041).
- check analog sensor S1 and connections.
See also:p5040 (Spindle voltage threshold values tolerance), p5041 (Spindle voltage threshold values)

## 233950 <location>Encoder 3: Internal software error

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.

**Remedy:** - if necessary, upgrade the firmware in the Sensor Module to a later version.
- contact Technical Support.

## 233999 <location>Encoder 3: Unknown alarm

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** A alarm has occurred on the Sensor Module for encoder 3 that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Sensor Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 234207 <location>VSM: Temperature fault threshold exceeded

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3668).
Note:
This fault can only be output if the temperature evaluation was activated (p3665 > 0).
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].
See also:r3666 (VSM temperature actual value), p3668

**Remedy:** - check the fan.
- reduce the power.
- check the temperature sensor type setting (p3665).
- infeed: check the line filter type setting (p0220).
See also:p3665 (VSM temperature evaluation sensor type)

## 234211 <location>VSM: Temperature alarm threshold exceeded

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature (r3666) measured using the Voltage Sensing Module (VSM) has exceeded the threshold value (p3667).
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].
See also:r3666 (VSM temperature actual value), p3667

**Remedy:** - check the fan.
- reduce the power.
- check the temperature sensor type setting (p3665).
- infeed: check the line filter type setting (p0220).
See also:p3665 (VSM temperature evaluation sensor type)

## 234800 <location>VSM: Group signal

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** NONE
**Cause:** The Voltage Sensing Module (VSM) has detected at least one fault.
**Remedy:** Evaluates other actual messages.

## 234801 <location>VSM DRIVE-CLiQ: Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the Voltage Sensing Module (VSM).
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the DRIVE-CLiQ connection.
- replace the Voltage Sensing Module (VSM).

## 234802 <location>VSM: Time slice overflow

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred on the Voltage Sensing Module.
**Remedy:** Replace the Voltage Sensing Module.

## 234803 <location>VSM: Memory test

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** An error has occurred during the memory test on the Voltage Sensing Module.
**Remedy:** - check whether the permissible ambient temperature for the Voltage Sensing Module is being maintained.
- replace the Voltage Sensing Module.

## 234804 <location>VSM: CRC

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A checksum error has occurred when reading-out the program memory on the Voltage Sensing Module (VSM).
**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module.

## 234805 <location>VSM: EEPROM checksum error

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY

**Cause:** Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the Voltage Sensing Module (VSM).

## 234806 <location>VSM: Initialization

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** For the Voltage Sensing Module (VSM), a fault has occurred while initializing.
**Remedy:** Replace the Voltage Sensing Module.

## 234807 <location>VSM: Sequence control time monitoring

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error, timeout in the sequence control on the Voltage Sensing Module (VSM).
**Remedy:** Replace the Voltage Sensing Module.

## 234820 <location>VSM DRIVE-CLiQ: Telegram error

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the Voltage Sensing Module involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 234835 <location>VSM DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the Voltage Sensing Module involved. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 234836 <location>VSM DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the Voltage Sensing Module. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON.

## 234837 <location>VSM DRIVE-CLiQ: Component fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 234845 <location>VSM DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** Component number: %1, fault cause: %2
**Reaction:** Infeed: OFF2 (NONE, OFF1)
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the Voltage Sensing Module (VSM).
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON.

## 234850 <location>VSM: Internal software error

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** %1

**Reaction:** Infeed: OFF1 (NONE, OFF2)

**Acknowledge:** POWER ON

**Cause:** An internal software error in the Voltage Sensing Module (VSM) has occurred.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.

**Remedy:** - replace the Voltage Sensing Module (VSM).
- if required, upgrade the firmware in the Voltage Sensing Module.
- contact Technical Support.

## 234851 <location>VSM DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Upgrade the firmware of the component involved.

## 234860 <location>VSM DRIVE-CLiQ (CU): Telegram error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 234875 <location>VSM: power supply voltage failed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 234885 <location>VSM DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

## 234886 <location>VSM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 234887 <location>VSM DRIVE-CLiQ (CU): Component fault

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component (Voltage Sensing Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 234895 <location>VSM DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: NONE (OFF1, OFF2)
Hla: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Voltage Sensing Module involved (VSM) to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 234896 <location>VSM DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (Voltage Sensing Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 234899 <location>VSM: Unknown fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** New message: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the Voltage Sensing Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Voltage Sensing Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

## 234903 <location>VSM: I2C bus error occurred

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An error has occurred when accessing the module-internal I2C bus.

**Remedy:** Replace the Voltage Sensing Module (VSM).

## 234904 <location>VSM: EEPROM

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred accessing the non-volatile memory on the Terminal Module.
**Remedy:** Replace the Voltage Sensing Module (VSM).

## 234905 <location>VSM: Parameter access

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The Control Unit attempted to write an illegal parameter value to the Voltage Sensing Module (VSM).
**Remedy:** - check whether the firmware version of the VSM (r0158) matches the firmware version of Control Unit (r0018).
- if required, replace the Voltage Sensing Module.
Note:
The firmware versions that match each other are in the readme.txt file on the memory card.

## 234920 <location>VSM: overtemperature or temperature sensor fault

**Drive object:** A_INF_840, B_INF_840, S_INF_840
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** When evaluating the temperature sensor, a resistance value outside the permissible range was detected.
Fault value (r0949, interpret decimal):
1: overtemperature, wire breakage or sensor not connected.
KTY: R > 1630 Ohm, PT1000: R > 1720 Ohm
2: Measured resistance too low.
PTC: R < 20 Ohm, KTY: R < 50 Ohm, PT1000: R < 723 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.
- allow to cool down and then check the ambient conditions, load cycle and cooling (fan fuse).
- check the temperature sensor type setting (p3665).
- infeed: check the line filter type setting (p0220).

## 234950 <location>VSM: Internal software error

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** An internal software error in the Voltage Sensing Module (VSM) has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.
**Remedy:** - if necessary, upgrade the firmware in the Voltage Sensing Module to a later version.
- contact Technical Support.

## 234999 <location>VSM: Unknown alarm

**Drive object:** A_INF_840, B_INF_840, S_INF_840

**Message value:** New message: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A fault occurred on the Voltage Sensing Module (VSM) an alarm has occurred that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Voltage Sensing Module by an older firmware version (r0148).
- upgrade the firmware on the Control Unit (r0018).

## 235000 <location>TM54F: Sampling time invalid

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** POWER ON

**Cause:** The set sampling time is invalid.
- not a multiple integer of the DP clock cycle.
Fault value (r0949, floating point):
Recommended valid sampling time.

**Remedy:** Adapt the sampling time (e.g. set the recommended valid sampling time).

## 235001 <location>TM54F: Parameter value invalid

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The functionality of Safety Basic Functions via TM54F is used.
TM54F has been incorrectly parameterized (incorrect parameter assignment).
Only the following signals may be parameterized:
- STO active
- SS1 active
- internal event
- safe state
Possible causes:
- p10024 ... p10038 not set to 0 or 255.
- p10039, p10042 ... p10045 use signals from Safety Extended Functions.
Fault value (r0949, interpret binary):
Bits 0 ... 3 specifies for which drive group an illegal F-DI was parameterized:
Bit 0 = 1: drive group 1 error
Bit 1 = 1: drive group 2 error
Bit 2 = 1: drive group 3 error
Bit 3 = 1: drive group 4 error
Bits 4 ... 7 specifies for which F-DOs incorrect links were specified:
Bit 4 = 1: F-DO 0 error (p10042)
Bit 5 = 1: F-DO 1 error (p10043)
Bit 6 = 1: F-DO 2 error (p10044)
Bit 7 = 1: F-DO 3 error (p10045)

**Remedy:** - check the setting of the failsafe digital inputs (F-DI) for the Safety Extended Functions - and set to a value of 0 or 255 (p10024 ... p10039).
- check the setting of the signal sources for the failsafe digital outputs (F-DO) and if necessary, correct (p10042 ... p10045).
Note:
F-DI: Failsafe Digital Input
F-DO: Failsafe Digital Output

## 235002 <location>TM54F: Commissioning not possible

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The commissioning mode activation was rejected because at least one drive belonging to the TM54F is enabled for operation.
Fault value (r0949, interpret decimal):
Drive object number of the first drive found without pulse suppression/power inhibit.
**Remedy:** Withdraw the operating enable for the drive specified in the fault value.

## 235003 <location>TM54F: Acknowledgment on the Control Unit is required

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A fault on the Terminal Module 54F (TM54) was acknowledged using the safe acknowledgment (p10006).
An additional acknowledgment is also required at the Control Unit.
**Remedy:** - acknowledge all faults on the Control Unit (BI: p2102).
or
- acknowledge all faults on the drive object TM54F (BI: p2103, p2104 or p2105).
Note:
A fault acknowledgment is triggered with a 0/1 signal.

## 235004 <location>TM54F: communication cycle invalid

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** - the communication cycle specified in p10000[x] does not correspond with the monitoring cycle of the drive object, which was specified in p10010[x].

As long as this fault is present, Failsafe Values are activated in TM54F. All the drives are not enabled.

Fault value (r0949, interpret binary):

If a bit is set in the range bit 0 ... 5, then the following applies:

The communication cycle specified in p10000[x] does not correspond with the monitoring cycle of the drive object which was specified in p10010[x]. (if only p10000[0] used, then this value must be identical with all monitoring cycles of the drive objects used in p10010[0...5].)

Bit 0 = 1: p10000[0] does not correspond with the monitoring cycle of p10010[0]

Bit 1 = 1: p10000[1] does not correspond with the monitoring cycle of p10010[1]

..

Bit 5 = 1: p10000[5] does not correspond with the monitoring cycle of p10010[5]

If a bit is set in the range bit 16 ... 21, then the following applies:

Bit 16 = 1: p10000[0] has been selected too low.

Bit 17 = 1: p10000[1] has been selected too low.

..

Bit 21 = 1: p10000[5] has been selected too low.

When using an axis with Basic Safety Functions with TM54F, then the monitoring cycle should be greater than 500us + 8 * current controller clock cycles of the drive.

Note:

This error is also signaled if a drive controlled with TM54F is parameterized so that the basic functions are controlled via TM54F - and simultaneously the extended safety functions or ncSI have been parameterized.

The following applies for fault value = 0:

- since the firmware update of the TM54F it has not been switched off.
- the firmware of the connected TM54F is too old.

**Remedy:** For a fault value in the range from bit 0 ... 5:

- first check that all drives, which are entered in p10010, have either Extended Safety Functions or Basic Functions via TM54F.
- Execute the copy function for TM54F(p9700 = 87).
- adapt the checksums for TM54F(p9701 = 172).
- copy RAM to ROM.
- carry out a POWER ON.

For a fault value in the range from bit 16 ... 21:

Increase the current controller sampling time of the corresponding drive, in order to avoid faults in operation.

- Execute the copy function for TM54F(p9700 = 87).
- adapt the checksums for TM54F(p9701 = 172).
- copy RAM to ROM.
- carry out a POWER ON.

## 235005 <location>TM54F:parallel connection not supported

**Drive object:** HLA_840, HLA_DBSI, SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** POWER ON

**Cause:** The TM54F function with Basic Safety Functions is used. This function is not supported when power units are connected in parallel.

All drives of the TM54F assume Failsafe Values, and are not enabled.

**Remedy:** - deactivate parallel connection or TM54F with Basic Safety Functions.
- copy RAM to ROM.
- carry out a POWER ON (switch-off/switch-on).

## 235006 <location>TM54F: drive groups invalid

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** POWER ON
**Cause:** The functionality of the basic functions via TM54F is used.
Drive groups have been incorrectly parameterized (incorrect parameter assignment).
Fault value (r0949, interpret binary):
The value specifies in which drive group Basic Safety drives are mixed with Extended Safety drives.
Bit 0 = 1: drive group 1 error
Bit 1 = 1: drive group 2 error
Bit 2 = 1: drive group 3 error
Bit 3 = 1: drive group 4 error
As long as this fault is present, Failsafe Values are activated in TM54F. All the drives are not enabled.
Note:
-this error is also signaled if a drive controlled with TM54F is parameterized so that the basic functions are controlled via TM54F and simultaneously extended safety functions or ncSI have been parameterized.
**Remedy:** Corresponding to the fault value, p10011 should be checked to ensure that no Basic Safety drives are mixed with Extended Safety drives in a drive group.

## 235009 <location>TM54F: Safety commissioning drive incomplete

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** For Terminal Module 54F (TM54F), a drive object was assigned (p10010), for which no safety functions or faulty safety functions are parameterized (p9501, p9601).
Fault value (r0949, interpret bitwise binary):
Bit 0 = 1: drive 1 error
Bit 1 = 1: drive 2 error
Bit 2 = 1: drive 3 error
Bit 3 = 1: drive 4 error
Bit 4 = 1: drive 5 error
Bit 5 = 1: drive 6 error
**Remedy:** - carry out the safety commissioning of the drive involved and enable the safety functions for TM54F.
- commission the TM54F – and just set p9700 = 87d and p9701 = 172d.

## 235011 <location>TM54F: Drive object number assignment illegal

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** A drive object number was assigned twice. Each drive object number can be assigned only once.
**Remedy:** Correct the assignment of the drive object numbers.

## 235012 <location>TM54F: Test stop for failsafe digital inputs/outputs

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The forced checking procedure (test stop) for the failsafe digital inputs/outputs (F-DI/F-DO) is currently in progress.
**Remedy:** The alarm is automatically withdraw after successfully ending or canceling (when a fault condition occurs) the test stop.
Note:
F-DI: Failsafe Digital Input
F-DO: Failsafe Digital Output

## 235013 <location>TM54F: Test stop error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault has been detected during the forced checking procedure (test stop) of the failsafe digital inputs/outputs on the TM54F. Failsafe control signals (Failsafe Values) are transferred to the safety functions.

Fault value (r0949, interpret hexadecimal):

aaaabbcc hex:

aaaa: DO or F-DI (dependent on test step cc), where the expected state was not assumed (bit 0 = F-DI 0 or F-DO 0, bit 1 = F-DI 1 or F-DO 1, etc.).

bb: Fault cause

bb = 01 hex: Internal fault.

bb = 02 hex: Fault when comparing the switching signals of the two channels (F-DI or DI).

bb = 03 hex: Internal fault.

bb = 04 hex: Fault when comparing the switching signals of the two channels (Diag-DO).

cc: State of the test stop in which the fault has occurred.

The display format is as follows:

Slave fault state: (test actions)(test actions) | corresponding step for the master: (test actions)(test actions) | Description

00 hex: (L1+OFF)(L2+ON) | 0A hex: ( )( ) | Synchronization / switching step

0A hex: (L1+OFF)(L2+ON) | 15 hex: ( )( ) | Wait step

15 hex: (L1+OFF)(L2+OFF) | 20 hex:( )( ) | 1.) F-DI 0 ... 4 check for 0 V 2.) Switch step to new level

20 hex: (L1+OFF)(L2+OFF) | 2B hex: ( )( ) | Wait step

2B hex: (L1+ON)(L2+ON) | 36 hex: ( )( ) | 1.) F-DI 5 ... 9 check for 0 V 2.) Switch step to new level

36 hex: (DO OFF)( ) | 41 hex: (DO OFF)( ) | Wait step / switching step

41 hex: (DO OFF)( ) | 4C hex: (DO OFF)( ) | Wait step

4C hex: (DO ON)( ) | 57 hex: (DO ON)( ) | 1.) Check diag-DO or diag-DI 2.) Switch step to new level

57 hex: (DO ON)( ) | 62 hex: (DO ON)( ) | Wait step

62 hex: (DO OFF)( ) | 6D hex: (DO ON)( ) | 1.) Check diag-DO or diag-DI 2.) Switch step

6D hex: (DO OFF)( ) | 78 hex: (DO ON)( ) | Wait step

78 hex: (DO ON)( ) | 83 hex: (DO OFF)( ) | 1.) Check diag-DO or diag-DI 2.) Switch step

83 hex: (DO ON)( ) | 8E hex: (DO OFF)( ) | Wait step

8E hex: (DO OFF)( ) | 99 hex: (DO OFF)( ) | 1.) Check diag-DO or diag-DI 2.) Switch step

99 hex: (DO OFF)( ) | A4 hex: (DO OFF)( ) | Wait step

A4 hex: (DO OFF)( ) | AF hex: (DO OFF)( ) | Check Diag-DO or Diag-DI

AF hex: (DO original state)() | C5 hex: (DO original state)() | Switching step

C5 hex: End of test

The expected states to be checked depend on the parameterized test mode (p10047).

The following expected states are tested in the test steps when testing the F-DOs:

The display format is as follows:

Test step (SL MA): Expected Diag-DO mode 1 | Expected DI 20 ... 23 mode 2 | Expected DI 20 ... 23 mode 3

(4C hex 57 hex): Diag-DO = 0 V | DI = 24 V | DI = 24 V

(62 hex 6D hex): Diag-DO = 0 V | DI = 0 V | DI = 0 V

(78 hex 83 hex): Diag-DO = 0 V | DI = 0 V | DI = 24 V

(8E hex 99 hex): Diag-DO = 24 V | DI = 0 V | DI = 24 V

(A4 hex AF hex): Diag-DO = 0 V | DI = 24 V | DI = 24 V

Example:

If an error with fault causes bb = 02 hex or 04 hex occurs in a test stop step, the test action for the fault took place in the previous test stop step. The expected states are tested in the next step.

Master signals fault value 0001_04AF and slave signals fault value 0001_04A4.

aaaa = 1 --> F-DO 0 is involved.

bb = 04 hex --> the test of the Diag-DO was unsuccessful.

cc = The expected states were tested in test stop step AF on the master and A4 on the slave.

The expected state Diag-DO = 0 V was checked in the table, i.e. Diag-DO was at 0 V instead of the expected 24 V. The associated test action took place in the previous step (99 hex DO OFF, A4 hex DO OFF). Both DOs were switched to OFF.

**Remedy:** Check the wiring of the F-DIs and F-DOs and restart the test stop.
Note:
The fault is withdrawn if the test stop is successfully completed.
For fault value = CCCCCCCC hex, DDDDDDDD hex, EEEEEEEE hex the following applies:
These fault values occur together with fault F35152.
Possible countermeasure:
- check all parameters for the test stop.
- you should also check whether the firmware version of the TM54F matches that of the Control Unit.
- check p10001, p10017, p10046 and p10047.
A POWER ON must be carried out after correcting the parameters.
F-DI: Failsafe Digital Input
F-DO: Failsafe Digital Output

## 235014 <location>TM54F: Test stop for failsafe digital inputs/outputs

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The time set in p10003 for the forced checking procedure (test stop) for the digital inputs/outputs has been exceeded. A new forced checking procedure is required.
After the next time the forced checking procedure is selected, the message is withdrawn and the monitoring time is reset.
Note:
- this message does not result in a safety stop response.
- the test must be performed within a defined, maximum time interval (p10003, maximum of 8760 hours) in order to comply with the requirements as laid down in the standards for timely fault detection and the conditions to calculate the failure rates of safety functions (PFH value). Operation beyond this maximum time period is permissible if it can be ensured that the forced checking procedure is performed before persons enter the hazardous area and who are depending on the safety functions correctly functioning.

**Remedy:** Carry out the forced checking procedure for the digital inputs/outputs.
The signal source to select the forced checking procedure is set via binector input p10007.

## 235015 <location>TM54F: Motor/Hydraulic Module replaced or configuration inconsistent

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** Cyclic communication of at least one drive with the Terminal Module 54F (TM54F) is not active.
Possible causes:
- at least one Motor Module/Hydraulic Module was replaced (e.g. hardware was replaced).
- the parameterization of theTM54F (p10010) is inconsistent with the number of drives, which have drive-based motion monitoring functions activated with TM54F.
- for the signaled drive, it is not permissible that the "Safe motion monitoring without selection" (p9601.5 = 1) is parameterized.
- And activated drive has no communication via DRIVE-CLiQ.
- p10010 of the TM54F master module is not the same as p10010 of the TM54F slave module (in this case, F35051 is also output).
- in p10010 of the TM54F master or slave module, the number of a drive object was entered several times.
- the control of the Basis Functions via TM54F was parameterized, and simultaneously the Extended Safety Functions or ncSI were parameterized.

Alarm value (r2124, interpret binary):
yyyy yyyy xxxx xxxx bin
xxxx xxxx bin: inconsistent configuration
Bit 0 = 1: No communication with drive 1.
...
Bit 5 = 1: No communication with drive 6.
yyyy yyyy bin: Motor Module/Hydraulic Module replaced or a DRIVE-CLiQ cable of a Motor/Hydraulic Module not inserted.
Bit 8 = 1: Motor Module/Hydraulic Module from drive 1 was replaced or does not communicate.
...
Bit 13 = 1: Motor Module/Hydraulic Module from drive 6 was replaced or does not communicate.
Note:
When this alarm is active, none of the drives listed in the alarm value, which have drive-based motion monitoring functions operating with TM54F, are enabled.
For alarm value = 0:
The number of drive objects specified in p10010 is not equal to the number of drives that have drive-based motion monitoring functions that have been enabled.

**Remedy:** For all drive objects specified in p10010, check whether the drive-based motion monitoring functions with TM54F are enabled (p9601).
Check as to whether F35051 is also output and remove the cause.
Check whether each drive object number is listed only once in the indices of p10010.
Note:
If a drive was deactivated and activated without first having established the DRIVE-CLiQ connection, then this alarm is also output.
When replacing a Motor Module/Hydraulic Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

For SINUMERIK, the following applies:
HMI supports the replacement of components with Safety functions (operating area "Diagnostics" --> Softkey "Alarm list" --> Softkey "Confirm SI HW" etc.).
The precise procedure is given in the following document:
SINUMERIK Function Manual Safety Integrated

## 235016 <location>TM54F: Net data communication with drive not established

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The cyclic net data communication within the Terminal Module 54F (TM54F) is still not active for at least one drive.
Note:
This message is output after the TM54F master and TM54F slave have booted and is automatically withdrawn as soon as communications have been established.

**Remedy:** When replacing a Motor Module/Hydraulic Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following always applies:
- for all drive objects specified in p10010, check whether the drive-based motion monitoring functions with TM54F are enabled (p9601).
- check whether fault F35150 is present and if required, remove the cause of this fault.

Note:
The communication status of the individual drives is indicated in r10055. The corresponding drive objects can be identified together with p10010.

## 235040 <location>TM54F: 24 V undervoltage

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Fault cause: %1 bin

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** For the 24 V power supply for the Terminal Module 54F (TM54F) an undervoltage condition was detected.
As fault response failsafe input terminal signals are transferred to the motion monitoring functions.
Fault value (r0949, interpret binary):
Bit 0 = 1: Power supply undervoltage at connection X524.
Bit 1 = 1: Power supply undervoltage at connection X514.

**Remedy:** - check the 24 V DC power supply for the TM54F.
- carry out safe acknowledgment (p10006).

## 235043 <location>TM54F: 24 V overvoltage

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** For the 24 V power supply for the Terminal Module 54F (TM54F) an overvoltage condition was detected.
As fault response failsafe input terminal signals are transferred to the motion monitoring functions.

**Remedy:** - check the 24 V DC power supply for the TM54F.
- carry out safe acknowledgment (p10006).

## 235051 <location>TM54F: Defect in a monitoring channel

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The Terminal Module 54F (TM54F) has identified an error in the data cross check between the two control channels.
This can be the result of incorrect parameterization. However, a fault may have occurred, which was identified by the Safety Integrated software (e.g. defective hardware).
Perform the steps listed under "Remedy" in order to rule out any defective hardware.
As fault response failsafe input terminal signals are transferred to the motion monitoring functions.
Fault value (r0949, interpret hexadecimal):
aaaabbcc hex
aaaa: A value greater than zero indicates an internal software error.
bb: Data to be cross-compared that resulted in the error.
If specified, check the specified parameters to ensure that they are the same for both the TM54F master and TM54F slave.
bb = 00 hex: p10000[0]
bb = 01 hex: p10001
bb = 02 hex: p10002
bb = 03 hex: p10006
bb = 04 hex: p10008
bb = 05 hex: p10010
bb = 06 hex: p10011
bb = 07 hex: p10020
bb = 08 hex: p10021
bb = 09 hex: p10022
bb = 0A hex: p10023
bb = 0B hex: p10024
bb = 0C hex: p10025
bb = 0D hex: p10026
bb = 0E hex: p10027
bb = 0F hex: p10028
bb = 10 hex: p10036
bb = 11 hex: p10037
bb = 12 hex: p10038
bb = 13 hex: p10039
bb = 14 hex: p10040
bb = 15 hex: p10041
bb = 16 hex: p10042
bb = 17 hex: p10043
bb = 18 hex: p10044
bb = 19 hex: p10045
bb = 1A hex: p10046
bb = 1B hex: p10041
bb = 1C hex: p10046
bb = 1D ... 1F hex: p10017, p10002, p10000
bb = 20 ... 2A hex: p10040, p10046, p10047
bb = 2B hex: error in the data for test stop initialization
bb = 2C hex: error in the data for initializing the input/output calculation
bb = 2D ... 45 hex: error in the data for the output calculation p10042 ... p10045
bb = 46 ... 63 hex: error in the data for the calculation of drive group 1
bb = 64 ... 81 hex: error in the data for the calculation of drive group 2
bb = 82 ... 9F hex: error in the data for the calculation of drive group 3
bb = A0 ... BD hex: error in the data for the calculation of the drive group 4
bb = BE hex: debounce time of the failsafe inputs (F-DI) p10017
bb = BF hex: debounce time of the single-channel inputs (DI) p10017
bb = C0 hex: debounce time of the Diag inputs p10017
bb = C1 hex: error in the internal data for p10030 SDI positive

bb = C2 hex: error in the internal data for p10031 SDI negative
bb = C3 ... CA hex: error in the data to calculate the drive groups p10030 ... p10031
bb = CB hex: p10032
bb = CC hex: p10033
bb = CD hex: p10009
bb = CE ... CF error in the data for drive group 1 SLP parameter p10032 ... p10033
bb = D0 ... D1 error in the data for drive group 2 SLP parameter p10032 ... p10033
bb = D2 ... D3 error in the data for drive group 3 SLP parameter p10032 ... p10033
bb = D4 ... D5 error in the data for drive group 4 SLP parameter p10032 ... p10033
bb = D6 error in the data for initializing the retract function
bb = D7 error in the data for the retract function SLP
bb = D8 error in parameter p10000[1...5]
bb = D9 ... E3 error in the internal data of the axis communication
bb = E4 ... F2 error in the internal data of the discrepancy check
cc: indicates the index of the data to be cross-compared that resulted in the error.

**Remedy:** Carry out the following steps on the TM54F:
- check the specified parameters for incorrect parameterization.
- activate the safety commissioning mode (p0010 = 95).
- start the copy function for SI parameters (p9700 = 57 hex).
- acknowledge complete data change (p9701 = AC hex).
- exit the safety commissioning mode (p0010 = 0).
- save all parameters (p0977 = 1).
- carry out safe acknowledgment (p10006).

For an internal software error (aaaa > 0):
- For TM54F, upgrade the firmware to a later version.
- contact Technical Support.
- replace the TM54F.

## 235052 <location>TM54F: Internal hardware error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** An internal software/hardware error has been detected on the Terminal Module 54F (TM54F).
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:**
- check the electrical cabinet design and cable routing for EMC compliance
- upgrade TM54F firmware to more recent version.
- contact Technical Support.
- replace the TM54F.

## 235053 <location>TM54F: Temperature fault threshold exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature measured using the temperature sensing on the TM54F has exceeded the threshold value to initiate this fault.
As fault response failsafe input terminal signals are transferred to the motion monitoring functions.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.

**Remedy:** - allow the TM54F to cool down.
- carry out safe acknowledgment (p10006).

## 235054 <location>TM54F: Temperature alarm threshold exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature measured using the temperature sensing on the TM54F has exceeded the threshold value to initiate this alarm.
**Remedy:** - allow the TM54F to cool down.
- carry out safe acknowledgment (p10006).

## 235075 <location>TM54F: Error during internal communication

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An internal communications error has occurred in the Terminal Module 54F (TM54F).
This message is also output in the following cases:
- parameter p10000 (TM54F master) is not set the same as p10000 (TM54F slave).
- parameter p10010 (TM54F master) is not set the same as p10010 (TM54F slave).
Alarm value (r2124, interpret decimal):
Only for internal Siemens diagnostics.
**Remedy:** For p10010/p10000 from the TM54F master not equal to the TM54F slave:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.
For internal communication errors:
- check the electrical cabinet design and cable routing for EMC compliance
- upgrade the software on the TM54F.
- contact Technical Support.
- replace the TM54F.

## 235080 <location>TM54F: Checksum error safety parameters

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The calculated checksum entered in r10004 over the safety-relevant parameters does not match the reference checksum saved in p10005 at the last machine acceptance.
Fault value (r0949, interpret binary):
Bit 0 = 1: Checksum error for functional SI parameters.
Bit 1 = 1: Checksum error for SI parameters for component assignment.
**Remedy:** - check the safety-relevant parameters and if required, correct.
- set the reference checksum to the actual checksum.
- acknowledge the hardware replacement.
- carry out a POWER ON (switch-off/switch-on).
- carry out an acceptance test.

## 235081 <location>TM54F: Static (steady state) 1 signal at the F-DI for safe acknowledgment

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A logical 1 signal is present at the F-DI configured in p10006 for more than 10 seconds.
If, at the F-DI no acknowledgment was performed for safe acknowledgment, then a steady-state logical and 0 signal must be present. This avoids unintentional safety-relevant acknowledgment (or the "Internal Event Acknowledge" signal) if a wire breaks or one of the two digital inputs bounces.

**Remedy:** Set the failsafe digital input (F-DI) to a logical 0 signal (p10006).
Note:
F-DI: Failsafe Digital Input

## 235150 <location>TM54F: Communication error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A communication error between the TM54F master and Control Unit or between the TM54F slave and the Motor Module/ Hydraulic Module was detected.
Fault value (r0949, interpret hexadecimal):
Only for internal Siemens troubleshooting.

**Remedy:** When replacing a Motor Module/Hydraulic Module, carry out the following steps:
- start the copy function for the node identifier on the TM54F (p9700 = 1D hex).
- acknowledge the hardware CRC on the TM54F (p9701 = EC hex).
- save all parameters (p0977 = 1).
- carry out a POWER ON (switch-off/switch-on) for all components.

The following always applies:
- check the electrical cabinet design and cable routing for EMC compliance
- upgrade the software on the TM54F.
- contact Technical Support.
- replace the TM54F.

## 235151 <location>TM54F: Discrepancy error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The safe input terminals or output terminals have a different state for longer than the time parameterized in p10002 - or too many switching operations were carried out within a monitoring cycle p10002.

Fault value (r0949, interpret hexadecimal):

yyyyxxxx hex

xxxx: The safety-relevant input terminals F-DI indicate a discrepancy.

Bit 0: Discrepancy for F-DI 0

...

Bit 9: Discrepancy for F-DI 9

yyyy: The safety-relevant output terminals F-DO indicate a discrepancy.

Bit 0: Discrepancy for F-DO 0

...

Bit 3: Discrepancy for F-DO 3

Note:

If several discrepancy errors occur consecutively, then this fault is only signaled for the first error that occurs.

The following options are available to analyze all of the discrepancy errors:

- using the commissioning tool, evaluate the input states and output states of the TM54F. All discrepancy errors are displayed here.

- compare parameters p10051 and p10052 from the TM54F master and TM54F slave for discrepancy.

**Remedy:** Check the wiring of the corresponding F-DI (contact problems).

If the wiring is correct, and for example there is no wire breakage, then a check must be made as to whether the switching frequency at F-DI is too high and must therefore be reduced (switching pulses must have a longer time between them).

The time interval between each signal edge at an F-DI must be at least equal to the discrepancy time before the input is switched again.

Discrepancy errors in the failsafe digital inputs (F-DI) can only be completely acknowledged if, after the cause of the error was resolved, safe acknowledgment was carried out (see p10006). As long as safety acknowledgment was not carried out, the corresponding F-DI stays in the safe state internally.

Sets the discrepancy time for fast switching operations at the F-DIs:

For fast switching operations at the failsafe digital inputs (F-DI), it may be necessary to adapt the discrepancy time to the switching frequency:

- the period of a cyclic switching pulse must be less than half of the discrepancy time (if necessary, round down).

- the time between two switching pulses should be longer than the discrepancy time (if necessary, round up).

- the discrepancy time must be at least r10003 (it must always be rounded-down or rounded-up to an integer multiple of the SI sampling time r10003). If a debounce time has been parameterized (p10017 > 0), then the shortest possible discrepancy time is directly specified using the debounce time.

- the period of a cyclic switching pulse must be less than half of the discrepancy time p10017 (if necessary, round down).

- the time between two fast switching pulses should be longer than the discrepancy time+p10017 (if necessary, round up).

- the discrepancy time must be at least r10003.

The debounce time must always be set less than the discrepancy time.

Example:

If the SI sampling cycle is 12 ms and the switching frequency is 110 ms (p10017 = 0), the maximum discrepancy time which can be set is as follows:

p10002 <= 110/2 ms - 12 ms = 43 ms --> rounded-off, the following is obtained p10002 <= 36 ms

Since the discrepancy time can only be accepted as a whole SI sampling time, the value will need to be rounded up or down to a whole SI sampling time value if it is not an exact integer multiple of an SI sampling time.

Basic secondary condition to set the discrepancy time:

The discrepancy time of the F-DIs must always be longer than the longest SI sampling time of all drives that use Safety Integrated with TM54F (p9780/p9500).

F-DI: Failsafe Digital Input

F-DO: Failsafe Digital Output

## 235152 <location>TM54F: Internal software error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** An internal software error has occurred in the Terminal Module 54F (TM54F).
The failsafe digital inputs and digital outputs (F-DI, F-DO) on the TM54F have been set to the safe state.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
Note:
F-DI: Failsafe Digital Input
F-DO: Failsafe Digital Output

**Remedy:** Check that the firmware version of the TM54F matches the Control Unit's firmware version.
The automatic firmware update must be activated in the project.
Note:
This signal will also appear, for example, in conjunction with fault F35013. In this case, check all the parameters for the test stop on the TM54F (p10001, p10003, p10007, p10041, p10046, p10047). In this case, a POWER ON is required after the parameters have been corrected.

## 235200 <location>TM: Calibration data

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An error was detected in the calibration data of the Terminal Module.
Alarm value (r2124, interpret decimal):
ddcbaa dec: dd = component number, c = AI/AO, b = fault type, aa = number
c = 0: analog input (AI)
c = 1: analog output (AO)
b = 0: No calibration data available.
b = 1: Offset too high (> 100 mV).

**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- replace the component if necessary.

## 235207 <location>TM: Temperature fault/alarm threshold channel 0 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[0], p4103[0]).

or

- fault threshold exceeded (p4102[1]).

Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[0] = 1, 4), the following applies:
- if r4101[0] > 1650 ohms, the temperature r4105[0] = 250 °C
- if r4101[0] <= 1650 ohms, the temperature r4105[0] = -50 °C

The temperature actual value is displayed via connector output r4105[0] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[1] - hysteresis (5 K, for TM150, can be set using p4118[0]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235208 <location>TM: Temperature fault/alarm threshold channel 1 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[2], p4103[1]).

or

- fault threshold exceeded (p4102[3]).

Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[1] = 1, 4), the following applies:
- if r4101[1] > 1650 ohms, the temperature r4105[1] = 250 °C
- if r4101[1] <= 1650 ohms, the temperature r4105[1] = -50 °C

The temperature actual value is displayed via connector output r4105[1] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[3] - hysteresis (5 K, for TM150, can be set using p4118[1]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235209 <location>TM: Temperature fault/alarm threshold channel 2 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[4], p4103[2]).

or

- fault threshold exceeded (p4102[5]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[2] = 1, 4), the following applies:

- if r4101[2] > 1650 ohms, the temperature r4105[2] = 250 °C
- if r4101[2] <= 1650 ohms, the temperature r4105[2] = -50 °C

The temperature actual value is displayed via connector output r4105[2] and can be interconnected.

Notice:

This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.

Fault value (r0949, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[5] - hysteresis (5 K, for TM150, can be set using p4118[2]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235210 <location>TM: Temperature fault/alarm threshold channel 3 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)

Servo: OFF2 (NONE, OFF1, OFF3)

Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module (TM), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[6], p4103[3]).

or

- fault threshold exceeded (p4102[7]).

Note:

For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[3] = 1, 4), the following applies:

- if r4101[3] > 1650 ohms, the temperature r4105[3] = 250 °C
- if r4101[3] <= 1650 ohms, the temperature r4105[3] = -50 °C

The temperature actual value is displayed via connector output r4105[3] and can be interconnected.

Notice:

This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.

Fault value (r0949, interpret decimal):

Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[7] - hysteresis (5 K, for TM150, can be set using p4118[3]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235211 <location>TM: Temperature alarm threshold channel 0 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[0]) has exceeded the threshold value to initiate this alarm (p4102[0]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[0] = 1, 4), the following applies:
- if r4101[0] > 1650 ohms, the temperature r4105[0] = 250 °C
- if r4101[0] <= 1650 ohms, the temperature r4105[0] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[0] - hysteresis (5 K, for TM150, can be set using p4118[0]).
See also:p4102

## 235212 <location>TM: Temperature alarm threshold channel 1 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[1]) has exceeded the threshold value to initiate this alarm (p4102[2]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[1] = 1, 4), the following applies:
- if r4101[1] > 1650 ohms, the temperature r4105[1] = 250 °C
- if r4101[1] <= 1650 ohms, the temperature r4105[1] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[4] - hysteresis (5 K, for TM150, can be set using p4118[1]).
See also:p4102

## 235213 <location>TM: Temperature alarm threshold channel 2 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[2]) has exceeded the threshold value to initiate this alarm (p4102[4]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[2] = 1, 4), the following applies:
- if r4101[2] > 1650 ohms, the temperature r4105[2] = 250 °C
- if r4101[2] <= 1650 ohms, the temperature r4105[2] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[4] - hysteresis (5 K, for TM150, can be set using p4118[2]).
See also:p4102

## 235214 <location>TM: Temperature alarm threshold channel 3 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature measured using the temperature sensing of the Terminal Module (TM) (r4105[3]) has exceeded the threshold value to initiate this alarm (p4102[6]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[3] = 1, 4), the following applies:
- if r4101[3] > 1650 ohms, the temperature r4105[3] = 250 °C
- if r4101[3] <= 1650 ohms, the temperature r4105[3] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[6] - hysteresis (5 K, for TM150, can be set using p4118[3]).
See also:p4102

## 235220 <location>TM: Frequency limit reached for signal output

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The signals output from the Terminal Module 41 (TM41) for tracks A/B have reached the limit frequency. The output signals are no longer in synchronism with the specified setpoint.
SIMOTION (p4400 = 0) operating mode:
- if the TM41 has been configured as the technology project, this fault is also output in response to short-circuited A/B signals in X520.
SINAMICS (p4400 = 1) operating mode:
- the fine resolution of TM41 in p0418 does not match that of the connector input that was interconnected at p4420
- the encoder position actual value r0479 interconnected at connector input p4420 has an excessively high actual speed
- the output signals correspond to a speed, which is greater than the maximum speed (r1082 of TM41).

**Remedy:** SIMOTION (p4400 = 0) operating mode:
- enter a lower speed setpoint (p1155).
- reduce the encoder pulse number (p0408).
- check track A/B for short-circuits.
SINAMICS (p4400 = 1) operating mode:
- enter a lower speed setpoint (p1155).
- reduce the encoder pulse number (p0408).
Notice:
The output signal is no longer monitored after changing the message type to "Alarm" (A).

## 235221 <location>TM: Setpoint - actual value deviation outside the tolerance range

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The deviation between the setpoint and the output signals (track A/B) exceeds the tolerance of +/-3 %. The deviation between the internal and external measured value is too high (> 1000 pulses).

**Remedy:** - reduce the basic clock cycle (p0110, p0111).
- if required, replace the component (e.g. internal short-circuit).

## 235222 <location>TM: Encoder pulse number not permissible

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The encoder pulse number entered does not match the permissible pulse number from a hardware perspective.
Alarm value (r2124, interpret decimal):
1: Encoder pulse number is too high.
2: Encoder pulse number is too low.
4: Encoder pulse number is less than the zero mark offset (p4426).
**Remedy:** - enter the encoder pulse number in the permissible range (p0408).
- if necessary, replace TM41 SAC with TM41 DAC.
Note:
TM41 SAC: Article No. = 6SL3055-0AA00-3PA0
TM41 DAC: Article No. = 6SL3055-0AA00-3PA1
The following applies for TM41 SAC:
- minimum/maximum value for p0408: 1000/8192
The following applies for TM41 DAC:
- minimum/maximum value for p0408: 1000/16384
See also:p0408

## 235223 <location>TM: Zero mark offset not permissible

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The entered zero mark offset is not permissible.
Alarm value (r2124, interpret decimal):
1: Zero mark offset is too high.
See also:p4426 (TM41 encoder emulation pulses for zero mark)
**Remedy:** Enter the zero mark offset in the permissible range (p4426).

## 235224 <location>TM: Zero mark synchronization interrupted

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The zero mark synchronization with the encoder to be emulated was interrupted.
Alarm value (r2124, interpret decimal):
0: The encoder is not in the ready state (e.g. encoder parked)
1: An absolute encoder was connected.
2: The encoder r0479[0...2] interconnected via connector input: p4420 is already communicating with another TM41 (precisely one TM41 can be interconnected with a specific r0479[0...2]).
3: The BICO interconnection to Terminal Module 41 (TM41) was removed (CI: p4420 = 0 signal).
4: The encoder interconnected via connector input: p4420 has carried out an EDS changeover or has been re-parameterized (this operation is not supported, set p4420 to 0 and interconnect again).
5: The maximum number of revolutions of the encoder was exceeded.
6: Encoder in an invalid state.
7: Encoder in an invalid state.
8: Encoder in an invalid state (the encoder is not parameterized or the interconnected signal source is not in the cyclic state).

**Remedy:** Not necessary.
- if the encoder changes into the ready state, then a synchronization operation that was previously interrupted is carried out again.
- if the synchronization was interrupted due to the maximum permissible synchronization duration, then a new synchronization is not carried out.
- the alarm is only output, if, for an absolute encoder, the zero mark synchronization is set to the zero position (p4401.0 = 1 and p4401.1=0).

## 235225 <location>TM: Zero mark synchronization held - encoder not in the ready state

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The zero mark synchronization with the encoder to be emulated was held.
The encoder is not in the "ready" state.
**Remedy:** Bring the encoder into the "ready" state.

## 235226 <location>TM: Tracks A/B are deactivated

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** There is no frequency setpoint for the Terminal Module 41 (TM41). The output of tracks A/B has been held (frozen).
Possible causes:
- connector input p4420 is not interconnected.
- the leading encoder is not in the "ready" state (parking encoder or encoder data set not parameterized).
- TM41 has a fault.
- the TM41 is in the commissioning mode (p0010 > 0).
- the TM41 component is not connected to DRIVE-CLiQ.

**Remedy:**
- appropriately interconnect connector input p4420.
- bring the leading encoder into the "ready" state.
- remove any TM41 faults.

## 235227 <location>EDS changeover/encoder data set change not supported

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Terminal Module 41 (TM41) does not support the following application cases:
- the encoder interconnected via connector input p4420 has carried out an EDS changeover.
- the encoder interconnected with the TM41 was re-parameterized so that the position actual value of the encoder must be newly interpreted.

For example, this is the case when changing the direction of rotation of the motor (p0410, p1821) or when changing the fine resolution (p0418). This may result in a sudden change in the position actual value of the encoder (position setpoint of the TM41), which must not be output at the TM41.
See also:p4420 (TM41 encoder emulation position setpoint)
**Remedy:** Set connector input p4420 = 0 and re-wire.

## 235228 <location>TM: Sampling time p4099[3] invalid

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The sampling time set in p4099[3] for incremental encoder emulation in Terminal Module 41 (TM41) does not correspond to the valid value. To resolve the problem, correct the setting of p4099[3]. The system automatically performs a warm restart/sub-boot.

Alarm value (r2124, interpret decimal):

1:

A sampling time p4099[3] < 125 µs was set.

2:

An integer multiple of the DRIVE-CLiQ clock cycle was not entered in p4099[3].

3:

- in the SINAMICS mode (p4400 = 1), the sampling time in p4099[3] is not an integer multiple of the current controller sampling time (p0115[0]) of the drive object, which supplies the position setpoint (CI: p4420) for the incremental encoder simulation.

- the encoder interconnected via connector input p4420 (e.g. an SSI encoder) is sampled in a slower clock cycle.

**Remedy:** - if necessary, cancel the BICO interconnection via connector input p4420.

- check the rules specified under cause for setting the sampling time in p4099[3].

- if necessary, set the BICO interconnection via connector input p4420 again.

Note:

Every time the BICO interconnection is reset via connector input p4420, the sampling time is checked in p4099[3] and, where necessary, this message is output.

## 235229 <location>TM: Time slice deactivated

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** %1

**Reaction:** Infeed: OFF1 (NONE, OFF2)

Servo: NONE

Hla: NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The required value of a cycle time in p4099[0...2] is invalid.

The corresponding time slice was not activated.

Alarm value (r2124, interpret decimal):

0: Digital input/outputs (p4099[0])

1: Analog inputs (p4099[1])

3: Encoder emulation (p4099[3]).

4: Encoder emulation speed setpoint (p4099[3]).

5: Encoder emulation speed setpoint (p4099[3]).

6: Internal sequence control of the TM41 (internal error)

**Remedy:** Change the sampling time according to the alarm value.

Note:

The sampling time p4099[0] may not be zero.

## 235230 <location>TM: Hardware fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: OFF1 (NONE, OFF2)

Servo: NONE

Hla: NONE

**Acknowledge:** POWER ON

**Cause:** The Terminal Module (TM) used has signaled internal errors.

Signals from this module may not be evaluated because they are very likely to be incorrect.

**Remedy:** If required, replace the Terminal Module.

## 235231 <location>TM: Master control by PLC missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The "master control by PLC" signal was missing in operation.
- interconnection of the binector input for "master control by PLC" is incorrect (p0854).
- the higher-level control has withdrawn the "master control by PLC" signal.
- data transfer via the fieldbus (master/drive) was interrupted.

Note:
This alarm is only decisive in the "SIMOTION" operating mode (p4400 = 0).
In the "SINAMICS" operating mode (p4400 = 1), the setpoints at p4420 are evaluated independent of binector input p0854.

**Remedy:**
- check the interconnection of the binector input for "master control by PLC" (p0854).
- check the "master control by PLC" signal and, if required, switch in.
- check the data transfer via the fieldbus (master/drive).
- check the setting of parameter p2037.

## 235232 <location>TM41: Zero mark no longer synchronous POWER ON required

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** SINAMICS (p4400 = 1) operating mode:
When parameterizing a Terminal Module 41 (TM41) or when operating a TM41 Module, an operating state was reached which required a POWER ON.
These include:
- changing the encoder pulse number (p0408).
- changing the fine resolution (p0418).
- withdrawing the DRIVE-CLiQ cable without first deactivating TM41 via p0105.

If this alarm was output, then the zero mark of the TM41 can no longer be output in synchronism to that of the encoder interconnected at p4420.
SIMOTION (p4400 = 0) operating mode:
A previously set zero mark position (p4426) no longer matches encoder position (r0479) due to the change in the pulse number (p0408).

**Remedy:** The incremental position at output X520 of TM41 can still be evaluated independent of the zero mark.
A POWER ON must be carried out if the TM41 zero mark is evaluated.

## 235233 <location>DRIVE-CLiQ component function not supported

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM31, TM41
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A function requested by the Control Unit is not supported by a DRIVE-CLiQ component.
Fault value (r0949, interpret decimal):
1: Terminal Module 31 does not support the function "Timer for temperature evaluation" (X522.7/8, p4103 > 0.000).
4: The improved actual value resolution is not supported (p4401.4).
5: The improved setpoint resolution is not supported (p4401.5).
6: The residual value handling in the setpoint channel cannot be deactivated (p4401.6).
7: Output frequencies greater than 750 kHz cannot be activated (p4401.7).

**Remedy:** For fault value = 1:
- Deactivate timer for temperature evaluation (X522.7/8) (p4103 = 0.000).
- use Terminal Module 31 and the relevant firmware version to enable the "Timer for temperature evaluation" function (Article No. 6SL3055-0AA00-3AA1, firmware version 2.6 and higher).

See also:p4103, p4401 (TM41 encoder emulation mode)

## 235400 <location>TM: Temperature fault/alarm threshold channel 4 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[8], p4103[4]).

or
- fault threshold exceeded (p4102[9]).

Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[4] = 1, 4), the following applies:
- if r4101[4] > 1650 ohms, the temperature r4105[4] = 250 °C
- if r4101[4] <= 1650 ohms, the temperature r4105[4] = -50 °C

The temperature actual value is displayed via connector output r4105[4] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[9] - hysteresis (p4118[4]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235401 <location>TM: Temperature fault/alarm threshold channel 5 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[10], p4103[5]).
or
- fault threshold exceeded (p4102[11]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[5] = 1, 4), the following applies:
- if r4101[5] > 1650 ohms, the temperature r4105[5] = 250 °C
- if r4101[5] <= 1650 ohms, the temperature r4105[5] = -50 °C
The temperature actual value is displayed via connector output r4105[5] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** - allow the temperature sensor to cool down to below p4102[11] - hysteresis (p4118[5]).
- if required, set the fault response to NONE (p2100, p2101).
See also:p4102

## 235402 <location>TM: Temperature fault/alarm threshold channel 6 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[12], p4103[6]).
or
- fault threshold exceeded (p4102[13]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[6] = 1, 4), the following applies:
- if r4101[6] > 1650 ohms, the temperature r4105[6] = 250 °C
- if r4101[6] <= 1650 ohms, the temperature r4105[6] = -50 °C
The temperature actual value is displayed via connector output r4105[6] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** - allow the temperature sensor to cool down to below p4102[13] - hysteresis (p4118[6]).
- if required, set the fault response to NONE (p2100, p2101).
See also:p4102

## 235403 <location>TM: Temperature fault/alarm threshold channel 7 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[14], p4103[7]).

or

- fault threshold exceeded (p4102[15]).

Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[7] = 1, 4), the following applies:
- if r4101[7] > 1650 ohms, the temperature r4105[7] = 250 °C
- if r4101[7] <= 1650 ohms, the temperature r4105[7] = -50 °C

The temperature actual value is displayed via connector output r4105[7] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[15] - hysteresis (p4118[7]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235404 <location>TM: Temperature fault/alarm threshold channel 8 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[16], p4103[8]).

or

- fault threshold exceeded (p4102[17]).

Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[8] = 1, 4), the following applies:
- if r4101[8] > 1650 ohms, the temperature r4105[8] = 250 °C
- if r4101[8] <= 1650 ohms, the temperature r4105[8] = -50 °C

The temperature actual value is displayed via connector output r4105[8] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:**
- allow the temperature sensor to cool down to below p4102[17] - hysteresis (p4118[8]).
- if required, set the fault response to NONE (p2100, p2101).

See also:p4102

## 235405 <location>TM: Temperature fault/alarm threshold channel 9 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[18], p4103[9]).
or
- fault threshold exceeded (p4102[19]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[9] = 1, 4), the following applies:
- if r4101[9] > 1650 ohms, the temperature r4105[9] = 250 °C
- if r4101[9] <= 1650 ohms, the temperature r4105[9] = -50 °C
The temperature actual value is displayed via connector output r4105[9] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** - allow the temperature sensor to cool down to below p4102[19] - hysteresis (p4118[9]).
- if required, set the fault response to NONE (p2100, p2101).
See also:p4102

## 235406 <location>TM: Temperature fault/alarm threshold channel 10 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[20], p4103[10]).
or
- fault threshold exceeded (p4102[21]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[10] = 1, 4), the following applies:
- if r4101[10] > 1650 ohms, the temperature r4105[10] = 250 °C
- if r4101[10] <= 1650 ohms, the temperature r4105[10] = -50 °C
The temperature actual value is displayed via connector output r4105[10] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** - allow the temperature sensor to cool down to below p4102[21] - hysteresis (p4118[10]).
- if required, set the fault response to NONE (p2100, p2101).
See also:p4102

## 235407 <location>TM: Temperature fault/alarm threshold channel 11 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (NONE, OFF1, OFF3)
Hla: OFF2 (NONE, OFF1, OFF3)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** For the temperature evaluation via the Terminal Module 150 (TM150), at least one of the following conditions to initiate this fault is fulfilled:
- alarm threshold has been exceeded longer than that set in the timer (p4102[22], p4103[11]).
or
- fault threshold exceeded (p4102[23]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[11] = 1, 4), the following applies:
- if r4101[11] > 1650 ohms, the temperature r4105[11] = 250 °C
- if r4101[11] <= 1650 ohms, the temperature r4105[11] = -50 °C
The temperature actual value is displayed via connector output r4105[11] and can be interconnected.
Notice:
This fault only causes the drive to shut down if there is at least one BICO interconnection between the drive and the Terminal Module.
Fault value (r0949, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** - allow the temperature sensor to cool down to below p4102[23] - hysteresis (p4118[11]).
- if required, set the fault response to NONE (p2100, p2101).
See also:p4102

## 235410 <location>TM: Temperature alarm threshold channel 4 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[4]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[8]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[4] = 1, 4), the following applies:
- if r4101[4] > 1650 ohms, the temperature r4105[4] = 250 °C
- if r4101[4] <= 1650 ohms, the temperature r4105[4] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[8] - hysteresis (p4118[4]).
See also:p4102

## 235411 <location>TM: Temperature alarm threshold channel 5 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[5]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[10]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[5] = 1, 4), the following applies:
- if r4101[5] > 1650 ohms, the temperature r4105[5] = 250 °C
- if r4101[5] <= 1650 ohms, the temperature r4105[5] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[10] - hysteresis (p4118[5]).
See also:p4102

## 235412 <location>TM: Temperature alarm threshold channel 6 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[6]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[12]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[6] = 1, 4), the following applies:
- if r4101[6] > 1650 ohms, the temperature r4105[6] = 250 °C
- if r4101[6] <= 1650 ohms, the temperature r4105[6] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[12] - hysteresis (p4118[6]).
See also:p4102

## 235413 <location>TM: Temperature alarm threshold channel 7 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[7]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[14]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[7] = 1, 4), the following applies:
- if r4101[7] > 1650 ohms, the temperature r4105[7] = 250 °C
- if r4101[7] <= 1650 ohms, the temperature r4105[7] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[14] - hysteresis (p4118[7]).
See also:p4102

## 235414 <location>TM: Temperature alarm threshold channel 8 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature (r4105[8]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[16]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[8] = 1, 4), the following applies:
- if r4101[8] > 1650 ohms, the temperature r4105[8] = 250 °C
- if r4101[8] <= 1650 ohms, the temperature r4105[8] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].

**Remedy:** Allow the temperature sensor to cool down to below p4102[16] - hysteresis (p4118[8]).
See also:p4102

## 235415 <location>TM: Temperature alarm threshold channel 9 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41

**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature (r4105[9]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[18]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[9] = 1, 4), the following applies:
- if r4101[9] > 1650 ohms, the temperature r4105[9] = 250 °C
- if r4101[9] <= 1650 ohms, the temperature r4105[9] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].
**Remedy:** Allow the temperature sensor to cool down to below p4102[18] - hysteresis (p4118[9]).
See also:p4102

## 235416 <location>TM: Temperature alarm threshold channel 10 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature (r4105[10]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[20]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[10] = 1, 4), the following applies:
- if r4101[10] > 1650 ohms, the temperature r4105[10] = 250 °C
- if r4101[10] <= 1650 ohms, the temperature r4105[10] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].
**Remedy:** Allow the temperature sensor to cool down to below p4102[20] - hysteresis (p4118[10]).
See also:p4102

## 235417 <location>TM: Temperature alarm threshold channel 11 exceeded

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature (r4105[11]) measured using the temperature sensing of the Terminal Module 150 (TM150) has exceeded the threshold value to initiate this alarm (p4102[22]).
Note:
For sensor type "PTC thermistor" and "Bimetallic NC contact" (p4100[11] = 1, 4), the following applies:
- if r4101[11] > 1650 ohms, the temperature r4105[11] = 250 °C
- if r4101[11] <= 1650 ohms, the temperature r4105[11] = -50 °C
Alarm value (r2124, interpret decimal):
Temperature actual value at the time of initiation [0.1 °C].
**Remedy:** Allow the temperature sensor to cool down to below p4102[22] - hysteresis (p4118[11]).
See also:p4102

## 235800 <location>TM: Group signal

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)
**Acknowledge:** NONE
**Cause:** The Terminal Module has detected at least one fault.
**Remedy:** Evaluates other actual messages.

## 235801 <location>TM DRIVE-CLiQ: Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the DRIVE-CLiQ connection.
- replace the component involved.

## 235802 <location>TM: Time slice overflow

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A time slice overflow has occurred on the Terminal Module.
**Remedy:** Replace the Terminal Module.

## 235803 <location>TM: Memory test

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An error has occurred during the memory test on the Terminal Module.
**Remedy:** - check whether the permissible ambient temperature for the Terminal Module is being maintained.
- replace the Terminal Module.

## 235804 <location>TM: CRC

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** A checksum error has occurred when reading-out the program memory on the Terminal Module.
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.

**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module.

## 235805 <location>TM: EEPROM checksum error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Internal parameter data is corrupted.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the Terminal Module 31 (TM31).

## 235807 <location>TM: Sequence control time monitoring

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM15DI_DO, TM17, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Error, timeout, sequence control on the Terminal Module.
**Remedy:** Replace the Terminal Module.

## 235820 <location>TM DRIVE-CLiQ: Telegram error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the Terminal Module involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 235835 <location>TM DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the Terminal Module involved. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 235836 <location>TM DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 235837 <location>PTM DRIVE-CLiQ: Component fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:**
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 235845 <location>TM DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred between the Control Unit and the Terminal Module (TM) involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 235850 <location>TM: Internal software error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** Infeed: OFF1 (NONE, OFF2)
Servo: OFF1 (NONE, OFF2, OFF3)
Hla: OFF1 (NONE, OFF2, OFF3)

**Acknowledge:** POWER ON

**Cause:** An internal software error in the Terminal Module (TM) has occurred.
Fault value (r0949, interpret decimal):
1: Background time slice is blocked.
2: Checksum over the code memory is not OK.

**Remedy:** - replace the Terminal Module (TM).
- if required, upgrade the firmware in the Terminal Module.
- contact Technical Support.

## 235851 <location>TM DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Upgrade the firmware of the component involved.

## 235860 <location>TM DRIVE-CLiQ (CU): Telegram error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 235875 <location>TM: power supply voltage failed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 235885 <location>TM DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

## 235886 <location>TM DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 235887 <location>TM DRIVE-CLiQ (CU): Component fault

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component (Terminal Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 235895 <location>TM DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Terminal Module involved (TM) to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 235896 <location>TM DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1

**Reaction:** Infeed: OFF2 (NONE, OFF1)
Servo: OFF2 (IASC/DCBRK, NONE, OFF1, OFF3, STOP2)
Hla: OFF2 (NONE, OFF1, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (Terminal Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 235899 <location>TM: Unknown fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** New message: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

## 235903 <location>TM: I2C bus error occurred

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An error has occurred while accessing the internal I2C bus of the Terminal Module.

**Remedy:** Replace the Terminal Module.

## 235904 <location>TM: EEPROM

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE
**Cause:** An error has occurred accessing the non-volatile memory on the Terminal Module.
**Remedy:** Replace the Terminal Module.

## 235905 <location>TM: Parameter access

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The Control Unit attempted to write an illegal parameter value to the Terminal Module.
**Remedy:** - check whether the firmware version of the Terminal Module (r0158) matches the firmware version of Control Unit (r0018).
- if required, replace the Terminal Module.
Note:
The firmware versions that match each other are in the readme.txt file on the memory card.

## 235906 <location>TM: 24 V power supply missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The 24 V power supply for the digital outputs is missing.
Alarm value (r2124, interpret hexadecimal):
01: TM17 24 V power supply for DI/DO 0 ... 7 missing.
02: TM17 24 V power supply for DI/DO 8 ... 15 missing.
04: TM15 24 V power supply for DI/DO 0 ... 7 (X520) missing.
08: TM15 24 V power supply for DI/DO 8 ... 15 (X521) missing.
10: TM15 24 V power supply for DI/DO 16 ... 23 (X522) missing.
20: TM41 24 V power supply for DI/DO 0 ... 3 missing.
**Remedy:** Check the terminals for the power supply voltage (L1+, L2+, L3+, M or +24 V_1 for TM41).

## 235907 <location>TM: Hardware initialization error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The Terminal Module was not successfully initialized.
Alarm value (r2124, interpret hexadecimal):
01: TM17 or TM41 - incorrect configuration request.
02: TM17 or TM41 - programming not successful.
04: TM17 or TM41 - invalid time stamp
**Remedy:** Carry out a POWER ON.

## 235910 <location>TM: Module overtemperature

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The temperature in the module has exceeded the highest permissible limit.

**Remedy:** - reduce the ambient temperature.
- replace the Terminal Module.

## 235911 <location>TM: Clock synchronous operation sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The maximum permissible number of errors in the master sign-of-life (clock synchronous operation) has been exceeded in cyclic operation.
When the alarm is output, the module outputs are reset up to the next synchronization.

**Remedy:** - check the physical bus configuration (terminating resistor, shielding, etc.).
- check the interconnection of the master sign-of-life (r4201 via p0915).
- check whether the master correctly sends the sign-of-life (e.g. set up a trace with r4201.12 ... r4201.15 and trigger signal r4301.9).
- check the bus and master for utilization level (e.g. bus cycle time Tdp was set too short).

## 235920 <location>TM: Error temperature sensor channel 0

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1720 Ohm (TM150: R > 1944 Ohm)
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235921 <location>TM: Error temperature sensor channel 1

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1720 Ohm (TM150: R > 1944 Ohm)
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm

**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235922 <location>TM: Error temperature sensor channel 2

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1720 Ohm (TM150: R > 1944 Ohm)
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235923 <location>TM: Error temperature sensor channel 3

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 1630 Ohm (TM150: R > 2170 Ohm), PT100: R > 194 Ohm, PT1000: R > 1720 Ohm (TM150: R > 1944 Ohm)
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 50 Ohm (TM150: R < 180 Ohm), PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235924 <location>TM: Error temperature sensor channel 4

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235925 <location>TM: Error temperature sensor channel 5

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235926 <location>TM: Error temperature sensor channel 6

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235927 <location>TM: Error temperature sensor channel 7

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235928 <location>TM: Error temperature sensor channel 8

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235929 <location>TM: Error temperature sensor channel 9

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235930 <location>TM: Error temperature sensor channel 10

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235931 <location>TM: Error temperature sensor channel 11

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM150, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When evaluating the temperature sensor, an error occurred.
Alarm value (r2124, interpret decimal):
1: Wire breakage or sensor not connected.
KTY84: R > 2170 Ohm, PT100: R > 194 Ohm, PT1000: R > 1944 Ohm
2: Measured resistance too low.
PTC thermistor: R < 20 Ohm, KTY84: R < 180 Ohm, PT100: R < 60 Ohm, PT1000: R < 603 Ohm
**Remedy:** - make sure that the sensor is connected correctly.
- replace the sensor.

## 235950 <location>TM: Internal software error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** OFF2 (NONE)
**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.
**Remedy:** - if necessary, upgrade the firmware in the Terminal Module to a later version.
- contact Technical Support.

## 235999 <location>TM: Unknown alarm

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred on the Terminal Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
**Remedy:** - replace the firmware on the Terminal Module by an older firmware version (r0158).
- upgrade the firmware on the Control Unit (r0018).

## 236207 <location>Hub: Overtemperature component

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The temperature on the DRIVE-CLiQ Hub Module has exceeded the fault threshold.
Fault value (r0949, interpret decimal):
Actual temperature in 0.1 °C resolution.
**Remedy:** - check ambient temperature at component installation location.
- replace the component involved.

## 236211 <location>Hub: Overtemperature alarm component

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The temperature on the DRIVE-CLiQ Hub Module has exceeded the alarm threshold.
Alarm value (r2124, interpret decimal):
Actual temperature in 0.1 °C resolution.
**Remedy:** - check ambient temperature at component installation location.
- replace the component involved.

## 236214 <location>Hub: overvoltage fault 24 V supply

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** The 24 V power supply on the DRIVE-CLiQ Hub Module has exceeded the fault threshold.
Fault value (r0949, interpret decimal):
Actual operating voltage in 0.1 °C resolution
**Remedy:** - check the supply voltage of the component involved.
- replace the component involved.

## 236216 <location>Hub: undervoltage fault 24 V supply

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE (OFF1, OFF2)
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The 24 V power supply on the DRIVE-CLiQ Hub Module has undershot the fault threshold.
Fault value (r0949, interpret decimal):
Actual operating voltage in 0.1 °C resolution
**Remedy:** - check the supply voltage of the component involved.
- replace the component involved.

## 236217 <location>Hub: undervoltage alarm 24 V supply

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The 24 V power supply on the DRIVE-CLiQ Hub Module has undershot the alarm threshold.
Alarm value (r2124, interpret decimal):
Actual operating voltage in 0.1 °C resolution
**Remedy:** - check the supply voltage of the component involved.
- replace the component involved.

## 236800 <location>Hub: Group signal

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The DRIVE-CLiQ Hub Module has detected at least one fault.
**Remedy:** Evaluates other actual messages.

## 236801 <location>Hub DRIVE-CLiQ: Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the DRIVE-CLiQ Hub Module involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ connection.
- replace the component involved.

## 236802 <location>Hub: Time slice overflow

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A time slice overflow has occurred on the DRIVE-CLiQ Hub Module.
Fault value (r0949, interpret decimal):
xx: Time slice number xx
**Remedy:** - reduce the current controller frequency.
- carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 236804 <location>Hub: Checksum error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** A checksum error has occurred when reading out the program memory on the DRIVE-CLiQ Hub Module.
Fault value (r0949, interpret hexadecimal):
Difference between the checksum at POWER ON and the actual checksum.
**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module.

## 236805 <location>Hub: EEPROM checksum incorrect

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** The internal parameter data on the DRIVE-CLiQ Hub Module is incorrect.
Alarm value (r2124, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** - check whether the permissible ambient temperature for the component is maintained.
- replace the DRIVE-CLiQ Hub Module.

## 236820 <location>Hub DRIVE-CLiQ: Telegram error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the DRIVE-CLiQ Hub Module involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 236835 <location>Hub DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the DRIVE-CLiQ Hub Module involved. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.

## 236836 <location>Hub DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the DRIVE-CLiQ Hub Module involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON.

## 236837 <location>Hub DRIVE-CLiQ: Component fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 236845 <location>Hub DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the DRIVE-CLiQ Hub Module involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON.

## 236851 <location>Hub DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Upgrade the firmware of the component involved.

## 236860 <location>Hub DRIVE-CLiQ (CU): Telegram error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 236875 <location>HUB: power supply voltage failed

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 236885 <location>Hub DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.

## 236886 <location>Hub DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 236887 <location>Hub DRIVE-CLiQ (CU): Component fault

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 236895 <location>Hub DRIVE-CLiQ (CU): Alternating cyclic data transfer error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from DRIVE-CLiQ Hub Module in question to Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.

## 236896 <location>Hub DRIVE-CLiQ (CU): Inconsistent component properties

**Drive object:** A_INF_840, B_INF_840, CU_LINK, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (DRIVE-CLiQ Hub Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).

## 236899 <location>Hub: Unknown fault

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** New message: %1

**Reaction:** Infeed: NONE (OFF1, OFF2)
Servo: NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)
Hla: NONE (OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault occurred on the DRIVE-CLiQ Hub Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the DRIVE-CLiQ Hub Module with older firmware (r0158).
- upgrade the firmware on the Control Unit (r0018).

## 236950 <location>Hub: Internal software error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2 (NONE)

**Acknowledge:** POWER ON

**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.

**Remedy:** - if required, upgrade the firmware in the DRIVE-CLiQ Hub Module to a more recent version.
- contact Technical Support.

## 236999 <location>Hub: Unknown alarm

**Drive object:** A_INF_840, B_INF_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TM41

**Message value:** New message: %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** An alarm occurred on the DRIVE-CLiQ Hub Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the DRIVE-CLiQ Hub Module with older firmware (r0158).
- upgrade the firmware on the Control Unit (r0018).

## 237001 <location>HF Damping Module: overcurrent

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Fault cause: %1 bin

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The power unit has detected an overcurrent condition.
- HF Choke Module or HF Damping Module defective.
- Resonance frequency of the output filter was excited.
Fault value (r0949, interpret bitwise binary):
Bit 0: Phase U.
Bit 1: Phase V.
Bit 2: Phase W.

**Remedy:** - check HF Choke Module and HF Damping Module and if required, replace.
- reduce the motor power in the proximity of the fault-generating frequency.
Note:
HF Choke Module (reactor module)
HF Damping Module

## 237002 <location>HF Damping Module: Damping voltage too high

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The damping voltage has reached an inadmissibly high value.
- a motor harmonic with a high amplitude has coincided with the resonance frequency of the output filter.
- the current controller excessively excites the resonance of the output filter.
Fault value (r0949, interpret decimal):
Damping voltage in the case of a fault [mV].
See also:r5171 (HF damping voltage actual value)

**Remedy:** - reduce the motor power in the proximity of the fault-generating frequency.
- check the current controller and if required, adapt.
- if required, use another motor.
Note:
HF Damping Module

## 237003 <location>HF Damping Module: Damping voltage not established

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A damping voltage was not able to be established.
Fault value (r0949, interpret decimal):
Damping voltage in the case of a fault [mV].
**Remedy:** Check the HF Damping Module wiring.
See also:r5171 (HF damping voltage actual value)

## 237004 <location>HF Damping Module: Heat sink overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature of the heat sink in the HF Damping Module has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
Fault value (r0949, interpret decimal):
Temperature [0.01 °C].
**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05000 has been undershot.
Note:
HF Damping Module

## 237005 <location>HF Damping Module: I2t overload

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The filter capacitor of the HF Damping Module was overloaded (r5173 = 100 %).
- the filter resonance frequency was excessively excited.
- the HF Choke Module is defective.
Fault value (r0949, interpret decimal):
I2t [100 % = 16384].
**Remedy:** - reduce the motor power in the proximity of the fault-generating frequency.
- the system should not stay in a steady-state condition in the vicinity of the fault-generating frequency.
- check the HF Choke Module and if required replace.
Note:
HF Choke Module (reactor module)
HF Damping Module
See also:r5173 (HF Damping Module I2t overload)

## 237012 <location>HF Damping Module: Heat sink temperature sensor wire breakage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** The connection to one of the heat sink temperature sensors in the HF Damping Module is interrupted.
Fault value (r0949, interpret binary):
Bit 0: HF Damping Module
Bit 1: HF Choke Module
**Remedy:** Contact the manufacturer.
Note:
HF Choke Module (reactor module)
HF Damping Module

## 237013 <location>HF Damping Module: Heat sink temperature sensor short-circuit

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY
**Cause:** The heat sink temperature sensor in the HF Damping Module is short-circuited.
Fault value (r0949, interpret binary):
Bit 0: HF Damping Module
Bit 1: HF Choke Module
**Remedy:** Contact the manufacturer.
Note:
HF Choke Module (reactor module)
HF Damping Module

## 237024 <location>HF Damping Module: Overtemperature thermal model

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature difference between the heat sink and chip has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.
See also:r0037
**Remedy:** - adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

## 237025 <location>HF Damping Module: Chip overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** The chip temperature has exceeded the permissible limit value.
- the permissible load duty cycle was not maintained.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
- pulse frequency too high.

Fault value (r0949, interpret decimal):
Temperature difference between the heat sink and chip [0.01 °C].

**Remedy:**
- adapt the load duty cycle.
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.
- reduce the pulse frequency if this is higher than the rated pulse frequency.

Note:
HF Damping Module
See also:r0037

## 237034 <location>HF Damping Module: Internal overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The alarm threshold for internal overtemperature has been reached.
If the temperature inside the unit continues to increase, fault F37036 may be triggered.
- ambient temperature might be too high.
- insufficient cooling, fan failure.

Fault value (r0949, interpret binary):
Bit 0 = 1: Control electronics range.
Bit 1 = 1: Power electronics range.

**Remedy:**
- check the ambient temperature.
- check the fan for the inside of the unit.

Note:
HF Damping Module

## 237036 <location>HF Damping Module: Internal overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature inside the HF Damping Module has exceeded the permissible temperature limit.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.

Fault value (r0949, interpret binary):
Bit 0 = 1: Control electronics range.
Bit 1 = 1: Power electronics range.

**Remedy:** - check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged once the permissible temperature limit minus 5 K has been undershot.
Note:
HF Damping Module

## 237040 <location>HF Damping Module: 24 V undervoltage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Failure of the 24 V power supply for the HF Damping Module.
- the undervoltage threshold was undershot for longer than 3 ms.
Fault value (r0949, interpret decimal):
24 V voltage [0.1 V].
**Remedy:** - check the 24 V DC voltage supply of the HF Damping Module.
- carry out a POWER ON (switch-off/switch-on) for the component.
Note:
HF Damping Module

## 237041 <location>HF Damping Module: 24 V undervoltage alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Fault in the 24 V power supply for the HF Damping Module.
- the 16 V threshold was undershot..
Alarm value (r2124, interpret decimal):
24 V voltage [0.1 V].
**Remedy:** - check the 24 V DC voltage supply of the HF Damping Module.
- carry out a POWER ON (switch-off/switch-on) for the component.
Note:
HF Damping Module

## 237043 <location>HF Damping Module: 24 V overvoltage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** Overvoltage of the 24 V power supply for the HF Damping Module.
- the 31.5 V threshold was exceeded for more than 3 ms.
**Remedy:** Check the 24 V DC voltage supply of the HF Damping Module.
Note:
HF Damping Module

## 237044 <location>HF Damping Module: 24 V overvoltage alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** Fault in the 24 V power supply for the HF Damping Module.
- the 32.0 V threshold was exceeded.
**Remedy:** Check the 24 V DC voltage supply of the HF Damping Module.
Note:
HF Damping Module

## 237045 <location>HF Damping Module: Supply undervoltage

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Power supply fault in the HF Damping Module.
- the voltage monitor signals an undervoltage fault on the module.
Fault value (r0949, interpret decimal):
24 V voltage [0.1 V].
**Remedy:** - check the 24 V DC voltage supply of the HF Damping Module.
- carry out a POWER ON (switch-off/switch-on) for the component.
- replace the module if necessary.
Note:
HF Damping Module

## 237049 <location>HF Damping Module: Internal fan defective

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The internal fan of the HF Damping Module has failed.
**Remedy:** Check the internal fan of the HF Damping Module and replace if necessary.

## 237050 <location>HF Damping Module: 24 V overvoltage fault

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** The voltage monitor signals an overvoltage fault on the module.
**Remedy:** - check the 24 V power supply.
- replace the module if necessary.

## 237052 <location>HF Damping Module: EEPROM data error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** POWER ON

**Cause:** EEPROM data error of the HF Damping Module.
Fault value (r0949, interpret hexadecimal):
0: The EEPROM data read in from the HF Damping Module is inconsistent.
1: EEPROM data is not compatible to the firmware of the HF Damping Module.
Additional values:
Only for internal Siemens troubleshooting.

**Remedy:** For fault value = 0:
Replace the HF Damping Module or update the EEPROM data.
For fault value = 1:
If necessary, upgrade the firmware to a later version.
Note:
HF Damping Module

## 237056 <location>HF Damping Module: Heat sink overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The temperature of the HF Damping Module heat sink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
Alarm value (r2124, interpret decimal):
Temperature [0.01 °C].

**Remedy:**
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05000 has been undershot.
Note:
HF Damping Module

## 237310 <location>HF Choke Module: Overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The temperature of the HF Choke Module heat sink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.
Alarm value (r2124, interpret decimal):
Temperature [0.01 °C].

**Remedy:**
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
Notice:
This fault can only be acknowledged after the alarm threshold for alarm A05000 has been undershot.
Note:
HF Choke Module (reactor module)

## 237311 <location>HF Choke Module: Heat sink overtemperature

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The temperature of the HF Choke Module heat sink has exceeded the permissible limit value.
- insufficient cooling, fan failure.
- overload.
- ambient temperature too high.

Fault value (r0949, interpret decimal):
Temperature [0.01 °C].

**Remedy:**
- check whether the fan is running.
- check the fan elements.
- check whether the ambient temperature is in the permissible range.
- check the motor load.

Notice:
This fault can only be acknowledged after this alarm threshold for alarm A05000 has been undershot.
Note:
HF Choke Module (reactor module)

## 237312 <location>HF Choke Module: Overtemperature or fan failure

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The HF Choke Module signals an overtemperature or fan failure.
Fault F37313 is output if the alarm is present for longer than 30 s.

**Remedy:**
- the cable between the HF Choke Module and the HF Damping Module has been withdrawn or is defective (X21).
- check the fan of the HF Choke Module and replace if necessary.
- check whether the ambient temperature is in the permissible range.

Note:
HF Choke Module (reactor module)
HF Damping Module

## 237313 <location>HF Choke Module: Overtemperature or fan failure

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY (POWER ON)
**Cause:** Alarm A37312 to display overtemperature or fan failure in the HF Choke Module was signaled for longer than 30 s.
**Remedy:**
- the cable between the HF Choke Module and the HF Damping Module has been withdrawn or is defective (X21).
- check the fan of the HF Choke Module and replace if necessary.
- check whether the ambient temperature is in the permissible range.

Note:
HF Choke Module (reactor module)
HF Damping Module

## 237502 <location>HF Damping Module: Damping voltage too high

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The damping voltage has exceeded the alarm threshold.
- a motor harmonic with a high amplitude has coincided with the resonance frequency of the output filter.
- the current controller excessively excites the resonance of the output filter.
If the damping voltage exceeds an inadmissibly high value, F37002 is output.
Alarm value (r2124, interpret decimal):
Damping voltage in the case of a fault [mV].
See also:r5171 (HF damping voltage actual value)
**Remedy:** - reduce the motor power in the proximity of the fault-generating frequency.
- check the current controller and if required, adapt.
- if required, use another motor.
Note:
HF Damping Module

## 237800 <location>HF Damping Module: Group signal

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The HF Damping Module has detected at least one fault.
**Remedy:** Evaluates other actual messages.

## 237801 <location>HF Damping Module: Sign-of-life missing

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** There is a DRIVE-CLiQ communication error between the Control Unit and the HF Damping Module.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the DRIVE-CLiQ connection.
- replace the component involved.
Note:
HF Damping Module

## 237802 <location>HF Damping Module: time slice overflow

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A time slice overflow has occurred.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.

## 237804 <location>HF Damping Module: CRC

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2 (OFF1, OFF3)
**Acknowledge:** IMMEDIATELY
**Cause:** A checksum error (CRC error) has occurred for the HF Damping Module.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- upgrade firmware to later version.
- contact Technical Support.
Note:
HF Damping Module

## 237805 <location>HF Damping Module: EEPROM checksum incorrect

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** Internal parameter data is corrupted.
Fault value (r0949, interpret hexadecimal):
01: EEPROM access error.
02: Too many blocks in the EEPROM.
**Remedy:** Replace the module.
Note:
HF Damping Module

## 237820 <location>HF Damping Module: Telegram error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communication error has occurred from the Control Unit to the damping module.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
Note:
HF Damping Module

## 237835 <location>HF Damping Module: Cyclic data transmission error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** There is a DRIVE-CLiQ communication error between the Control Unit and the HF Damping Module. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON.
- replace the component involved.
Note:
HF Damping Module

## 237836 <location>HF Damping Module: Send error for DRIVE-CLiQ data

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** There is a DRIVE-CLiQ communication error between the Control Unit and the HF Damping Module. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.
Note:
HF Damping Module

## 237837 <location>HF Damping Module: Component faulted

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Note:
HF Damping Module

## 237845 <location>HF Damping Module: Cyclic data transmission error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** There is a DRIVE-CLiQ communication error between the Control Unit and the HF Damping Module.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON.
Note:
HF Damping Module

## 237850 <location>HF Damping Module: Internal software error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF1 (NONE, OFF2, OFF3)
**Acknowledge:** POWER ON
**Cause:** An internal software error in the HF Damping Module has occurred.
Fault value (r0949, interpret decimal):
Only for internal Siemens troubleshooting.
**Remedy:** - Replace the HF Damping Module
- if required, upgrade the firmware in the HF Damping Module.
- contact Technical Support.
Note:
HF Damping Module

## 237851 <location>HF Damping Module (CU): Sign-of-life missing

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** DRIVE-CLiQ communication error from the HF Damping Module to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Upgrade the firmware of the component involved.
Note:
HF Damping Module

## 237860 <location>HF Damping Module (CU): Telegram error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from the HF Damping Module to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
Note:
HF Damping Module

## 237875 <location>HF Damping Module: power supply voltage failed

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF1 (OFF2)
**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the power supply voltage wiring for the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the power supply for the DRIVE-CLiQ component.

## 237885 <location>HF Damping Module (CU): Cyclic data transmission error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from the damping module to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the supply voltage of the component involved.
- carry out a POWER ON.
- replace the component involved.
Note:
HF Damping Module

## 237886 <location>HF Damping Module (CU): Error when sending DRIVE-CLiQ data

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from the HF Damping Module to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.
Note:
HF Damping Module

## 237887 <location>HF Damping Module (CU): Component faulted

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component (HF Damping Module) involved. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.
Note:
HF Damping Module

## 237895 <location>HF Damping Module (CU): Alternating cyclic data transmission error

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1, fault cause: %2

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** DRIVE-CLiQ communication error from the HF Damping Module to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON.
Note:
HF Damping Module

## 237896 <location>HF Damping Module (CU): Component properties inconsistent

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** Component number: %1

**Reaction:** NONE

**Acknowledge:** IMMEDIATELY

**Cause:** The properties of the DRIVE-CLiQ component (HF Damping Module), specified by the fault value, have changed in an incompatible fashion with respect to the properties when booted. One cause can be, e.g. that a DRIVE-CLiQ cable or DRIVE-CLiQ component has been replaced.
Fault value (r0949, interpret decimal):
Component number.

**Remedy:** - carry out a POWER ON.
- when a component is replaced, the same component type and if possible the same firmware version should be used.
- when a cable is replaced, only cables whose length is the same as or as close as possible to the length of the original cables should be used (ensure compliance with the maximum cable length).
Note:
HF Damping Module

## 237899 <location>HF Damping Module: Unknown fault

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** New message: %1

**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY (POWER ON)

**Cause:** A fault has occurred on the HF Damping Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Fault value (r0949, interpret decimal):
Fault number.
Note:
If required, the significance of this new fault can be read about in a more recent description of the Control Unit.

**Remedy:** - replace the firmware on the HF Damping Module by an older firmware version (r0168).
- upgrade the firmware on the Control Unit (r0018).
Note:
HF Damping Module

## 237903 <location>HF Damping Module: I2C bus error occurred

**Drive object:** SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE (IASC/DCBRK, OFF1, OFF2, OFF3, STOP2)

**Acknowledge:** IMMEDIATELY

**Cause:** Communications error with an EEPROM or an analog/digital converter.
Fault value (r0949, interpret hexadecimal):
80000000 hex:
- internal software error.
00000001 hex ... 0000FFFF hex:
- module fault.

**Remedy:** For fault value = 80000000 hex:
- upgrade firmware to later version.
For fault value = 00000001 hex ... 0000FFFF hex:
- replace the module.
Note:
HF Damping Module

## 237950 <location>HF Damping Module: Internal software error

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** %1
**Reaction:** OFF2
**Acknowledge:** POWER ON
**Cause:** An internal software error has occurred.
Fault value (r0949, interpret decimal):
Information about the fault source.
Only for internal Siemens troubleshooting.
**Remedy:** - if necessary, upgrade the firmware in the HF Damping Module to a later version.
- contact Technical Support.
Note:
HF Damping Module

## 237999 <location>HF Damping Module: Unknown alarm

**Drive object:** SERVO_840, SERVO_DBSI
**Message value:** New message: %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred on the HF Damping Module that cannot be interpreted by the Control Unit firmware.
This can occur if the firmware on this component is more recent than the firmware on the Control Unit.
Alarm value (r2124, interpret decimal):
Alarm number.
Note:
If required, the significance of this new alarm can be read about in a more recent description of the Control Unit.
**Remedy:** - replace the firmware on the HF Damping Module by an older firmware version (r0168).
- upgrade the firmware on the Control Unit (r0018).
Note:
HF Damping Module

## 240000 <location>Fault at DRIVE-CLiQ socket X100

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY

**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X100.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240001 <location>Fault at DRIVE-CLiQ socket X101

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X101.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240002 <location>Fault at DRIVE-CLiQ socket X102

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X102.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240003 <location>Fault at DRIVE-CLiQ socket X103

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X103.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240004 <location>Fault at DRIVE-CLiQ socket X104

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X104.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240005 <location>Fault at DRIVE-CLiQ socket X105

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE

**Acknowledge:** IMMEDIATELY
**Cause:** A fault has occurred at the drive object at the DRIVE-CLiQ socket X105.
Fault value (r0949, interpret decimal):
First fault that has occurred for this drive object.
**Remedy:** Evaluate the fault buffer of the specified object.

## 240100 <location>Alarm at DRIVE-CLiQ socket X100

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X100.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240101 <location>Alarm at DRIVE-CLiQ socket X101

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X101.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240102 <location>Alarm at DRIVE-CLiQ socket X102

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X102.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240103 <location>Alarm at DRIVE-CLiQ socket X103

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X103.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240104 <location>Alarm at DRIVE-CLiQ socket X104

**Drive object:** 'All objects
**Message value:** %1

**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X104.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240105 <location>Alarm at DRIVE-CLiQ socket X105

**Drive object:** 'All objects
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** An alarm has occurred at the drive object at the DRIVE-CLiQ socket X105.
Alarm value (r2124, interpret decimal):
First alarm that has occurred for this drive object.
**Remedy:** Evaluate the alarm buffer of the specified object.

## 240799 <location>CX32: Configured transfer end time exceeded

**Drive object:** 'All objects
**Message value:** -
**Reaction:** NONE
**Acknowledge:** IMMEDIATELY
**Cause:** The configured transfer end time when transferring the cyclic actual values was exceeded.
**Remedy:** - carry out a POWER ON (switch-off/switch-on) for all components.
- contact Technical Support.

## 240801 <location>CX32 DRIVE-CLiQ: Sign-of-life missing

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 240820 <location>CX32 DRIVE-CLiQ: Telegram error

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the component in the telegram and in the receive list do not match.
7 (= 07 hex):
A SYNC telegram is expected - but the received telegram is not a SYNC telegram.
8 (= 08 hex):
No SYNC telegram is expected - but the received telegram is one.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 240825 <location>CX32 DRIVE-CLiQ: Supply voltage failed

**Drive object:** 'All objects

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the DRIVE-CLiQ component power supply.

## 240835 <location>CX32 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** 'All objects

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. The nodes do not send and receive in synchronism.
Fault cause:
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 240836 <location>CX32 DRIVE-CLiQ: Send error for DRIVE-CLiQ data

**Drive object:** 'All objects

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved. Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 240837 <location>CX32 DRIVE-CLiQ: Component fault

**Drive object:** 'All objects

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 240845 <location>CX32 DRIVE-CLiQ: Cyclic data transfer error

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the Control Unit to the controller extension involved.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 240851 <location>CX32 DRIVE-CLiQ (CU): Sign-of-life missing

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
The DRIVE-CLiQ component did not set the sign-of-life to the Control Unit.
Fault cause:
10 (= 0A hex):
The sign-of-life bit in the receive telegram is not set.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Upgrade the firmware of the component involved.

## 240860 <location>CX32 DRIVE-CLiQ (CU): Telegram error

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Fault cause:
1 (= 01 hex):
Checksum error (CRC error).
2 (= 02 hex):
Telegram is shorter than specified in the length byte or in the receive list.
3 (= 03 hex):
Telegram is longer than specified in the length byte or in the receive list.
4 (= 04 hex):
The length of the receive telegram does not match the receive list.
5 (= 05 hex):
The type of the receive telegram does not match the receive list.
6 (= 06 hex):
The address of the power unit in the telegram and in the receive list do not match.
9 (= 09 hex):
The error bit in the receive telegram is set.
16 (= 10 hex):
The receive telegram is too early.
17 (= 11 hex):
CRC error and the receive telegram is too early.
18 (= 12 hex):
The telegram is shorter than that specified in the length byte or in the receive list and the receive telegram is too early.
19 (= 13 hex):
The telegram is longer than that specified in the length byte or in the receive list and the receive telegram is too early.
20 (= 14 hex):
The length of the receive telegram does not match the receive list and the receive telegram is too early.
21 (= 15 hex):
The type of the receive telegram does not match the receive list and the receive telegram is too early.
22 (= 16 hex):
The address of the power unit in the telegram and in the receive list does not match and the receive telegram is too early.
25 (= 19 hex):
The error bit in the receive telegram is set and the receive telegram is too early.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the electrical cabinet design and cable routing for EMC compliance
- check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).

## 240875 <location>CX32 DRIVE-CLiQ (CU): Supply voltage failed

**Drive object:** 'All objects

**Message value:** Component number: %1, fault cause: %2

**Reaction:** OFF1 (OFF2)

**Acknowledge:** IMMEDIATELY

**Cause:** The DRIVE-CLiQ communication from the DRIVE-CLiQ component involved to the Control Unit signals that the supply voltage has failed.
Fault cause:
9 (= 09 hex):
The power supply voltage for the components has failed.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - carry out a POWER ON (switch-off/switch-on).
- check the supply voltage wiring of the DRIVE-CLiQ component (interrupted cable, contacts, ...).
- check the dimensioning of the DRIVE-CLiQ component power supply.

## 240885 <location>CX32 DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
The nodes do not send and receive in synchronism.
Fault cause:
26 (= 1A hex):
Sign-of-life bit in the receive telegram not set and the receive telegram is too early.
33 (= 21 hex):
The cyclic telegram has not been received.
34 (= 22 hex):
Timeout in the telegram receive list.
64 (= 40 hex):
Timeout in the telegram send list.
98 (= 62 hex):
Error at the transition to cyclic operation.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** - check the power supply voltage of the component involved.
- carry out a POWER ON (switch-off/switch-on).
- replace the component involved.

## 240886 <location>CX32 DRIVE-CLiQ (CU): Error when sending DRIVE-CLiQ data

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Data were not able to be sent.
Fault cause:
65 (= 41 hex):
Telegram type does not match send list.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 240887 <location>CX32 DRIVE-CLiQ (CU): Component fault

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY

**Cause:** Fault detected on the DRIVE-CLiQ component concerned. Faulty hardware cannot be excluded.
Fault cause:
32 (= 20 hex):
Error in the telegram header.
35 (= 23 hex):
Receive error: The telegram buffer memory contains an error.
66 (= 42 hex):
Send error: The telegram buffer memory contains an error.
67 (= 43 hex):
Send error: The telegram buffer memory contains an error.
96 (= 60 hex):
Response received too late during runtime measurement.
97 (= 61 hex):
Time taken to exchange characteristic data too long.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause

**Remedy:** - check the DRIVE-CLiQ wiring (interrupted cable, contacts, ...).
- check the electrical cabinet design and cable routing for EMC compliance
- if required, use another DRIVE-CLiQ socket (p9904).
- replace the component involved.

## 240895 <location>CX32 DRIVE-CLiQ (CU): Cyclic data transfer error

**Drive object:** 'All objects
**Message value:** Component number: %1, fault cause: %2
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** A DRIVE-CLiQ communications error has occurred from the controller extension involved to the Control Unit.
Fault cause:
11 (= 0B hex):
Synchronization error during alternating cyclic data transfer.
Note regarding the message value:
The individual information is coded as follows in the message value (r0949/r2124):
0000yyxx hex: yy = component number, xx = error cause
**Remedy:** Carry out a POWER ON (switch-off/switch-on).

## 249150 <location>Cooling unit: Fault occurred

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The cooling unit signals a general fault.
**Remedy:** - check the wiring between the cooling unit and the input terminal (Terminal Module).
- check the external control device for the cooling unit.
See also:p0266 (Cooling unit feedback signals signal source)

## 249151 <location>Cooling unit: Conductivity has exceeded the fault threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The conductivity of the cooling liquid has exceeded the selected fault threshold (p0269[2]).
See also:p0261 (Cooling unit starting time 2), p0262 (Cooling unit fault conductivity delay time), p0266 (Cooling unit feedback signals signal source)

**Remedy:** Check the device to de-ionize the cooling liquid.

## 249152 <location>Cooling unit: ON command feedback signal missing

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The feedback signal of the ON command of the cooling unit is missing.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- the feedback signal has failed in operation.
- the cooling unit was stopped by an external signal.
See also:p0260 (Cooling unit starting time 1), r0267 (Cooling unit status word)

**Remedy:** - check the wiring between the cooling unit and the input terminal (Terminal Module).
- check the wiring between the output terminal (Terminal Module) and the cooling unit.
- check the external control device for the cooling unit.

## 249153 <location>Cooling unit: Liquid flow too low

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The drive converter cooling unit signals that the cooling liquid flow is too low.
- after the ON command, the feedback signal has not been received within the selected starting time (p0260).
- in operation, the feedback signal has failed for longer than the permitted failure time (p0263).
See also:p0260 (Cooling unit starting time 1), p0263 (Cooling unit fault liquid flow delay time), r0267 (Cooling unit status word)

**Remedy:** - check the wiring between the cooling unit and the input terminal (Terminal Module).
- check the external control device for the cooling unit.

## 249154 <location>Cooling unit: Liquid leak is present

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** IMMEDIATELY

**Cause:** The liquid leakage monitoring function has responded.
Caution:
If this fault is reparameterized as an alarm, then using other monitoring functions it must be ensured that when cooling water is lost, the drive is switched off!
See also:r0267 (Cooling unit status word)

**Remedy:** - check the cooling system for leaks in the cooling circuit.
- check the wiring of the input terminal (Terminal Module) used to monitor leaking fluid.

## 249155 <location>Cooling unit: Power Stack Adapter, firmware version too old

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** -

**Reaction:** OFF2

**Acknowledge:** POWER ON
**Cause:** The firmware version in the Power Stack Adapter (PSA) is too old and does not support the liquid cooling.
**Remedy:** Upgrade the firmware. Check EEPROM data.

## 249156 <location>Cooling unit: Cooling liquid temperature has exceeded the fault threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** OFF2
**Acknowledge:** IMMEDIATELY
**Cause:** The cooling liquid intake temperature has exceeded the specified fault threshold.
Note:
The value for the fault threshold depends on the power unit (hardware description data, e.g. 52 ... 55 °C).
**Remedy:** Check the cooling system and the ambient conditions.

## 249170 <location>Cooling unit: Alarm has occurred

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The cooling unit signals a general alarm.
**Remedy:** - check the wiring between the cooling unit and the input terminal (Terminal Module).
- check the external control device for the cooling unit.

## 249171 <location>Cooling unit: Conductivity has exceeded the alarm threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The conductivity of the cooling liquid has exceeded the selected alarm threshold (p0269[1]).
Note:
The threshold cannot be set higher than the fault threshold specified in the equipment description.
**Remedy:** Check the device to de-ionize the cooling liquid.

## 249172 <location>Cooling unit: Conductivity actual value is not valid

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** When monitoring the conductivity of the cooling liquid, there is a fault in the wiring or in the sensor.
**Remedy:** - check the wiring between the cooling unit and the Power Stack Adapter (PSA).
- check the function of the sensor to measure the conductivity.

## 249173 <location>Cooling unit: Cooling liquid temperature has exceeded the alarm threshold

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE

**Cause:** The cooling liquid intake temperature has exceeded the specified alarm threshold.
Note:
The value for the alarm threshold depends on the power unit (hardware description data, e.g. 42 ... 50 °C).
**Remedy:** Check the cooling system and the ambient conditions.

## 249920 <location>Protective breaker main circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The protective breaker in the main circuit of the power supply has tripped.
Note:
This message is output via the signal source of binector input p6577[1] of the Control Unit.
**Remedy:** Check the main circuit.

## 249921 <location>Protective breaker redundant main circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The protective breaker in the main circuit for the redundant feed to the power supply has tripped.
Note:
This message is output via the signal source of binector input p6577[2] of the Control Unit.
**Remedy:** Check the redundant main circuit.

## 249922 <location>Protective breaker 24 V circuit has tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A protective breaker in the 24 V circuit has tripped.
Note:
This message is output via the signal source of binector input p6577[3] of the Control Unit.
**Remedy:** Check the 24 V circuit

## 249923 <location>Protective breaker terminal strip 24 V circuit has tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** A protective breaker for the terminal strip in the 24 V circuit has tripped.
Note:
This message is output via the signal source of binector input p6577[6] of the Control Unit.
**Remedy:** Check the terminal strip for the 24 V circuit.

## 249924 <location>Protective breaker power unit supply circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A protective breaker in the circuit of the power unit supply has tripped.
Note:
This message is output via the signal source of binector input p6577[9] of the Control Unit.

**Remedy:** Check the power unit supply circuit.

## 249926 <location>Protective breaker synchronizing voltage tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A protective breaker for the synchronizing voltage has tripped.
Note:
This message is output via the signal source of binector input p6577[13] of the Control Unit.

**Remedy:** Check the synchronizing voltage.

## 249927 <location>Protective breaker auxiliary fan circuit has tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker in the fan circuit of the auxiliary fan has tripped.
Note:
This message is output via the signal source of binector input p6577[14] of the Control Unit.

**Remedy:** Check the auxiliary fan.

## 249933 <location>Protective breaker excitation 230 V AC circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker in the 230 V AC circuit of the excitation has tripped.
Note:
This message is output via the signal source of binector input p6577[17] of the Control Unit.

**Remedy:** Check the 230 V AC circuit of the excitation.

## 249934 <location>Protective breaker output cooling unit 230 V AC circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker in the 230 V AC circuit of the outgoing feeder of the cooling unit has tripped.
Note:
This message is output via the signal source of binector input p6577[18] of the Control Unit.
**Remedy:** Check the 230 V AC circuit of the outgoing feeder of the cooling unit.

## 249935 <location>Protective breaker power unit door solenoids 24 V circuit has tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The protective breaker in the 24 V circuit of the door solenoids in the power unit has tripped.
Note:
This message is output via the signal source of binector input p6577[19] of the Control Unit.
**Remedy:** Check the 24 V circuit of the door solenoids in the power unit.

## 249936 <location>Prot. breaker lighting supply/socket outlets 230V AC cct has tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The protective breaker in the 230 V AC circuit for the lighting supply/socket outlets has tripped.
Note:
This message is output via the signal source of binector input p6577[20] of the Control Unit.
**Remedy:** Check the 230V AC circuit for the lighting supply/socket outlets.

## 249937 <location>UPS not ready

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The uninterruptible power supply (UPS) is not ready.
Note:
This message is output via the signal source of binector input p6577[25] of the Control Unit.
UPS: Uninterruptible Power Supply
**Remedy:** Check the UPS.

## 249938 <location>UPS battery operation

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** -
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** The uninterruptible power supply (UPS) is in battery operation.
Note:
This message is output via the signal source of binector input p6577[26] of the Control Unit.
UPS: Uninterruptible Power Supply
**Remedy:** Check the power supply of the control cabinet.

## 249939 <location>UPS battery discharged

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The uninterruptible power supply (UPS) battery is discharged.
Note:
This message is output via the signal source of binector input p6577[27] of the Control Unit.
UPS: Uninterruptible Power Supply

**Remedy:** Check the UPS battery.

## 249940 <location>Protective breaker tripped PU supply 400 V circuit

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker for the 400 V AC supply of the power unit has tripped.
Note:
This message is output via the signal source of binector input p6577[28] of the Control Unit.

**Remedy:** Check the 400 V AC supply voltage for the power unit.

## 249941 <location>Protective breaker anti-condensation heating tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker for the anti-condensation heating was tripped.
Note:
This message is output via the signal source of binector input p6577[29] of the Control Unit.

**Remedy:** Check the anti-condensation heating circuit.

## 249942 <location>Protective breaker SITOP supply circuit tripped

**Drive object:** A_INF_840, B_INF_840, CU_I_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** -

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** The protective breaker for the SITOP 24 V circuit has tripped.
Note:
This message is output via the signal source of binector input p6577[21] of the Control Unit.

**Remedy:** Check the SITOP power supply.

## 249998 <location>Recorder trigger event occurred

**Drive object:** A_INF_840, B_INF_840, S_INF_840, SERVO_840, SERVO_DBSI

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** A recorder trigger event has occurred. The data are then written to the memory card, specifying the event number.
Alarm value (r2124, interpret decimal):
Event number.
**Remedy:** Not necessary.
This message disappears automatically.

## 250002 <location>COMM BOARD: Alarm 2

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** %1
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** CBE20 SINAMICS Link:
A specific telegram word (send) is being used twice.
Alarm value (r2124, interpret decimal):
Telegram word used twice
See also:p8871 (SINAMICS Link PZD send word)
**Remedy:** CBE20 SINAMICS Link:
Correct the parameter assignment.
See also:p8871 (SINAMICS Link PZD send word)

## 250003 <location>COMM BOARD: Alarm 3

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Info 1: %1, Info 2: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** CBE20 SINAMICS Link:
A specific telegram word (receive) is being used twice.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info. 1 (decimal) = Address of sender
Info. 2 (decimal) = Receive telegram word
See also:p8870 (SINAMICS Link PZD receive word), p8872 (SINAMICS Link PZD receive address)
**Remedy:** CBE20 SINAMICS Link:
Correct the parameter assignment.

## 250004 <location>COMM BOARD: Alarm 4

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41
**Message value:** Info 1: %1, Info 2: %2
**Reaction:** NONE
**Acknowledge:** NONE
**Cause:** CBE20 SINAMICS Link:
- telegram word (receive) and address of sender inconsistent. Both values have to be either equal to zero or not equal to zero.
- address of the sender > maximum project address.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info. 1 (decimal) = Drive object number from p8870, p8872
Info. 2 (decimal) = Index from p8870, p8872
See also:p8870, p8872

**Remedy:** In the case of CBE20 SINAMICS Link:
Correct the parameter assignment.

## 250005 <location>COMM BOARD: Alarm 5

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:
Sender not found on SINAMICS Link.
Alarm value (r2124, interpret decimal):
0: synchronization to the bus clock cycle unsuccessful.
1 ... 64: address of the sender that was not found.
See also:p8872 (SINAMICS Link PZD receive address)

**Remedy:** CBE20 SINAMICS Link:
Check the connection to the sender.
Set parameters p8811, p8812[1] to identical values for all participants/nodes.
Check parameter p8836 for all participants.

## 250006 <location>COMM BOARD: Alarm 6

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Info 1: %1, Info 2: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:
The parameter assignment indicates that the sender and the receiver are one and the same. This is not permitted.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info. 1 (decimal) = Drive object number from p8872
Info. 2 (decimal) = Index from p8872
See also:p8872 (SINAMICS Link PZD receive address)

**Remedy:** In the case of CBE20 SINAMICS Link:
Correct the parameter assignment. All p8872[index] must be set to a value not equal to p8836.

## 250007 <location>COMM BOARD: Alarm 7

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Info 1: %1, Info 2: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:
A send telegram word is greater than possible in the project.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info. 1 (decimal) = drive object number from p8871
Info. 2 (decimal) = index from p8871
See also:p8871 (SINAMICS Link PZD send word)

**Remedy:** In the case of CBE20 SINAMICS Link:
Correct the parameter assignment.

## 250008 <location>COMM BOARD: Alarm 8

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** Info 1: %1, Info 2: %2

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 SINAMICS Link:
A receive telegram word is greater than possible in the project.
Alarm value (r2124, interpret hexadecimal):
yyyyxxxx hex: yyyy = info. 1, xxxx = info. 2
Info. 1 (decimal) = drive object number from p8870
Info. 2 (decimal) = index from p8870
See also:p8870 (SINAMICS Link PZD receive word)

**Remedy:** In the case of CBE20 SINAMICS Link:
Correct the parameter assignment.

## 250011 <location>EtherNetIP/COMM BOARD: configuration error

**Drive object:** A_INF_840, B_INF_840, CU_LINK, ENC_840, HLA_840, HLA_DBSI, HUB, S_INF_840, SERVO_840, SERVO_DBSI, TB30, TM120, TM150, TM15DI_DO, TM17, TM31, TM41

**Message value:** %1

**Reaction:** NONE

**Acknowledge:** NONE

**Cause:** CBE20 EtherNet/IP:
An EtherNet/IP controller attempts to establish a connection using an incorrect configuring telegram.
The telegram length set in the controller does not match the parameterization in the drive device.

**Remedy:** Check the set telegram length.
Note:
PZD interface 1:
For p0922 not equal to 999, then the length of the selected telegram applies.
For p0922 = 999, the maximum interconnected PZD (r2067) applies.
PZD interface 2:
The maximum interconnected PZD (r8867) applies.
See also:p0922, r2067, r8867

# I/O alarms

# 8

## 300402 System error in drive link. Error codes %1, %2

**Parameters:** %1 = Error code 1
%2 = Error code 2

**Explanation:** An internal software error or serious error condition has occurred, which could possibly be rectified by a hardware reset.

**Reaction:** NC not ready.
The NC switches to follow-up mode.
Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.
NC Stop on alarm.

**Remedy:** If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Switch control OFF - ON.

## 300406 Problem in the non-cyclic communication for basic address %1, additional information %2, %3, %4

**Explanation:** For PROFIdrive only:
A problem occured during the non-cyclic communication with the logical start address. The additional information defines the location of the problem. If the logical start address 0 is output, only the additional information is relevant.

**Reaction:** Alarm display.
Warning display.

**Remedy:** Please inform the authorized personnel/service department. The alarm can be suppressed with MD11411 $MN_ENABLE_ALARM_MASK bit 1 = 0
If you experience such a system error, please contact Technical Support.
www.siemens.com/sinumerik/help
Please supply the following information to ensure quick processing:
- Alarm number together with alarm text
- Description of the operation/mode before the alarm message
- Generate log files using the key combination: <Ctrl> + <Alt> + <D>

**Programm continuation:** Clear alarm with the Delete key or NC START.

## 300410 Axis %1 drive %2 error when storing a file (%3, %4)

**Parameters:** %1 = NC axis number
%2 = Drive number
%3 = Error code 1
%4 = Error code 2

**Explanation:** An attempt to save a data block, e. g. the result of a measuring function, in the file system has failed.
On error code 1 == 291: An error occurred during preparation of the ACC information. Basic information prepared on the drive contains an error or has an unknown format.
On error code 1 == 292: Memory shortage during preparation of the ACC information.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
You have the following possibilities of eliminating the error:
Ensure that there is adequate memory in the file system. For example, delete 2 NC programs or create 4 to 8 kbytes more memory space.
Increase the number of files per directory or the size of the file system itself. This requires the following actions:
- A complete data backup
- Change the setting of the MDs
- MD18280 $MM_NUM_FILES_PER_DIR
- MD18320 $MM_NUM_FILES_IN_FILESYSTEM
- MD18321 $MM_MAXNUM_SYSTEM_FILES_IN_FILESYSTEM
- MD18350 $MM_USER_FILE_MEM_MINIMUM
- and, if necessary those of
- MD18270 $MM_NUM_SUBDIR_PER_DIR,
- MD18310 $MM_NUM_DIR_IN_FILESYSTEM,
- Power On
- Reload saved data
- On error code 1 == 291: Replace the drive software and use a version with suitable ACC basic information.
- On error code 1 == 292: Replace the drive software and use fewer different versions of the drive software.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 300412 Error when storing a file (%1, %2)

**Parameters:** %1 = Error code 1
%2 = Error code 2

**Explanation:** An attempt to save a data block, e.g. the result of a measuring function, in the file system has failed.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Inform the authorized personnel/service department.
You have the following possibilities of eliminating the error:
Ensure that there is adequate memory in the file system. For example, delete 2 NC programs or create an additional 4 to 8 kbytes of memory space.
Increase the number of files per directory or the total size of the file system itself. This requires the following actions:
- A complete data backup
- Change the settings of machine data
- MD18280 $MM_NUM_FILES_PER_DIR
- MD18320 $MM_NUM_FILES_IN_FILESYSTEM
- MD18321 $MM_MAXNUM_SYSTEM_FILES_IN_FILESYSTEM
- MD18350 $MM_USER_FILE_MEM_MINIMUM
- and, if necessary, of
- MD18270 $MM_NUM_SUBDIR_PER_DIR
- MD18310 $MM_NUM_DIR_IN_FILESYSTEM
- Power On
- Reload the data backup

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 300423 Measuring result could not be read (%1)

**Parameters:** %1 = Error code

**Explanation:** An attempt to read a measurement result has failed:
- Error code = 4: Not enough space for test result
- Error code = 16: Measurement not yet finished

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** Repeat the measurement. Alter the measuring time if necessary.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 380001 PROFIBUS/PROFINET: Startup error, reason %1 parameter %2 %3 %4.

**Parameters:** %1 = Cause of the error
%2 = Parameter 1
%3 = Parameter 2
%4 = Parameter 3

**Explanation:** An error occurred during startup of the PROFIBUS/PROFINET master.
Overview: Cause of the error, Par 1, Par 2, Par 3:
- 01 = DPM version, DPM version, DPA version, --
- 02 = DPM ramp-up timeout, DPM actual value status, DPM setpoint value status, --
- 03 = DPM ramp-up status, DPM actual value status, DPM setpoint value status, DPM error code
- 04 = DPM ramp-up error, DPM actual value status, DPM setpoint value status, DPM error code
- 05 = DPM-PLL sync error, --, --, --
- 07 = Alarm queue too long, Actual number, Setpoint number, --
- 08 = Unknown client, Client ID, --, --
- 09 = Client version, Client ID, Client version, DPA version
- 10 = Too many clients, Client number, max. number of clients, --
- 11 = Log.basic address used several times; bus no.; slot no.; log.basic address --
- 20 = Slave/device address used several times, slave/device address --
- 21 = Slave/device address unknown, slave/device address, --
- 22 = Erroneous configuration telegram, slave/device address, error code, --
- 23 = OMI incompatible (data), drive version, CDA version, --, --
- 24 = OMI incompatible (driver), drive version, CDA version, --, --
- 25 = CPI initialization failed, error code, --, --, --
- 26 = DMA not active
- 27 = Reserved
- 28 = Reserved
- 29 = Reserved
- The 1000s digit of the error cause = number of the affected bus
- (Special case: Error causes in the 5000 range indicate problems with the NCU-LINK communication)

Clients are the following components of the control system that use the PROFIBUS/PROFINET:
Client ID = 1: PLC
Client ID = 2: NCK
Possible causes are:
- Error in contents of PROFIBUS/PROFINET configuration
- Corruption of parts of the system program
- Hardware defect on NC component

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:**
Remedy for 1-11
1. Check the control project, check MD11240 $MN_PROFIBUS_SDB_NUMBER, and reload it when using a user-specific SDB.
2. Increase the monitoring time for the PLC run-up in MD10120 $MN_PLC_RUNNINGUP_TIMEOUT
3. If the error still occurs, back up data, and restart the control with the standard values as per the as-delivered condition.
4. If run-up is satisfactory, reload the user data stage by stage.
5. If the error still occurs during run-up with standard values, reboot the system from the PC card or update the software.
6. If the error still occurs, replace the hardware.
Remedy for 20-21
1. Check/correct the addresses of the connected slaves/devices.
Remedy for 22
See SINAMICS warning 1903 for a description of the meaning behind the error codes.
1. Check PROFIBUS/PROFINET configuration
- Check the type and length of the message frame
- Match slot assignment with P978
2. Evaluate the drive alarms/warnings
Remedy for 23-24
1. Software replacement required
Remedy for 25
1. Change the message frame type
2. Reduce the number of slots
3. Reduce the number of slaves/devices
4. Create a new PROFIBUS/PROFINET configuration
5. Software must be replaced
If the error can still not be rectified after this procedure, send the error message to the control manufacturer.

**Programm continuation:**
Switch control OFF - ON.

## 380003 PROFIBUS/PROFINET: Operating error, reason %1 parameter %2 %3 %4.

**Parameters:**
%1 = Cause of the error
%2 = Parameter 1
%3 = Parameter 2
%4 = Parameter 3

**Explanation:**
An operating error occurred on the PROFIBUS/PROFINET in cyclic mode.
Overview: Cause of the error, Par 1, Par 2, Par 3:
- 01 = unknown alarm, alarm class, logical address, --
- 02 = DPM cycle timeout, DPM actual value status, DPM setpoint value status, --
- 03 = DPM cycle status, DPM actual value status, DPM setpoint value status, DPM error code
- 04 = DPM cycle error, DPM actual value status, DPM setpoint value status, DPM error code
- 05 = Client not registered, client number, max. number of clients, --
- 06 = Synchronization error, number of sync violation, --, --
- 07 = Spinlock timeout, PLC spinlock, NCK spinlock, --
- 1000s digit of the error cause = number of the affected bus
- (Special case: Error causes in the 5000 range indicate problems with the NCU-LINK communication)
Alarm class: (see alarm 380 060)
The following can be primary causes:
- For error cause 01: Data transfer error on the PROFIBUS/PROFINET
- For error causes 02, 03, 04: Error in contents of PROFIBUS/PROFINET configuration
- For error causes 02, 03, 04, 05, 07: Corruption of parts of system program
- For error cause 06: The PCI bus cycle does not match the expected rate, so synchronization is not possible. The correct PCI bus cycle must be entered.
The error can also be caused by a hardware problem on the MCI module.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - For error cause 01:
- Check compliance with the electrical and fault-related specifications for PROFIBUS/PROFINET, assess the cable installation
- Check the terminating resistors of the PROFIBUS connectors (ON setting at ends of cables, otherwise OFF setting required)
- Check slave/device
- For error causes 02, 03, 04:
- Check PROFIBUS/PROFINET configuration
- For error causes 02, 03, 04, 05, 07:
- Follow the procedure described for troubleshooting alarm 380 001
- For error cause 06:
- The correct PCI bus cycle must be entered.
If the error cannot be eliminated by this procedure, send the error text to the control system manufacturer.

**Programm continuation:** Clear alarm with the RESET key. Restart part program

## 380005 PROFIBUS/PROFINET: Bus access conflict

**Explanation:** An access conflict occurred on the PROFIBUS/PROFINET in cyclic mode: An attempt has been made in the NCK to write data to the bus or to read from the bus while cyclic data transfer was active. This may lead to inconsistent data, sign-of-life errors or additional transmission dead times on the bus.

**Reaction:** Alarm display.

**Remedy:** - Check the effective timing in MD10063 $MN_POSCTRL_CYCLE_DIAGNOSIS, and ensure in particular that the settings in MD10050 $MN_SYSCLOCK_CYCLE_TIME and MD10062 $MN_POSCTRL_CYCLE_DELAY are correct:
- Use MD10062 $MN_POSCTRL_CYCLE_DELAY = 0 for automatic setting of the position control cycle delay.
- If alarm-free operation cannot be achieved with MD10062 $MN_POSCTRL_CYCLE_DELAY = 0, MD10050 $MN_SYSCLOCK_CYCLE_TIME should be increased.

**Programm continuation:** Switch control OFF - ON.

## 380020 PROFIBUS/PROFINET: Bus %3 SDB %4 error %1 source %2

**Parameters:** %1 = Error
%2 = SDB source
%3 = Bus number
%4 = SDB number

**Explanation:** Error in SDB for configuring PROFIBUS/PROFINET.
Causes of the error:
- 01 = SDB does not exist in source.
- 02 = SDB from source is too large.
- 03 = SDB from source cannot be activated.
- 04 = Source is empty.
- 05 = Source is not present.
SDB source:
- 99 = Passive file system: _N_SDB_DIR
- 100 = Memory card: /siemens/sinumerik/sdb/...
- 101 = Memory card: /addon/sinumerik/sdb/...
- 102 = Memory card: /oem/sinumerik/sdb/...
- 103 = Memory card: /user/sinumerik/sdb/...
Reaction: PROFIBUS/PROFINET is inactive or working with the default SDB.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** - Check the setting of MD 11240 $MN_PROFIBUS_SDB_NUMBER.
- If source = 100: Check directory _N_SDB_DIR in the passive file system.
- If source = 103-106: Check directories on memory card

**Programm continuation:** Switch control OFF - ON.

## 380022 PROFIBUS/PROFINET: Configuration of DP master bus %1 has been changed

**Parameters:** %1 = Number of the affected bus

**Explanation:** The PROFIBUS/PROFINET configuration on the DP master was changed during operation, e.g. by downloading a new hardware configuration. As the cycle data may also have changed, operation cannot be continued, and a warm restart is required.
If the master functionality is within the PLC, the PLC will have been stopped anyway for the download, and alarm 2000 (PLC sign-of-life) output.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** NCK restart
If the error cannot be eliminated by this procedure, please make a note of the error text and contact the control system manufacturer.

**Programm continuation:** Switch control OFF - ON.

## 380040 PROFIBUS/PROFINET: Bus %3, configuration error %1, parameter %2

**Parameters:** %1 = Cause of the error
%2 = Parameter
%3 = Number of the affected bus

**Explanation:** The PROFIBUS/PROFINET configuration (SDB) does not conform to the configuration specifications of the NC in use.
Overview: Cause of the error, par 1:
- 01 = SDB contains slave/device without diagnostics slot, slave/device address
- 02 = SDB contains too many slot entries, identifier
- 03 = SDB contains no equidistance data, no function
- 04 = PNIO: SDB contains different Tdp (also TDC) on one device
- 05 = PNIO: SDB contains different Tmapc (also CACF) on one device
- 06 = PNIO: SDB contains different TI on one device
- 07 = PNIO: SDB contains different TO on one device
- 08 = PNIO: SDB contains device numbers that are too high (with values higher than 126/255), slave/device address
- 09 = SDB content transferred segmented (too many slots/frames)
- 10 = Not enough memory space for segmented SDB content (too many slots/frames)
- 11 = The telegram configured in the SDB is too short for the selected telegram acc. to $MN_DRIVE_TELEGRAM_TYPE.
- 20 = SDB contains too many slaves/devices, quantity
- 21 = SDB missing or contains invalid data, error code
- 22 = SDB configuration data incorrect, slave/device address, error code
- 23 = Reserved
- 24 = Reserved
- 25 = Reserved
- 26 = Reserved
- 27 = Reserved
- 28 = Reserved
- 29 = Reserved

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Check that the corresponding PROFIBUS/PROFINET configuration:
- Contains a diagnostics slot for every slave/device
- Contains only slave/device entries relevant to the application

In principle, it is possible to include a superset of slaves/devices in the PROFIBUS/PROFINET configuration that is partially relevant for different end versions of the product. However, this overloads the NC memory and runtime capacity and should, therefore, always be avoided.
If this alarm occurs, reduce the PROFIBUS/PROFINET configuration to a minimum.
If the code for the error cause is 03, check that equidistance is activated in the PROFIBUS/PROFINET configuration.
If the code for the error cause is 10, reduce the number of slaves/slots on the bus concerned.
If the alarm continues to occur, please send the error text to the control system manufacturer.
If the code for the error cause is 11, select a larger telegram as appropriate or select a smaller telegram at $MN_DRIVE_TELEGRAM_TYPE.

**Programm continuation:** Switch control OFF - ON.

## 380050 PROFIBUS/PROFINET: Multiple assignment of inputs on address %1

**Parameters:** %1 = Logical address

**Explanation:** Multiple assignments of input data have been detected in the logical address space. Logical address: Base address of the address area defined several times

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The address partitioning should be checked as follows:
Check for multiple assignments in the following machine data:
- MD13050 $MN_DRIVE_LOGIC_ADDRESS[0] - MD13050 $MN_DRIVE_LOGIC_ADDRESS[n-1] : n = highest axis index on control system
- MD12970 $MN_PLC_DIG_IN_LOGIC_ADDRESS, MD12971 $MN_PLC_DIG_IN_NUM : PLC address area for digital inputs
- MD12978 $MN_PLC_ANA_IN_LOGIC_ADDRESS, MD12979 $MN_PLC_ANA_IN_NUM : PLC address area for analog inputs
If no inconsistencies can be found in the parameters, compare these machine data with the PROFIBUS/PROFINET configuration. In particular, check that the lengths configured for the individual slots do not result in area overlaps. When you find the cause of the error, change the machine data and/or the PROFIBUS/PROFINET configuration.

**Programm continuation:** Switch control OFF - ON.

## 380051 PROFIBUS/PROFINET: Multiple assignment of outputs on address %1

**Parameters:** %1 = Logical address

**Explanation:** Multiple assignments of input data have been detected in the logical address space. Logical address: Base address of the address area defined several times

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** The address partitioning should be checked as follows:
Check for multiple assignments in the following machine data:
- MD13050 $MN_DRIVE_LOGIC_ADDRESS[0] - MD13050 $MN_DRIVE_LOGIC_ADDRESS [n-1] : n = highest axis index on control system
- MD12974 $MN_PLC_DIG_OUT_LOGIC_ADDRESS, MD12975 $MN_PLC_DIG_OUT_NUM : PLC address area for digital outputs
- MD12982 $MN_PLC_ANA_OUT_LOGIC_ADDRESS, MD12983 $MN_PLC_ANA_OUT_NUM : PLC address area for analog outputs
If no inconsistencies can be found in the parameters, compare these machine data with the PROFIBUS/PROFINET configuration. In particular, check that the lengths configured for the individual slots do not result in area overlaps. When you find the cause of the error, change the machine data and/or the PROFIBUS/PROFINET configuration.

**Programm continuation:** Switch control OFF - ON.

## 380070 PROFIBUS/PROFINET: No input slot available for basic address %1 (length %2)

**Parameters:** %1 = Logical base address of the requested area
%2 = Size of the area in bytes

**Explanation:** An incorrect logical base address was specified for a digital or analog input. Either no slot has been configured for this base address or the requested area extends beyond the end of the slot.
Length=1 indicates a digital input.
Length=2 indicates a analog input.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter correct base addresses in the machine data:
- For length=1: Correct machine data MN_HW_ASSIGN_DIG_FASTIN.
- For length=2: Correct machine data MN_HW_ASSIGN_ANA_FASTIN.
- NCK restart
If the error cannot be eliminated by this procedure, please make a note of the error text and contact the control system manufacturer.

**Programm continuation:** Switch control OFF - ON.

## 380071 PROFIBUS/PROFINET: No output slot available for basic address %1 (size %2)

**Parameters:** %1 = Logical base address of the requested area
%2 = Size of the area in bytes

**Explanation:** An incorrect logical base address was specified for a digital or analog input. Either no slot has been configured for this base address or the requested area extends beyond the end of the slot.
For length =1 it is a digital output,
For length =2 it is an analog output.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Enter correct base addresses in the machine data:
- For length=1: Correct machine data MN_HW_ASSIGN_DIG_FASTOUT.
- For length=2: Correct machine data MN_HW_ASSIGN_ANA_FASTOUT.
- NCK restart
If the error cannot be eliminated by this procedure, please make a note of the error text and contact the control system manufacturer.

**Programm continuation:** Switch control OFF - ON.

## 380072 PROFIBUS/PROFINET: Output slot for basic address %1 (size %2) not allowed

**Parameters:** %1 = Logical base address of the requested area
%2 = Size of the area in bytes

**Explanation:** An incorrect logical base address was set for a digital or analog output, the area is resides in the access range of the PLC.
For length =1 it is a digital output,
For length =2 it is an analog output.

**Reaction:** Channel not ready.
NC Start disable in this channel.
Interface signals are set.
Alarm display.

**Remedy:** Only use addresses outside the PLC process image (e.g. >= 256) for output slots.
Enter correct basic addresses in the machine data:
- For length=1: Correct machine data MN_HW_ASSIGN_DIG_FASTOUT.
- For length=2: Correct machine data MN_HW_ASSIGN_ANA_FASTOUT.
- NCK restart
If the error cannot be eliminated by this procedure, please make a note of the error text and contact the control system manufacturer.

**Programm continuation:** Switch control OFF - ON.

## 380075 PROFIBUS/PROFINET: Failure of DP I/O bus %2 slave/device %1 logical start address %3

**Parameters:** %1 = Slave/device address
%2 = Number of the affected bus
%3 = PROFINET: Logical start address with input-IOPS=BAD

**Explanation:** Failure of a PROFIBUS/PROFINET slot used by the NCK for digital or analog I/Os.
PROFINET: Input IOPS=BAD was reported at logical start address

**Reaction:** Alarm display.

**Remedy:** Check that the slave/device is operating correctly (all slaves/devices must be included in the bus, green LEDs).

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 380076 PROFIBUS/PROFINET: No DO1 message frame: Bus %2 slave/device %1

**Parameters:** %1 = Slave/device address
%2 = Number of the affected bus

**Explanation:** Note for the system setup engineer: A PROFIBUS slave/PROFINET device used as an NCK drive does not have a valid DO1 message frame assignment (see MD13120 $MN_CONTROL_UNIT_LOGIC_ADDRESS with the PROFIBUS/PROFINET configuration).
This alarm indicates that the alarm time-of-day synchronization is not working between the controller and this slave/device.

**Reaction:** Alarm display.

**Remedy:** Enter a valid value in MD13120 $MN_CONTROL_UNIT_LOGIC_ADDRESS.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 380077 PROFIBUS/PROFINET: Too many DOs: Currently minimum %2, maximum %3 in DO group %1

**Parameters:** %1 = DO group
%2 = Current number of DOs
%3 = Maximum permissible number of DOs

**Explanation:** Note for the system setup engineer: The number of equivalent DOs ("drive objects" group) on all busses (configured and connected) exceeds predefined limit values.
The services linked to these DOs (e.g. time synchronization, alarm display, HMI diagnostics, HMI data archiving) can no longer be guaranteed for all DOs in this group.
The following different DO groups exist (see parameter %1):
0 = Device (CU, DO1)
1 = Communications (CU-LINK)
2 = Drive (SERVO, VECTOR)
3 = Infeed (ALM etc.)
4 = Terminal block (TB)
5 = Terminal module (TM)

**Reaction:** Alarm display.

**Remedy:** Reduce the number of devices (containing DOs of this type) on the bus.
Use a more powerful type of controller (one which supports more DOs).

**Programm continuation:** Switch control OFF - ON.

## 380100 PROFIBUS intern: Error %1 for basis address %2 in direction %3.

**Parameters:** %1 = Error code
%2 = Logic base address
%3 = Communication direction; 0 means input; 1 means output; 3 means independent of the direction

**Explanation:** Data transfer cannot be realized at the interface between HW-PLC and the internal PROFIBUS.

**Reaction:** Alarm display.

**Remedy:** Fault IDs:
01 = The logical basis address is used by the NCK, and cannot be made available to the HW-PLC (output direction).
02 = The logical basis address has exceeded the number of maximum slots.
03 = The logical basis address is not available in the PROFIBUS/PROFINET project.
04 = The registration of the basis address exceeds the maximum memory size available.
05 = The logical basis address registered for transfer is not available at the internal bus or has not been configured.
06 = The logical basis address must point to the start of an output slot (sub slots are not supported).
07 = The interface versions of HW-PLC and NCK do not match, please contact the hotline.
08 = The interface quantity structure between HW-PLC and NCK is not consistent, please contact the hotline.
09 = In the output direction, the HW-PLC was repeatedly not able to supply consistent data, relieve the load on the OB1 or LR cycle.
10, 11 = internal memory problems, please contact the hotline
12 = The transfer of output data is disrupted, the default values of the PLC are not available at the right time for forwarding toward the internal PROFIBUS. Please contact the hotline with a description of the context of the fault.

**Programm continuation:** Switch control OFF - ON.

## 380110 PROFIBUS/PROFINET: Error %1 in start address %2.

**Parameters:** %1 = Error code
%2 = Logic base address

**Explanation:** Error during cyclic data transfer via I/O transfer interface to external PROFIBUS/PROFINET.

**Reaction:** Alarm display.

**Remedy:** Error codes:
01 = The interface versions of HW-PLC and NCK are not compatible.
02 = The logical start address has exceeded the maximum number of slots.
03 = The registration of the start addresses exceeds the maximum memory size available.
04, 05 = Internal memory problems
06 = In the input direction, the HW PLC was repeatedly not able to supply consistent data, relieve the load on the OB1 or LR cycle.
07 = Error initializing the I/O transfer interfaces

**Programm continuation:** Switch control OFF - ON.

## 380500 PROFIBUS/PROFINET: Fault on drive %1, code %2, value %3, time %4

**Parameters:** %1 = Axis
%2 = Fault code of drive (P947(/945)/P824)
%3 = Fault value of drive ((P949/P826)
%4 = Fault time of drive (P948/P825)

**Explanation:** Contents of fault memory of assigned drive.

**Reaction:** Alarm display.

**Remedy:** See drive documentation for fault codes/fault values.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 380501 PROFIBUS/PROFINET: Fault on bus, slave/device, DO ID %1, code %2, value %3, time %4

**Parameters:** %1 = 8 bit bus number, 8 bit slave/device number, 16 bit DO ID
%2 = Fault code of drive (P947)
%3 = Fault value of the drive (P949)
%4 = Fault time of the drive (P948)

**Explanation:** Contents of the fault memory of the assigned slave/device.

**Reaction:** Alarm display.

**Remedy:** See drive documentation for fault codes/fault values.

**Programm continuation:** Alarm display showing cause of alarm disappears. No further operator action necessary.

## 380502 PROFIBUS/PROFINET: Bus %1, slave/device %2 configuration changed

**Parameters:** %1 = Bus number
%2 = Slave/device address

**Explanation:** The bus configuration has changed.
Causes:
- First commissioning
- New slave/device recognized on the bus

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** In order to operate the bus with the new configuration, an additional restart will be required.

**Programm continuation:** Switch control OFF - ON.

## 380503 PROFIBUS/PROFINET: Bus %1 configuration changed

**Parameters:** %1 = Bus number

**Explanation:** The PROFIBUS/PROFINET configuration has been changed.
The new settings will not be activated until the next bus power up.

**Reaction:** Interface signals are set.
Alarm display.

**Remedy:** In order to operate the bus with the new configuration, an additional restart will be required.

**Programm continuation:** Switch control OFF - ON.

| 400102 | Delete DB 2 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400103 | Delete DB 3 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400106 | Delete DB 6 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400109 | Delete DB 9 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400110 | Delete DB 10 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400111 | Delete DB 11 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400117 | Delete DB 17 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400119 | Delete DB 19 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400120 | Delete DB 20 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400121 | Delete DB 21 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400122 | Delete DB 22 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400123 | Delete DB 23 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400124 | Delete DB 24 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400125 | Delete DB 25 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400126 | Delete DB 26 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400127 | Delete DB 27 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400128 | Delete DB 28 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400129 | Delete DB 29 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400130 | Delete DB 30 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400131 | Delete DB 31 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400132 | Delete DB 32 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400133 | Delete DB 33 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400134 | Delete DB 34 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400135 | Delete DB 35 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400136 | Delete DB 36 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400137 | Delete DB 37 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

| 400138 | Delete DB 38 in the PLC and restart |
|---|---|
| **Explanation:** | The DB created by the basic program and the existing DB differ in size. |
| **Reaction:** | Alarm display. |
| **Remedy:** | Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded. |
| **Programm continuation:** | Internal |

**400139 Delete DB 39 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400140 Delete DB 40 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400141 Delete DB 41 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400142 Delete DB 42 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400143 Delete DB 43 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400144 Delete DB 44 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400145 Delete DB 45 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400146** **Delete DB 46 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400147** **Delete DB 47 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400148** **Delete DB 48 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400149** **Delete DB 49 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400150** **Delete DB 50 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400151** **Delete DB 51 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400152** **Delete DB 52 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400153** **Delete DB 53 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400154** **Delete DB 54 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400155** **Delete DB 55 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400156** **Delete DB 56 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400157** **Delete DB 57 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400158** **Delete DB 58 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400159** **Delete DB 59 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400160** **Delete DB 60 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400161** **Delete DB 61 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400171** **Delete DB 71 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400172** **Delete DB 72 in the PLC and restart**

**Explanation:** --

**Reaction:** Alarm display.

**Remedy:** See the machine manufacturer's information.

**Programm continuation:** Internal

**400173** **Delete DB 73 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400174** **Delete DB 74 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

**400176** **Delete DB 76 in the PLC and restart**

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

### 400177 Delete DB 77 in the PLC and restart

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.

**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.

**Programm continuation:** Internal

### 400201 PLC STOP due to DB loading in the RUN state: DB%Z

**Parameters:** %Z = Data block

**Explanation:** An existing DB was reloaded in the RUN state.

**Reaction:** Alarm display.

**Remedy:** Restart required.

**Programm continuation:** Switch control OFF - ON.

### 400202 Access error

**Explanation:** The data could not be accessed.

**Reaction:** Alarm display.

**Remedy:** System error, contact the Siemens AG SINUMERIK Hotline with the error text.

**Programm continuation:** Switch control OFF - ON.

### 400203 DB acces error: DB%Z

**Parameters:** %Z = Data block

**Explanation:** Data block is either not present, write-protected or too small.

**Reaction:** Alarm display.

**Remedy:** The displayed DB has to be reloaded via STEP 7 or its write protection has to be removed. Restart required.

**Programm continuation:** Switch control OFF - ON.

### 400204 Restart required

**Explanation:** DB generated by the basic program are different in size of existing DB.

**Reaction:** Alarm display.

**Remedy:** The DB is deleted during the next start-up and it is generated again by the basic program.

**Programm continuation:** Switch control OFF - ON.

### 400250 NCK sign-of-life monitoring

**Explanation:** NCK has not contacted the PLC during cyclic operation. Timer of FB1 parameter NCCyclTimeout was executed without retrigger.

**Reaction:** Alarm display.

**Remedy:** NCK restart

**Programm continuation:** Internal

### 400251 NCK has not started up

**Explanation:** NCK has not contacted the PLC.

**Reaction:** Alarm display.

**Remedy:** Increase FB1 parameter for the NCK runup timeout NCRunupTimeout.

**Programm continuation:** Internal

## 400252 Error in internal communication with NCK

**Explanation:** An error has occured during data transmission between the PLC and the NCK (FM-NC only).

**Reaction:** Alarm display.

**Remedy:** NCK restart

**Programm continuation:** Internal

## 400253 PLC STOP because of SPL system error

**Explanation:** After the interruption of the communication between the NCK and the PLC with regard to the SPL data cross-check, the PLC was switched to STOP with a delay of 5 s.

**Reaction:** Alarm display.

**Remedy:** Do no longer start SPL. Check the system components (PLC must be provided with the correct version of FB15 and with DB18).

**Programm continuation:** Switch control OFF - ON.

## 400254 Checksum error found: %1

**Parameters:** %1 = Note on code section or table

**Explanation:** Checksum error in safety-relevant code or safety-relevant data. The safe monitoring functions (Safety Integrated) in the PLC may be damaged.

**Reaction:** Alarm display.

**Remedy:** Power OFF/ON of the control. If the error occurs again, inform the service department.

**Programm continuation:** Switch control OFF - ON.

## 400255 Sign of life monitoring NCK2

**Explanation:** NCK2 has not contacted the PLC during cyclic operation. Timer of FB1 parameter NCCyclTimeout was executed without retrigger. (FM-NC only).

**Reaction:** Alarm display.

**Remedy:** NCK restart

**Programm continuation:** Internal

## 400256 NCK2 has not run up

**Explanation:** NCK2 has not run up. NCK has not contacted the PLC. Timer of FB1 parameter NCRunupTimeout has expired. (FM-NC only).

**Reaction:** Alarm display.

**Remedy:** General NCK reset and restart.

**Programm continuation:** Internal

## 400257 Error in internal communication with NCK2

**Explanation:** An error has occured during data transmission between the PLC and the NCK. (FM-NC only)

**Reaction:** Alarm display.

**Remedy:** NCK restart

**Programm continuation:** Internal

## 400260 Failure of machine control panel 1

**Explanation:** Machine control panel (MCP) at machine control panel interface 1 has failed. Timer of FB1 parameter MCP1Timeout has expired. Incorrect address in DB7 parameter MCP1BusAdr. DB7 parameter MCP1NotSend=TRUE.

**Reaction:** Alarm display.

**Remedy:** Check the connection to the MCP. Increase the value of the timer parameter MCP1Timeout. Set MCP1Cycl to the default value. Correct the MCP1BusAdr in the DB7 parameter/compare with the selected address. Set DB7 parameter MCP1NotSend=FALSE.

**Programm continuation:** Internal

## 400261 Failure of machine control panel 2

**Explanation:** Machine control panel (MCP) at machine control panel interface 2 has failed. Timer of FB1 parameter MCP2Timeout has expired. Incorrect address in DB7 parameter MCP2BusAdr. DB7 parameter MCP2NotSend=TRUE.

**Reaction:** Alarm display.

**Remedy:** Check the connection to the MCP. Increase the value of the timer parameter MCP2Timeout. Set MCP2Cycl to the default value. Correct the MCP2BusAdr in the DB7 parameter/compare with the selected address. Set DB7 parameter MCP2NotSend=FALSE.

**Programm continuation:** Internal

## 400262 Failure of handheld unit

**Explanation:** Handheld unit (HHU) at handheld unit interface has failed. Timer of FB1 parameter HHUTimeout has expired.

**Reaction:** Alarm display.

**Remedy:** Check the connection to the HHU. Increase the value of timer parameter HHUTimeout. Set HHUCycl to the default value.

**Programm continuation:** Internal

## 400264 Pointer parameter machine control panel 1 incorrect

**Explanation:** A pointer is incorrect in the MCP1 parameter range.

**Reaction:** Alarm display.

**Remedy:** Correct the PLC configuration in the FB1 parameters.

**Programm continuation:** Switch control OFF - ON.

## 400265 Pointer parameter machine control panel 2 incorrect

**Explanation:** A pointer is incorrect in the MCP2 parameter range.

**Reaction:** Alarm display.

**Remedy:** Correct the PLC configuration in the FB1 parameters.

**Programm continuation:** Switch control OFF - ON.

## 400266 Pointer parameter handheld unit incorrect

**Explanation:** A pointer is incorrect in the HHU parameter range.

**Reaction:** Alarm display.

**Remedy:** Correct the PLC configuration in the FB1 parameters.

**Programm continuation:** Switch control OFF - ON.

## 400267 Access error

**Explanation:** MCP or HHU data could not be accessed

**Reaction:** Alarm display.
**Remedy:** Check the MCP or HHU parameters of the FB1.
**Programm continuation:** Switch control OFF - ON.

### 400268 Error in internal communication with machine control panel 1, internal error code: %Z

**Explanation:** Communication error between CP and PLC.
**Reaction:** Alarm display.
**Remedy:** Check MCP parameter of FB1, MCP1Stop, switch TRUE->FALSE
**Programm continuation:** Switch control OFF - ON.

### 400269 Error in internal communication with machine control panel 2, internal error code: %Z

**Explanation:** Communication error between CP and PLC.
**Reaction:** Alarm display.
**Remedy:** Check MCP parameter of FB1, MCP2Stop, switch TRUE->FALSE
**Programm continuation:** Switch control OFF - ON.

### 400270 Error in internal communication with handheld unit, internal error code: %Z

**Explanation:** Communication error between CP and PLC.
**Reaction:** Alarm display.
**Remedy:** Check HHU parameter of FB1, HHUStop, switch TRUE->FALSE
**Programm continuation:** Switch control OFF - ON.

### 400271 Direct keys 1 communication error, internal error code: %Z

**Explanation:** Communication error between CP and PLC.
**Reaction:** Alarm display.
**Remedy:** Check OpKey parameter
**Programm continuation:** Internal

### 400272 Direct keys 2 communication error, internal error code: %Z

**Explanation:** Communication error between CP and PLC.
**Reaction:** Alarm display.
**Remedy:** Check OpKey parameter
**Programm continuation:** Internal

### 400274 Direct keys 1 failed

**Explanation:** Direct keys 1: internal timeout has expired.
**Reaction:** Alarm display.
**Remedy:** Check connection to direct key module
**Programm continuation:** Internal

### 400275 Direct keys 2 failed

**Explanation:** Direct keys 2: internal timeout has expired.

**Reaction:** Alarm display.
**Remedy:** Check connection to direct key module
**Programm continuation:** Internal

## 400276 Pointer parameter direct keys 1 incorrect

**Explanation:** Pointer incorrectly defined
**Reaction:** Alarm display.
**Remedy:** Correct the pointer
**Programm continuation:** Switch control OFF - ON.

## 400277 Pointer parameter direct keys 2 incorrect

**Explanation:** Pointer incorrectly defined
**Reaction:** Alarm display.
**Remedy:** Correct the pointer
**Programm continuation:** Switch control OFF - ON.

## 400551 Fault on MPI/DP bus

**Explanation:** Error detected on I/O bus
**Reaction:** Alarm display.
**Remedy:** Check I/Os, rectify I/O fault
**Programm continuation:** Internal

## 400552 Fault on DP bus

**Explanation:** Error detected on I/O bus
**Reaction:** Alarm display.
**Remedy:** Check I/Os, rectify I/O fault
**Programm continuation:** Internal

## 400553 Fault on PROFINET bus

**Explanation:** Error detected on I/O bus
**Reaction:** Alarm display.
**Remedy:** Check I/Os, rectify I/O fault
**Programm continuation:** Internal

## 400601 Configuration of loading points incorrect

**Explanation:** The PLC configuration in the DB4 does not match the NC configuration
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

## 400602 Spindle configuration incorrect

**Explanation:** The PLC configuration in the DB4 does not match the NC configuration

**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

## 400603 Turret configuration incorrect

**Explanation:** The PLC configuration in the DB4 does not match the NC configuration
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

## 400604 Set change with M06 in the machine data

**Explanation:** With the magazine type used (box magazine, chain), changing is possible only with M06. Also check for any impermissible settings for turret magazines.
**Reaction:** Alarm display.
**Remedy:** Set the value in the channel-specific machine data TOOL_CHANGE_MODE (MD 22550) to 1.
**Programm continuation:** Internal

## 400902 Parameter ChanNo impermissible in FC9

**Explanation:** The parameterized channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

## 400903 Parameter IntNo impermissible in FC 9

**Explanation:** The parameterized interrupt does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

## 401502 Impermissible axis no. parameter in FC 15

**Explanation:** The parameterized axis does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

## 401602 Impermissible axis no. parameter in FC 16

**Explanation:** The parameterized axis does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

## 401702 Impermissible spindle IF no. parameter in FC 17

**Explanation:** The parameterized spindle does not exist.

**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 401805 Impermissible axis no. parameter in FC 18

**Explanation:** The parameterized axis / spindle does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 401901 Parameter BAGNo impermissible in FC19

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 401902 Parameter ChanNo impermissible in FC19

**Explanation:** The parameterized channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402401 Parameter BAGNo impermissible in FC24

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402402 Parameter ChanNo impermissible in FC24

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402501 Parameter BAGNo impermissible in FC25

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402502 Parameter ChanNo impermissible in FC25

**Explanation:** The parameterized mode group, channel does not exist.

**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402601 Parameter BAGNo impermissible in FC26

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 402602 Parameter ChanNo impermissible in FC26

**Explanation:** The parameterized mode group, channel does not exist.
**Reaction:** Alarm display.
**Remedy:** Correct the parameter.
**Programm continuation:** Switch control OFF - ON.

### 403000 Delete DB 1000 in the PLC and restart

**Explanation:** The DB differs in the required length.
**Reaction:** Alarm display.
**Remedy:** Displayed DB must be deleted via STEP7. Load DB from current toolbox.
**Programm continuation:** Internal

### 403001 Delete DB 1001 in the PLC and restart

**Explanation:** The DB differs in the required length.
**Reaction:** Alarm display.
**Remedy:** Displayed DB must be deleted via STEP7. Load DB from current toolbox.
**Programm continuation:** Internal

### 403071 Delete DB 1071 in the PLC and restart

**Explanation:** The DB created by the basic program and the existing DB differ in size.
**Reaction:** Alarm display.
**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.
**Programm continuation:** Internal

### 403072 Delete DB 1072 in the PLC and restart

**Explanation:** The DB created by the basic program and the existing DB differ in size.
**Reaction:** Alarm display.
**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.
**Programm continuation:** Internal

### 403073 Delete DB 1073 in the PLC and restart

**Explanation:** The DB created by the basic program and the existing DB differ in size.

**Reaction:** Alarm display.
**Remedy:** Displayed DB must be deleted via STEP7. Possibly max. program size of the user program exceeded.
**Programm continuation:** Internal

### 410141 TM: Too many loading points

**Explanation:** The PLC configuration in the DB4 has more than 16 loading points
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

### 410142 TM: Too many toolholders

**Explanation:** The PLC configuration in the DB4 has more than 16 toolholders
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

### 410143 TM: Too many turrets

**Explanation:** The PLC configuration in the DB4 has more than 16 turrets
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

### 410144 TOOLMAN: Multiple definition of magazine number %Z

**Explanation:** Multiple definition of the magazine number
**Reaction:** Alarm display.
**Remedy:** Magazines, spindles, loading points must be uniquely defined in different TO areas
**Programm continuation:** Switch control OFF - ON.

### 410145 Tool manager: number of toolholders too low

**Explanation:** The PLC configuration in DB4 has less than 1 toolholder
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

### 410146 Tool management: Too many magazines

**Explanation:** The PLC configuration has more than 64 magazines
**Reaction:** Alarm display.
**Remedy:** Correct tool management setup
**Programm continuation:** Switch control OFF - ON.

### 410150 Area in M group decoder list is too large

**Explanation:** Number of M groups in PLC too large.

**Reaction:** Alarm display.
**Remedy:** Reduce the number of groups
**Programm continuation:** Internal

## 410151 Magazine data for tool management missing in the PLC

**Explanation:** Magazine data are not available in the PLC. The setup has not been completed, although the option TOOLMAN has been activated.
**Reaction:** Alarm display.
**Remedy:** In HMI Advanced the softkey 'Create PLC Data' must be pressed during TOOLMAN setup. Or create the data in data block DB4 from DBB64 onward.
**Programm continuation:** Internal

## 410160 PROFIBUS configuration is too large for DP1

**Explanation:** Internal data area is too large for PROFIBUS configuration.
**Reaction:** Alarm display.
**Remedy:** Define and load a smaller PROFIBUS configuration
**Programm continuation:** Internal

## 410900 M:N: call waiting was not continued

**Explanation:** The switchover sequence started was not completed
**Reaction:** Alarm display.
**Remedy:** Reactuate channel menu on HMI
**Programm continuation:** Internal

## 410901 M:N: HMI 1 does not respond to displacement

**Explanation:** The HMI that is to be switched over does not respond
**Reaction:** Alarm display.
**Remedy:** Reactuate channel menu on HMI
**Programm continuation:** Internal

## 410902 M:N: HMI 1 does not go offline

**Explanation:** The HMI that is to be switched over does not respond
**Reaction:** Alarm display.
**Remedy:** Reactuate channel menu on HMI
**Programm continuation:** Internal

## 410903 M:N: HMI 2 does not respond to displacement

**Explanation:** The HMI that is to be switched over does not respond
**Reaction:** Alarm display.
**Remedy:** Reactuate channel menu on HMI
**Programm continuation:** Internal

### 410904 M:N: HMI 2 does not go offline

**Explanation:** The HMI that is to be switched over does not respond

**Reaction:** Alarm display.

**Remedy:** Reactuate channel menu on HMI

**Programm continuation:** Internal

### 410905 M:N: No HMI link to assigned interface

**Explanation:** The HMI to be switched over is not connecting to the NC

**Reaction:** Alarm display.

**Remedy:** Reactuate channel menu on HMI

**Programm continuation:** Internal

### 410906 M:N: No sign of life of an HMI

**Explanation:** Link to NC disconnected

**Reaction:** Alarm display.

**Remedy:** Check connection to HMI

**Programm continuation:** Internal

### 411101 Impermissible Parameter Axis in FB11

**Explanation:** Axis parameter not within the permissible range.

**Reaction:** Alarm display.

**Remedy:** Use permissible axis number.

**Programm continuation:** Internal

### 411501 Incorrect version of FB 15, > general reset, do not transmit FB 15 from project

**Explanation:** FB 15 does not match the basic program used.

**Reaction:** Alarm display.

**Remedy:** General PLC reset. Use correct version of the basic program.

**Programm continuation:** Internal

### 411502 Incorrect basic PLC program version

**Explanation:** FB 15 does not match the basic program used.

**Reaction:** Alarm display.

**Remedy:** Load the basic program that matches the NCK version.

**Programm continuation:** Internal

### 411503 Error in the hardware configuration

**Explanation:** Incorrect NCU type in HW config. data

**Reaction:** Alarm display.

**Remedy:** Load HW configuration with matching NCU type

**Programm continuation:** Switch control OFF - ON.

**428201** **Diagnostic alarm**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428221** **Diagnostic alarm from diagnostics address %Z**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428601** **Module failure of the expansion unit**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428602** **Recurrence of module failure of the expansion unit**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428603** **Module failure of the DP master**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428604** **Failure of a DP slave**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

**428605** **Fault in a DP slave**

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428606 Expansion unit recurrence, parameterization error

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428607 DP slave recurrence, parameterization error

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428608 DP slave recurrence, discrepancy between preset and actual configurations

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428621 Failure of expansion unit

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428622 Restoration of expansion unit, discrepancy between preset and actual configurations

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428623 Failure of a DP master system, bus: %2

**Parameters:** %2 = Bus number

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428624 Failure of a DP slave, bus: %2, slave: %1

**Parameters:** %2 = Bus number

%1 = Number of the DP station

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428625 Restoration of DP slave with fault, bus: %2, slave: %1

**Parameters:** %2 = Bus number
%1 = Number of the DP station

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428626 Restoration of expansion unit, parameterization error

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428627 Restoration of DP slave, parameterization error, bus: %2, slave: %1

**Parameters:** %2 = Bus number
%1 = Number of the DP station

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428628 Restoration of DP slave, discrepancy between preset and actual configurations, bus: %2, slave: %1

**Parameters:** %2 = Bus number
%1 = Number of the DP station

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428630 Failure of the PROFINET IO system

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

## 428631 Failure of a PROFINET device, device: %Z

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428632 Restoration of PROFINET device with fault, device %Z

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428633 Restoration of PROFINET device, discrepancy between preset and actual configurations, device %Z

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 428634 Restoration of PROFINET device, parameterization error, device %Z

**Explanation:** OB82 or OB86 has been triggered.

**Reaction:** Alarm display.

**Remedy:** Rectify the cause of the error displayed

**Programm continuation:** Switch control OFF - ON.

### 430000 F diagnostic: PLC project inconsistent

**Explanation:** The F diagnostic is not possible because the PLC project is inconsistent or the configured firmware version is not supported.

**Reaction:** Alarm display.

**Remedy:** Configured NCU firmware version (TIA Portal) must be at least V4.8.
Reload consistent PLC project.

**Programm continuation:** Switch control OFF - ON.

### 430001 F module %1: timeout detected by F I/O

**Explanation:** The F I/O has detected a timeout in the PROFIsafe communication.

**Reaction:** Alarm display.

**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.

**Programm continuation:** Switch control OFF - ON.

### 430002 F module %1: channel error detected by F I/O

**Explanation:** The F I/O has detected a channel error.

**Reaction:** Alarm display.

**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.

**Programm continuation:** Switch control OFF - ON.

### 430003 F module %1: CRC/sequence number error detected by F I/O

**Explanation:** The F I/O has detected a CRC/sequence number error.

**Reaction:** Alarm display.

**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.
**Programm continuation:** Switch control OFF - ON.

### 430005 F module %1: timeout detected by F system

**Explanation:** The F system has detected a timeout.
**Reaction:** Alarm display.
**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.
**Programm continuation:** Switch control OFF - ON.

### 430006 F module %1: sequence number error detected by F system

**Explanation:** The F system has detected a sequence number error.
**Reaction:** Alarm display.
**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.
**Programm continuation:** Switch control OFF - ON.

### 430007 F module %1: CRC error detected by F system

**Explanation:** The F system has detected a CRC error.
**Reaction:** Alarm display.
**Remedy:** Eliminate the displayed cause of the error, and reintegrate the module if necessary.
**Programm continuation:** Switch control OFF - ON.

### 430010 F module %1: reintegration required

**Explanation:** The F module is passivated, and has to be reintegrated before being used again.
**Reaction:** Alarm display.
**Remedy:** Reintegrate the F module with the signal ACK_REI.
**Programm continuation:** Switch control OFF - ON.

### 430101 F_DP: Timeout detected DP_DP_ID %1

**Explanation:** A timeout error occurred in the stated F_DP communication connection.
**Reaction:** Alarm display.
**Remedy:** Check connection for possible errors and eliminate them.
**Programm continuation:** Switch control OFF - ON.

### 430102 F_DP: Sequence number error detected DP_DP_ID %1

**Explanation:** A sequence number error has occurred in the stated F_DP communication connection.
**Reaction:** Alarm display.
**Remedy:** Check connection for possible errors and eliminate them.
**Programm continuation:** Switch control OFF - ON.

### 430103 F_DP: CRC error detected DP_DP_ID %1

**Explanation:** A CRC error has occurred in the stated F_DP communication connection.
**Reaction:** Alarm display.

**Remedy:** Check connection for possible errors and eliminate them.
**Programm continuation:** Switch control OFF - ON.

### 430104 F_DP: Communication DP_DP_ID %1 reports error SFC14

**Explanation:** An access error has occurred while reading the telegram of the stated F_DP communication connection.
**Reaction:** Alarm display.
**Remedy:** Check connection and configuration for possible errors, and eliminate them.
**Programm continuation:** Switch control OFF - ON.

### 430105 F_DP: Communication DP_DP_ID %1 reports error SFC15

**Explanation:** An access error occurred while writing the telegram of the stated F_DP communication connection.
**Reaction:** Alarm display.
**Remedy:** Check connection and configuration for possible errors, and eliminate them.
**Programm continuation:** Switch control OFF - ON.

### 431001 The safety mode of the F-PLC has been deactivated.

**Explanation:** The safety mode of the F-PLC has been deactivated by the user, some error control measures are deactivated.
**Reaction:** Alarm display.
**Remedy:** The safety mode will be activated at the next PLC power on.
**Programm continuation:** Switch control OFF - ON.

### 431003 General error in the F program

**Explanation:** A serious problem has been found in the safety mode, STEP 7 is required for an exact analysis
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Switch control OFF - ON.

### 800000 Error: HiGraph group no. %A graph no. %N status %Z

**Explanation:** -
**Reaction:** Alarm display.
**Remedy:** -
**Programm continuation:** Internal

### 810001 Error OB event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810002 Synchronous error, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.

**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810003 Asynchronous error, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810004 Stop/cancel event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810005 Operational state sequence event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810006 Error communication event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810007 Error H/F system event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Diagnose with STEP7.
**Programm continuation:** Internal

### 810008 Error diagnostics data from modules, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.
**Remedy:** Alarm display, PLC Stop if required.
**Programm continuation:** Internal

### 810009 User diagnostics event, error analysis via STEP7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.
**Reaction:** Alarm display.

**Remedy:** Diagnose with STEP7.

**Programm continuation:** Internal

## 810015 Module diagnositcs event, error analysis via STEP 7 required

**Explanation:** Reduced PLC error message. STEP7 is required for exact analysis.

**Reaction:** Alarm display.

**Remedy:** Diagnose with STEP7.

**Programm continuation:** Internal

## 830000 Message: HiGraph group no. %A graph no. %N status %Z

**Explanation:** -

**Reaction:** Alarm display.

**Remedy:** -

**Programm continuation:** Internal

# System responses

# 10

## 10.1 System reactions to SINUMERIK alarms

| Response | Effect |
|---|---|
| Correction block with reorganization | Block preparation has detected an error, which can be corrected by modifying the program. Reorganization is performed after a program modification. |
| Correction block | Block preparation has detected an error, which can be corrected by modifying the program. |
| NC switches into the tracking mode | The axes follow-up. |
| Interpreter stop | Program execution is canceled after all the prepared blocks (IPO buffer) have been processed. |
| Local alarm response | A local alarm response is output.<br>In the program code, individual actions can be executed, which are checked using this response. For example, the block sequence is interrupted in preprocessing if a compile cycle alarm appears with this response. |
| No alarm response | No alarm response is initiated. |
| NC not ready | NC ready is not set:<br>Active fast braking (i.e. with the maximum braking current) for all drives.<br>The controller enable for all NC axes is deleted.<br>NC ready relay contact drops out. |
| Mode group not ready | Mode group ready is not set:<br>Active fast braking (i.e. with the maximum braking current) is realized for all drives of this mode group.<br>The controller enable of the NC axes involved is deleted. |
| Channel not ready | Channel ready is not set:<br>Active fast braking (i.e. with the maximum braking current) is realized for all drives of this channel.<br>The controller enable of the NC axes involved is deleted. |
| NC start inhibit in this channel | A program cannot be started in this channel. |
| Re-reference axes in this channel | The axes in this channel have to be referenced again. |
| Interface signals are set | A VDI interface signal alarm is set. |
| Alarm display | The alarm is displayed at the user interface. |
| NC stop for alarm | All channel are stopped using a ramp stop. |
| NC Stop for an alarm at end of block | NC stops if the end of a block is reached. |
| Alarm reaction in automatic mode | The alarm is displayed whenever bit 0 of machine data MD11411 $MN_ENABLE_ALARM_MASK is set.<br>The response is be set whenever an alarm should only occur during automatic mode without manual operation by a user. |
| Message display | The alarm is displayed when bit 1 of machine data MD11411 $MN_ENABLE_ALARM_MASK is set.<br>The message display is for alarms that are normally suppressed. |

| Response | Effect |
|---|---|
| Mode group is not ready, is also effective on individual axes | The NC ready is canceled in all mode groups.<br>As a consequence, the response corresponds to an "NC not ready" with the following difference:<br>The "NC ready" is not withdrawn and the corresponding VDI bit is not set, e.g. for Emergency Stop. |
| All channel-specific alarm reactions delayed on alarm, alarm display | All responses are buffered on a channel-for-channel-specific basis from the incoming alarms and are therefore not active.<br>The alarms are displayed at the user interface.<br>The responses from the mode group and NC are transferred.<br>The delayed alarm responses are activated if the responses are deleted by an activated internal NC code, or by the configured alarm response "Alarm response delay is canceled". |
| All alarm responses are delayed by one IPO cycle on alarm | All alarm responses are delayed by one cycle when an alarm is issued. This functionality is required as part of ESR development. |
| The alarm response delay is canceled | The state of "All channel-specific alarm responses delayed on alarm, alarm display" is canceled. |
| NC start inhibit in this channel, ASUB starts, where relevant, are permitted | A program cannot be started in this channel. ASUBs, where relevant, are permitted. |

## 10.2 Cancel criteria for alarms

| Cancel criteria | Effect |
|---|---|
| Clear the alarm with the Clear key or with NC start. | The alarm is cleared in any channel by pressing the <ALARM CANCEL> key.<br>In addition, the alarm is cleared by pressing the <CYCLE START> or <RESET> key. |
| The alarm is no longer displayed when the alarm cause has been removed. No other operator actions are required. | Self-clearing alarm.<br>The alarm is not cleared by an operator action, but explicitly by an activated internal NC code. |
| Clear the alarm with NC start or RESET key and continue the program. | The alarm is cleared by pressing the <CYCLE START> key in the channel in which the alarm occurred.<br>In addition, the alarm is cleared by pressing the <RESET> key. |
| Switch the control OFF - ON. | The alarm is canceled by switching off the control and switching it on again. |
| Clear the alarm with the RESET key. Restart the part program. | The alarm is cleared by pressing the <RESET> key in the channel in which the alarm occurred.<br>Then restart the part program. |
| Press the RESET key to clear the alarm in all channels of this mode group. Restart the part program. | The alarm is cleared in the channels, in which the mode group alarm has occurred, by pressing the <RESET> key.<br>Then restart the part program. |
| Clear alarm in all channels with the RESET key. Restart the part program. | The alarm is cleared in the channels by pressing the <RESET> key.<br>Then restart the part program. |

# 10.3 System reactions for SINAMICS alarms

## Fault responses

The fault reactions used and their meanings are described below:

| | |
|---|---|
| Designation | NONE |
| Response | None |
| Description | No reaction when a fault occurs. |

| | |
|---|---|
| Designation | OFF1 |
| Response | Braking along the ramp-function generator deceleration ramp followed by pulse disable. |
| Description | Closed loop speed control (p1300 = 20, 21)<br>• The immediate specification of n_set = 0 at the ramp generator deceleration ramp (p1121) causes the drive to be braked.<br>• When zero speed is detected, the motor holding brake (if parameterized) is closed (p1215). The pulses are suppressed when the brake closing time (p1217) expires. The standstill is detected when the speed actual value falls below the speed threshold (p1226) or when the monitoring time (p1227) started when speed setpoint ≤ speed threshold (p1226) has expired.<br>Closed loop torque control (p1300 = 23)<br>• The following applies for torque control: Response as for OFF2.<br>• When the system switches to torque control with p1501, the following applies: There is no separate braking reaction.<br>If the actual speed value falls below the speed threshold (p1226) or the timer stage (p1227) has expired, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the brake closing time (p1217) expires. |

| | |
|---|---|
| Designation | OFF1_DELAYED |
| Response | As for OFF1, however delayed. |
| Description | Faults with this fault reaction only become effective after the delay time on p3136 has expired.<br>The remaining time up to OFF1 is displayed in r3137. |

| | |
|---|---|
| Designation | OFF2 |
| Response | Internal/external pulse disable |
| Description | Closed-loop speed and torque control<br>• Instantaneous pulse suppression, the drive "coasts down".<br>• The motor holding brake (if one is being used) is closed immediately.<br>• Switch-on inhibit is activated. |

| Designation | OFF3 |
|---|---|
| Response | Braking along the OFF3 deceleration ramp followed by pulse disable |
| Description | Closed loop speed control (p1300 = 20, 21)<br>• The drive is braked along the OFF3 down ramp (p1135) by immediately entering n_set = 0.<br>• When zero speed is detected, the motor holding brake (if parameterized) is closed. The pulses are suppressed when the closing time of the holding brake (p1217) expires.<br>Standstill is detected when the speed actual value falls below the speed threshold (p1226) or when the monitoring time (p1227) started when speed setpoint <= speed threshold (p1226) has expired.<br>• Switch-on inhibit is activated.<br><br>Closed loop torque control (p1300 = 23)<br>• Switchover to speed-controlled operation and other reactions as described for speed-controlled operation. |

| Designation | STOP2 |
|---|---|
| Response | n_set = 0 |
| Description | • The drive is braked along the OFF3 down ramp (p1135) by immediately entering n_set = 0.<br>• The drive remains in closed-loop speed control. |

| Designation | IASC/DCBRK |
|---|---|
| Response | - |
| Description | • For synchronous motors, the following applies:<br>If a fault occurs with this fault reaction, an internal armature short-circuit is triggered. The conditions for p1231 = 4 must be observed.<br>• For induction motors, the following applies:<br>If a fault occurs with this fault reaction, DC braking is triggered. DC braking must have been commissioned (p1232, p1233, p1234). |

| Designation | ENCODER |
|---|---|
| Response | Internal/external pulse disable (p0491) |
| Description | The fault reaction ENCODER is applied as a function of the setting in p0491.<br>Factory setting:<br>p0491 = 0 → Encoder fault causes OFF2<br>**Please note:**<br>When changing p0491, it is imperative that the information in the description of this parameter is carefully observed. |

### Acknowledge faults

Specifies the default method of acknowledging faults after the cause has been removed.

| Designation | POWER ON |
|---|---|
| Description | The fault is acknowledged by a POWER ON process (switch drive unit off and on again).<br>**Note:**<br>If the fault cause has still not been resolved, then the fault is immediately displayed again after booting. |

| Designation | IMMEDIATELY |
|---|---|
| Description | Faults can be acknowledged on one drive object (Points 1 to 3) or on all drive objects (Point 4) as follows:<br>1. Acknowledge via setting parameter:<br>– p3981 = 0 → 1<br>2. Acknowledge via binector inputs:<br>– p2103 BI: 1. Acknowledge faults<br>– p2104 BI: 2. Acknowledge faults<br>– p2105 BI: 3. Acknowledge faults<br>3. Acknowledging via a PROFIdrive control signal:<br>– STW1.7 = 0 --> 1 (edge)<br>4. Acknowledge all faults<br>– p2102 BI: Acknowledge all faults<br>**Note**<br>• These faults can also be acknowledged by a POWER ON.<br>• If this action has not eliminated the fault cause, the fault will continue to be displayed after acknowledgment.<br>• Safety Integrated faults<br>The "Safe Torque Off" (STO) function must be activated in case of these faults: Safe Torque Off must be deselected before these faults are acknowledged. |
| | |

| Designation | PULSE DISABLE |
|---|---|
| Description | The fault can only be acknowledged with a pulse disable (r0899.11 = 0).<br>The same options are available for acknowledging as described under acknowledgment with IMMEDIATE. |

### Reference to SINAMICS parameters

In some fields, reference is made to a SINAMICS parameter for the alarms.

The parameter number consists of the letter "p" or "r" as prefix, followed by a 4-digit number (xxxx), and optionally an index, e.g. p0918[0...3].

### References

A detailed description of the SINAMICS parameters is provided in the:

SINAMICS S120/S150 List Manual

# Stop conditions

# 11

| | |
|---|---|
| **0** | **No stop state active** |
| **Reaction:** | none |
| **1** | **Stop: No NC Ready** |
| **Reaction:** | stop |
| **2** | **Stop: No Mode Group Ready** |
| **Reaction:** | stop |
| **3** | **Stop: Emergency Stop active** |
| **Reaction:** | stop |
| **4** | **Stop: Alarm active with Stop** |
| **Reaction:** | stop |
| **5** | **Stop: M0/M1 active** |
| **Reaction:** | stop |
| **6** | **Stop: Block ended in SBL mode** |
| **Reaction:** | stop |
| **7** | **Stop: NC Stop active** |
| **Reaction:** | stop |
| **8** | **Wait: Read-in enable missing** |
| **Reaction:** | stop |
| **9** | **Wait: Feedrate enable missing** |
| **Reaction:** | stop |
| **10** | **Dwell time F%1 still %2 s** |
| **Parameters:** | %1 = Dwell time: specification from part program<br>%2 = Remaining dwell time |
| **Reaction:** | wait |
| **11** | **Waiting: Aux. funct. ack. missing** |
| **Reaction:** | stop |

**12** **Wait: Axis enable missing %2 %3 %4**

**Parameters:** %2 = Channel axis/spindle identifier (before spindle converter)
%3 = Channel axis/spindle identifier (before spindle converter)
%4 = Channel axis/spindle identifier (before spindle converter)

**Reaction:** wait

**13** **Wait: Exact stop not reached**

**Reaction:** wait

**14** **Wait: For positioning axis %2 %3 %4**

**Reaction:** wait

**15** **Wait: For spindle %1**

**Parameters:** %1 = Channel axis identifier

**Reaction:** wait

**16** **Waiting for other channel: %3 %4 %5**

**Parameters:** %3 = Channel identifier
%4 = Channel identifier
%5 = Channel identifier

**Reaction:** wait

**17** **Wait: Feedrate override**

**Reaction:** stop

**18** **Faulty NC block / user alarm**

**Reaction:** stop

**19** **Wait: For NC blocks from external**

**Reaction:** stop

**20** **Waiting due to SYNACT instruction**

**Reaction:** wait

**21** **Waiting: block search active**

**Reaction:** wait

**22** **Wait: No spindle enable %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** stop

**23** **Wait: Axis feedrate override is 0: %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** stop

**24** **Wait for tool change - acknowledgment**
**Reaction:** wait

**25** **Wait for gear ratio change %2 %3 %4**
**Reaction:** wait

**26** **Wait for position control %2 %3 %4**
**Reaction:** wait

**27** **Wait for thread first cut**
**Reaction:** wait

**28** **Wait**
**Reaction:** wait

**29** **Wait for punching**
**Reaction:** wait

**30** **Wait for safe operation**
**Reaction:** wait

**31** **STOP: No Channel Ready**
**Reaction:** stop

**32** **STOP: Reciprocation active**
**Reaction:** wait

**33** **STOP: Axis replacement active %2 %3 %4**
**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier
**Reaction:** wait

**34** **Wait for axis container rotation %2 %3 %4**
**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container
**Reaction:** wait

**35** **Wait: AXCT following axis active %2 %3 %4**
**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container
**Reaction:** wait

**36** **Wait: AXCT leading axis active %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**37** **Wait: Follow up AXCT axis %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**38** **Wait: AXCT axis status change %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**39** **Wait: AXCT axis/spindle disable %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**40** **Wait: AXCT axis superimposed motion active %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**41** **Wait: AXCT axis replacement active %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**42** **Wait: AXCT axis interpol. active %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**43** **Wait for compile cycle**

**Reaction:** wait

**44** **Wait: Access to system variable %2**

**Parameters:** %2 = Identifier of the system variable with indices.

**Reaction:** wait

**45** **Wait: Search target found**

**Reaction:** stop

**46** **Wait: Rapid retraction triggered**

**Reaction:** wait

**47** **Wait: AXCT: Wait for spindle stop**

**Reaction:** wait

**48** **Wait: Synchron. of machine data %2 %3 %4**

**Parameters:** %2 = Axis container
%3 = Axis container
%4 = Axis container

**Reaction:** wait

**49** **Wait: Axis replacement: Axis coupled %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**50** **Wait: Axis repl.: Liftfast active %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**51** **Wait: Axis replace.: new config. active %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**52** **Wait: Axis replacement: AXCTSW active %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**53** **Wait: Axis replacement: Waitp active %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**54** **Wait: Axis in another channel %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**55** **Wait: Axis replacement: Axis is PLC axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**56** **Wait: Axis replace.: Axis is recip. axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**57** **Wait: Axis replacement: axis is JOG axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**58** **Wait: Axis replacement: Command axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**59** **Wait: Axis replacement: Axis is OEM axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**60** **Wait: Coupled following axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**61** **Wait: Coupled-motion following axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**62** **Wait: Coupled slave axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**63** **Stop at cycle end M0**

**Reaction:** stop

**64** **Stop at cycle end M1**

**Reaction:** stop

**65** **Axis is at fixed stop %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**66** **Master-slave switchover active**

**Reaction:** wait

**67** **Axis replace.: axis single axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**68** **Stop: destination reached after block search**

**Reaction:** stop

**69** **Synchronism: Synchronous spindle**

**Reaction:** wait

**70** **Deactivation position synchron. spindle**

**Reaction:** wait

**71** **Wait for transformation axis enable%2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**72** **Wait because of possible collision**

**Reaction:** stop

**73** **JOG: Position reached %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** stop

**74** **Jog: Direction disabled %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** stop

**75** **Context sensitive stop request %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier
%7 = Braking priority with sign for the direction of the motion command

**Reaction:** wait

**76** **Wait: G4 S%1 still: %2 U**

**Parameters:** %1 = Programmed dwell time in revolutions
%2 = Remaining revolutions

**Reaction:** wait

**77** **Axial feed disable from PLC %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** stop

**78** **Waiting for axial feedrate enable**

**Reaction:** stop

**79** **Axial feed disable from Synact %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**80** **Wait for speed of master spindle %1**

**Parameters:** %1 = Channel axis identifier

**Reaction:** wait

**81** **Wait for parameter set change %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**82** **Wait for axis before transformer change %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**83** **Waiting for cutting calculation**

**Parameters:** %1 = Progress display

**Reaction:** wait

**84** **Wait for measuring system axis %2 %3 %4**

**Parameters:** %2 = Channel axis identifier
%3 = Channel axis identifier
%4 = Channel axis identifier

**Reaction:** wait

**85** **Override limited: %1**

**Parameters:** %1 = Feedrate override value

**Reaction:** wait

**86** **Wait for MMC command**

**Reaction:** wait

**87** **Overlap not released %2 %3 %4**

**Reaction:** wait

**88** **Waiting for drive parameter of %2**

**Parameters:** %2 = Part program command "ESRR" or "ESRS"

**Reaction:** wait

**89** **Waiting for external device %2**

**Parameters:** %2 = Programmed identifier of the external device"

**Reaction:** wait

**90** **Wait for end of program in the channel %3 %4 %5**

**Parameters:** %3 = Channel identifier
%4 = Channel identifier
%5 = Channel identifier

**Reaction:** wait

**91** **Wait for interpolation buffer**

**Reaction:** wait

**92** **Configured stop CST G0->G0**

**Reaction:** stop

**93** **Configured stop CST G0->G1**

**Reaction:** stop

**94** **Configured stop CST G1->G0**

**Reaction:** stop

**95** **Configured stop CST**

**Reaction:** stop

**96** **Configured stop CST ON**

**Reaction:** stop

**97** **Configured stop CST WAIT marker**

**Reaction:** stop

# Appendix A

A

## A.1 List of abbreviations

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| AC | Adaptive Control | |
| ALM | Active Line Module | Infeed module for drives |
| AP | User program | |
| AS | Automation system | |
| ASCII | American Standard Code for Information Interchange | American coding standard for the exchange of information |
| ASIC | Application Specific Integrated Circuit | User switching circuit |
| ASUP | Asynchronous subprogram | |
| AUTO | | Operating mode "Automatic" |
| AUXFU | Auxiliary Function | Auxiliary functions |
| STL | Statement list | |
| BA | Operating mode | |
| Mode group | Mode group | |
| BERO | Proximity limit switch with feedback oscillator | |
| BI | Binector Input | |
| HHU | Handheld unit | |
| BICO | Binector Connector | Interconnection technology for the drive |
| BIN | Binary Files | Binary files |
| BIOS | Basic Input Output System | |
| BCS | Basic coordinate system | |
| SSM | System status message | In connection with PLC messages |
| BO | Binector Output | |
| OPI | Operator Panel Interface | |
| CAD | Computer-Auded Design | |
| CAM | Computer-Aided Manufacturing | |
| CC | Compile Cycle | Compile cycles |
| CI | Connector Input | |
| CF-Card | Compact Flash-Card | |
| CNC | Computerized Numerical Control | Computerized numerical control |
| CO | Connector Output | |
| COM Board | Communication Board | |
| CP | Communication Processor | |
| CPU | Central Processing Unit | Central processing unit |
| CR | Carriage Return | |
| CRC | Cyclic Redundancy Check | Checksum test |
| CRT | Cathode Ray Tube | Picture tube |

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| CSB | Central Service Board | PLC module |
| CTS | Clear To Send | Signals that data is ready to be sent for serial data interfaces |
| CUTCOM | Cutter Radius Compensation | Tool radius compensation |
| DB | Data block | Data block in the PLC |
| DBB | Data-block byte | Data block-byte in the PLC |
| DBW | Data-block word | Data-block word in the PLC |
| DBX | Data-block bit | Data-block bit in the PLC |
| DDE | Dynamic Data Exchange | Dynamic data exchange |
| DDS | Drive Data Set | Drive data set |
| DIN | Deutsche Industrie Norm (German Industry Standard) | |
| DIR | Directory | Directory |
| DLL | Dynamic Link Library | |
| DO | Drive Object | Drive object |
| DPM | Dual Port Memory | |
| DRAM | Dynamic Random Access Memory | Dynamic memory block |
| DRF | Differential Resolver Function | Differential resolver function (handwheel) |
| DRIVE-CLiQ | Drive Component Link with IQ | |
| DRY | Dry Run | DRY run feedrate |
| DSB | Decoding Single Block | Decoding single block |
| DSC | Dynamic Servo Control / Dynamic Stiffness Control | |
| DSR | Data Send Ready | Signals the availability of serial data interfaces |
| DW | Data word | |
| DWORD | Double word (currently 32 bits) | |
| I | Input | |
| I/O | Input/Output | |
| ENC | Encoder | Actual value encoder |
| EPROM | Erasable Programmable Read Only Memory | Erasable, electronically programmable read-only memory |
| EQN | | Type designation for an absolute encoder with 2048 sine signals per revolution |
| ESR | Extended stop and retract | |
| ETC | ETC key | Expansion of the softkey bar in the same menu |
| FB | Function block | |
| FBS | Flat screen | |
| FC | Function Call | Function block in the PLC |
| FDD | Feed Disable | Feed disable |
| FdStop | Feed Stop | Feed stop |
| FEPROM | Flash-EPROM | Read and write memory |
| FIFO | First In - First Out | Method of storing and retrieving data in a memory |
| FIPO | Fine interpolator | |
| FM | Error message | In connection with PLC alarms |

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| FM | Function Module | Hardware (I/O module) |
| FPU | Floating Point Unit | Floating-point unit |
| FRA | Frame block | |
| FRAME | Data set | Coordinate conversion with the components work offset, rotation, scaling, mirroring |
| CRC | Cutter radius compensation | |
| FST | Feed Stop | Feed stop |
| CSF | Control system flowchart (PLC programming method) | |
| FW | Firmware | |
| GC | Global Control | PROFIBUS: Broadcast telegram |
| GD | Global data | |
| GEO | Geometry, e.g. geometry axis | |
| GP | Basic program | |
| GS | Gear stage | |
| GUD | Global User Data | Global user data |
| HD | Hard Disk | Hard disk |
| HEX | Abbreviation for hexadecimal number | |
| AuxF | Auxiliary function | |
| HMI | Human Machine Interface | SINUMERIK user interface |
| MSD | Main spindle drive | |
| HT | Handheld Terminal | Handheld unit |
| HW | Hardware | |
| COMM | Commissioning | |
| IF | Drive module pulse enable | |
| IK (GD) | Implicit communication (global data) | |
| IKA | Interpolative Compensation | Interpolatory compensation |
| IM | Interface Modul | Interface module |
| INC | Increment | Increment |
| INI | Initializing Data | Initializing data |
| IGBT | Insulated Gate Bipolar Transistor | |
| IPO | Interpolator | |
| ISO | International Organization for Standardization | International Organization for Standardization |
| JOG | "Jogging" operating mode | |
| KD | Coordinate rotation | |
| KDV | Crosswise data comparison | Crosswise data comparison between the NC and PLC |
| $K_V$ | Servo-gain factor | Gain factor of control loop |
| LAD | Ladder diagram | PLC programming method |
| LCD | Liquid Crystal Display | Liquid crystal display |
| LED | Light Emitting Diode | Light emitting diode |
| LF | Line Feed | |
| LMS | | Position measuring system |
| LSB | Least Significant Bit | Least significant bit |

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| LUD | Local User Data | User data |
| MAC | Media Access Control | |
| MAIN | Main program | Main program (OB1, PLC) |
| MB | Megabyte | |
| MCI | Motion Control Interface | |
| MCIS | Motion Control Information System | |
| MCP | Machine Control Panel | Machine control panel |
| MD | Machine data | |
| MDI | "Manual Data Automatic" operating mode | Manual input |
| MCS | Machine coordinate system | |
| MPF | Main Program File | Main program (NC part program) |
| MPI | Multi Point Interface | Multi-point interface |
| NC | Numerical Control | Numerical control |
| NCK | Numerical Control Kernel | Numerical control kernel |
| NCSD | NC Start Disable | NC start disable |
| NCU | Numerical Control Unit | NC hardware unit |
| IF | Interfaces | Interface signal |
| WO | Zero offset | |
| NX | Numerical Extension | Axis expansion module |
| OB | Organization block in the PLC | |
| OEM | Original Equipment Manufacturer | |
| OP | Operation Panel | Operator panel |
| OPI | Operation Panel Interface | Interface for connection to the operator panel |
| OSI | Open Systems Interconnection | Standard for computer communications |
| OPT | Options | Options |
| PIQ | Process Image Output | |
| PII | Process Image Input | |
| P bus | Peripheral bus | |
| PC | Personal Computer | |
| PCMCIA | Personal Computer Memory Card International Association | Standard for plug-in memory cards |
| PCU | Programmable Control Unit | |
| PI | Programm Instanz | |
| PG | Programming device | |
| PLC | Programmable Logic Control | Programmable Logic Controller |
| PN | PROFINET | |
| PO | POWER ON | |
| POU | Program organization unit | Unit in the PLC user program |
| PPU | Panel Processing Unit | Panel-based control |
| PTP | Point to Point | Point-to-point |
| PZD | Process data for drives | |
| QEC | Quadrant Error Compensation | Quadrant error compensation |
| QEC | Quadrant error compensation | |

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| RAM | Random Access Memory | Program memory that can be read and written to |
| REF POINT | | Function "Reference point approach" in JOG mode |
| REPOS | | Function "Repositioning" in JOG mode |
| RID | Read In Disable | Read-in disable |
| RPA | R-Parameter Active | Memory area on the NC for R parameter numbers |
| RPY | Roll Pitch Yaw | Rotation type of a coordinate system |
| RTC | Real Time Clock | Real-time clock |
| RTS | Request To Send | RTS, control signal of serial data interfaces |
| SBL | Single Block | Single block |
| SBR | Subroutine | Subroutine (PLC) |
| SBT | Safe Brake Test | Safe Brake Test |
| SCC | Safety Control Channel | |
| SCL | Structured Control Language | Preferred STEP 7 programming language |
| SD | Setting-Datum | |
| SDB | System data block | |
| SDI | Safe Direction | Safe Motion Direction |
| SEA | Setting Data Active | Identifier (file type) for setting data |
| SERUPRO | Search–Run by Program Test | Search run by program test |
| SFC | System Function Call | |
| SGE | Safety-related input | |
| SGA | Safety-related output | |
| SH | Safe Stop | |
| SIC | Safety Info Channel | |
| SK | Softkey | |
| SKP | Skip | Skip block |
| SLM | Smart Line Module | |
| SLP | Safe Limited Position | Safely-Limited Position |
| SLS | Safely Limited Speed | Safely-Limited Speed |
| SM | Stepper Motor | |
| SOS | Safe Operating Stop | Safe Operating Stop |
| SS1 | Safe Stop 1 | Safe Stop 1 (time-monitored, ramp-monitored) |
| SS2 | Safe Stop 2 | Safe Stop 2 |
| SPF | Subprogram file | Subprogram (NC) |
| PLC | Programmable Logic Controller | |
| SRAM | Static Random Access Memory | Static memory block |
| TNRC | Tool nose radius compensation | |
| LEC | Leadscrew error compensation | |
| SSI | Serial synchronous interface | Serial synchronous interface |
| STO | Safe Torque Off | Safe Torque Off |
| STW | Control word | |
| GWPS | Grinding wheel peripheral speed | |
| SW | Software | |
| SYF | System Files | System files |

| Abbreviation | Derivation of the abbreviation | Meaning |
|---|---|---|
| SYNACT | SYNACT Synchronized Action | Synchronized action |
| TB | Terminal Board (SINAMICS) | |
| TEA | Testing Data Aktive | Identifier for machine data |
| TCP | Tool Center Point | Tool tip |
| TCU | Thin Client Unit | |
| TEA | Testing Data Active | Identifier for machine data |
| TM | Terminal Module (SINAMICS) | |
| TO | Tool Offset | Tool offset |
| TOA | Tool Offset Active | Identifier (file type) for tool offsets |
| TRANSMIT | Transform Milling into Turning | Coordinate conversion on turning machines for milling operations |
| TTL | Transistor–Transistor–Logik | Interface type |
| UFR | User Frame | Zero offset |
| SR | Subroutine | |
| USB | Universal Serial Bus | |
| UPS | Uninterruptible Power Supply | |
| VDI | | Internal communication interface between NC and PLC |
| FDD | Feed drive | |
| VPM | Voltage Protection Module | |
| VSM | Voltage Sensing Module | |
| WAB | | Function "Smooth Approach and Retraction" |
| WCS | Workpiece coordinate system | |
| T | Tool coordinate system | |
| TLC | Tool length compensation | |
| WPD | Work Piece Directory | Workpiece directory |
| T | Tool | |
| TM | Tool management | |
| TC | Tool change | |
| ZWS | | Buffer location |
| ZOA | Zero Offset Active | Identifier (file type) for zero offset data |
| ZSW | Status word (of drive) | |

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