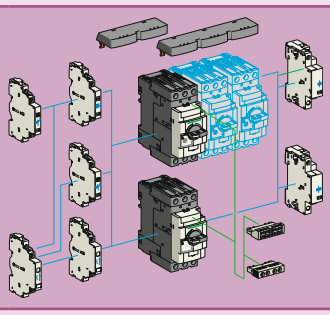
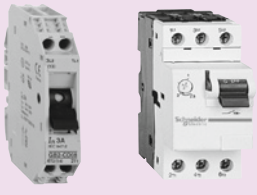
Circuit breakers
TeSys GV, GB

Circuit breakers - TeSys GV, GB			
Type of product	**Range**		**Pages**
Magnetic circuit breakers for motors TeSys GV	Up to **15**, **30** kW		B6/2
Thermal magnetic circuit breakers for motors TeSys GV	Up to **15**, **37** or **110** kW		B6/4
Add-on blocks, accessories, for motor circuit breakers			B6/10
Thermal magnetic circuit breakers for control circuits, Solenoid valves or transformers TeSys GB, GV	From **0.5** to **23** A		B6/26

Technical Data for Designers B6/29

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TeSys protection components

Magnetic motor circuit breakers
GV2 LE

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GV2 LE10

Magnetic motor circuit breakers from 0.06 to 15 kW

GV2 LE: control by rocker lever, connection by screw clamp terminals

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
0.06	★	★	**–**	–	–	**–**	–	–	0.4	5	LR2 K0302	**GV2LE03**
0.09	★	★	**–**	–	–	**–**	–	–	0.4	5	LR2 K0304	**GV2LE03**
0.12	★	★	**–**	–	–	**0.37**	★	★	0.63	8	LR2 K0304	**GV2LE04**
0.18	★	★	**–**	–	–	**–**	–	–	0.63	8	LR2 K0305	**GV2LE04**
–	–	–	**–**	–	–	**0.55**	★	★	1	13	LR2 K0305	**GV2LE05**
0.25	★	★	**–**	–	–	**–**	–	–	1	13	LR2 K0306	**GV2LE05**
–	–	–	**–**	–	–	**0.75**	★	★	1	13	LR2 K0306	**GV2LE05**
0.37	★	★	**0.37**	★	★	**–**	–	–	1	13	LR2 K0306	**GV2LE05**
0.55	★	★	**0.55**	★	★	**1.1**	★	★	1.6	22.5	LR2 K0307	**GV2LE06**
–	–	–	**0.75**	★	★	**–**	–	–	1.6	22.5	LR2 K0307	**GV2LE06**
0.75	★	★	**1.1**	★	★	**1.5**	3	75	2.5	33.5	LR2 K0308	**GV2LE07**
1.1	★	★	**–**	–	–	**–**	–	–	2.5	33.5	LR2 K0308	**GV2LE07**
1.5	★	★	**1.5**	★	★	**3**	3	75	4	51	LR2 K0310	**GV2LE08**
–	–	–	**2.2**	★	★	**–**	–	–	4	51	LR2 K0312	**GV2LE08**
2.2	★	★	**3**	50	100	**4**	3	75	6.3	78	LR2 K0312	**GV2LE10**
3	★	★	**4**	10	100	**5.5**	3	75	10	138	LR2 K0314	**GV2LE14**
4	★	★	**5.5**	10	100	**–**	–	–	10	138	LR2 K0316	**GV2LE14**
–	–	–	**–**	–	–	**7.5**	3	75	10	138	LRD 14	**GV2LE14**
–	–	–	**–**	–	–	**9**	3	75	14	170	LRD 16	**GV2LE16**
5.5	15	50	**7.5**	6	75	**11**	3	75	14	170	LR2 K0321	**GV2LE16**
7.5	15	50	**9**	6	75	**15**	3	75	18	223	LRD 21	**GV2LE20**
9	15	40	**11**	4	75	**18.5**	3	75	25	327	LRD 22	**GV2LE22**
11	15	40	**15**	4	75	**–**	–	–	25	327	LRD 22	**GV2LE22**
15	10	50	**18.5**	4	75	**22**	3	75	32	416	LRD 32	**GV2LE32**

(1) As % of Icu.
★) > 100 kA.

Characteristics:
pages B6/30 and B6/31

Dimensions:
pages B6/43 to B6/45

Schemes:
page B6/48

TeSys protection components

Magnetic motor circuit breakers GV2 L, GV3 L and GK3 EF80

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GV2 L10

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GV3 L65

Motor circuit breakers from 0.09 to 30 kW

GV2 L: Control by rotary knob, connection by screw clamp terminals

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay (class 10 A)	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
0.09	★	★	–	–	–	–	–	–	0.4	5	LRD 03	GV2L03
0.12	★	★	–	–	–	0.37	★	★	0.63	8	LRD 04	GV2L04
0.18	★	★	–	–	–	–	–	–	0.63	8	LRD 04	GV2L04
–	–	–	–	–	–	0.55	★	★	1	13	LRD 05	GV2L05
0.25	★	★	–	–	–	–	–	–	1	13	LRD 05	GV2L05
–	–	–	–	–	–	0.75	★	★	1	13	LRD 06	GV2L05
0.37	★	★	0.37	★	★	–	–	–	1	13	LRD 05	GV2L05
0.55	★	★	0.55	★	★	1.1	★	★	1.6	22.5	LRD 06	GV2L06
–	–	–	0.75	★	★	–	–	–	1.6	22.5	LRD 06	GV2L06
0.75	★	★	1.1	★	★	1.5	4	100	2.5	33.5	LRD 07	GV2L07
1.1	–	–	–	–	–	–	–	–			LRD 08	GV2L08
1.5	★	★	1.5	★	★	3	4	100	4	51	LRD 08	GV2L08
–	–	–	–	–	–	–	–	–			LRD 08	GV2L08
2.2	★	★	3	★	★	4	4	100	6.3	78	LRD 10	GV2L10
3	★	★	4	10	100	5.5	4	100	10	138	LRD 12	GV2L14
4	–	–	–	–	–	–	–	–			LRD 14	GV2L14
–	–	–	–	–	–	7.5	4	100	10	138	LRD 14	GV2L14
–	–	–	–	–	–	9	4	100	14	170	LRD 16	GV2L16
5.5	50	50	7.5	10	75	11	4	100	14	170	LRD 16	GV2L16
7.5	50	50	9	10	75	15	4	100	18	223	LRD 21	GV2L20
9	50	50	11	10	75	18.5	4	100	25	327	LRD 22	GV2L22
11	50	50	15	10	75	–	–	–	25	327	LRD 22	GV2L22
15	50	50	18.5	10	75	22	4	100	32	416	LRD 32	GV2L32

GV3 L: control by rotary knob, connection by EverLink® BTR screw connectors

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Magnetic protection rating	Tripping current Id ± 20 %	Use in association with thermal overload relay (class 10 A)	Reference
400/415 V			500 V			690 V						
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)				
kW	kA		kW	kA		kW	kA		A	A		
11	100	100	15	12	50	18.5	6	50	25	350	LRD 325	GV3L25
15	100	100	18.5	12	50	22	6	50	32	448	LRD 332	GV3L32
18.5	50	100	22	12	50	37	6	50	40	560	LRD 340	GV3L40
22	50	100	30	12	50	45	6	50	50	700	LRD 350	GV3L50
30	50	100	37	12	50	55	6	50	65	910	LRD 365	GV3L65

Connection by EverLink® BTR screw connectors, for assembly with a contactor

To assemble a **GV3 L25** to **L65** circuit breaker with an **LC1 D40A** to **D65A** contactor, it is possible to use the circuit breaker supplied without downstream EverLink® power terminal block. To order this product, add the digit **1** to the end of the references selected above. Example: **GV3 L65** becomes **GV3 L651**.

Connection by lugs

To order these circuit breakers with connection by lugs, add the digit **6** to the end of reference selected above. Example: **GV3 L32** becomes **GV3 L326**.

(1) As % of Icu. Associated current limiter or fuses, where required. See characteristics page B6/33.
★ > 100 kA.

Characteristics: pages B6/30 to B6/33
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME

TeSys GV

GV2 ME10

Motor circuit breakers from 0.06 to 15 kW / 400 V, with screw clamp terminals

GV2 ME with pushbutton control

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips (2)	Magnetic tripping current Id ± 20 %	Reference
400/415 V			500 V			690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
–	–	–	–	–	–	–	–	–	0.1…0.16	1.5	**GV2ME01**
0.06	★	★	–	–	–	–	–	–	0.16…0.25	2.4	**GV2ME02**
0.09	★	★	–	–	–	–	–	–	0.25…0.40	5	**GV2ME03**
0.12	★	★	–	–	–	**0.37**	★	★	0.40…0.63	8	**GV2ME04**
0.18	★	★	–	–	–	–	–	–			
0.25	★	★	–	–	–	**0.55**	★	★	0.63…1	13	**GV2ME05**
0.37	★	★	**0.37**	★	★	–	–	–	1…16	22.5	**GV2ME06**
0.55	★	★	**0.55**	★	★	**0.75**	★	★			
–	–	–	**0.75**	★	★	**1.1**	★	★			
0.75	★	★	**1.1**	★	★	**1.5**	3	75	1.6…2.5	33.5	**GV2ME07**
1.1	★	★	**1.5**	★	★	**2.2**	3	75	2.5…4	51	**GV2ME08**
1.5	★	★	**2.2**	★	★	**3**	3	75			
2.2	★	★	**3**	50	100	**4**	3	75	4…6.3	78	**GV2ME10**
3	★	★	**4**	10	100	**5.5**	3	75	6…10	138	**GV2ME14**
4	★	★	**5.5**	10	100	**7.5**	3	75			
5.5	15	50	**7.5**	6	75	**9**	3	75	9…14	170	**GV2ME16**
–	–	–	–	–	–	**11**	3	75			
7.5	15	50	**9**	6	75	**15**	3	75	13…18	223	**GV2ME20**
9	15	40	**11**	4	75	**18.5**	3	75	17…23	327	**GV2ME21**
11	15	40	**15**	4	75	–	–	–	20…25	327	**GV2ME22** (3)
15	10	50	**18.5**	4	75	**22**	3	75	24…32	416	**GV2ME32**

Motor circuit breakers from 0.06 to 15 kW / 400 V, with lugs

To order thermal magnetic circuit breakers with connection by lugs, add the digit **6** to the end of reference selected above.
Example: **GV2 ME08** becomes **GV2 ME086**.

Thermal magnetic circuit breakers GV2 ME with built-in auxiliary contact block

With instantaneous auxiliary contact block (composition, see page B6/11):

■ GV AE1, add suffix **AE1TQ** to the motor circuit breaker reference selected above.
Example: **GV2 ME01AE1TQ**.
■ GV AE11, add suffix **AE11TQ** to the motor circuit breaker reference selected above.
Example: **GV2 ME01AE11TQ**.
■ GV AN11, add suffix **AN11TQ** to the motor circuit breaker reference selected above.
Example: **GV2 ME01AN11TQ**.

These circuit breakers with built-in contact block are sold in lots of 20 units in a single pack.

(1) As % of Icu.
(2) The thermal trip setting must be within the range marked on the graduated knob.
*(3) Maximum rating which can be mounted in enclosures **GV2 MC** or **MP**, please consult your Regional Sales Office.*
★ > 100 kA.

Characteristics: pages B6/51 to B6/54
Dimensions: pages B6/70 to B6/72
Schemes: page B6/82

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME

TeSys GV

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GV2 ME●●3

Motor circuit breakers from 0.06 to 11 kW, with spring terminal connections

GV2 ME (1) with pushbutton control

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3						Setting range of thermal trips (3)	Magnetic tripping current Id ± 20 %	Reference
400/415 V			500 V					
P	Icu	Ics (2)	P	Icu	Ics (2)			
kW	kA	%	kW	kA	%	A	A	
–	–	–	–	–	–	0.1…0.16	1.5	**GV2ME013**
0.06	★	★	–	–	–	0.16…0.25	2.4	**GV2ME023**
0.09	★	★	–	–	–	0.25…0.40	5	**GV2ME033**
0.12 **0.18**	★ ★	★ ★	–	–	–	0.40…0.63	8	**GV2ME043**
0.25 **0.37**	★ ★	★ ★	**0.37**	★	★	0.63…1	13	**GV2ME053**
0.37 **0.55**	★ ★	★ ★	**0.37** **0.55** **0.75**	★ ★ ★	★ ★ ★	1…1.6	22.5	**GV2ME063**
0.75	★	★	**1.1**	★	★	1.6…2.5	33.5	**GV2ME073**
1.1 **1.5**	★ ★	★ ★	**1.5** **2.2**	★ ★	★ ★	2.5…4	51	**GV2ME083**
2.2	★	★	**3**	50	100	4…6.3	78	**GV2ME103**
3 **4**	★ ★	★ ★	**4** **5.5**	10 10	100 100	6…10	138	**GV2ME143**
5.5	15	50	**7.5**	6	75	9…14	170	**GV2ME163**
7.5	15	50	**9**	6	75	13…18	223	**GV2ME203**
9 **11**	15 15	40 40	**11**	4	75	17…23	327	**GV2ME213**
11	15	40	**15**	4	75	20…25	327	**GV2ME223**

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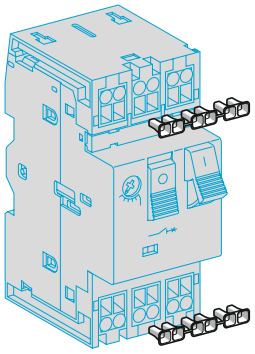

LA9 D99

Contact blocks

Description	Mounting	Maximum number	Type of contacts	Sold in lots of	Unit reference
Instantaneous auxiliary contacts	Front	1	N/O + N/C	10	**GVAE113**
			N/O + N/O	10	**GVAE203**
	LH side	2	N/O + N/C	1	**GVAN113**
			N/O + N/O	1	**GVAN203**

Accessory

Description	Application	Sold in lots of	Unit reference
Cable end reducer	For connection of conductors from 1 to 1.5 mm²	20	**LA9D99**

*(1) For connection of conductors from 1 to 1.5 mm², the use of an **LA9 D99** cable end reducer is recommended.*
*(2) Maximum rating which can be mounted in enclosures **GV2 MC** or **MP**, please consult your Regional Sales Office*
(3) The thermal trip setting must be within the range marked on the graduated knob.
★ > 100 kA.

Characteristics: pages B6/51 to B6/54
Dimensions: pages B6/70 to B6/72
Schemes: page B6/82

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 P, GV3 P and GV3 ME80

TeSys GV

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GV2 P10

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GV3 P65

DF526140.tif

GV3 P651

Motor circuit breakers from 0.06 to 37 kW / 400 V

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips (2)	Magnetic tripping current Id ± 20 %	Reference
400/415 V			500 V			690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A	A	
GV2 P: control by rotary knob											
Screw clamp terminals											
–	–	–	–	–	–	–	–	–	0.1…0.16	1.5	**GV2P01**
0.06	★	★	–	–	–	–	–	–	0.16…0.25	2.4	**GV2P02**
0.09	★	★	–	–	–	–	–	–	0.25…0.40	5	**GV2P03**
0.12	★	★	–	–	–	**0.37**	★	★	0.40…0.63	8	**GV2P04**
0.18	★	★	–	–	–	**–**	–	–			
0.25	★	★	–	–	–	**0.55**	★	★	0.63…1	13	**GV2P05**
0.37	★	★	**0.37**	★	★	**–**	–	–	1…1.6	22.5	**GV2P06**
0.55	★	★	**0.55**	★	★	**0.75**	★	★			
0.75	★	★	**1.1**	★	★	**1.5**	8	100	1.6…2.5	33.5	**GV2P07**
1.1	★	★	**1.5**	★	★	**2.2**	8	100	2.5…4	51	**GV2P08**
2.2	★	★	**3**	★	★	**4**	6	100	4…6.3	78	**GV2P10**
3	★	★	**5**	50	100	**5.5**	6	100	6…10	138	**GV2P14**
5.5	★	★	**7.5**	42	75	**9**	6	100	9…14	170	**GV2P16**
–	–	–	**–**	–	–	**11**	6	100			
7.5	50	50	**9**	10	75	**15**	4	100	13…18	223	**GV2P20**
9	50	50	**11**	10	75	**18.5**	4	100	17…23	327	**GV2P21**
11	50	50	**15**	10	75	**–**	–	–	20…25	327	**GV2P22**
15	50	50	**18.5**	10	75	**22**	4	100	24…32	416	**GV2P32**
GV3 P: control by rotary knob											
Connection by EverLink® BTR screw connectors (3)											
5.5	100	100	**7.5**	12	50	**11**	6	50	9…13	182	**GV3P13**
7.5	100	100	**9**	12	50	**15**	6	50	12…18	252	**GV3P18**
11	100	100	**15**	12	50	**18.5**	6	50	17…25	350	**GV3P25**
15	100	100	**18.5**	12	50	**22**	6	50	23…32	448	**GV3P32**
18.5	50	100	**22**	12	50	**37**	6	50	30…40	560	**GV3P40**
22	50	100	**30**	12	50	**45**	6	50	37…50	700	**GV3P50**
30	50	100	**45**	12	50	**55**	6	50	48…65	910	**GV3P65**

Connection by EverLink® BTR screw connectors, for assembly with a contactor

To assemble a **GV3 P13** to **P65** circuit breaker with an **LC1 D40A** to **D65A** contactor, it is possible to use the circuit breaker supplied without downstream EverLink® power terminal block. To order this product, add the digit **1** to the end of the references selected above. Example: **GV3 P65** becomes **GV3 P651**.

Connection by lugs

To order thermal magnetic circuit breakers with connection by lugs, add the digit **6** to the end of reference selected above. Example: **GV3 P18** becomes **GV3 P186**.

GV3 ME80: pushbutton control, screw clamp terminals											
37	15	50	**45**	4	100	**55**	2	100	56…80		**GV3ME80** (4)

Motor circuit breakers up to 50 hp / 600 V, UL 508 type E

GV2 (5)

To obtain a GV2 **P** motor circuit breaker, UL 508 type E, use the following with the circuit breaker:
- a "Large Spacing" adapter **GV2 GH7.**

GV3 (6)

To obtain a motor-circuit breaker GV3 **P**, UL 508 type E, use the following with the circuit breaker:
- a "Large Spacing" cover **GV3 G66**,
- a short-circuit signalling contact **GV AM11**.

GV3 with connection by lugs (6)

To obtain a motor-circuit breaker GV3 **P**, UL 508 type E, with connection by lugs, add the digit **6** to the end of reference selected above and use the following with the circuit breaker:
- two IP 20 covers **LAD 96570**,
- a short-circuit signalling contact **GV AM11**.

(1) As % of Icu.
(2) The thermal trip setting must be within the range marked on the graduated knob.
(3) BTR screws: hexagon socket head. Require use of an insulated Allen key, in compliance with local wiring regulations.
(4) Recommended for use in association with a contactor.
(5) Accessory: see page B6/13.
(6) Accessories: see page B6/17.
★ > 100 kA.

Characteristics: pages B6/51, B6/52 and B6/55
Dimensions: pages B6/70 to B6/78
Schemes: pages B6/82 and B6/83

TeSys protection components

Thermal-magnetic motor circuit breakers GV7 R

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GV7 RE40

DF526141.tif

GV7 RS220

Thermal-magnetic circuit breakers GV7 R with screw clamp terminals up to 110 kW

Control by rocker lever

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3									Setting range of thermal trips	Reference	Weight
400/415 V			500 V			660/690 V					
P	Icu	Ics (1)	P	Icu	Ics (1)	P	Icu	Ics (1)			
kW	kA	%	kW	kA	%	kW	kA	%	A		kg
7.5 **9**	36 36	100 100	**9** **11**	18 18	100 100	**11** **15**	8 8	100 100	12…20	**GV7RE20**	2.010
7.5 **9**	70 70	100 100	**9** **11**	50 50	100 100	**11** **15**	10 10	100 100	12…20	**GV7RS20**	2.010
9 **11**	36 36	100 100	**11** **15**	18 18	100 100	**15** **18.5**	8 8	100 100	15…25	**GV7RE25**	2.010
9 **11**	70 70	100 100	**11** **15**	50 50	100 100	**15** **18.5**	10 10	100 100	15…25	**GV7RS25**	2.010
18.5	36	100	**18.5** **22**	18 18	100 100	**22**	8	100	25…40	**GV7RE40**	2.010
18.5	70	100	**18.5**	50	100	**22**	10	100	25…40	**GV7RS40**	2.010
22	36	100	**30**	18	100	**30**	8	100	30…50	**GV7RE50**	2.015
22	70	100	**30**	50	100	**30**	10	100	30…50	**GV7RS50**	2.015
37	36	100	**45** **55**	18 18	100 100	**55**	8	100	48…80	**GV7RE80**	2.040
37	70	100	**45** **55**	50 50	100 100	**55**	10	100	48…80	**GV7RS80**	2.040
45	36	100	**–**	18	100	**75**	8	100	60…100	**GV7RE100**	2.040
45	70	100	**–**	50	100	**75**	10	100	60…100	**GV7RS100**	2.040
55 **75**	35 35	100 100	**75** **90**	30 30	100 100	**90** **110**	8 8	100 100	90…150	**GV7RE150**	2.020
55 **75**	70 70	100 100	**75** **90**	50 50	100 100	**90** **110**	10 10	100 100	90…150	**GV7RS150**	2.020
90 **110**	35 35	100 100	**110** **132** **160**	30 30 30	100 100 100	**160** **200**	8 8	100 100	132…220	**GV7RE220**	2.350
90 **110**	70 70	100 100	**110** **132** **160**	50 50 50	100 100 100	**160** **200**	10 10	100 100	132…220	**GV7RS220**	2.350

(1) As % of Icu.

Characteristics: pages B6/51, B6/52 and B6/56
Dimensions: pages B6/79 to B6/81
Schemes: page B6/83

TeSys protection components

Thermal-magnetic circuit breakers
GV2 RT

DF526142.tif

GV2 RT

For motors with high current peak on starting

Control by rocker lever

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3					Setting range of thermal trips (1)	Magnetic tripping current Id ± 20 %	Reference
220/ 230 V	400/ 415 V	440 V	500 V	690 V			
kW	kW	kW	kW	kW	A	A	
0.06	0.09	0.09 0.12	–	–	0.25…0.40	8	**GV2RT03**
–	0.12 0.18	0.18	–	0.37	0.40…0.63	13	**GV2RT04**
0.09 0.12	0.25 0.37	0.25 0.37	0.37	0.55	0.63…1	22	**GV2RT05**
0.18 0.25	0.37 0.55	0.37 0.55	0.37 0.55 0.75	0.75 1.1	1…1.6	33	**GV2RT06**
0.37	0.75	0.75 1.1	1.1	1.5	1.6…2.5	51	**GV2RT07**
0.55 0.75	1.1 1.5	1.5	1.5 2.2	2.2 3	2.5…4	78	**GV2RT08**
1.1	2.2	2.2 3	3	4	4…6.3	138	**GV2RT10**
1.5 2.2	3 4	4	4 5.5	5.5 7.5	6…10	200	**GV2RT14**
2.2 3	5.5	5.5 7.5	7.5	9 11	9…14	280	**GV2RT16**
4	7.5	7.5 9	9	15	13…18	400	**GV2RT20**
5.5	9 11	11	11	18.5	17…23	400	**GV2RT21**

(1) The thermal trip setting must be within the range marked on the graduated knob.

Characteristics: page B6/51
Dimensions: page B6/75
Schemes: page B6/82

TeSys protection components

Thermal-magnetic circuit breakers
GV2 RT

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GV2 RT

For primaries of 3-phase transformers

Control by rocker lever

Standard power ratings					Setting range of thermal trips [1]	Magnetic tripping current Id ± 20 %	Reference
230/240 V	400/415 V	440 V	500 V	690 V			
kW	kW	kW	kW	kW	A	A	
–	–	–	–	–	0.25…0.40	8	**GV2RT03**
–	–	–	–	–	0.40…0.63	13	**GV2RT04**
–	–	0.63	0.63	1	0.63…1	22	**GV2RT05**
0.4	0.63	1	1	–	1…1.6	33	**GV2RT06**
0.63	1	–	1.6	1.6 2	1.6…2.5	51	**GV2RT07**
1	1.6 2	1.6 2	2 2.5	2.5	2.5…4	78	**GV2RT08**
1.6 2	2.5	2.5 4	4	4 5 6.3	4…6.3	138	**GV2RT10**
2.5	4 5	5	5 6.3	–	6…10	200	**GV2RT14**
4	6.3	6.3	–	10 12.5	9…14	280	**GV2RT16**
5 6.3	10	10	10 12.5	10	13…18	400	**GV2RT20**

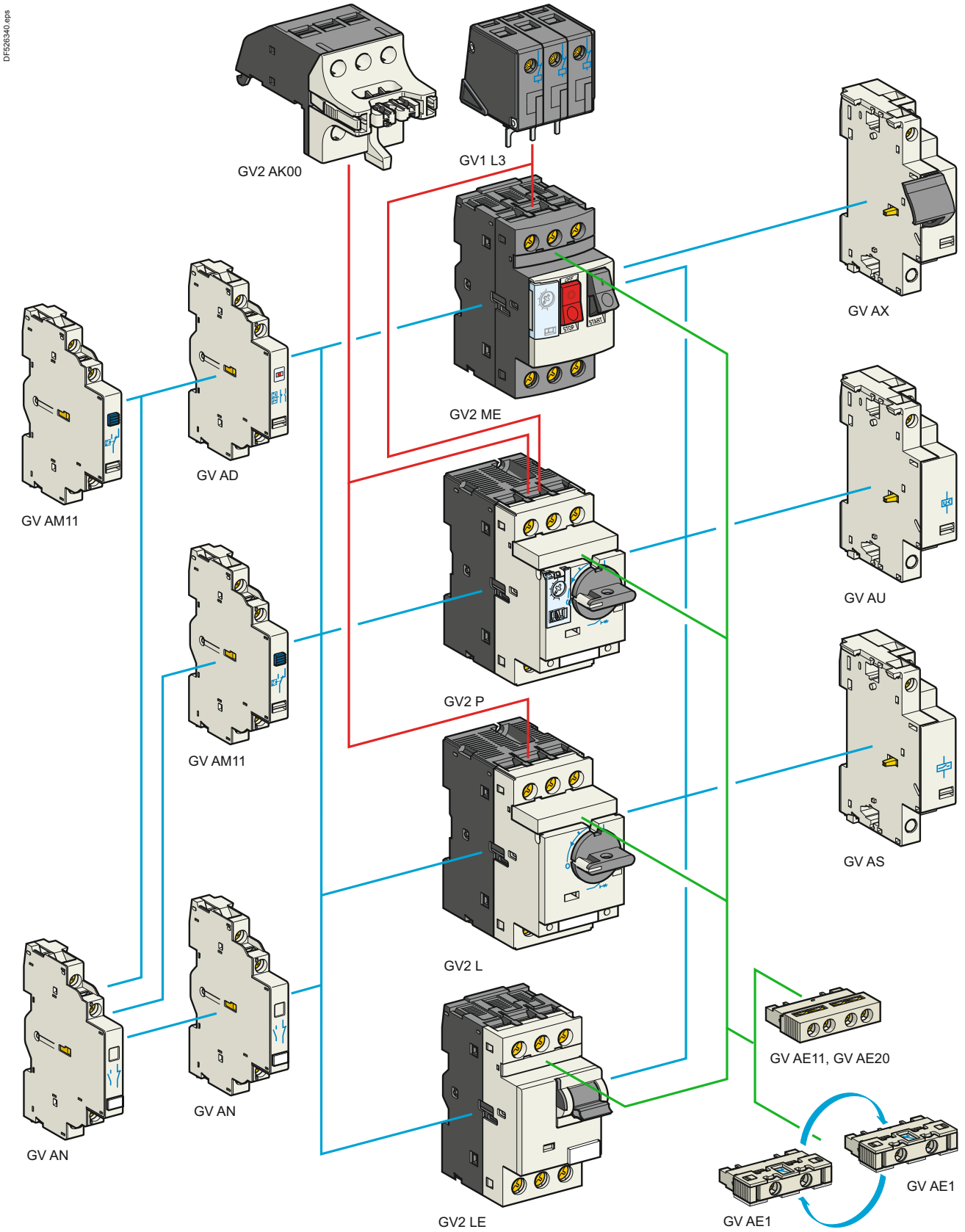
Accessory [2]

Description	Reference
Padlockable external operator (IP 54) black handle, blue legend plate	**GV2AP03**

(1) The thermal trip setting must be within the range marked on the graduated knob.

(2) Other accessories such as mounting, cabling and marking accessories are identical to those used for GV2 ME motor circuit breakers, see page B6/13.

Characteristics: page B6/51
Dimensions: page B6/75
Schemes: page B6/82


DF526340.eps
GV2 AK00
GV1 L3
GV AX
GV2 ME
GV AD
GV AM11
GV AU
GV2 P
GV AM11
GV AS
GV2 L
GV AE11, GV AE20
GV AN
GV AN
GV AE1
GV AE1
GV2 LE

TeSys protection components

Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections

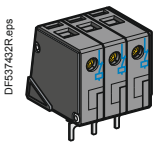
Add-on blocks and accessories

Contact blocks

Description	Mounting	Maximum number	Type of contacts		Sold in lots of	Unit reference
Instantaneous auxiliary contacts	Front (1)	1	N/O or N/C (2)		10	**GVAE1**
			N/O + N/C		10	**GVAE11**
			N/O + N/O		10	**GVAE20**
	Side (LH)	2	N/O + N/C		1	**GVAN11**
			N/O + N/O		1	**GVAN20**
Fault signalling contact + instantaneous auxiliary contact	Side (3) (LH)	1	N/O (fault)	+ N/O	1	**GVAD1010**
				+ N/C	1	**GVAD1001**
			N/C (fault)	+ N/O	1	**GVAD0110**
				+ N/C	1	**GVAD0101**
Short-circuit signalling contact	Side (LH)	1	C/O common point		1	**GVAM11**

Electric trips

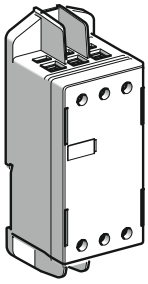
Mounting	Voltage		Reference
Undervoltage or shunt trips (4)			
Side (1 block on RH side of circuit breaker)	24 V	50 Hz	**GVA●025**
		60 Hz	**GVA●026**
	48 V	50 Hz	**GVA●055**
		60 Hz	**GVA●056**
	100 V	50 Hz	**GVA●107**
	100…110 V	60 Hz	**GVA●107**
	110…115 V	50 Hz	**GVA●115**
		60 Hz	**GVA●116**
	120…127 V	50 Hz	**GVA●125**
	127 V	60 Hz	**GVA●115**
	200 V	50 Hz	**GVA●207**
	200…220 V	60 Hz	**GVA●207**
	220…240 V	50 Hz	**GVA●225**
		60 Hz	**GVA●226**
	380…400 V	50 Hz	**GVA●385**
		60 Hz	**GVA●386**
	415…440 V	50 Hz	**GVA●415**
	415 V	60 Hz	**GVA●416**
	440 V	60 Hz	**GVA●385**
	480 V	60 Hz	**GVA●415**
	500 V	50 Hz	**GVA●505**
	600 V	60 Hz	**GVA●505**
Undervoltage trip, INRS (can only be mounted on GV2 ME) Safety device for dangerous machines conforming to INRS and VDE 0113			
Side (1 block on RH side of circuit breaker GV2 ME)	110…115 V	50 Hz	**GVAX115**
		60 Hz	**GVAX116**
	127 V	60 Hz	**GVAX115**
	220…240 V	50 Hz	**GVAX225**
		60 Hz	**GVAX226**
	380…400 V	50 Hz	**GVAX385**
		60 Hz	**GVAX386**
	415…440 V	50 Hz	**GVAX415**
	440 V	60 Hz	**GVAX385**



GV1L3

Add-on contact blocks

Description	Mounting	Maximum number	Reference
Visible isolation block (5)	Front (1)	1	**GV2AK00 (6)**
Limiters	At top (GV2 ME and GV2 P)	1	**GV1L3**
	Independent	1	**LA9LB920**

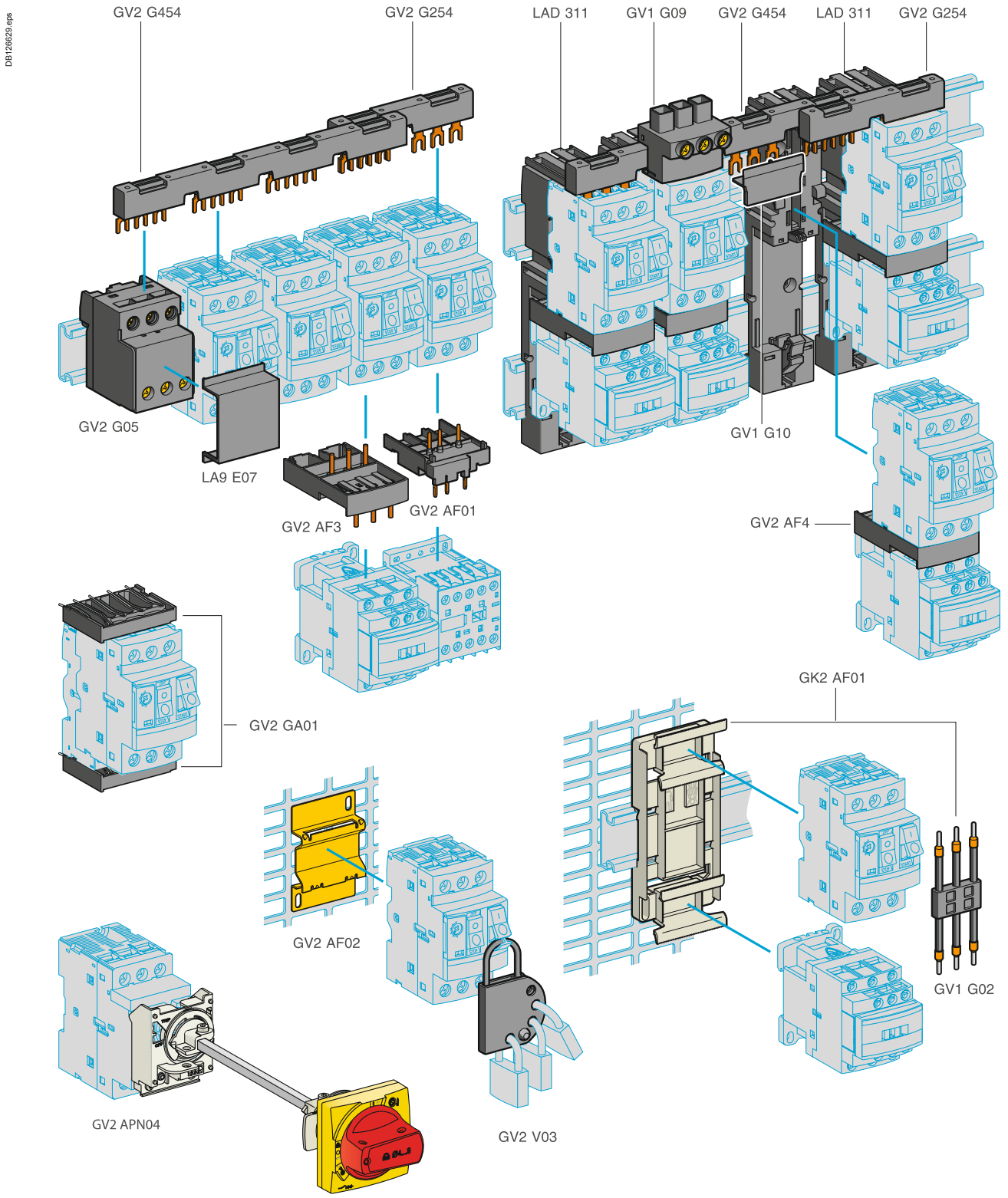


LA9LB920

*(1) Mounting of a **GV AE** contact block or a **GV2 AK00** visible isolation block on **GV2 P** and **GV2 L**.*
(2) Choice of N/C or N/O contact operation, depending on which way round the reversible block is mounted.
*(3) The **GV AD** is always mounted next to the circuit breaker.*
*(4) To order an undervoltage trip: replace the dot (●) in the reference with a **U**, example: **GV AU025**.*
*To order a shunt trip: replace the dot (●) in the reference with an **S**, example: **GV AS025**.*
*(5) Visible isolation of the 3 poles upstream of circuit breaker **GV2 P** and **GV2 L**.*
*Visible isolation block **GV2 AK00** cannot be used with motor circuit breakers GV2 P32 and GV2 L32 (Ith max = 25 A).*
(6) Ie Max = 32 A.

Characteristics: pages B6/89 and B6/94

Dimensions, schemes: pages B6/70 to B6/82


DB126629.eps
GV2 G454
GV2 G254
LAD 311
GV1 G09
GV2 G454
LAD 311
GV2 G254
GV2 G05
LA9 E07
GV2 AF3
GV2 AF01
GV1 G10
GV2 AF4
GV2 GA01
GK2 AF01
GV2 AF02
GV1 G02
GV2 APN04
GV2 V03

TeSys protection components

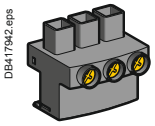
Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections

Accessories

Accessories

Description	Application	Sold in lots of	Unit reference
Adapter plates	For mounting a GV2 ME or GV2 LE by screw fixing	10	**GV2AF02**
	For mounting a GV2 ME or GV2 P and contactor LC1 D09…D38 with front faces aligned	1	**LAD311**
Height compensation plate	7.5 mm	10	**GV1F03**
Combination blocks	Between GV2 and contactor LC1 K or LP1 K	10	**GV2AF01**
	Between GV2 and contactor LC1 D09…D38	10	**GV2AF3**
	Between GV2 mounted on LAD 311 and contactor LC1 D09…D38	10	**GV2AF4**
Motor starter adapter plate	With 3-pole connection for mounting a GV2 and a contactor LC1 D09…D25	1	**GK2AF01**

Description	Application	Pitch	Reference
		mm	
Sets of 3-pole 63 A busbars	2 tap-offs	45	**GV2G245**
		54	**GV2G254**
		72	**GV2G272**
	3 tap-offs	45	**GV2G345**
		54	**GV2G354**
	4 tap-offs	45	**GV2G445**
		54	**GV2G454**
		72	**GV2G472**
	5 tap-offs	54	**GV2G554**



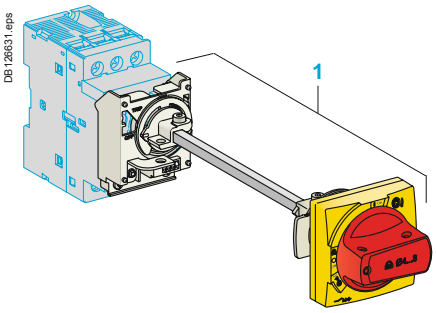
GV1 G09

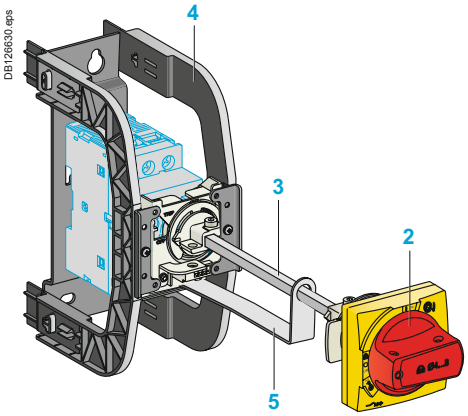
Description	Application	Sold in lots of	Unit reference
Protective end cover	For unused busbar outlets	5	**GV1G10**
Terminal block for supply to one or more GV2 G busbar sets	Connection from the top	1	**GV1G09**
	Can be fitted with current limiter GV1 L3 (GV2 ME and GV2 P)	1	**GV2G05**
Cover for terminal block	For mounting in modular panels	10	**LA9E07**
Flexible 3-pole connection for connecting a GV2 to a contactor LC1-D09…D25	Centre distance between mounting rails: 100…120 mm	10	**GV1G02**
Set of connections upstream/downstream	For connecting GV2 ME to a printed circuit board	10	**GV2GA01**
"Large Spacing" adapter UL 508 type E	For GV2 P●●H7 (except 32 A)	1	**GV2GH7**
Clip-in marker holders (supplied with each circuit breaker)	For GV2 P, GV2 L, GV2 LE and GV2 RT (8 x 22 mm)	100	**LA9D92**

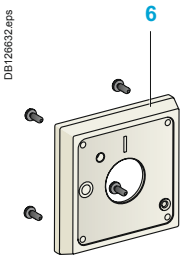
Dimensions, schemes:
pages B6/70 to B6/82

TeSys protection components

Thermal-magnetic and magnetic motor circuit breakers GV2 with screw clamp connections







Extended Rotary Handle

Allows a circuit breaker or a starter-controller installed in back of an enclosure to be operated from the front of the enclosure.
A rotary handle can be black or red/yellow, IP54 or IP65. It includes a function for locking the circuit breaker or the starter in the O (Off) or I (On) position (depending of the type of rotary handle) by means of up to 3 padlocks with a shank diameter of 4 to 8 mm. The extended shaft must be adjusted to use in different size enclosures. The IP54 rotary handle is fixed with a nut (Ø22) to make easier the assembling. The new Laser Square tool brings the accuracy to align the circuit breaker and the rotary handle.

Padlockable external operators for GV2P and GV2L

Description

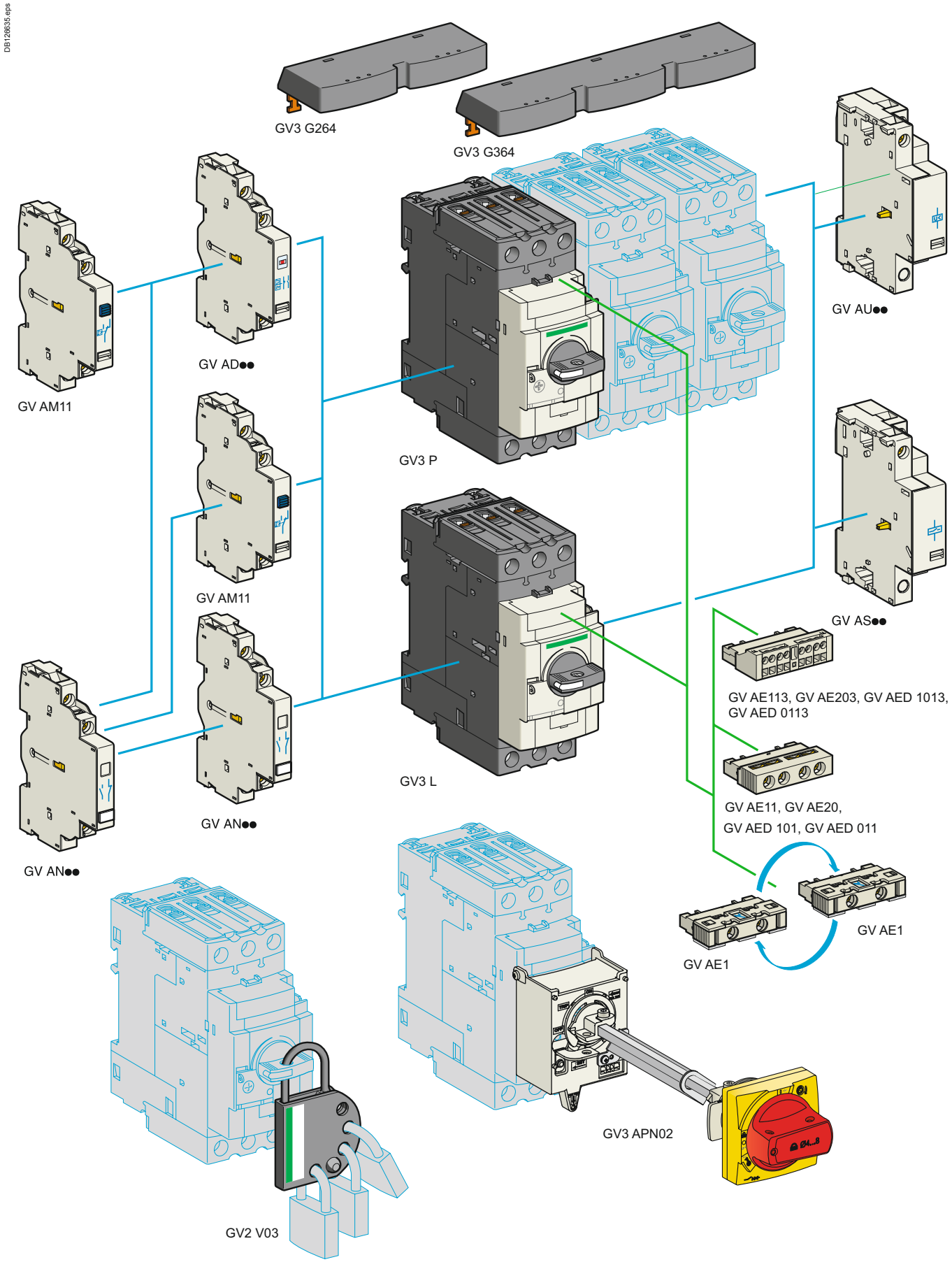
1 Kit handle + mounting system
2 Universal handle
3 Shaft
4 Bracket
5 Shaft support plate for deep enclosure
6 Retrofit accessory
7 Laser Square accessory

Kit handle + mounting system			
Description		**Item**	**Reference**
For GV2 P/L	Black handle, front plate, with trip status, IP 54	1	**GV2APN01**
	Red handle, front plate, with trip status, IP 54	1	**GV2APN02**
	Red handle, front plate, without trip status, IP 65	1	**GV2APN04**
For GV2 LE	Padlocking in “On” and “Off” position Black handle, blue front plate, IP 54	-	**GV2AP03**
Universal handle			
For GV2 P/L	Black handle, IP 54	2	**GVAPB54**
	Red handle, IP 54	2	**GVAPR54**
	Red handle, IP 65	2	**GVAPR65**
Shaft			
For GV2 P/L	L = 315 mm	3	**GVAPA1**
Bracket			
For GV2 P/L		4	**GVAPH02**
Shaft support plate for deep enclosure			
For GV2 P/L	Depth ⩾ 250 mm	5	**GVAPK11**
Retrofit accessory			
For GV2 P/L		6	**GVAPP1**
Laser Square accessory			
For GV2 P/L		7	**GVAPL01**

Sticker		Sold in lots of		
Warning label	For French	10	-	**GVAPSFR**
	For English	10	-	**GVAPSEN**
	For German	10	-	**GVAPSDE**
	For Spanish	10	-	**GVAPSES**
	For Chinese	10	-	**GVAPSCN**
	For Portuguese	10	-	**GVAPSPT**
	For Russian	10	-	**GVAPSRU**
	For Italian	10	-	**GVAPSIT**

Padlocking device

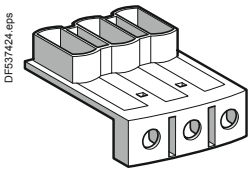
Description		Reference
For all GV2 device	For use with up to 4 padlocks, Ø6 mm shank max. (padlocks not included)	**GV2V03**


DB126635.eps
GV3 G264
GV3 G364
GV AM11
GV AD●●
GV AM11
GV AN●●
GV AN●●
GV3 P
GV3 L
GV AU●●
GV AS●●
GV AE113, GV AE203, GV AED 1013,
GV AED 0113
GV AE11, GV AE20,
GV AED 101, GV AED 011
GV AE1
GV AE1
GV3 APN02
GV2 V03

TeSys protection components

Thermal-magnetic motor circuit breakers GV3 P and GV3 L

Add-on blocks and accessories



GV3 G66

Contact blocks

Description	Mounting	Maximum number	Type of contacts		Sold in lots of	Unit reference
Instantaneous auxiliary contacts	Front	1	N/O or N/C (1)		10	**GVAE1**
			N/O + N/C		10	**GVAE11** (2)
			N/O + N/O		10	**GVAE20** (2)
	Side (LH)	2	N/O + N/C		1	**GVAN11** (2)
			N/O + N/O		1	**GVAN20** (2)
Fault signalling contact + instantaneous auxiliary contact	Front	1	N/O (fault)	+ N/O	1	**GVAED101** (2)
			N/O (fault)	+ N/C	1	**GVAED011** (2)
	Side (3) (LH)	1	N/O (fault)	+ N/O	1	**GVAD1010**
				+ N/C	1	**GVAD1001**
			N/C (fault)	+ N/O	1	**GVAD0110**
				+ N/C	1	**GVAD0101**
Short-circuit signalling contact	Side (LH)	1	C/O common point		1	**GVAM11**

Electric trips - undervotlage or shunt (4)

Mounting	Voltage		Reference
Side (1 block on RH side of circuit breaker)	24 V	50 Hz	**GVA●025**
		60 Hz	**GVA●026**
	48 V	50 Hz	**GVA●055**
		60 Hz	**GVA●056**
	100	50 Hz	**GVA●107**
	100…110 V	60 Hz	**GVA●107**
	110…115 V	50 Hz	**GVA●115**
		60 Hz	**GVA●116**
	120…127 V	50 Hz	**GVA●125**
	127 V	60 Hz	**GVA●115**
	200 V	50 Hz	**GVA●207**
	200…220 V	60 Hz	**GVA●207**
	220…240 V	50 Hz	**GVA●225**
		60 Hz	**GVA●226**
	380…400 V	50 Hz	**GVA●385**
		60 Hz	**GVA●386**
	415…440 V	50 Hz	**GVA●415**
	415 V	60 Hz	**GVA●416**
	440 V	60 Hz	**GVA●385**
	480 V	60 Hz	**GVA●415**
	500 V	50 Hz	**GVA●505**
	600 V	60 Hz	**GVA●505**

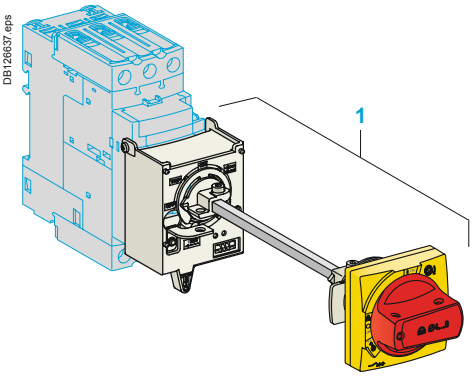
Accessories

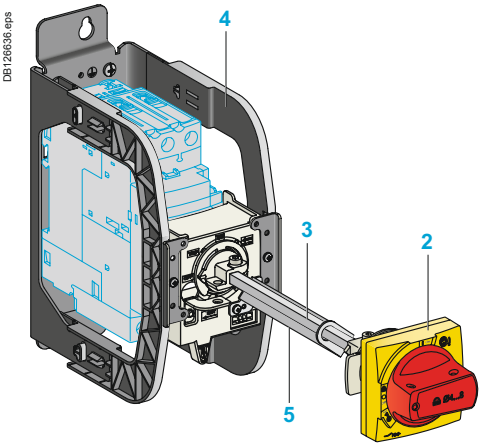
Description			Reference
Sets of 3-pole 115 A busbars Pitch: 64 mm	2 tap-off	GV3 P●● and GV3 L●●	**GV3G264**
	3 tap-off	GV3 P●● and GV3 L●●	**GV3G364**
Cover "Large Spacing" UL 508 type E (Only one cover required on supply side)		GV3 P●●	**GV3G66**

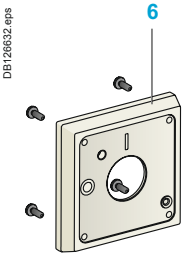
(1) Choice of N/C or N/O contact operation, depending on which way round the reversible block is mounted.
*(2) Contact blocks available in version with spring terminal connections. Add a figure **3** at the end of the references selected above. Example: **GV AED101** becomes **GV AED1013**.*
*(3) The **GV AD●●** is always mounted next to the circuit breaker.*
*(4) To order an undervoltage trip: replace the dot (●) in the reference with a **U**, example: **GV AU025**.*
*To order a shunt trip: replace the dot (●) in the reference with an **S**, example: **GV AS025**.*

TeSys protection components

Thermal-magnetic motor circuit breakers GV3 P and GV3 L







Extended Rotary Handle

Allows a circuit breaker or a starter-controller installed in back of an enclosure to be operated from the front of the enclosure.
A rotary handle can be black or red/yellow, IP54 or IP65. It includes a function for locking the circuit breaker or the starter in the O (Off) or I (On) position (depending of the type of rotary handle) by means of up to 3 padlocks with a shank diameter of 4 to 8 mm. The extended shaft must be adjusted to use in different size enclosures. The IP54 rotary handle is fixed with a nut (Ø22) to make easier the assembling. The new Laser Square tool brings the accurency to align the circuit breaker and the rotary handle.

Padlockable external operators for GV3 and GV3L

Description

1 Kit handle + mounting system
2 Universal handle
3 Shaft
4 Bracket
5 Shaft support plate for deep enclosure
6 Retrofit accessory
7 Laser Square accessory

Kit handle + mounting system				
Description			**Item**	**Reference**
For GV3 P/L	Black handle, front plate, with trip status, IP 54		1	**GV3APN01**
	Red handle, front plate, with trip status, IP 54		1	**GV3APN02**
	Red handle, front plate, without trip status, IP 65		1	**GV3APN04**
Universal handle				
For GV3 P/L	Black handle, IP 54		2	**GVAPB54**
	Red handle, IP 54		2	**GVAPR54**
	Red handle, IP 65		2	**GVAPR65**
Shaft				
For GV3 P/L	L = 315 mm		3	**GVAPA1**
Bracket				
For GV3 P/L			4	**GVAPH03**
Shaft support plate for deep enclosure				
For GV3 P/L	Depth ⩾ 300 mm		5	**GVAPK12**
Retrofit accessory				
For GV3 P/L			6	**GVAPP1**
Laser Square accessory				
For GV3 P/L			7	**GVAPL01**
Sticker		**Sold in lots of**		
Warning label	For French	10	-	**GVAPSFR**
	For English	10	-	**GVAPSEN**
	For German	10	-	**GVAPSDE**
	For Spanish	10	-	**GVAPSES**
	For Chinese	10	-	**GVAPSCN**
	For Portuguese	10	-	**GVAPSPT**
	For Russian	10	-	**GVAPSRU**
	For Italian	10	-	**GVAPSIT**

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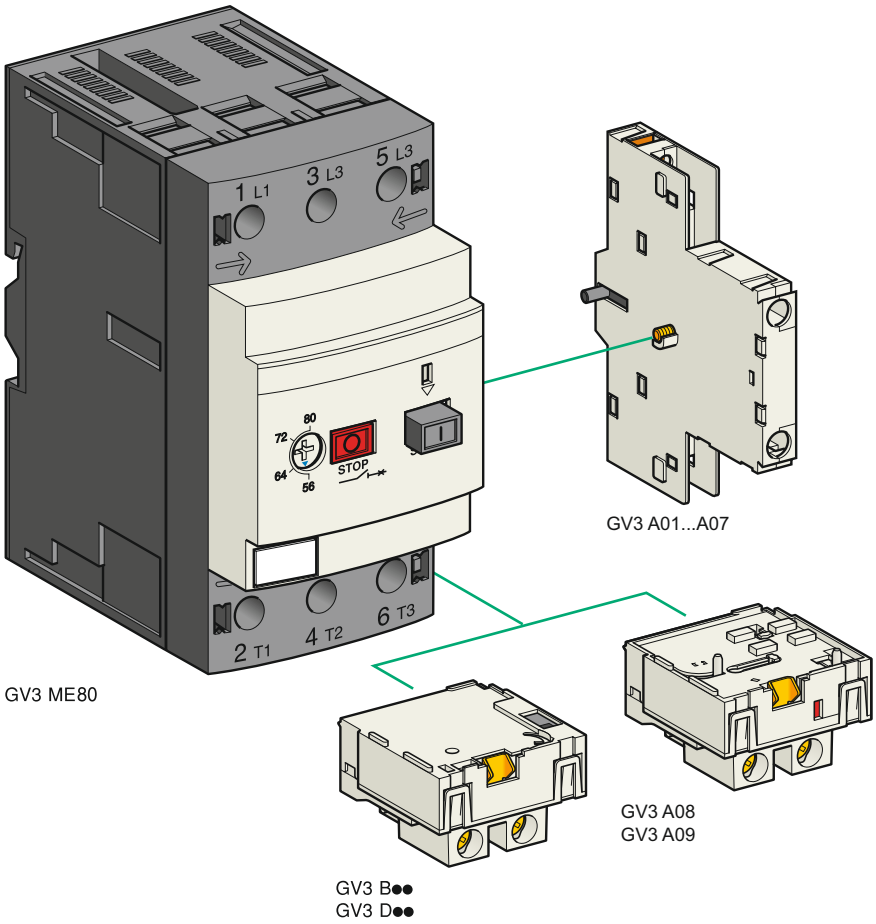

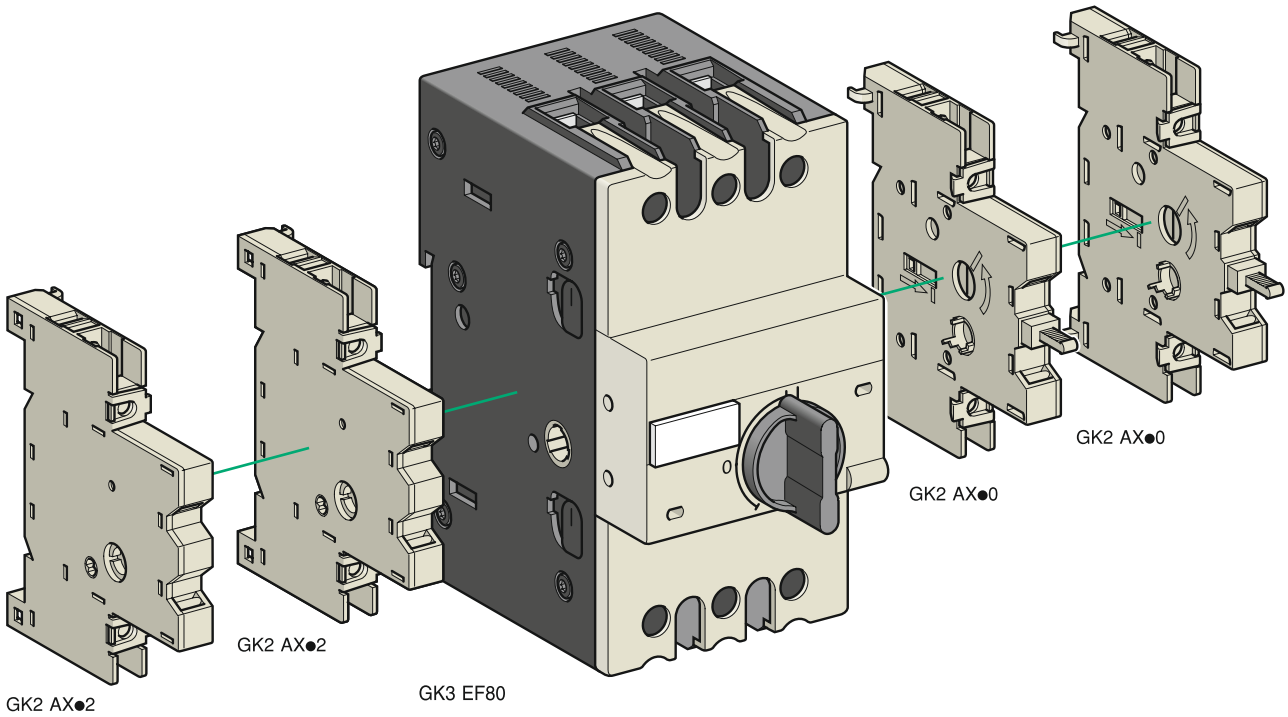

TeSys protection components

Motor circuit breakers GV3 ME80 and GK3 EF80

Add-on blocks and accessories

For thermal-magnetic motor circuit breakers GV3 ME80

Contact blocks

Description	Type of standard early break contacts	Reference
Instantaneous auxiliary contact blocks (1 per circuit breaker)	N/C + N/O	GV3A01
	N/O + N/O	GV3A02
	N/C + N/O + N/O	GV3A03
	N/O + N/O + N/O	GV3A05
	N/O + N/O + 2 volt-free terminals	GV3A06
	N/C + N/O + 2 volt-free terminals	GV3A07
Fault signalling contacts (1)	N/C	GV3A08
	N/O	GV3A09

Electric trips

Description	Voltages 50 Hz	Voltages 60 Hz	Reference
Udervoltage trips (1)	110, 120, 127 V	120, 127 V	GV3B11
	220, 240 V	277 V	GV3B22
	380, 415 V	440 V, 480 V	GV3B38
Shunt trips (1)	110, 120, 127 V	120, 127 V	GV3D11
	220, 240 V	277 V	GV3D22
	380, 415 V	440 V, 480 V	GV3D38

Accessory

Description	Sold in lots of	Unit reference
Padlocking device, for locking the Start button (on open-mounted product)	5	GV1V02

For magnetic circuit breaker GK3 EF80

Contact blocks

Description	Number of poles	Reference
Auxiliary contact blocks for On-Off signalling and “control circuit test” function (1 or 2 blocks per device) mounted on RH side of GK3 EF80	N/O	GK2AX10
	N/O + N/O	GK2AX20
	N/C + N/O	GK2AX50
Instantaneous fault signalling contact blocks (1 or 2 blocks per device) mounted on LH side of GK3 EF80	N/O	GK2AX12
	N/O + N/O	GK2AX22
	N/C + N/O	GK2AX52

Accessories

Description	Reference
Padlocking device for padlocking the operator, using up to 3 padlocks (padlocks to be ordered separately)	GK3AV01
External operator for mounting on enclosure door. Red Ø40 knob on yellow plate, padlockable in position O (with up to 3 padlocks). Door locked when knob in position I, and when knob padlocked in position O.	GK3AP03

*(1) 1 voltage trip **OR** 1 fault signalling contact to be fitted inside the motor circuit breaker.*

Other versions

24 to 690 V, 50 or 60 Hz voltage trips for circuit breakers **GV3 ME80**.
Please consult your Regional Sales Office.

Characteristics: pages B6/89 and B6/92

Dimensions: page B6/47

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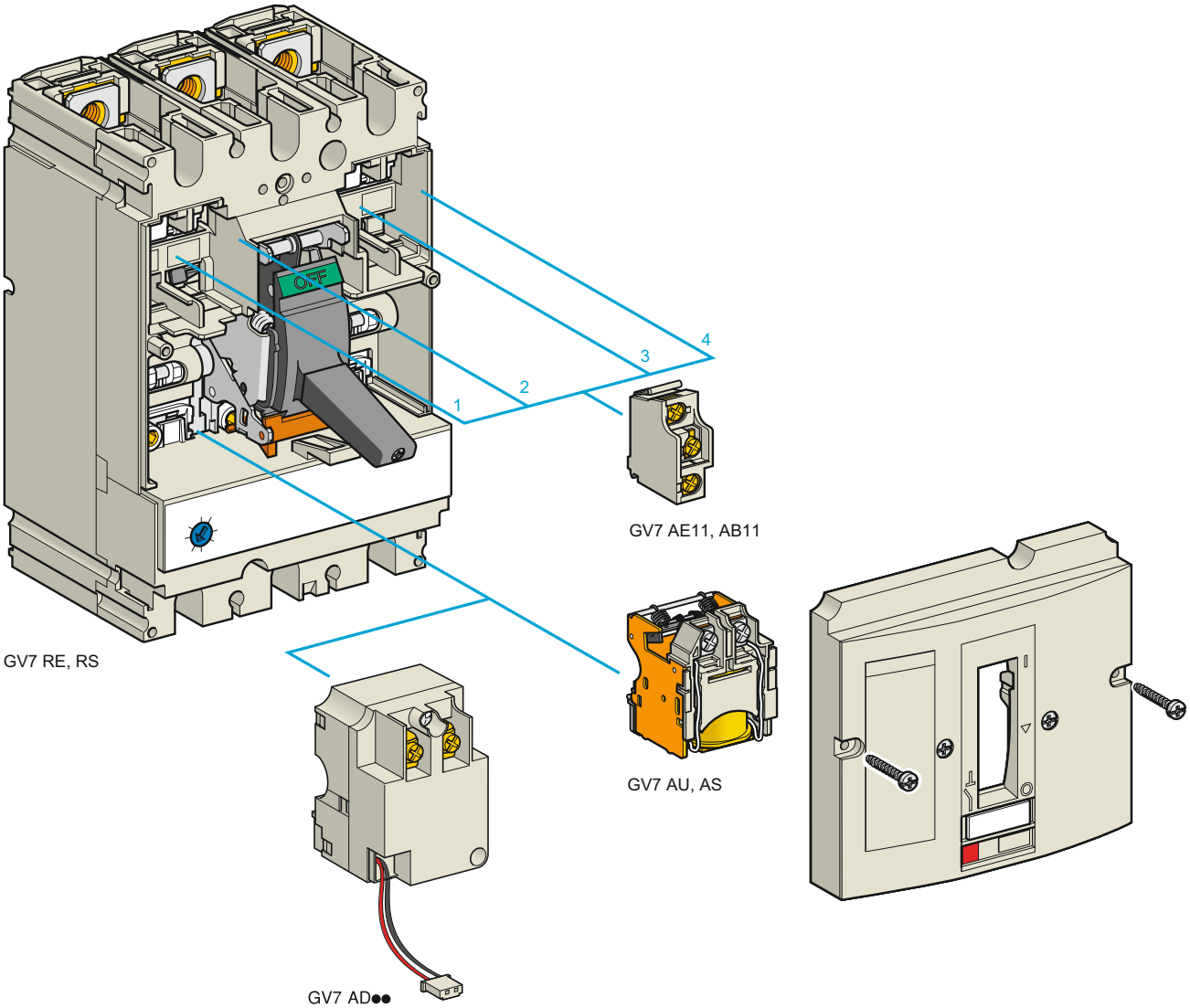

TeSys protection components
Thermal-magnetic motor circuit breakers
GV7 R with screw clamp connections
Add-on blocks and accessories

Add-on auxiliary contacts

These allow remote indication of the circuit breaker contact states. They can be used for signalling, electrical locking, relaying, etc. They are available in two versions: standard and low level. They include a terminal block and the auxiliary circuits leave the circuit breaker through a hole provided for this purpose.
They perform the following functions, depending on where they are located in the circuit breaker:

Location	Function	Application
1 and/or 4	C/O contact	Indicates the position of the circuit breaker poles
2	Trip indication	Indicates that the circuit breaker has tripped due to an overload, a short-circuit, a differential fault or the operation of a voltage trip (undervoltage or shunt trip), or of the “push to trip” test button. It resets when the circuit breaker is reset.
3	Electrical fault indication	Indicates that the circuit breaker has tripped due to an overload, a short-circuit or a differential fault. It resets when the circuit breaker is reset.

Type	Reference
Standard	**GV7AE11**
Low level	**GV7AB11**

Fault discrimination devices

These make it possible to:
- either differentiate a thermal fault from a magnetic fault,
- or open the contactor only in the event of a thermal fault.

Voltage	Reference
∿ 24...48 and ⎓ 24…72 V	**GV7AD111** (1)
∿ 110…240 V	**GV7AD112** (1)

Electric trips

These allow the circuit breaker to be tripped via an electrical control signal.

■ Undervoltage trip GV7 AU
□ Trips the circuit breaker when the control voltage drops below the tripping threshold, which is between 0.35 and 0.7 times the rated voltage.
□ Circuit breaker closing is only possible if the voltage exceeds 0.85 times the rated voltage.
Circuit breaker tripping by a GV7 AU trip meets the requirements of IEC 60947-2.

■ Shunt trip GV7 AS
Trips the circuit breaker when the control voltage rises above 0.7 times the rated voltage.

■ Operation (GV7 AU or GV7 AS)
□ When the circuit breaker has been tripped by a GV7 AU or AS, it must be reset either locally or by remote control. (For remote control, please consult your Regional Sales Office).
□ Tripping has priority over manual closing: if a tripping instruction is present, manual action does not result in closing, even temporarily, of the contacts.
□ Durability: 50 % of the mechanical durability of the circuit breaker.

Type	Voltage	Reference
Undervoltage trip	48 V, 50/60 Hz	**GV7AU055** (1)
	110…130 V, 50/60 Hz	**GV7AU107** (1)
	200…240 V, 50/60 Hz	**GV7AU207** (1)
	380…440 V, 50/60 Hz	**GV7AU387** (1)
	525 V, 50 Hz	**GV7AU525** (1)
Shunt trip	48 V, 50/60 Hz	**GV7AS055** (1)
	110…130 V, 50/60 Hz	**GV7AS107** (1)
	200…240 V, 50/60 Hz	**GV7AS207** (1)
	380…440 V, 50/60 Hz	**GV7AS387** (1)
	525 V, 50 Hz	**GV7AS525** (1)

(1) For mounting of a GV7 AD or a GV7 AU or AS.

Characteristics: pages B6/51, B6/52 and B6/56
Dimensions: pages B6/79 to B6/81
Schemes: page B6/83

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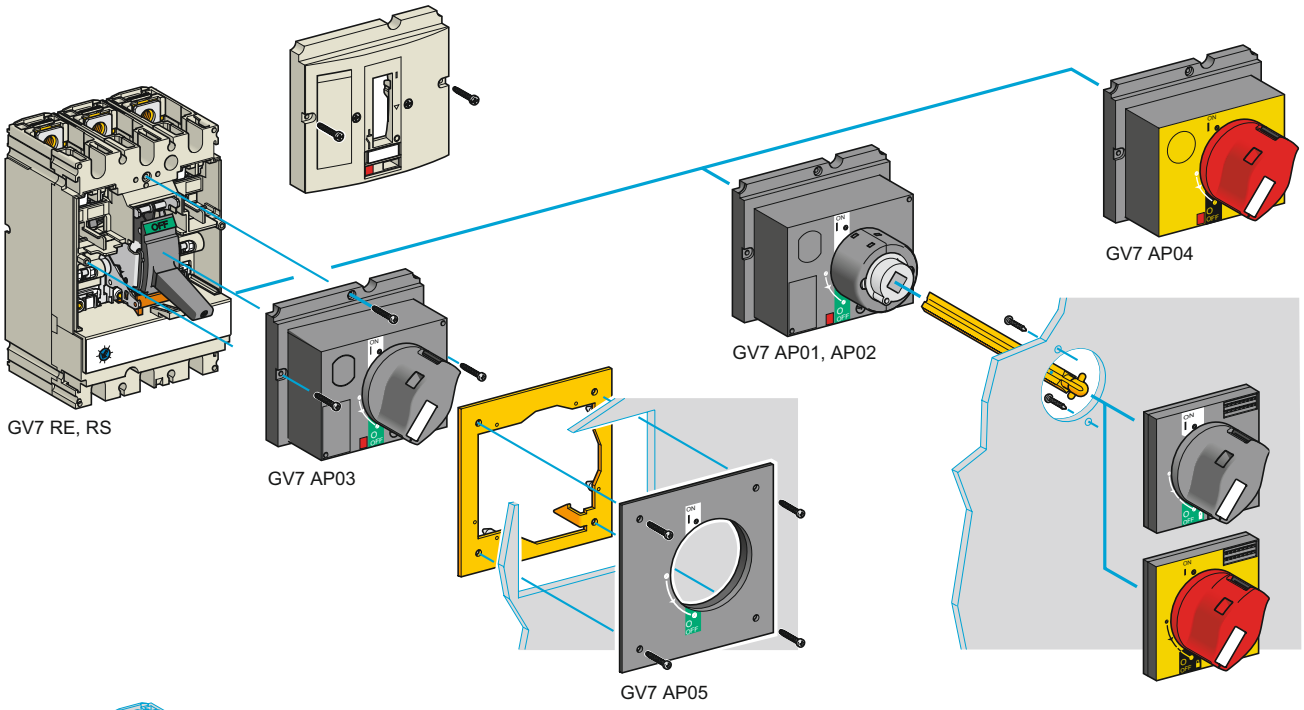
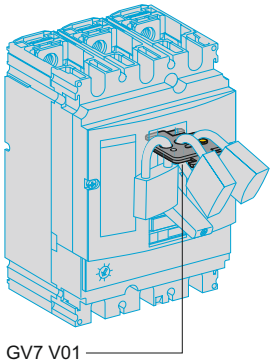
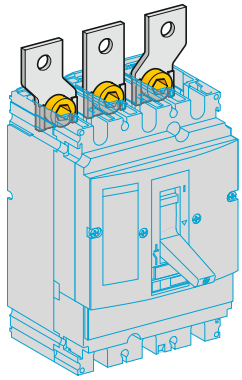
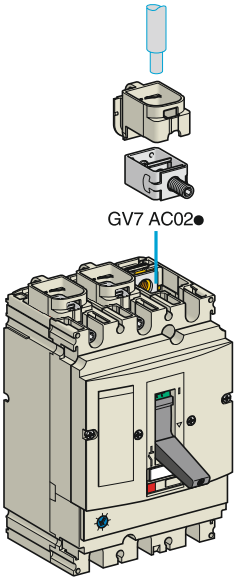
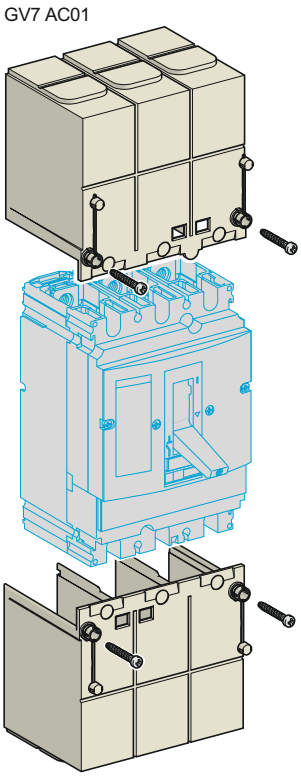
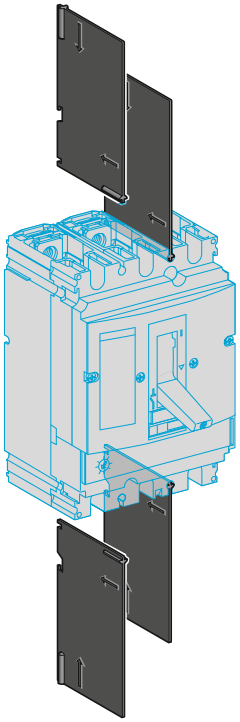








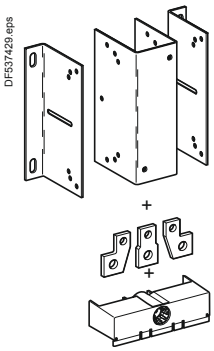




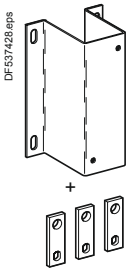
TeSys protection components

Thermal-magnetic motor circuit breakers GV7 R with screw clamp connections

Accessories



GV7 AC07



GV7 AC08

Cabling accessories

Description	Application	For use on contactors	Sold in lots of	Unit reference
Clip-on connectors for GV7 R	Up to 150 A, 1.5…95 mm²	–	3	**GV7AC021**
	Up to 220 A, 1.5…185 mm²	–	3	**GV7AC022**
Spreader 3-pole (1)	To increase the pitch to 45 mm	–	1	**GV7AC03**
Terminal shields IP 405 (1)	Supplied with sealing accessory	–	1	**GV7AC01**
Phase barriers	Safety accessories used when fitting of shields is impossible	–	2	**GV7AC04**
Insulating screens	Ensure insulation between the connections and the backplate	–	2	**GV7AC05**
Kits for combination with contactor (2)	Allowing link between the circuit breaker and the contactor. The cover provides protection against direct finger contact	LC1 F115…F185	1	**GV7AC06**
		LC1 F225 and F265	1	**GV7AC07**
		LC1 D115 and D150	1	**GV7AC08**

Direct rotary handle

Replaces the circuit breaker front cover; secured by screws. It includes a device for locking the circuit breaker in the O (Off) position by means of up to 3 padlocks with a shank diameter of 5 to 8 mm (padlocks not included). A conversion accessory allows the direct rotary handle to be mounted on the enclosure door. In this case, the door cannot be opened if the circuit breaker is in the “ON” position. Circuit breaker closing is inhibited if the enclosure door is open.

Description	Type	Degree of protection	Reference
Direct rotary handle	Black handle, black legend plate	IP 40	**GV7AP03**
	Red handle, yellow legend plate	IP 40	**GV7AP04**
Adapter plate (3)	Four mounting direct rotary handle on enclosure door	IP 43	**GV7AP05**

Extended rotary handle

Allows a circuit breaker installed in the back of an enclosure to be operated from the front of the enclosure.
It comprises:
- a unit which screws onto the front cover of the circuit breaker,
- an assembly (handle and front plate) to be fitted on the enclosure door,
- an extension shaft which must be adjusted (distance between the mounting surface and the door: 185 mm minimum, 600 mm maximum). It includes a device for locking the circuit breaker in the O (Off) position by means of up to 3 padlocks with a shank diameter of 5 to 8 mm (padlocks not included). This prevents the enclosure door from being opened.

Description	Type	Degree of protection	Reference
Extended rotary handle	Black handle, black legend plate	IP 55	**GV7AP01**
	Red handle, yellow legend plate	IP 55	**GV7AP02**

Locking device

Allows circuit breakers not fitted with a rotary handle to be locked in the O (Off) position by means of up to 3 padlocks with a shank diameter of 5 to 8 mm (padlocks not included).

Description	Application	Reference
Locking device	For circuit breaker not fitted with a rotary handle	**GV7V01**

(1) Terminal shields cannot be used together with spreaders.
(2) The kit comprises links, a protective shield and a depth adjustable metal bracket for the breaker.
(3) This conversion accessory makes it impossible to open the door if the device is closed and prevents the device from being closed if the door is open.

Dimensions:
pages B6/79 to B6/81

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

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GB2 CB●●

Circuit breakers with magnetic tripping threshold: 12 to 16 In

Single-pole

Conventional rated thermal current Ith [1]	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	6	GB2CB05
1	14	6	GB2CB06
2	26	6	GB2CB07
3	40	6	GB2CB08
4	52	6	GB2CB09
5	66	6	GB2CB10
6	83	6	GB2CB12
8	108	6	GB2CB14
10	138	6	GB2CB16
12	165	6	GB2CB20
16	220	6	GB2CB21
20	270	6	GB2CB22

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GB2 CD●●

Single-pole + neutral

Conventional rated thermal current Ith [1]	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	6	GB2CD05
1	14	6	GB2CD06
2	26	6	GB2CD07
3	40	6	GB2CD08
4	52	6	GB2CD09
5	66	6	GB2CD10
6	83	6	GB2CD12
8	108	6	GB2CD14
10	138	6	GB2CD16
12	165	6	GB2CD20
16	220	6	GB2CD21
20	270	6	GB2CD22

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GB2 DB●●

2-pole

Conventional rated thermal current Ith [1]	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	6.6	3	GB2DB05
1	14	3	GB2DB06
2	26	3	GB2DB07
3	40	3	GB2DB08
4	50	3	GB2DB09
5	66	3	GB2DB10
6	83	3	GB2DB12
8	108	3	GB2DB14
10	138	3	GB2DB16
12	165	3	GB2DB20
16	220	3	GB2DB21
20	270	3	GB2DB22

(1) Conforming to IEC 60947-1.

Presentation, selection : page B6/84
Characteristics : pages B6/85 to B6/87
Dimensions : page B6/88
Schemes : page B6/88

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Circuit breakers with magnetic tripping threshold: 5 to 7 In

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GB2 CS●●

Single-pole

Conventional rated thermal current Ith (1)	Magnetic tripping current Id ± 20 %	Sold in lots of	Unit reference
A	A		
0.5	3.3	6	**GB2CS05**
1	6	6	**GB2CS06**

(1) Conforming to IEC 60947-1.

Accessories for circuit breakers GB2-CB, DB and CS

Description	Sold in lots of	Unit reference
Busbar set for supply to 10 GB2 DB or 20 GB2 CB or GB2 CS with 2 connectors	1	**GB2G210**
Supply connector	10	**GB2G01**

TeSys GV, GB

Technical Data for Designers

Circuit breakers

Contents

Magnetic motor circuit breakers - TeSys GV:
> characteristics.....B6/30 to B6/33
> curves.....B6/34 to B6/42
> dimensions.....B6/43 to B6/47
> schemes.....B6/48

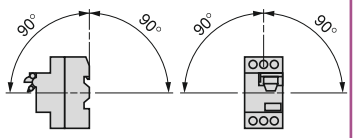
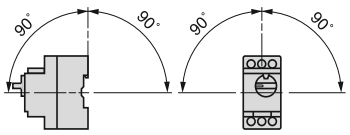
Thermal magnetic motor circuit breakers - TeSys GV:
> presentation.....B6/49 and B6/50
> characteristics.....B6/51 to B6/56
> curves.....B6/57 to B6/69
> dimensions.....B6/70 to B6/81
> schemes.....B6/82 and B6/83

Thermal magnetic motor circuit breakers - TeSys GB:
> presentation and selection.....B6/84
> characteristics.....B6/85 to B6/87
> dimensions and schemes.....B6/88

Auxiliary contacts characteristics.....B6/89 to B6/94

TeSys protection components
Magnetic motor circuit breakers
GV2 LE and GV2 L

Environment

Circuit breaker type			GV2 LE		GV2 L	
Conforming to standards			IEC 60947-1, 60947-2, EN 60204, NF C 63-650, NF C63-120, 79-130, VDE 0113, 0660.			
Product certifications			CSA, CCC		CSA, CCC, BV, DNV, GL, LROS, RINA	
Protective treatment			"TH"		"TH"	
Shock resistance	Conforming to IEC 60068-2-27		30 gn		30 gn	
Vibration resistance	Conforming to IEC 60068-2-6		5 gn (5 to 150 Hz)		5 gn (5 to 150 Hz)	
Ambient air temperature	Storage	°C	-40…+80		-40…+80	
	Operation	°C	-20…+60		-20…+60	
Flame resistance	Conforming to IEC 60695-2-1	°C	960		960	
Maximum operating altitude		m	2000		2000	
Operating position		DF534073.eps				
Connection (Max. number of conductors x c.s.a)			Min.	Max.	Min.	Max.
	Solid cable	mm²	2 x 1	2 x 6	2 x 1	2 x 6
	Flexible cable without cable end	mm²	2 x 1.5	2 x 6	2 x 1.5	2 x 6
	Flexible cable with cable end	mm²	2 x 1	2 x 4	2 x 1	2 x 4
Tightening torque		N.m	1.7		1.7	
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6		Yes		Yes	
Resistance to mechanical impact		J	0.5		0.5	

Technical characteristics

Utilisation category	Conforming to IEC 60947-2		A	A
	Conforming to IEC 60947-4-1		AC-3	AC-3
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690	690
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	690	690
Rated operational frequency	Conforming to IEC 60947-2	Hz	50/60	50/60
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	6	6
Total power dissipated per pole		W	1.8	1.8
Mechanical durability (C.O.: Closing, Opening)	For AC-3 duty	C.O.	100 000	100 000
Electrical durability for AC-3/415V duty (C.O.: Closing, Opening)		C.O.	100 000	100 000
Duty class (maximum operating rate)		C.O./h	40	40
Rated duty	Conforming to IEC 60947-4-1		Continuous duty	Continuous duty

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components

Magnetic motor circuit breakers GV2 LE and GV2 L

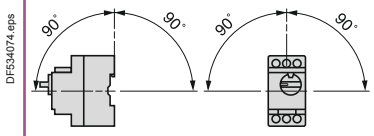
Circuit breaker type				GV2 LE									GV2 L								
				03 to 06	07	08	10	14	16	20	22	32	03 to 05	06 & 07	08	10	14	16	20	22	32
Rating			A	0.4 to 1.6	2.5	4	6.3	10	14	18	25	32	0.4 to 1	1.6 to 2.5	4	6.3	10	14	18	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	50	50	★	★	★	★	★	★	★	50	50
		Ics % (1)		★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	100	100
	400/415 V	Icu	kA	★	★	★	★	★	15	15	15	10	★	★	★	★	★	50	50	50	50
		Ics % (1)		★	★	★	★	★	50	50	40	50	★	★	★	★	★	50	50	50	50
	440 V	Icu	kA	★	★	★	50	15	8	8	6	6	★	★	★	★	20	20	20	20	20
		Ics % (1)		★	★	★	100	100	50	50	50	50	★	★	★	★	75	75	75	75	75
	500 V	Icu	kA	★	★	★	50	10	6	6	4	4	★	★	★	★	10	10	10	10	10
		Ics % (1)		★	★	★	100	100	75	75	75	75	★	★	★	★	100	75	75	75	75
	690 V	Icu	kA	★	3	3	3	3	3	3	3	3	★	4	4	4	4	4	4	4	4
		Ics % (1)		★	75	75	75	75	75	75	75	75	★	100	100	100	100	100	100	100	100
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2 amendment 1	230/240 V	aM	A	★	★	★	★	★	★	★	80	80	★	★	★	★	★	★	★	100	100
		gG	A	★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	125	125
	400/415 V	aM	A	★	★	★	★	★	63	63	80	80	★	★	★	★	★	80	100	100	100
		gG	A	★	★	★	★	★	80	80	100	100	★	★	★	★	★	100	125	125	125
	440 V	aM	A	★	★	★	50	50	50	50	63	63	★	★	★	★	50	63	80	80	80
		gG	A	★	★	★	63	63	63	63	80	80	★	★	★	★	63	80	100	100	100
	500 V	aM	A	★	★	★	50	50	50	50	50	50	★	★	★	★	50	50	50	50	50
		gG	A	★	★	★	63	63	63	63	63	63	★	★	★	★	63	63	63	63	63
	690 V	aM	A	★	16	25	32	32	40	40	40	40	★	20	25	40	40	50	50	50	50
		gG	A	★	20	32	40	40	50	50	50	50	★	25	32	50	50	63	63	63	63
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables) Minimum c.s.a. protected at 40 °C and at Isc max.	1 mm²		kA	●	●	●	≤10	≤6	(2)	(2)	(2)	(2)	●	●	●	≤10	≤6	(2)	(2)	(2)	(2)
	1.5 mm²		kA	●	●	●	≤20	≤10	(2)	(2)	(2)	(2)	●	●	●	≤20	≤10	(2)	(2)	(2)	(2)
	2.5 mm²			●	●	●	●	●	●	●	●	(2)	●	●	●	●	●	●	●	●	(2)
	4…6 mm²			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

★ > 100 kA.
● Cable c.s.a. protected.
(1) As % of Icu.
(2) Cable c.s.a. not protected.

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components
Magnetic motor circuit breakers
GV3 L

Environment

Circuit breaker type			GV3 L	
Conforming to standards			IEC/EN 60947-1, 60947-2	
Protective treatment			"TH"	
Degree of protection (front face)	Conforming to IEC 60529		IP20 against finger direct contact	
Shock resistance	Conforming to IEC 60068-2-27		On : 15 gn -11 ms Off : 30 gn -11 ms	
Vibration resistance	Conforming to IEC 60068-2-6		4 gn (5…300 Hz)	
Flame resistance	Conforming to IEC 60695-2-1	°C	960	
Ambient air temperature	Storage	°C	-40…+80	
	Operation	°C	-20…+60 (1)	
Maximum operating altitude		m	3000	
Operating position Without derating, in relation to normal vertical mounting plane (2)				
Connection (Max. number of conductors x c.s.a)			Min.	Max.
	Solid cable	mm²	2 x 1	1 x 25 1 x 35
	Flexible cable without cable end	mm²	2 x 1	1 x 25 1 x 35
	Flexible cable with cable end	mm²	2 x 1	1 x 25 1 x 35
Tightening torque		N.m	5	5 : 25 mm² 8 : 35 mm²
Suitable for isolation conforming to IEC 60947-1 § 7-1-6			Yes	

Technical characteristics

Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	690
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	6
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690
Rated operational frequency		Hz	50/60
Electrical durability for AC-3/415V duty (C.O.: Close - Open)		C.O.	50 000
Mechanical durability (C.O.: Closing, Opening)		C.O.	50 000
Maximum operating rate		C.O./h	25
Operating threshold of magnetic trips			14 I max
Utilisation category	Conforming to IEC 60947-2		A

(1) Leave a space of 9 mm between 2 circuit breakers: either an empty space or side-mounting add-on contact blocks. Side by side mounting is possible up to 40 °C.
(2) When mounting on a vertical rail, fit a stop to prevent any slippage.

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

TeSys protection components
Magnetic motor circuit breakers
GV3 L

Breaking capacity of GV3 L

Type				GV3 L25	GV3 L32	GV3 L40	GV3 L50	GV3 L65
Breaking capacity of the circuit-breaker only or of the circuit-breaker combined with a thermal overload relay	230/240 V	Icu	**kA**	100	100	100	100	100
		Ics % (1)		100	100	100	100	100
	400/415 V	Icu	**kA**	100	100	50	50	50
		Ics % (1)		100	100	100	100	100
	440 V	Icu	**kA**	50	50	50	50	50
		Ics % (1)		100	100	100	100	100
	500 V	Icu	**kA**	12	12	12	12	12
		Ics % (1)		50	50	50	50	50
	690 V	Icu	**kA**	6	6	6	6	6
		Ics % (1)		50	50	50	50	50
Associated fuses (if required) for use with circuit breaker only or circuit breaker combined with a thermal overload relay if Isc > breaking capacity	230/240 V	aM	**A**	★	★	★	★	★
		gG	**A**	★	★	★	★	★
	415 V	aM	**A**	★	★	★	★	125
		gG	**A**	★	★	★	★	160
	440 V	aM	**A**	63	80	125	125	125
		gG	**A**	80	100	160	160	160
	500 V	aM	**A**	63	63	63	63	80
		gG	**A**	80	80	80	80	100
	690 V	aM	**A**	50	50	50	50	63
		gG	**A**	63	63	63	63	80
Use of circuit breakers without fuses				Minimum cable length (in metres) limiting the maximum short-circuit current to 35 kA maximum, so enabling breakers **GK3 EF80** to be used without fuses				
Cable c.s.a.			**mm²**	**≤ 25**	**35**	**50**	**70**	**95**
Isc (rms) 3-phase, incoming (Ue = 415 V)		50 kA	**m**	5	6	8	10	13
		45 kA	**m**	5	5	7	8	10
		40 kA	**m**	5	5	5	5	8
		37 kA	**m**	5	5	5	5	5

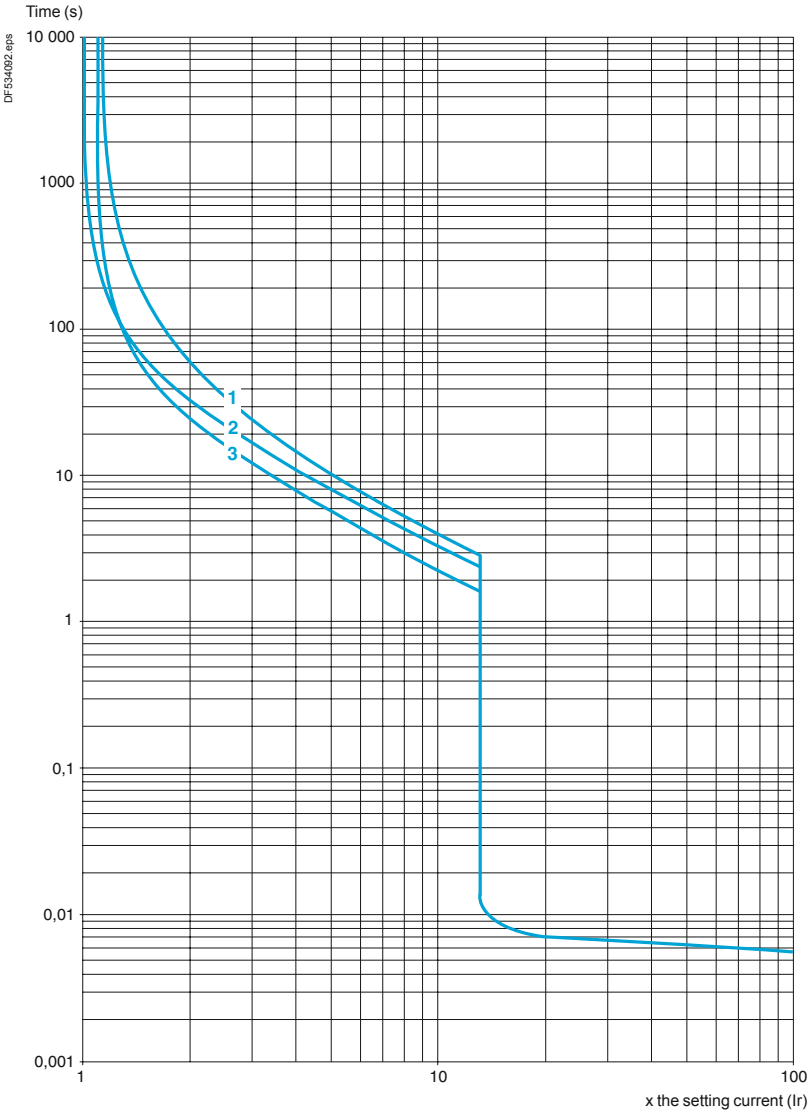
★ *Fuse not required: breaking capacity Icn > Isc.*

(1) As % of Icu.

References: pages B6/2 and B6/3
Dimensions: pages B6/43 to B6/47
Schemes: page B6/48

Tripping curves for GV2 L or LE combined with thermal overload relay LRD or LR2 K

Average operating times at 20 °C related to multiples of the setting current



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

References:
pages B6/2 and B6/3

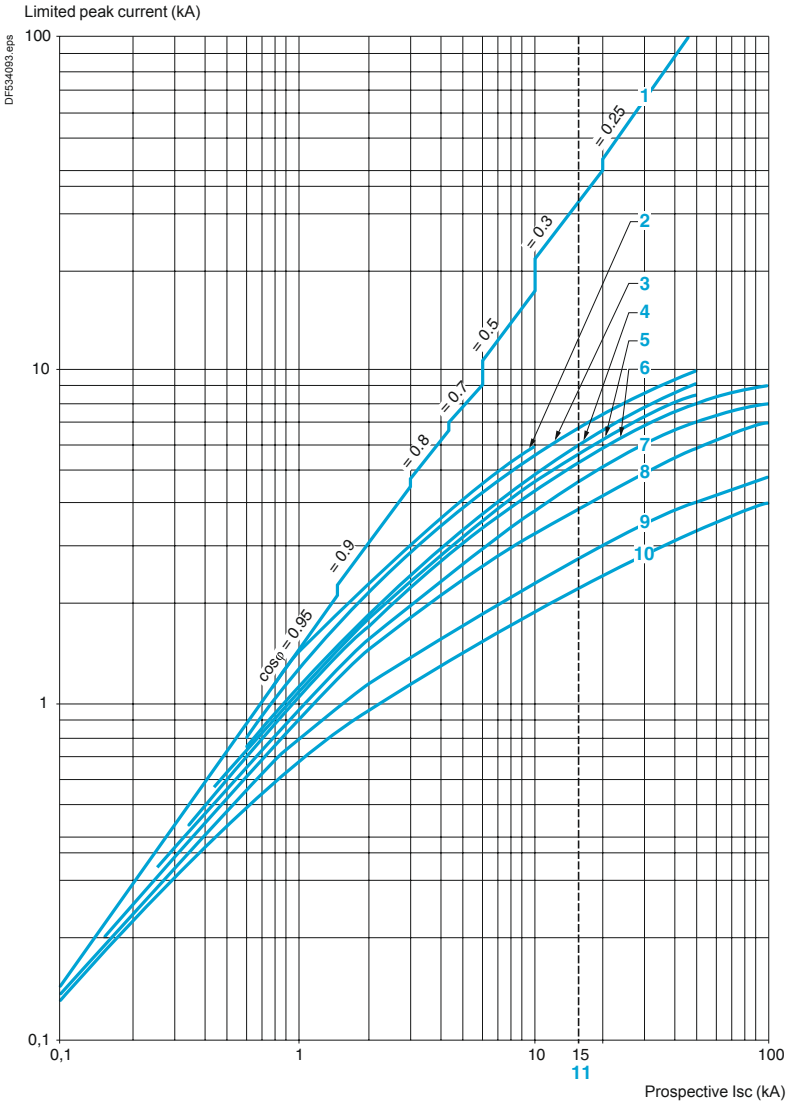
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Current limitation on short-circuit for GV2 L and GV2 LE only (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

References:
pages B6/2 and B6/3

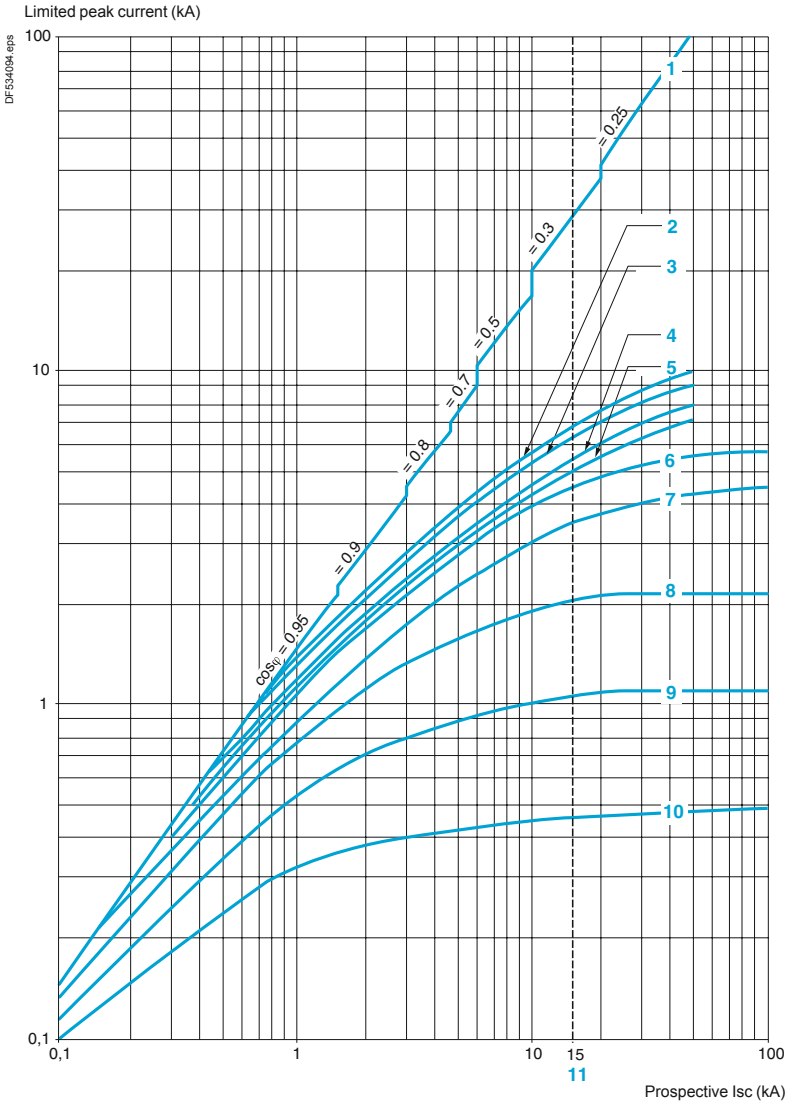
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Current limitation on short-circuit for GV2 L and GV2 LE + thermal overload relay LRD or LR2 K (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 32 A
3 25 A
4 18 A
5 14 A
6 10 A
7 6.3 A
8 4 A
9 2.5 A
10 1.6 A
11 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

References:
pages B6/2 and B6/3

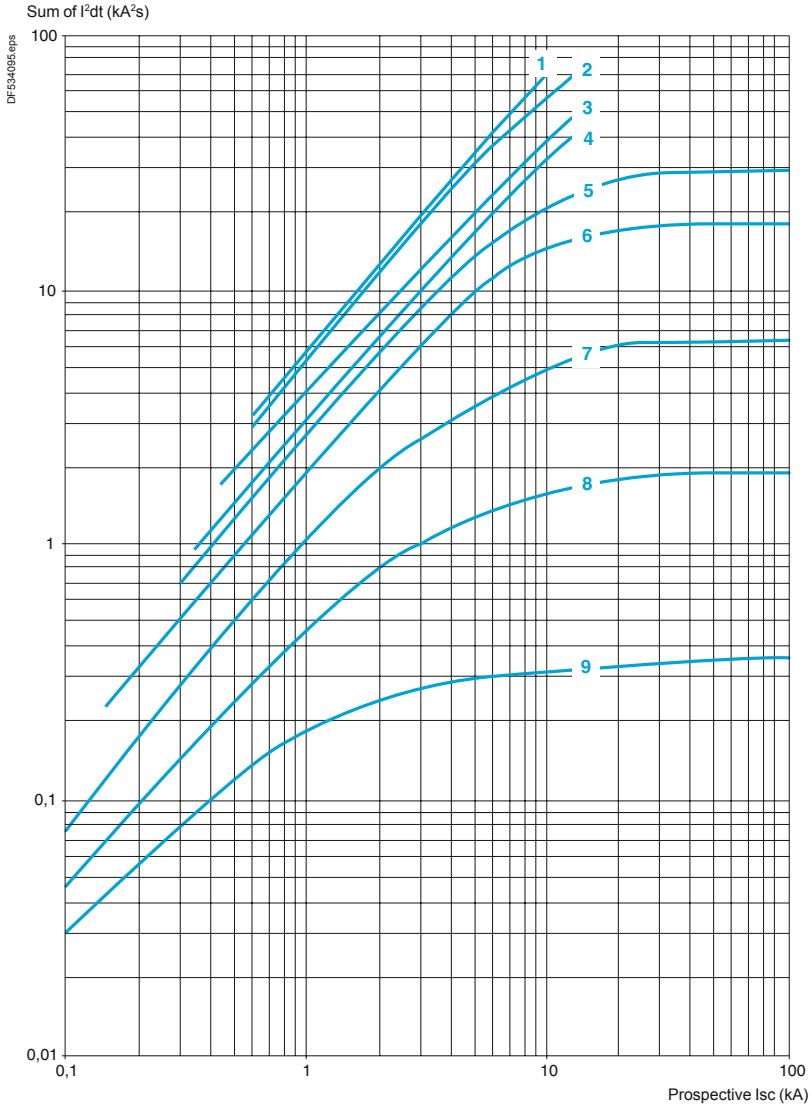
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Thermal limit on short-circuit for GV2 LE only

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 32 A
2 25 A
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A

References:
pages B6/2 and B6/3

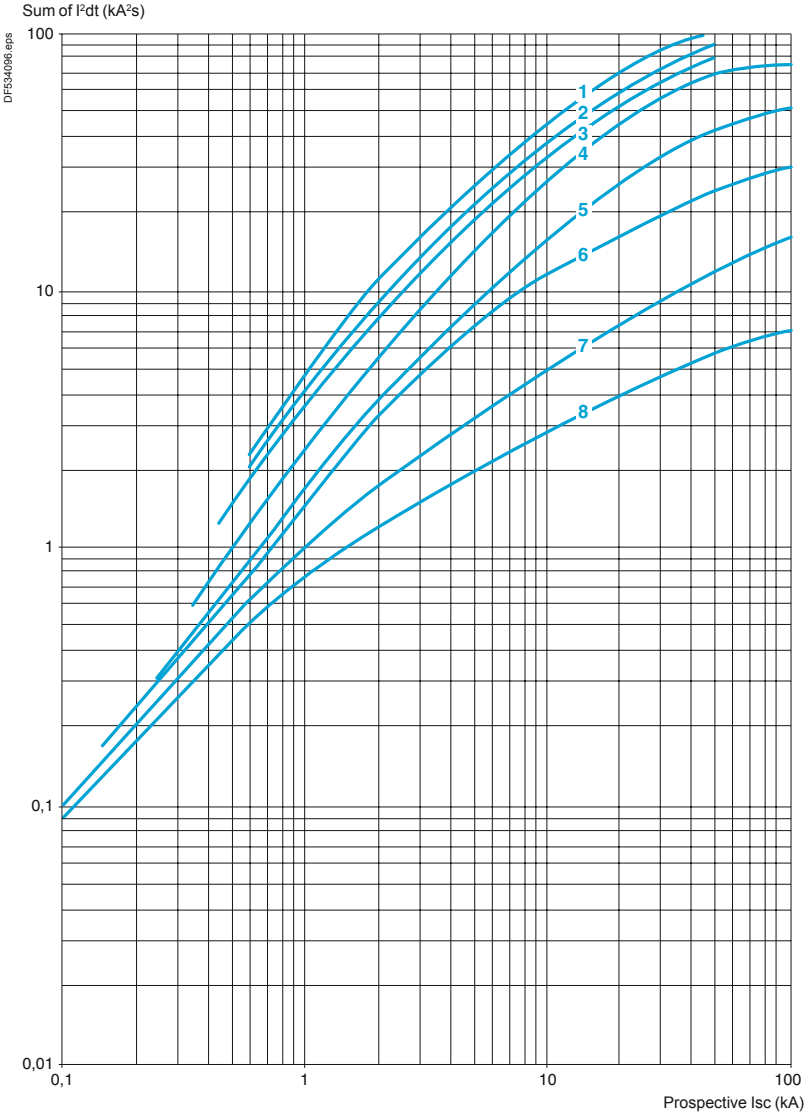
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Thermal limit on short-circuit for GV2 L only

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 25 A and 32 A
2 18 A
3 14 A
4 10 A
5 6.3 A
6 4 A
7 2.5 A
8 1.6 A

References:
pages B6/2 and B6/3

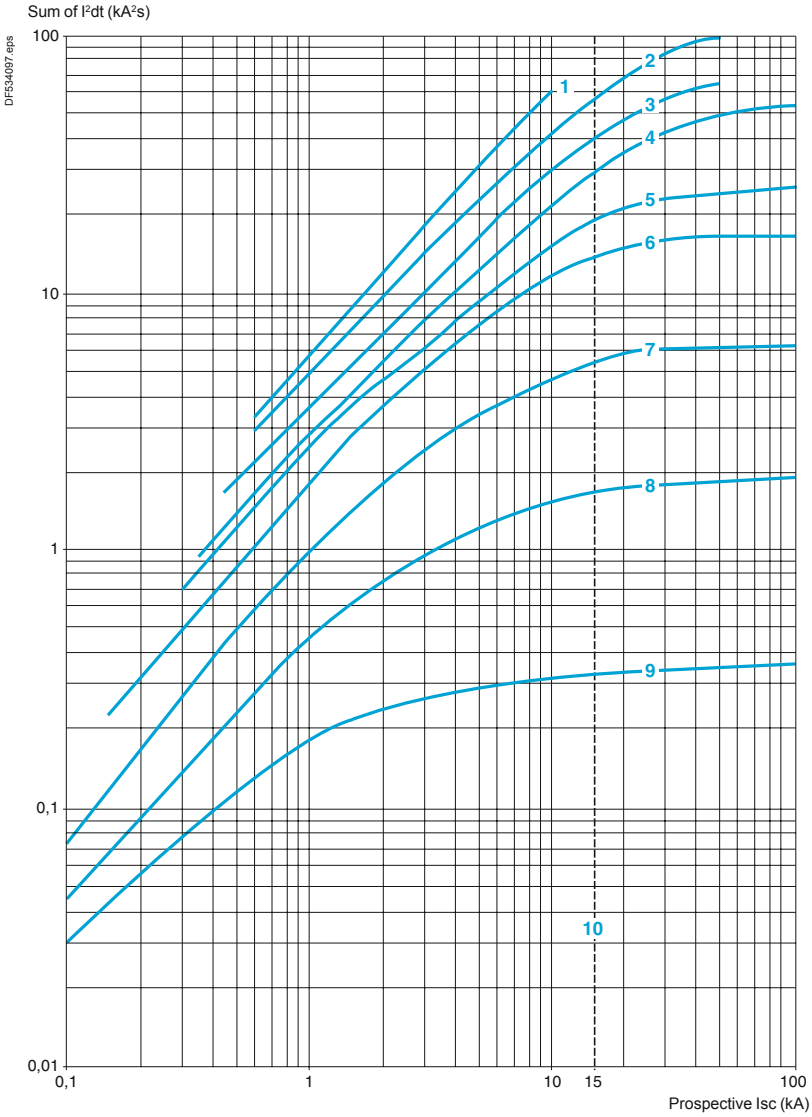
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Thermal limit on short-circuit for GV2 L and GV2 LE + thermal overload relay LRD or LR2 K

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 32 A (GV2 LE32)
2 25 A and 32 A (GV2 L32)
3 18 A
4 14 A
5 10 A
6 6.3 A
7 4 A
8 2.5 A
9 1.6 A
10 Limit of rated ultimate breaking capacity on short-circuit of GV2 LE (14, 18, 23 and 25 A ratings).

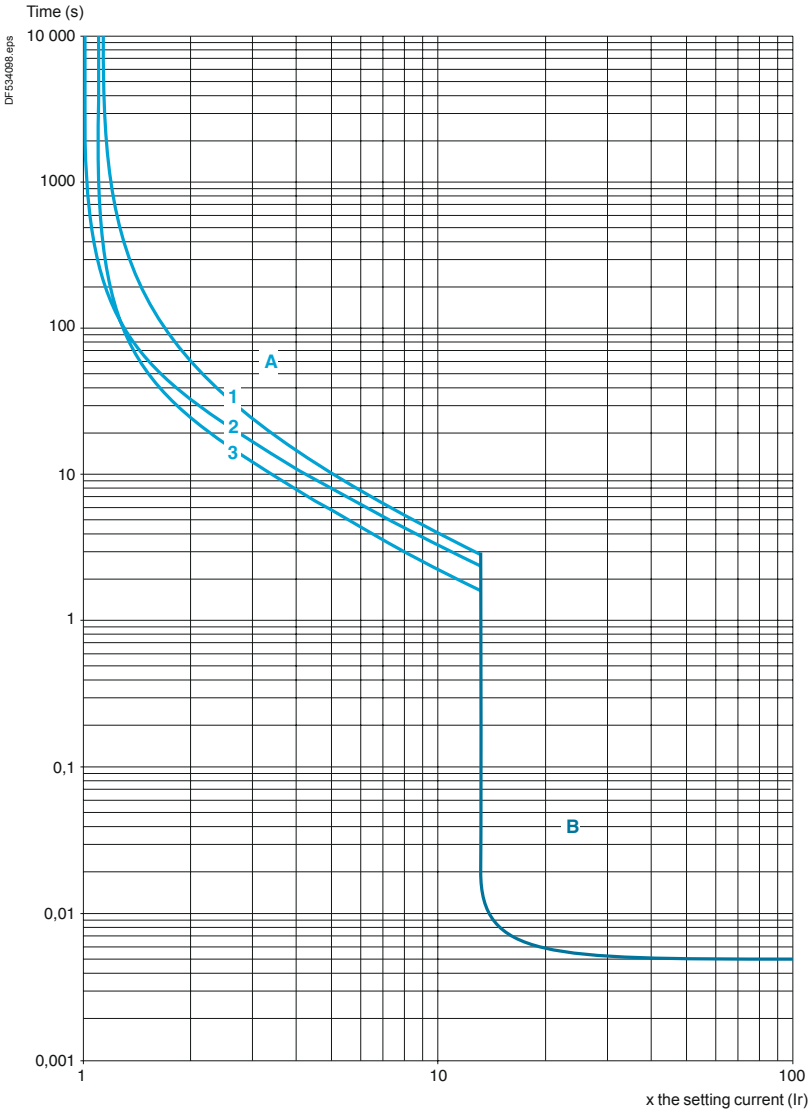
References:
pages B6/2 and B6/3

Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Tripping curves for GV3 L combined with thermal overload relay LRD 33

Average operating time at 20 °C without prior current flow



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

A Thermal overload relay protection zone
B GV3 L protection zone

References:
pages B6/2 and B6/3

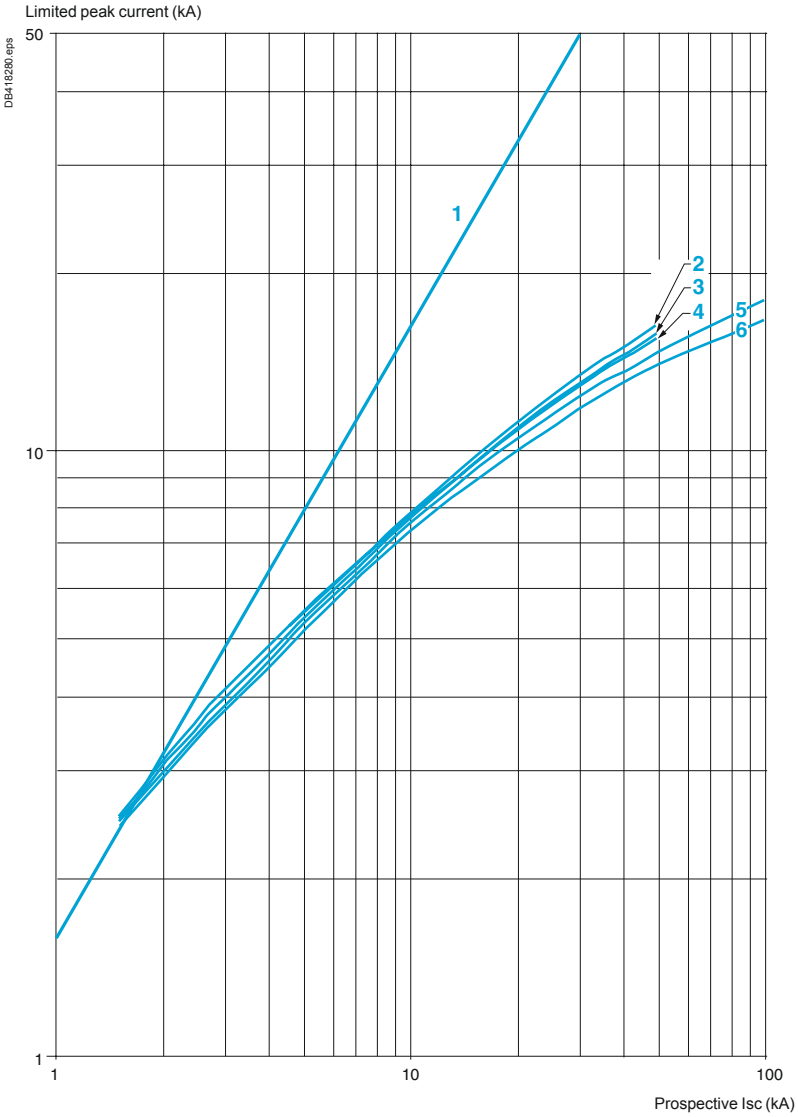
Dimensions:
pages B6/43 to B6/47

Schemes:
page B6/48

Current limitation on short-circuit for GV3 L (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



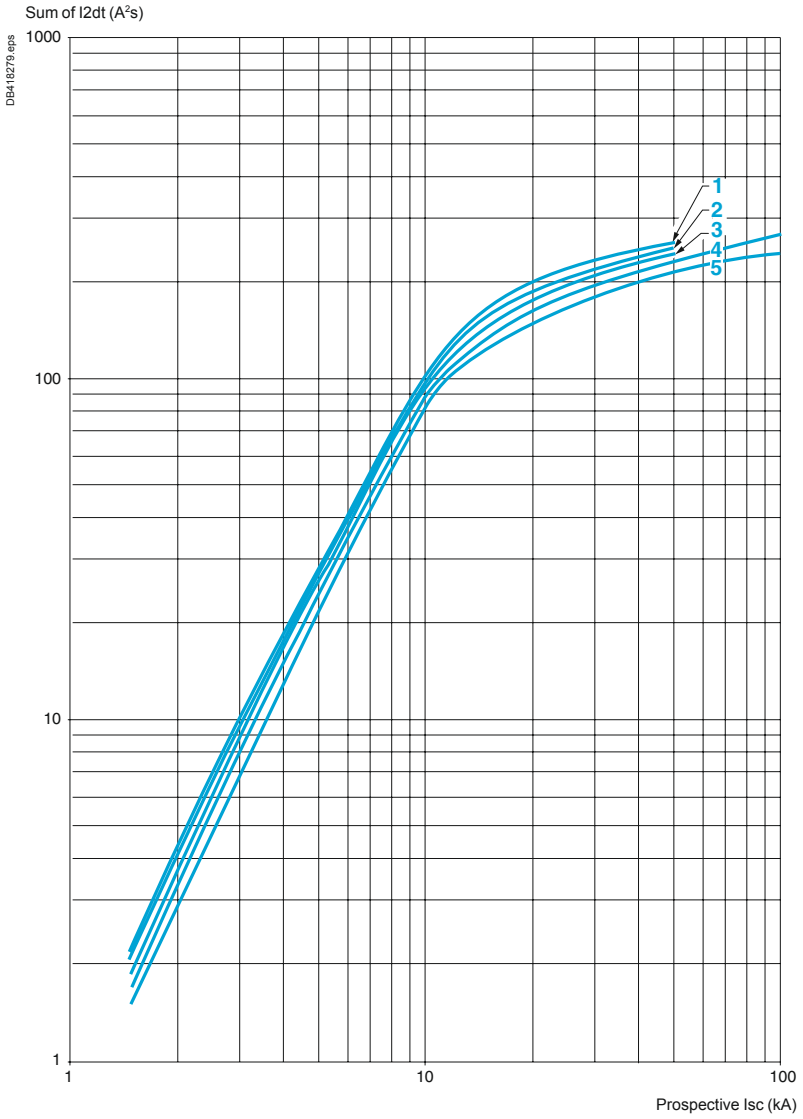
1 Maximum peak current
2 GV3 L65
3 GV3 L50
4 GV3 L40
5 GV3 L32
6 GV3 L25

Circuit breakers

Thermal limit on short-circuit for GV3 L

Thermal limit in A^2s

Sum of I^2dt = f (prospective Isc) at 1.05 Ue = 435 V

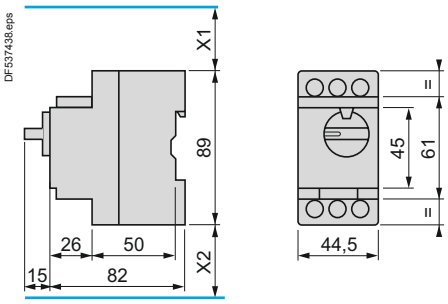


1 GV3 L65
2 GV3 L50
3 GV3 L40
4 GV3 L32
5 GV3 L25

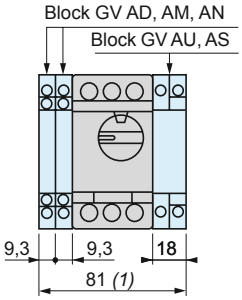
TeSys protection components
Magnetic motor circuit breakers
GV2 L and GV2 LE

GV2 L

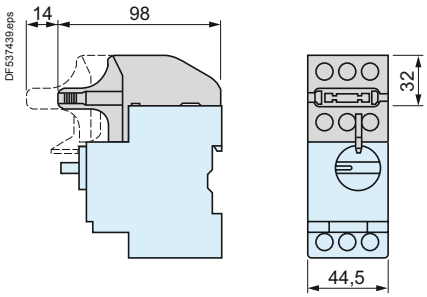
Dimensions



GV AD, AM, AN, AU, AS



GV2 AK00

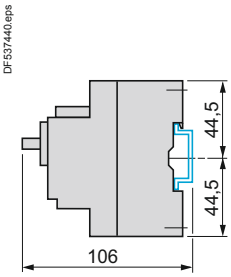


X1 Electrical clearance = 40 mm for Ue ≤ 415 V, or 80 mm for Ue = 440 V, or 120 mm for Ue = 500 and 690 V.
X2 = 40 mm.

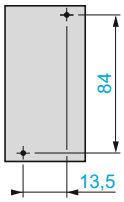
(1) Maximum.

Mounting

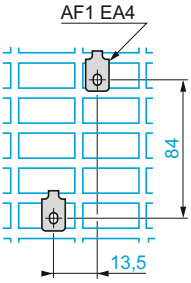
On rail AM1 DE200, AM1 ED200 (35 x 15)



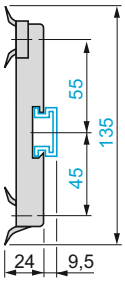
Panel mounted

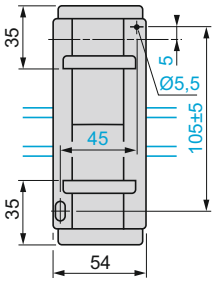


On pre-slotted mounting plate AM1 PA



Adapter plate GK2 AF01

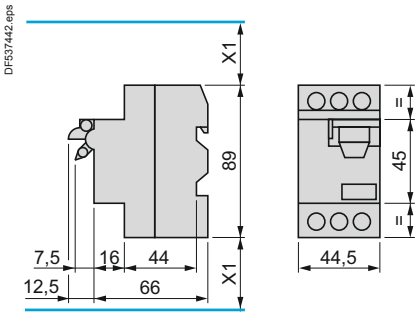




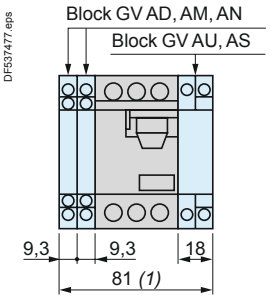
7.5 mm height compensation plate GV1 F03

GV2 LE

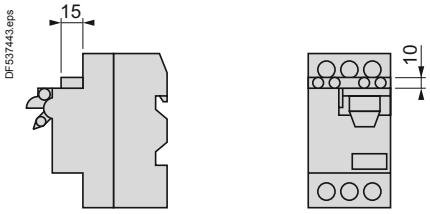
Dimensions



GV AD, AM, AN, AU, AS



GV AE

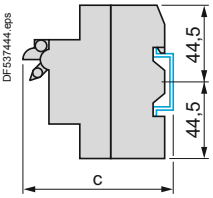


X1 Electrical clearance = 40 mm for Ue ≤ 690 V.

(1) Maximum.

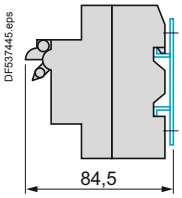
Mounting

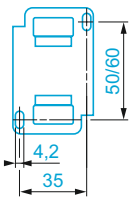
On 35 mm ⎍ rail



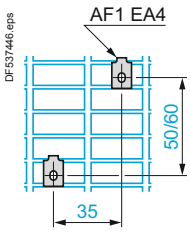
c = 80 on AM1 DP200 (35 x 7.5) and 88 on AM1 DE200, ED200 (35 x15)

On panel with adapter plate GV2 AF02

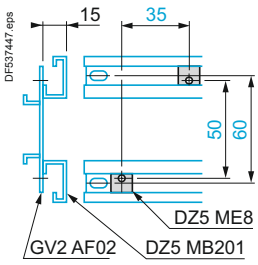




On pre-slotted plate AM1 PA



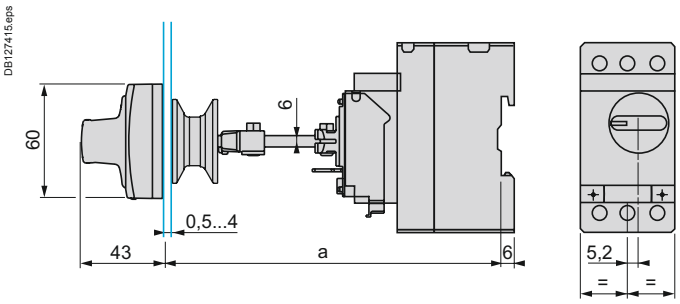
On rails DZ5 MB201



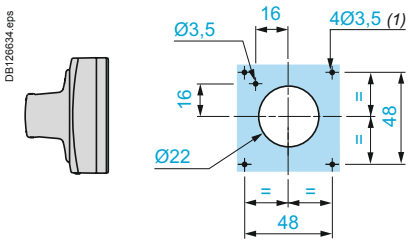
TeSys protection components
Magnetic motor circuit breakers GV2 L and GV2 LE

Mounting

Mounting of external operator GV2 APN01, GV2 APN02 or GV2 APN04 for motor circuit breakers GV2 L

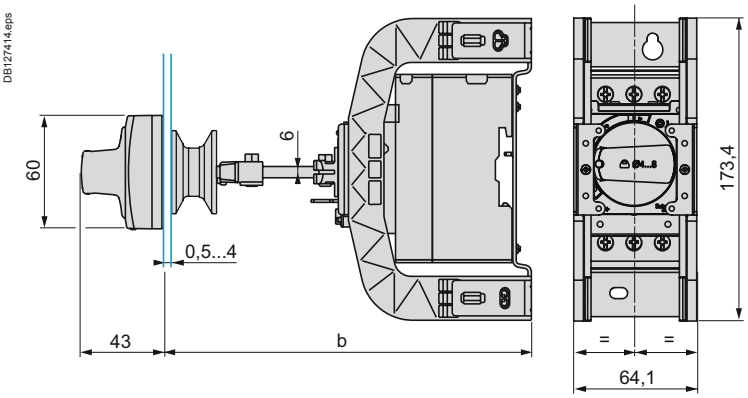


Door cut-out

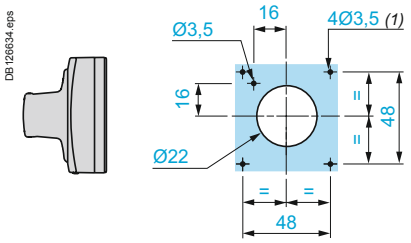


(1) For IP65 only.

Mounting of external operator GV APH02 for motor circuit breakers GV2 L



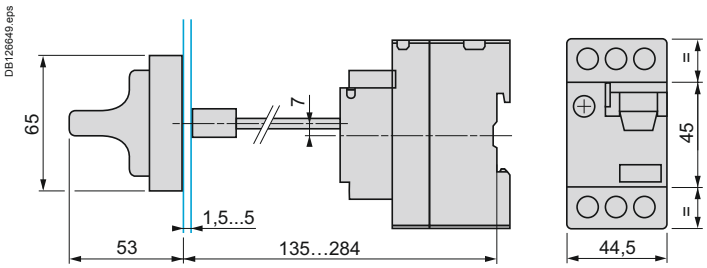
Door cut-out



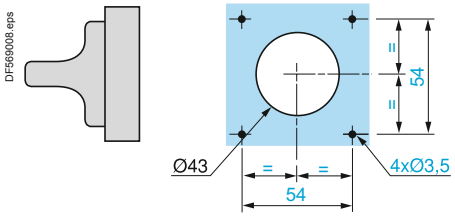
(1) For IP65 only.

	a		b	
	Mini	Maxi	Mini	Maxi
GV2 APN●●	140	250		
GV2 APN●● + GV APH02			151	250
GV2 APN●● + GV APK11	250	434	-	-
GV2 APN●● + GV APH02 + GV APK11	-	-	250	445

Mounting of external operator GV2 AP03 for GV2 LE



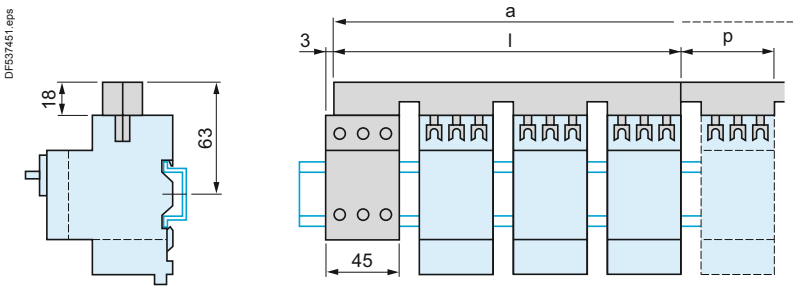
Door cut-out



TeSys protection components
Magnetic motor circuit breakers
GV2 L and GV2 LE

GV2 L and GV2 LE

Sets of busbars GV2 G445, GV2 G454, GV2 G472, with terminal block GV2 G05

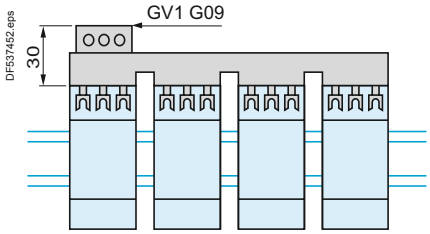


	l	p
GV2 G445 (4 x 45 mm)	179	45
GV2 G454 (4 x 54 mm)	206	54
GV2 G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	**5**	**6**	**7**	**8**
GV2 G445	224	269	314	359
GV2 G454	260	314	368	422
GV2 G472	332	404	476	548

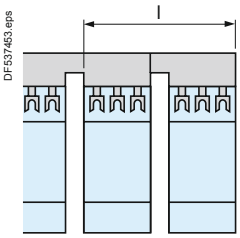
Sets of busbars for GV2 L and GV2 LE

Sets of busbars GV2 G●●● with term. block GV1 G09

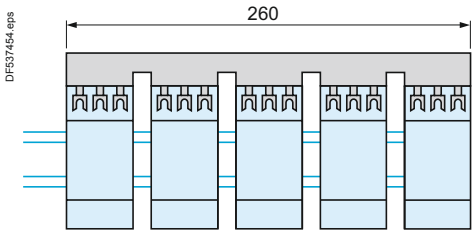


	l
GV2 G245 (2 x 45 mm)	89
GV2 G254 (2 x 54 mm)	98
GV2 G272 (2 x 72 mm)	116

Sets of busbars GV2 G245, GV2 G254, GV2 GR272

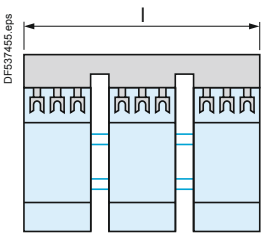


Set of busbars GV2 G554



	l
GV2 G345 (3 x 45 mm)	134
GV2 G354 (3 x 54 mm)	152

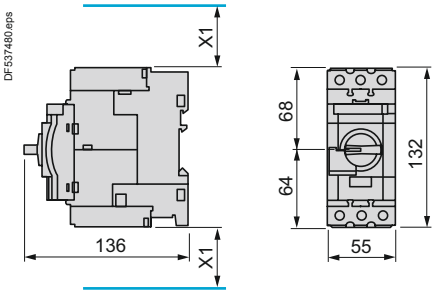
Sets of busbars GV2 G345 and GV2 G354

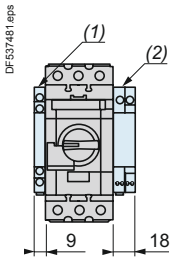


TeSys protection components
Magnetic motor circuit breakers
GV3 L

GV3 L

Dimensions





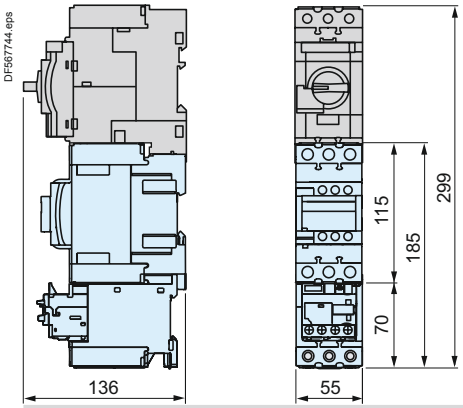
X1 = Electrical clearance (ISC max)
40 mm for Ue ⩽ 500 V, 50 mm for Ue ⩽ 690 V

(1) Blocks GV AN●● , GV AD●● and GV AM11.
(2) Blocks GV3 AU●● and GV3 AS●●.

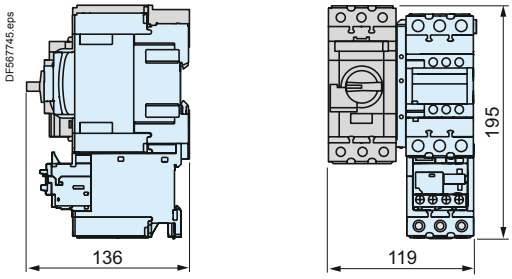
***Note:** Leave a space of 9 mm between 2 circuit breakers: either an empty space or side-mounting add-on contact blocks.*
Side by side mounting is possible up to 40 °C.

Mounting

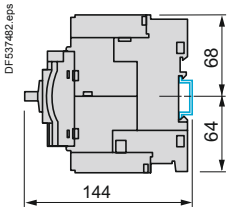
Mounting with Tesys contactor LC1 D40A…D65A and relay LR3 D313…365



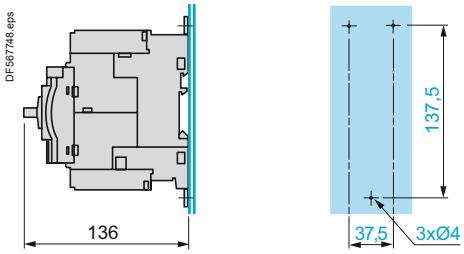
Side by side mounting with Tesys contactor LC1 D40A…D65A (S-shape busbar system GV3 S)



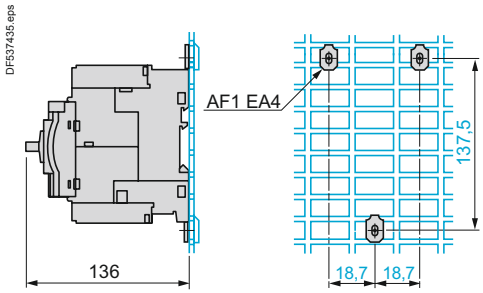
Mounting on rail AM1 DE200 or AM1 ED201



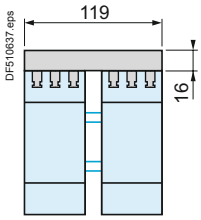
Panel mounting, using M4 screws



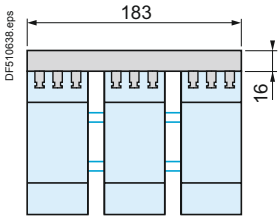
Mounting on pre-slotted plate AM1 PA



Set of busbars GV3 G264



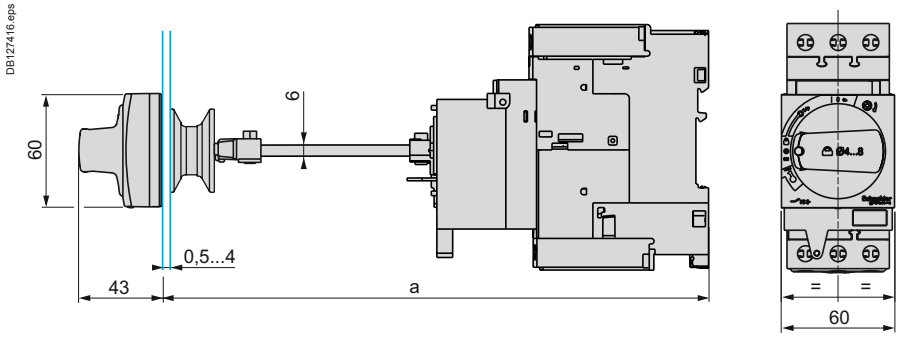
Set of busbars GV3 G364



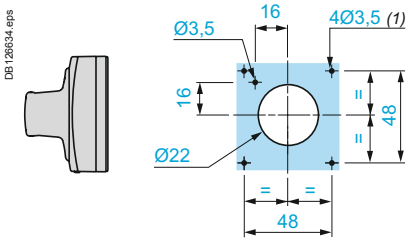
TeSys protection components
Magnetic motor circuit breakers
GV3 L

Mounting

Mounting of external operator GV3 APN01, GV3 APN02 or GV3 APN04 for motor circuit breakers GV3 L

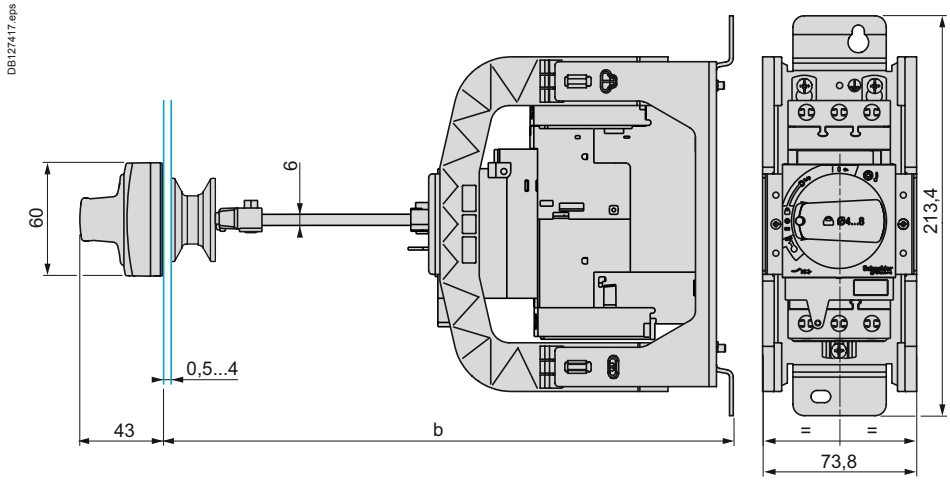


Door cut-out

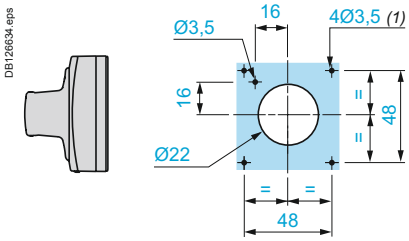


(1) For IP65 only.

Mounting of external operator GV APH03 for motor circuit breakers GV3 L



Door cut-out



(1) For IP65 only.

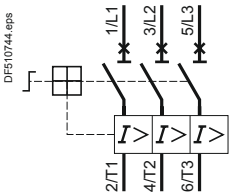
	a		b	
	Mini	Maxi	Mini	Maxi
GV3 APN●●	189	300	-	-
GV3 APN●● + GV APK12	300	481		
GV3 APN●● + GV APH03	-	-	200	300
GV3 APN●● + GV APH03 + GV APK12	-	-	300	492

TeSys protection components

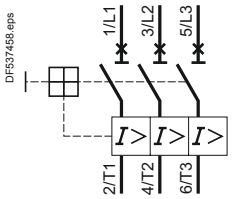
Magnetic motor circuit breakers
GV2 L, GV2 LE, GV3 L

Magnetic motor circuit breakers

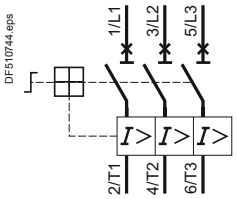
GV2 L●●



GV2 LE●●



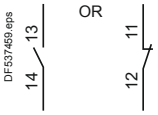
GV3 L●●



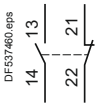
Accessories

Front mounting add-on contact blocks
Instantaneous auxiliary contacts

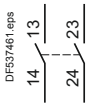
GV AE1



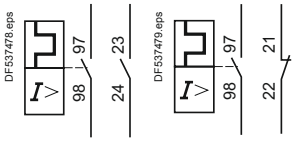
GV AE11



GV AE20

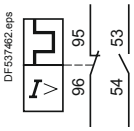


GV AED101 and GV AED011

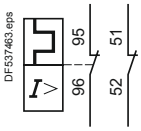


Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

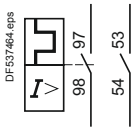
GV AD0110



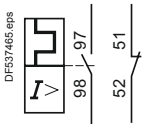
GV AD0101



GV AD1010

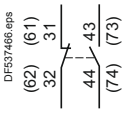


GV AD1001

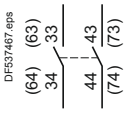


Instantaneous auxiliary contacts

GV AN11

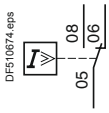


GV AN20



Short-circuit signalling contacts

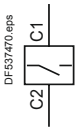
GV AM11



Voltage trips

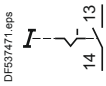
GV AU●●●

GV AS●●●

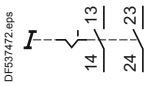


Start-Stop signalling contact blocks

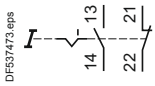
GK2 AX10



GK2 AX20

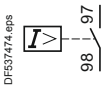


GK2 AX50

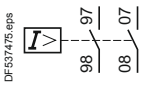


Fault signalling contact blocks

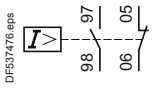
GK2 AX12



GK2 AX22



GK2 AX52

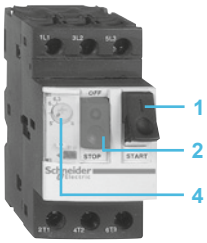


Schneider Electric

TeSys protection components

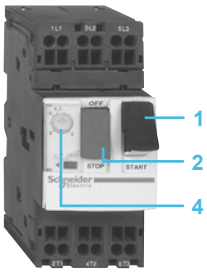
Thermal-magnetic motor circuit breakers GV2, GV3 and GV7

DF526134.tif



GV2 ME with screw clamp terminals

DF526135.tif



GV2 ME with spring terminals connections

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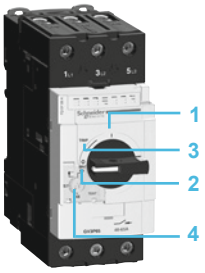
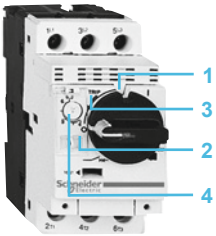


GV3 P

EverLink®

DF526137.tif



GV2 P

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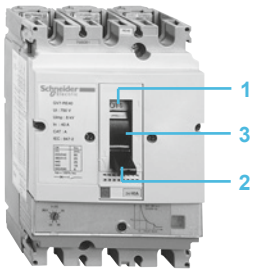


GV7 R

Presentation

GV2 ME, GV2 P, GV3 ME, GV3 P and GV7 R motor circuit breakers are 3-pole thermal-magnetic circuit breakers **specifically designed for the control and protection of motors**, conforming to standards IEC 60947-2 and IEC 60947-4-1.

Connection

GV2

GV2 ME and GV2 P circuit breakers are designed for connection by screw clamp terminals.
Circuit breaker GV2 ME can be supplied with lugs or spring terminal connections.
Spring terminal connections ensure secure, permanent and durable clamping that is resistant to harsh environments, vibration and impact and are even more effective when conductors without cable ends are used. Each connection can take two independent conductors.

GV3

GV3 circuit breakers feature connection by BTR screws (hexagon socket head), tightened using a n° 4 Allen key.
This type of connection uses the **Ever**Link® system with creep compensation (1) (Schneider Electric patent).
This technique makes it possible to achieve accurate and durable tightening torque, in order to avoid cable creep.

GV3 circuit breakers are also available with connection by lugs. This type of connection meets the requirements of certain Asian markets and is suitable for applications subject to strong vibration, such as railway transport.

GV7

GV7 circuit breakers: with connection by screw clamp terminals (for bars and lugs) and by clip-on connectors.

Operation

Control is manual and local when the motor circuit breaker is used on its own.
Control is automatic and remote when it is associated with a contactor.

GV2 ME and GV3 ME80

Pushbutton control.
Energisation is controlled manually by operating the Start button “I” 1.
De-energisation is controlled manually by operating the Stop button “O” 2, or automatically by the thermal-magnetic protection elements or by a voltage trip attachment.

GV2 P, GV3 P and GV7 R

- Control by rotary knob: for GV2 P and GV3 P
- Control by rocker lever: for GV7 R.

Energisation is controlled manually by moving the knob or rocker lever to position “I” 1.
De-energisation is controlled manually by moving the knob or rocker lever to position “O” 2.
De-energisation due to a fault automatically places the knob or rocker lever in the “Trip” position 3.
Re-energisation is possible only after having returned the knob or rocker lever to position “O”.

(1) Creep: normal crushing phenomenon of copper conductors, that is accentuated over time.

Characteristics: pages B6/51 to B6/56
References: pages B6/4 to B6/9
Dimensions and schemes: pages B6/70 to B6/83

TeSys protection components

Thermal-magnetic motor circuit breakers GV2, GV3 and GV7

Presentation

Protection of motors and personnel

Motor protection is provided by the thermal-magnetic protection elements incorporated in the motor circuit breaker.

The **magnetic** elements (short-circuit protection) have a non-adjustable tripping threshold, which is equal to 13 times the maximum setting current of the thermal trips.

The **thermal** elements (overload protection) include automatic compensation for ambient temperature variations.
The rated operational current of the motor is displayed by means of a graduated knob 4.
Personnel protection is also provided. All live parts are protected against direct finger contact from the front panel.

The addition of an undervoltage trip allows the circuit breaker to be de-energised in the event of an undervoltage condition. The user is therefore protected against sudden starting of the machine when normal voltage is restored, since the Start button “I” has to be pressed to restart the motor.

With the addition of a shunt trip, de-energisation of the unit can be remotely controlled.
The operators on both open-mounted and enclosed motor circuit breakers can be locked in the Stop position “O” by up to 4 padlocks.

Because they are suitable for isolation, these circuit breakers, in the open position, provide an adequate isolation distance and indicate the actual position of the moving contacts by the position of the operators.

Special features

These motor circuit breakers are easily installed in any configuration thanks to their universal fixing arrangement: screw fixing or clip-on mounting on symmetrical, asymmetrical or combination rails.

Characteristics:
pages B6/51 to B6/56

References:
pages B6/4 to B6/9

Dimensions and schemes:
pages B6/70 to B6/83

TeSys protection components

Thermal-magnetic motor circuit breakers

TeSys GV

Environment

Circuit breaker type				GV2 ME	GV2 P	GV3 P	GV3 ME80	GV7 R
Conforming to standards				IEC 60947-1, 60947-2, 60947-4-1, EN 60204, UL 508, CSA C 22.2 n° 14-05, NF C 63-650, 63-120, 79-130, VDE 0113, 0660		IEC/EN 60947-1, 60947-2, 60947-4-1, UL 508 type E, CSA C 22.2 n° 14-05 type E	IEC/EN, NF EN, BS EN, DIN EN 60947-2, 60947-4-1	IEC 60947-1, 60947-2, 60947-4-1, EN 60947-1, 60947-2, EN 60947-4-1, NF C 63-650, NF C 63-120, 79-130, VDE 0113, 0660
Product certifications				UL, CSA, CCC, CEBEC, GOST, TSE, BV, GL, LROS , DNV, PTB, EZU, SETI, RINA, ATEX	UL (1), CSA, PTB, EZU, GOST, TSE, DNV, LROS, GL, BV, RINA, CCC, ATEX	UL, CSA, CCC (pending), GOST, ATEX, GL, BV, LROS (DNV, RINA pending)	UL, CSA, LROS	UL, DNV, CCC
Protective treatment				"TH"		"TH"	"TC"	"TC"
Degree of protection (front face)	Conforming to IEC 60529	Open mounted		Against direct finger contact: IP20		Against direct finger contact: IP20	Against direct finger contact: IP20	IP405 with terminal shrouds
		In enclosure		**GV2 M●01**: IP41 **GV2 M●02**: IP55	–	**GV3 PC01** and **GV3 PC02**: IP55	**GV3 CE01**: IP55	–
Shock resistance	Conforming to IEC 60068-2-27			30 gn -11 ms		On: 15 gn -11 ms Off: 30 gn -11 ms	22 gn - 20 ms	15 gn -11 ms
Vibration resistance	Conforming to IEC 60068-2-6			5 gn (5…150 Hz)		4 gn (5…300 Hz)	2.5 gn (0…25 Hz)	2.5 gn (25 Hz)
Ambient air temperature	Storage		°C	-40…+80	-40…+80	-40…+80	-40…+80	-55…+95
	Operation	Open mounted	°C	-20…+60	-20…+60	-20…+60 (2)	-20…+60	-25… +70
		In enclosure	°C	-20…+40	-20…+40	-20…+40	-20…+40	–
Temperature compensation		Open mounted	°C	-20…+60	-20…+60	-20…+60	-20…+60	-25… +55 (3)
		In enclosure	°C	-20…+40	-20…+40	-20…+40	-20…+40	–
Flame resistance	Conforming to IEC 60695-2-1		°C	960		960	960	960
Maximum operating altitude			m	2000		3000	3000	2000
Suitable for isolation	Conforming to IEC 60947-1 § 7-1-6			Yes		Yes	–	Yes
Resistance to mechanical impact			J	0.5	0.5	10	0.5	0.5
				IK04		IK09 (in enclosure)	–	–
Sensitivity to phase failure				Yes, conforming to IEC 60947-4-1 § 7-2-1-5-2				

Technical characteristics

Circuit breaker type			GV2 ME	GV2 P	GV2 RT	GV3 P	GV3 ME80	GV7 R●20... R●100	GV7 R●150	GV7 R●220
Utilisation category	Conforming to IEC 60947-2		A			A	A	A		
	Conforming to IEC 60947-4-1		AC-3			AC-3	AC-3	AC-3		
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	690			690	690	690		
Rated insulation voltage (Ui)	Conforming to IEC 60947-2	V	690			690	690	750		
Rated voltage	Conforming to CSA C22-2 n° 14, UL 508	V	600			600	600 (B600)	600		
Rated operational frequency	Conforming to IEC 60947-4-1 UL, CSA	Hz	50/60			50/60	50/60	50/60		
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	6			6	6	8		
Total power dissipated per pole		W	2.5			8	8	5	8.7	14.5
Mechanical durability (C.O.: Close, Open)		C.O.	100 000			50 000	30 000	50 000	40 000	20 000
Electrical durability for AC-3 duty	440 V In/2	C.O.	100 000			–	30 000	50 000	40 000	20 000
	440 V In	C.O.	–			50 000	–	30 000	20 000	10 000
Duty class (maximum operating rate)		C.O./h	25			25	25	25		
Maximum conventional rated thermal current (Ith)	Conforming to IEC 60947-4-1	A	0.16…32	0.16…32	0.40…23	13…65	80	12…100	150	220
Rated duty	Conforming to IEC 60947-4-1		Continuous duty							

*(1) UL 508 type E for **GV2 P●●H7**.*
(2) Leave a space of 9 mm between 2 circuit breakers: either an empty space, or side mounting add-on contact blocks. Side by side mounting is possible up to 40 °C.
(3) For operation up to 70 °C, please consult your Regional Sales Office.

References: pages B6/4 to B6/9
Dimensions: pages B6/70 to B6/81
Schemes: pages B6/82 and B6/83

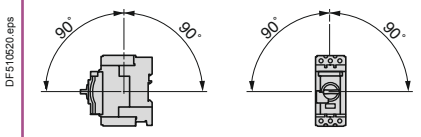
TeSys protection components

Thermal-magnetic motor circuit breakers

TeSys GV

Mounting characteristics

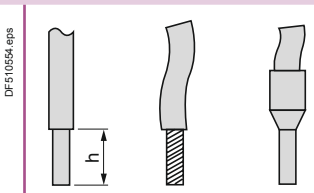
Operating position
Without derating, in relation to normal vertical mounting plane [1]



Connection characteristics

Connection to screw clamp terminals or spring terminals

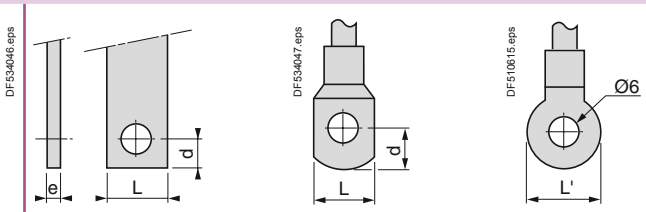
Bare cables



Circuit breaker type			GV2 ME		GV2 P		GV3 P		GV3 ME80	
			Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
Connection to screw clamp terminals [2] (Max. number of conductors x c.s.a.)	Solid cable	mm²	2 x 1	2 x 6	2 x 1	2 x 6	2 x 1	1 x 25 and 1 x 35	1 x 2.5	1 x 35
	Flexible cable without cable end	mm²	2 x 1.5	2 x 6	2 x 1.5	2 x 6	2 x 1	1 x 25 and 1 x 35	1 x 2.5	2 x 16
	Flexible cable with cable end	mm²	2 x 1	2 x 4	2 x 1	2 x 4	2 x 1	1 x 25 and 1 x 35	1 x 2.5	2 x 16
Tightening torque		N.m	1.7	1.7	1.7	1.7	5	5: 25 mm² 8: 35 mm²	5	5
Connection to spring terminals Number of conductors x c.s.a.	Solid cable	mm²	2 x 1 [3]	2 x 6	–	–	–	–	–	–
	Flexible cable without cable end	mm²	2 x 1.5 [3]	2 x 4	–	–	–	–	–	–

Connection by bars or lugs

Bars or lugs



Circuit breaker type			GV2 ME●●6	GV3 P●●6	GV7 R●20...R●100	GV7 R●150	GV7 R●220
Pitch	Without spreaders	mm	13.5	17.5	35	35	35
	With spreaders	mm	–	–	45	45	45
Bars or cables with lugs	e	mm	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6
	L	mm	≤ 9.5	≤ 13.5	≤ 25	≤ 25	≤ 25
	L'	mm	≤ 9.5	≤ 16.5	–	–	–
	d	mm	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
Screws			M4	M6	M6	M8	M8
	Tightening torque	N.m	1.7	6	10	15	15
Bare cables (copper or aluminium) with connectors	Height (h)	mm	–	–	20	20	20
	C.s.a.	mm²	–	–	1.5...95	1.5...95	1.5...185
	Tightening torque	N.m	–	–	15	15	15

(1) When mounting on a vertical rail, fit a stop to prevent any slippage.
*(2) For motor circuit breakers **GV3 P**: BTR hexagon socket head screws, **Ever**Link® system. Require use of an insulated Allen key, in compliance with local electrical wiring regulations.*
*(3) For cross-sections 1 to 1.5 mm², the use of an **LA9 D99** cable end reducer is recommended.*

References: pages B6/4 to B6/9
Dimensions: pages B6/70 to B6/81
Schemes: pages B6/82 and B6/83

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Breaking capacity of GV2 ME and GV2 P

Circuit breaker type				GV2 ME									GV2 P								
				01 to 06	07	08	10	14	16	20	21 & 22	32	01 to 06	07	08	10	14	16	20	21 & 22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23 & 25	32	0.1 to 1.6	2.5	4	6.3	10	14	18	23 & 25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	50	50	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	15	15	15	10	★	★	★	★	★	★	50	50	50
		Ics % (1)		★	★	★	★	★	50	50	40	50	★	★	★	★	★	★	50	50	50
	440 V	Icu	kA	★	★	★	50	15	8	8	6	6	★	★	★	★	★	50	20	20	20
		Ics % (1)		★	★	★	100	100	50	50	50	50	★	★	★	★	★	75	75	75	75
	500 V	Icu	kA	★	★	★	50	10	6	6	4	4	★	★	★	★	50	42	10	10	10
		Ics % (1)		★	★	★	100	100	75	75	75	75	★	★	★	★	100	75	75	75	75
	690 V	Icu	kA	★	3	3	3	3	3	3	3	3	★	8	8	6	6	6	4	4	4
		Ics % (1)		★	75	75	75	75	75	75	75	75	★	100	100	100	100	100	100	100	100
Associated fuses (if required) if Isc > breaking capacity Icu conforming to IEC 60947-2	230/240 V	aM	A	★	★	★	★	★	★	★	80	80	★	★	★	★	★	★	★	★	★
		gG	A	★	★	★	★	★	★	★	100	100	★	★	★	★	★	★	★	★	★
	400/415 V	aM	A	★	★	★	★	★	63	63	80	80	★	★	★	★	★	★	100	100	100
		gG	A	★	★	★	★	★	80	80	100	100	★	★	★	★	★	★	125	125	125
	440 V	aM	A	★	★	★	50	50	50	50	63	63	★	★	★	★	★	50	63	80	80
		gG	A	★	★	★	63	63	63	63	80	80	★	★	★	★	★	63	80	100	100
	500 V	aM	A	★	★	★	50	50	50	50	50	50	★	★	★	★	50	50	50	50	50
		gG	A	★	★	★	63	63	63	63	63	63	★	★	★	★	63	63	63	63	63
	690 V	aM	A	★	16	25	32	32	40	40	40	40	★	20	25	40	40	50	50	50	50
		gG	A	★	20	32	40	40	50	50	50	50	★	25	32	50	50	63	63	63	63

★ > 100 kA.
(1) As % of Icu.

References: pages B6/4 to B6/6
Dimensions: pages B6/70 to B6/75
Schemes: page B6/82

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Breaking capacity of GV2 ME and GV2 P (used in association with current limiter GV1 L3)

Circuit breaker type				GV2 ME									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	100	100	100	100	100
		Ics % (1)		★	★	★	★	★	50	50	40	40	40
	440 V	Icu	kA	★	★	★	★	★	50	20	20	20	20
		Ics % (1)		★	★	★	★	★	75	75	75	75	75
	500 V	Icu	kA	★	★	★	★	50	42	10	10	10	10
		Ics % (1)		★	★	★	★	100	100	75	75	75	75

Circuit breaker type				GV2 P									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	400/415 V	Icu	kA	★	★	★	★	★	★	★	★	★	★
		Ics % (1)		★	★	★	★	★	★	★	★	★	★
	440 V	Icu	kA	★	★	★	★	★	100	100	100	100	100
		Ics % (1)		★	★	★	★	★	50	50	50	50	50
	500 V	Icu	kA	★	★	★	★	100	100	100	100	100	100
		Ics % (1)		★	★	★	★	50	50	50	50	50	50
	690 V (3)	Icu = Ics	kA	★	50	50	50	50	50	50	50	50	50

Circuit breaker type				GV2 ME									
				01 to 06	07	08	10	14	16	20	21	22	32
Rating			A	0.1 to 1.6	2.5	4	6.3	10	14	18	23	25	32
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables)	Minimum c.s.a. protected at 40 °C at Isc max.	1 mm²		●	●	●	≤ 10 kA	≤ 6 kA	(2)	(2)	(2)	(2)	(2)
		1.5 mm²		●	●	●	≤ 20 kA	≤ 10 kA	(2)	(2)	(2)	(2)	(2)
		2.5 mm²		●	●	●	●	●	●	●	●	●	(2)
		4…6 mm²		●	●	●	●	●	●	●	●	●	●

★ > 100 kA.
● Cable c.s.a. protected.
(1) As % of Icu.
(2) Cable c.s.a. not protected.
(3) With limiter LA9 LB920.

References:
pages B6/4 to B6/6

Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

TeSys protection components

Thermal-magnetic motor circuit breakers GV3 P and GV3 ME80

Breaking capacity of GV3 P and GV3 ME80

Motor circuit breaker type				GV3 P							GV3 ME80
				13	18	25	32	40	50	65	
Rating			A	13	18	25	32	40	50	65	80
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	100	100	100	100	100	100	100	100
		Ics % (1)		100	100	100	100	100	100	100	100
	400/415 V	Icu	kA	100	100	100	100	50	50	50	15
		Ics % (1)		100	100	100	100	100	100	100	50
	440 V	Icu	kA	50	50	50	50	50	50	50	10
		Ics % (1)		100	100	100	100	100	100	100	60
	500 V	Icu	kA	12	12	12	12	12	12	12	4
		Ics % (1)		50	50	50	50	50	50	50	100
	690 V	Icu	kA	6	6	6	6	6	6	6	2
		Ics % (1)		50	50	50	50	50	50	50	100
Associated fuses, if required if Isc > breaking capacity Icu	230/240 V	aM	A	★	★	★	★	★	★	★	★
		gG	A	★	★	★	★	★	★	★	★
	415 V	aM	A	★	★	★	★	125	125	125	315
		gG	A	★	★	★	★	160	160	160	400
	440 V	aM	A	63	80	125	125	125	125	125	315
		gG	A	80	100	160	160	160	160	160	400
	500 V	aM	A	63	63	63	63	80	80	80	200
		gG	A	80	80	80	80	100	100	100	250
	690 V	aM	A	50	50	50	50	63	63	63	200
		gG	A	63	63	63	63	80	80	80	250

★ *Fuse not required: breaking capacity Icn > Isc.*
(1) As % of Icu.

References:
page B6/6

Dimensions:
pages B6/76 to B6/78

Schemes:
pages B6/82 and B6/83

TeSys protection components

Thermal-magnetic motor circuit breakers GV7 R

Breaking capacity of GV7 R

Circuit breaker type				GV7					
				RE20…RE100	RS20…RS100	RE150	RS150	RE220	RS220
Rating			A	12…20 to 60…100		90…150	90…150	132…220	132…220
Breaking capacity conforming to IEC 60947-2	230/240 V	Icu	kA	85	100	85	100	85	100
		Ics % (1)		100	100	100	100	100	100
	400/415 V	Icu	kA	36	70	35	70	35	70
		Ics % (1)		100	100	100	100	100	100
	440 V	Icu	kA	36	65	35	65	35	65
		Ics % (1)		100	100	100	100	100	100
	500 V	Icu	kA	18	50	30	50	30	50
		Ics % (1)		100	100	100	100	100	100
	690 V	Icu	kA	8	10	8	10	8	10
		Ics % (1)		100	100	100	100	100	100
Cable protection against thermal stress in the event of short-circuit (PVC insulated copper cables)	Minimum c.s.a. protected at 40 °C at Isc max.	4 mm²		≤ 6 kA	≤ 6 kA	(2)	(2)	(2)	(2)
		6 mm²		●	≤ 25 kA	(2)	(2)	(2)	(2)
		10…50 mm²		●	●	●	●	●	●

(1) As % of Icu.
● Cable c.s.a. protected.
(2) Cable c.s.a. not protected.

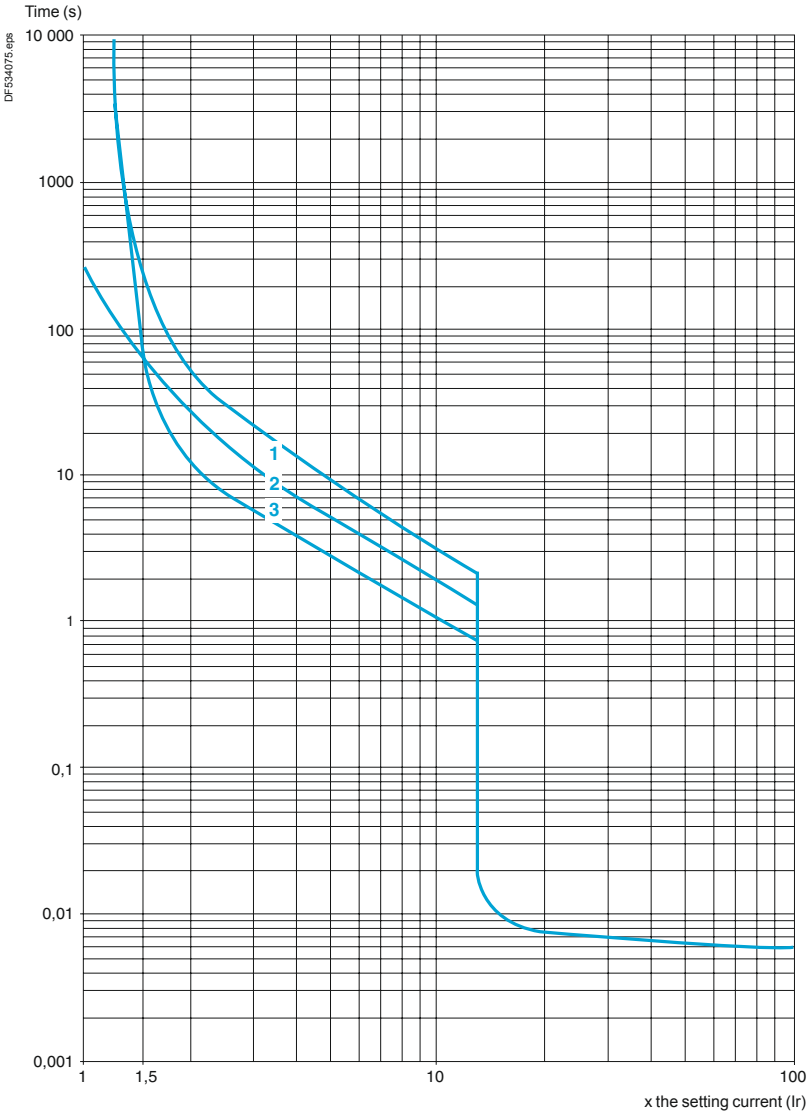
References:
page B6/7

Dimensions:
pages B6/79 to B6/81

Schemes:
page B6/83

Thermal-magnetic tripping curves for GV2 ME and GV2 P

Average operating times at 20 °C related to multiples of the setting current



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

References:
pages B6/4 to B6/6

Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

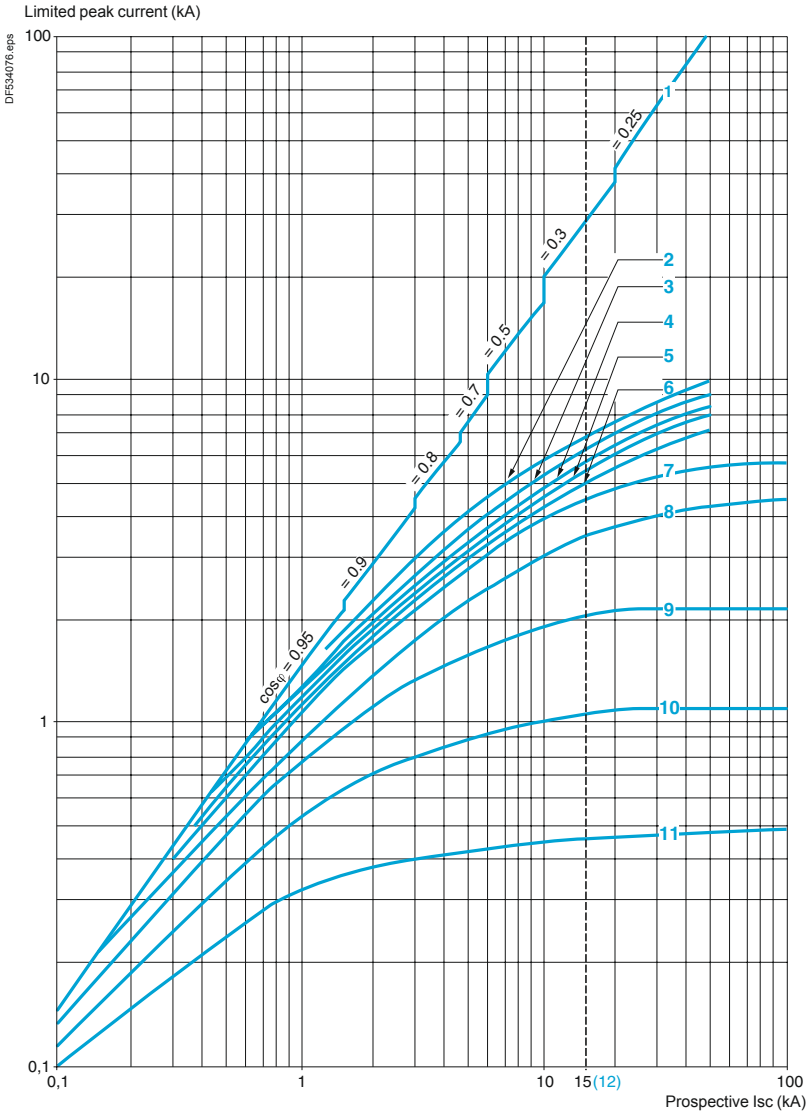
TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Current limitation on short-circuit for GV2 ME and GV2 P (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V



1 Maximum peak current
2 24 -32 A
3 20 -25 A
4 17 -23 A
5 13 -18 A
6 9 -14 A
7 6 -10 A
8 4 -6.3 A
9 2.5 -4 A
10 1.6 -2.5 A
11 1 -1.6 A
12 Limit of rated ultimate breaking capacity on short-circuit of GV2 ME (14, 18, 23 and 25 A ratings)

References:
pages B6/4 to B6/6

Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

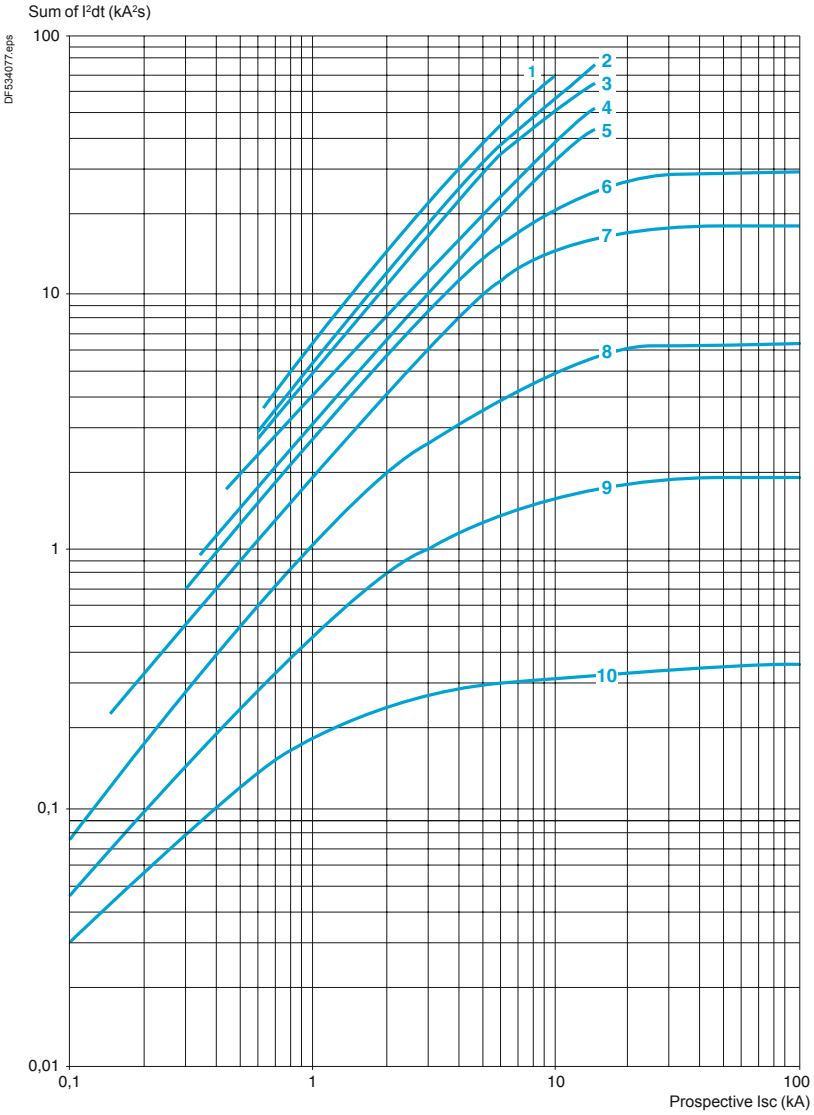
TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME

Thermal limit on short-circuit for GV2 ME

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 24 -32 A
2 20 -25 A
3 17 -23 A
4 13 -18 A
5 9 -14 A
6 6 -10 A
7 4 -6.3 A
8 2.5 -4 A
9 1.6 -2.5 A
10 1 -1.6 A

References:
pages B6/4 to B6/6

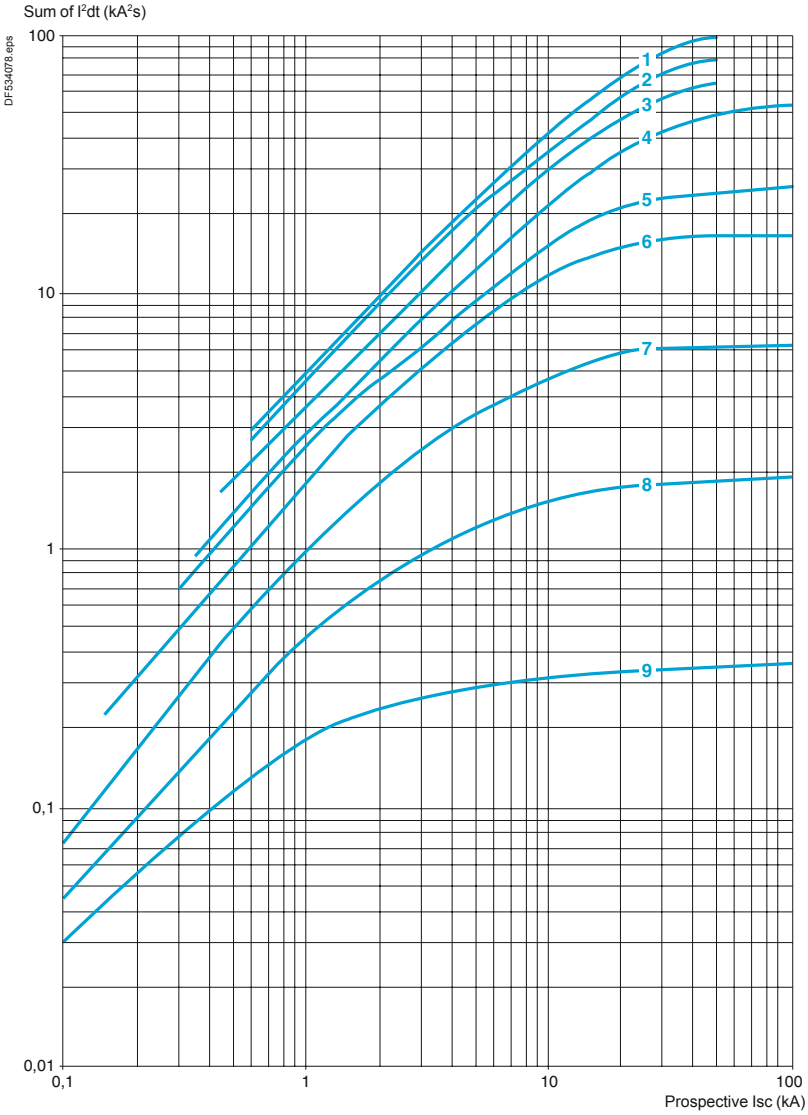
Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

Thermal limit on short-circuit for GV2 P

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 24 -32 A
1 20 -25 A
2 17 -23 A
3 13 -18 A
4 9 -14 A
5 6 -10 A
6 4 -6.3 A
7 2.5 -4 A
8 1.6 -2.5 A
9 1 -1.6 A

References:
pages B6/4 to B6/6

Dimensions:
pages B6/70 to B6/75

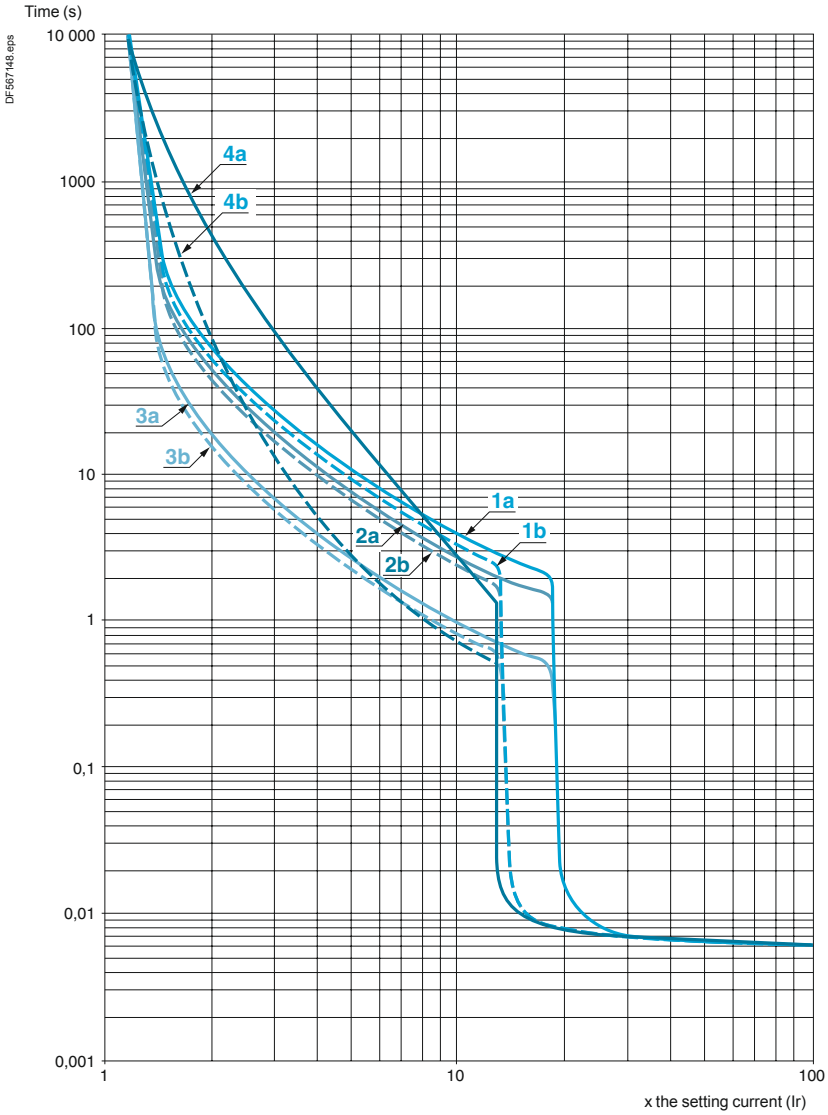
Schemes:
page B6/82

TeSys protection components

Thermal-magnetic motor circuit breakers GV3 P and GV3 ME80

Thermal-magnetic tripping curves

Average operating times at 20 °C related to multiples of the setting current



1a 3 poles from cold state (Ir mini.) : GV3 P
1b 3 poles from cold state (Ir maxi.) : GV3 P
2a 2 poles from cold state (Ir mini.) : GV3 ME80
2b 2 poles from cold state (Ir maxi.) : GV3 ME80
3a 3 poles from hot state (Ir mini.) : GV3 P
3b 3 poles from hot state (Ir maxi.) : GV3 P
4a 3 poles from hot state (Ir mini.) : GV3 ME80
4b 3 poles from hot state (Ir maxi.) : GV3 ME80

References:
pages B6/4 to B6/6

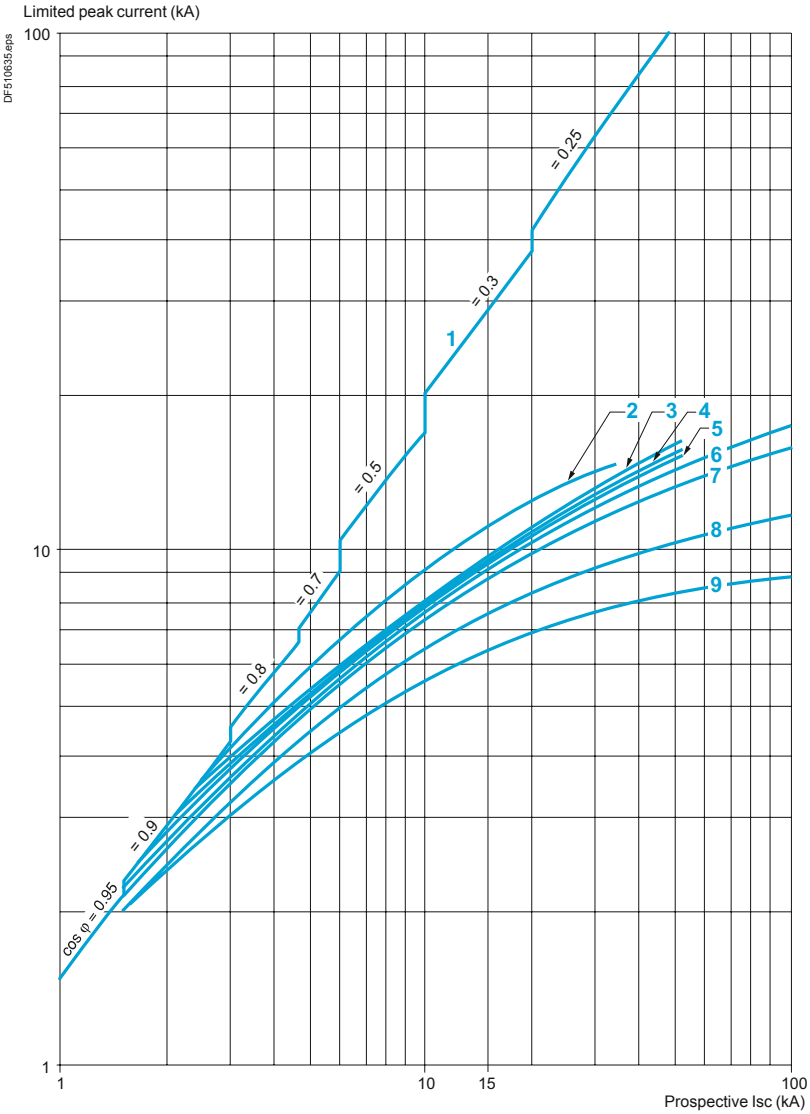
Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

Current limitation on short-circuit (3-phase 400/415 V)

Dynamic stress

I peak = f (prospective Isc) at 1.05 Ue = 435 V

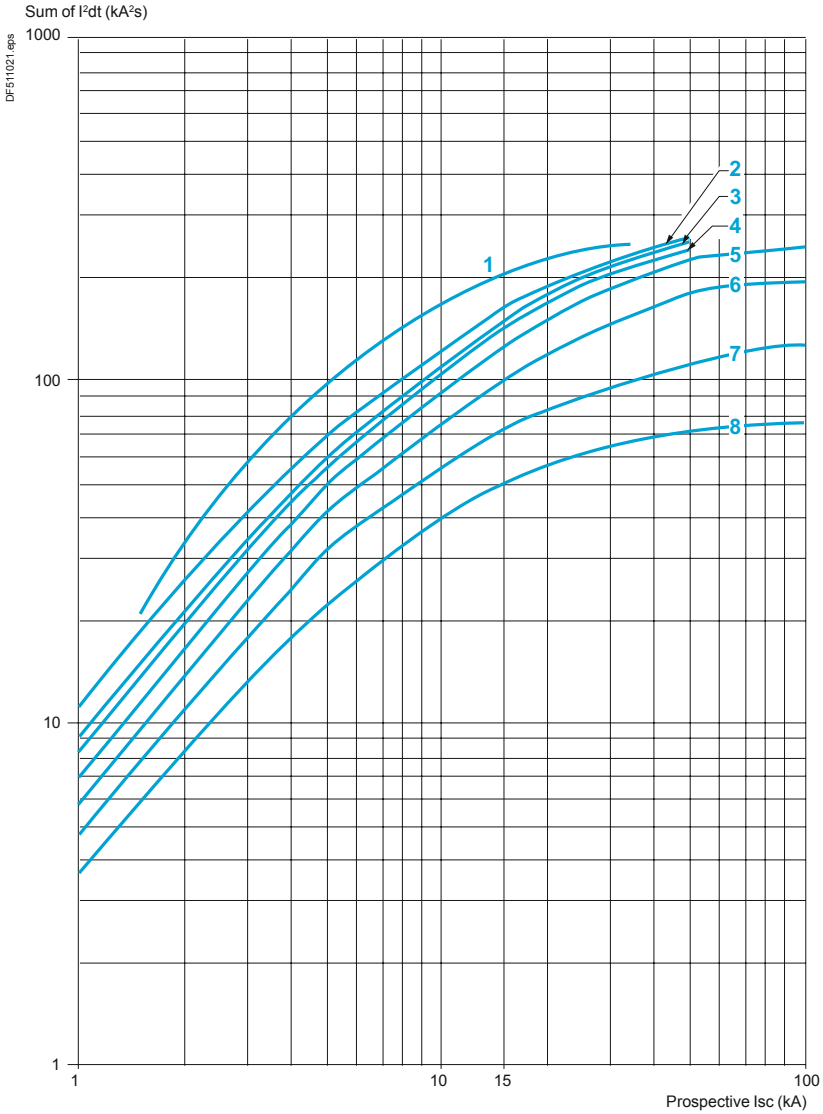


1 Maximum peak current
2 56 -80 A
3 48 -65 A
4 37 -50 A
5 30 -40 A
6 23 -32 A
7 17 -25 A
8 12 -18 A
9 9 -13 A

Maximum thermal limit on short-circuit

Thermal limit in kA²s in the magnetic operating zone

Sum of I²dt = f (prospective Isc) at 1.05 Ue = 435 V



1 56-80 A (GV3 ME80)
2 48-65 A (GV3 P65)
3 37-50 A (GV3 P50)
4 30-40 A (GV3 P40)
5 23-32 A (GV3 P32)
6 17-25 A (GV3 P25)
7 12-18 A (GV3 P18)
8 9-13 A (GV3 P13)

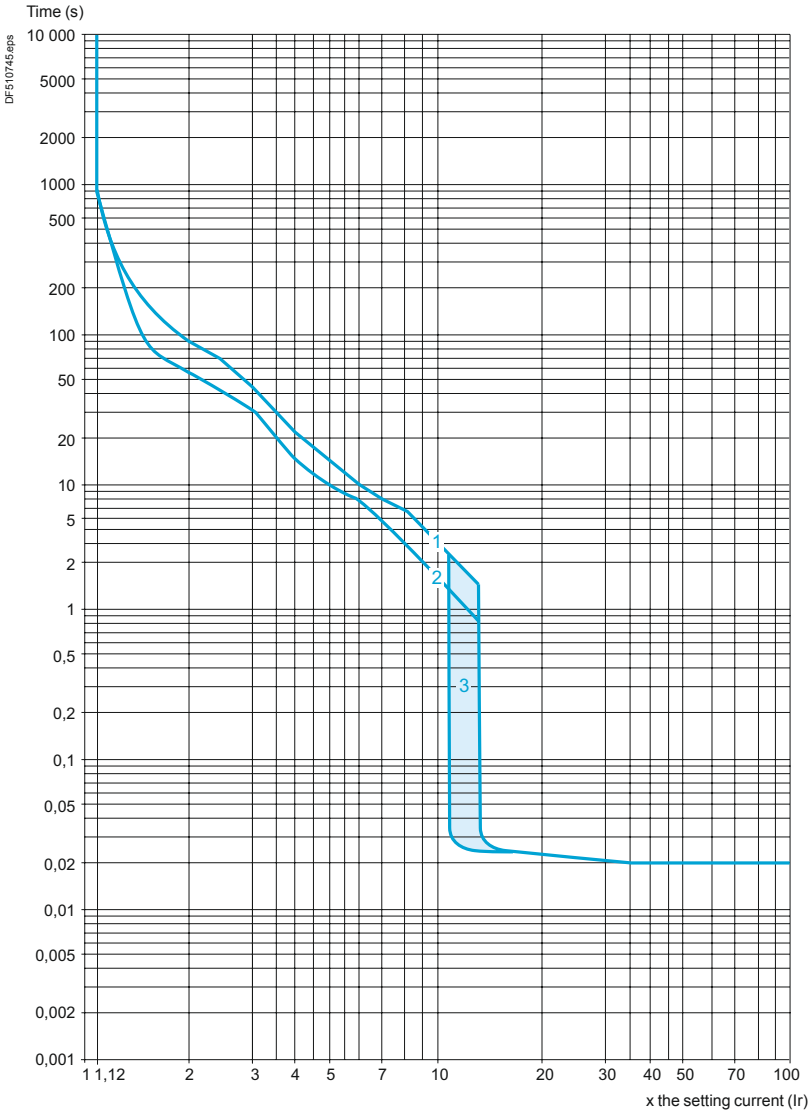
References:
pages B6/4 to B6/6

Dimensions:
pages B6/70 to B6/75

Schemes:
page B6/82

Thermal-magnetic tripping curves for GV7 R

Average operating times at 20 °C related to multiples of the setting current



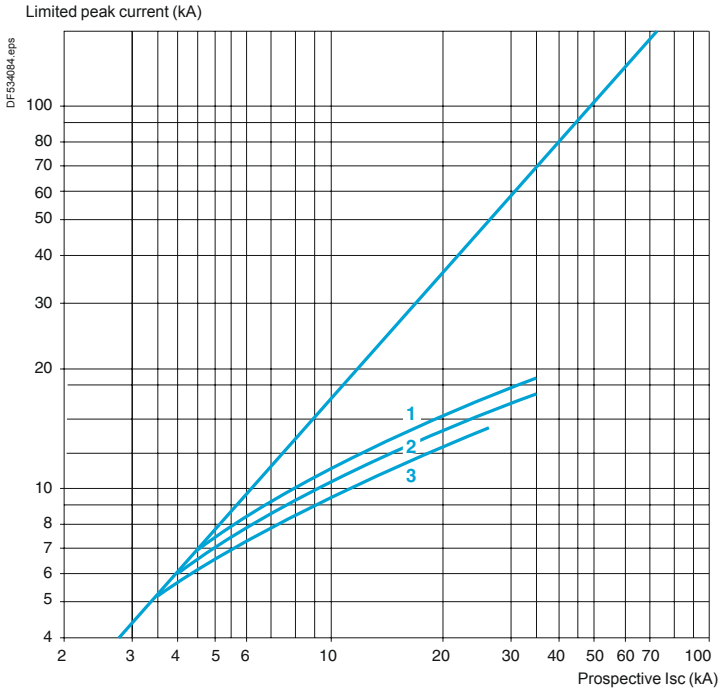
1 Cold state curve
2 Cold state curve
3 12…14 Ir
In the event of total phase failure, tripping occurs after 4 s ± 20 %

Current limitation on short-circuit (3-phase 400/415 V)

Dynamic stress

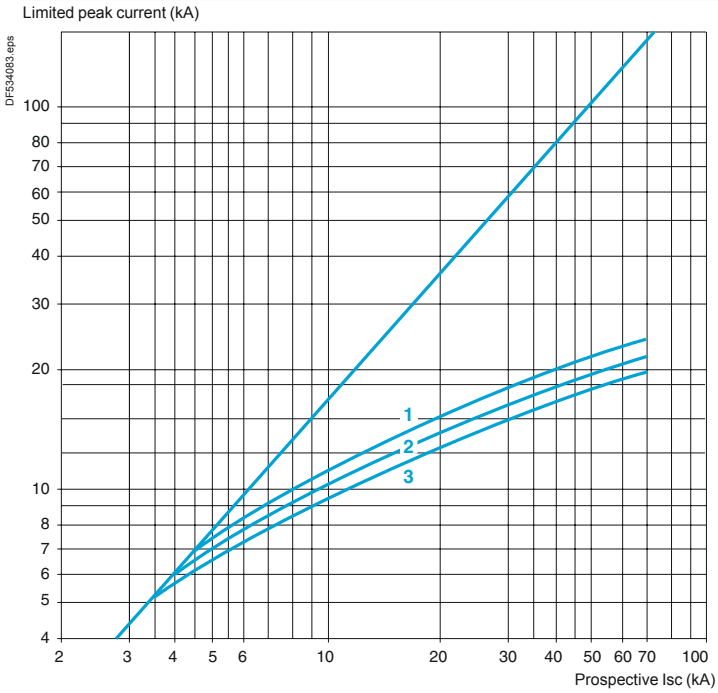
I peak = f (prospective Isc)

For GV7 RE only



1 GV7 RE220
2 GV7 RE150
3 GV7 RE100

For GV7 RS only



1 GV7 RS220
2 GV7 RS150
3 GV7 RS100

References:
page B6/7

Dimensions:
pages B6/79 to B6/81

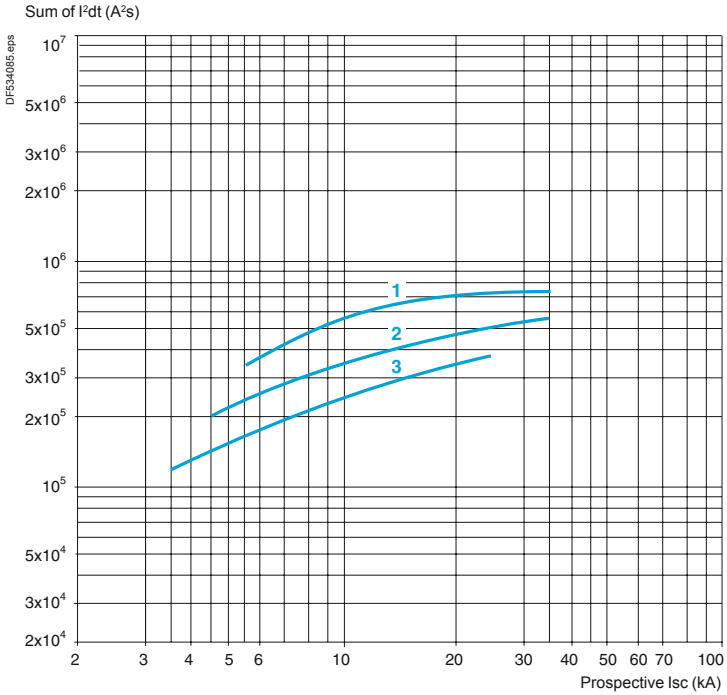
Schemes:
page B6/83

Thermal limit (3-phase 400/415 V)

Thermal limit

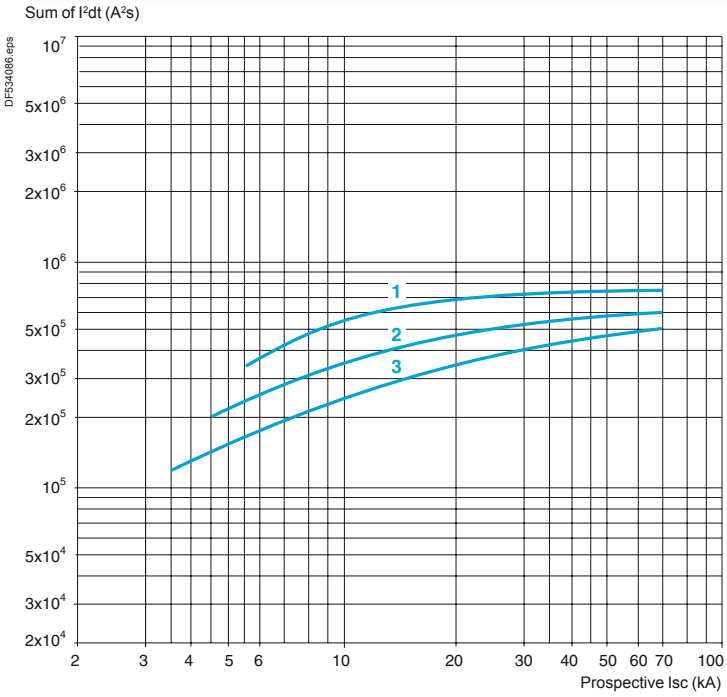
Sum of I^2dt = f (prospective Isc)

For GV7 RE only



1 GV7 RE220
2 GV7 RE150
3 GV7 RE100

For GV7 RS only



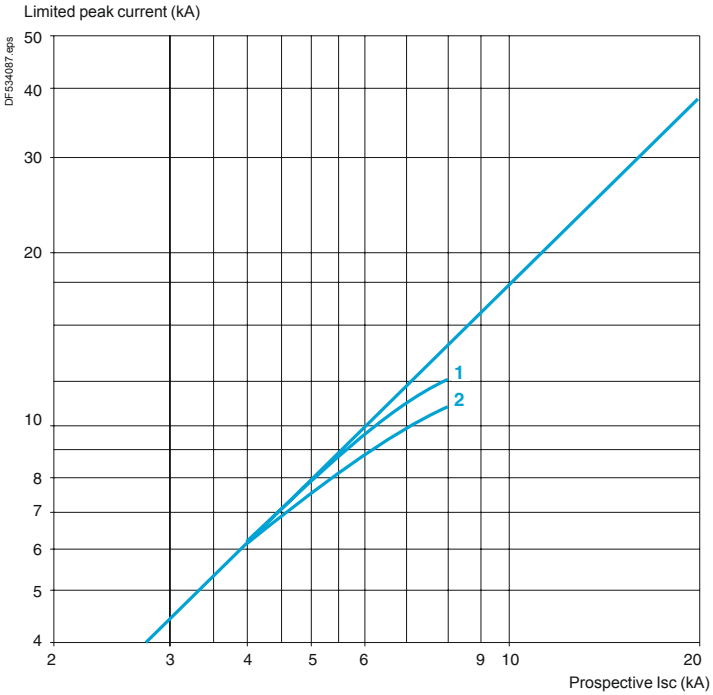
1 GV7 RS220
2 GV7 RS150
3 GV7 RS100

Current limitation on short-circuit (3-phase 690 V)

Dynamic stress

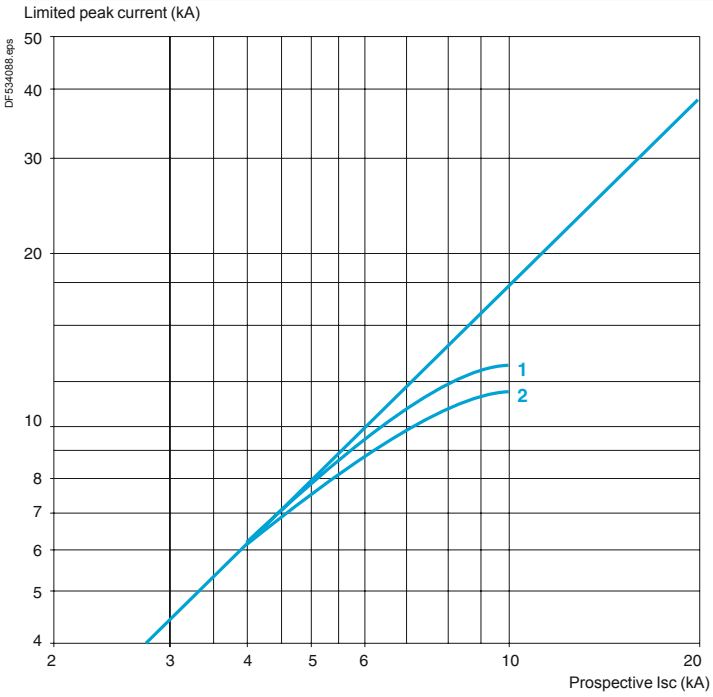
I peak = f (prospective Isc)

For GV7 RE only



1 GV7 RE220
2 GV7 RE150 and GV7 RE100

For GV7 RS only



1 GV7 RS220
2 GV7 RS150 and GV7 RS100

References:
page B6/7

Dimensions:
pages B6/79 to B6/81

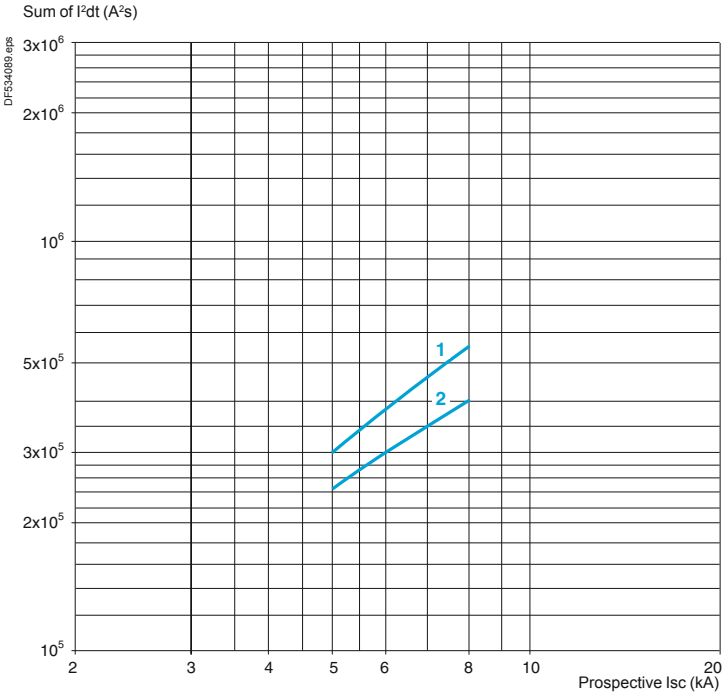
Schemes:
page B6/83

Thermal limit on short-circuit (3-phase 690 V)

Thermal limit

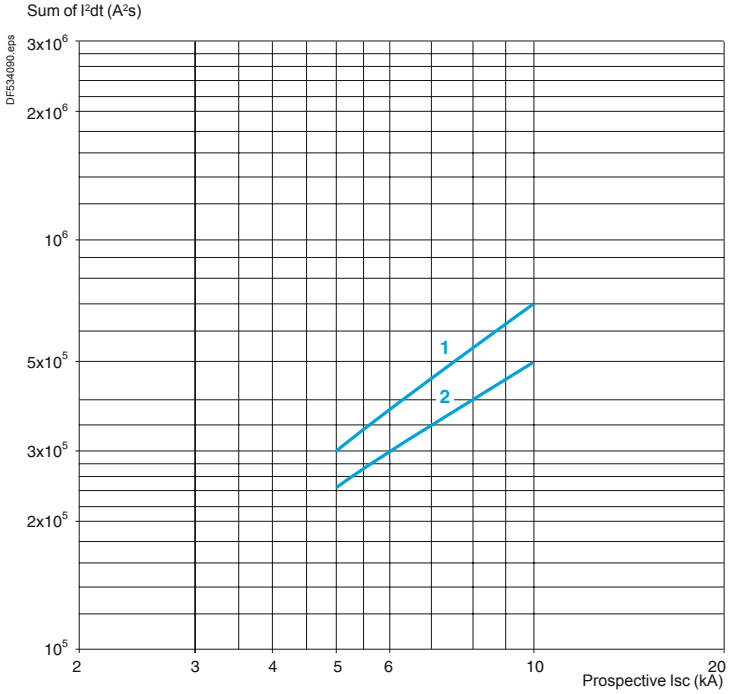
Sum of I^2dt = f (prospective Isc)

For GV7 RE only



1 GV7 RE220
2 GV7 RE150 and GV7 RE100

For GV7 RS only

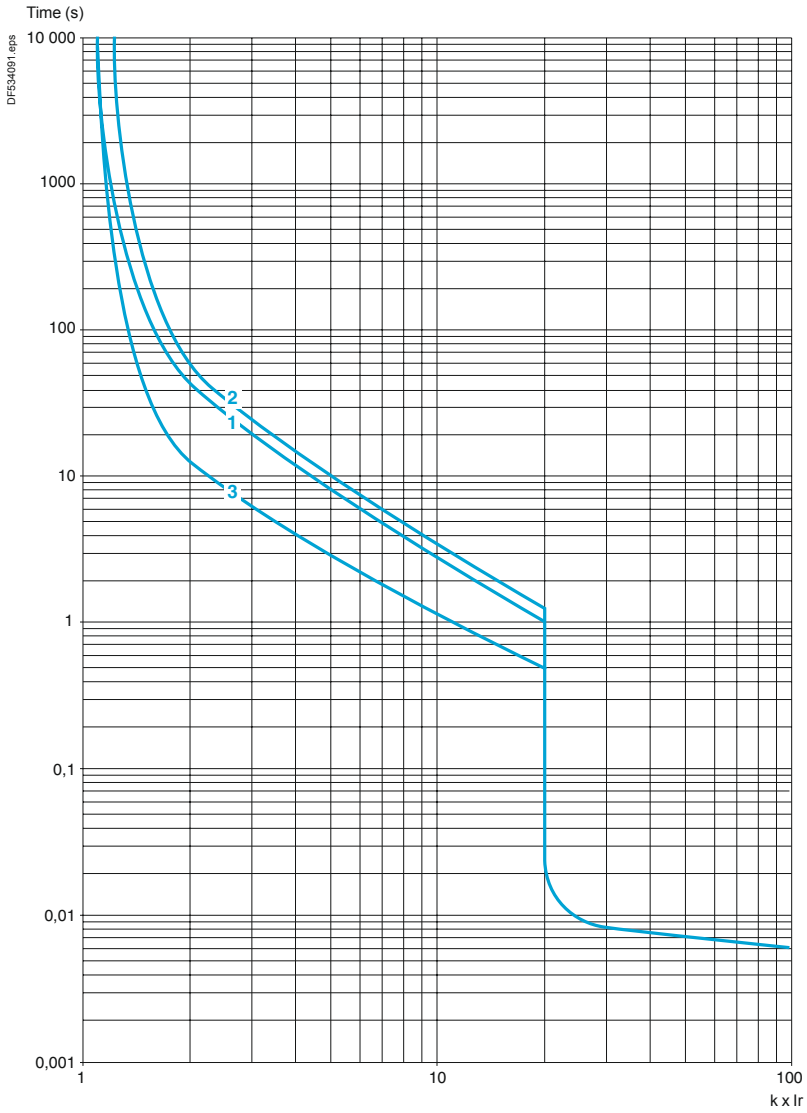


1 GV7 RS220
2 GV7 RS150 and GV7 RS100

TeSys protection components

Thermal-magnetic motor circuit breakers GV2 RT

Thermal-magnetic tripping curves for GV2 RT



1 3 poles from cold state
2 2 poles from cold state
3 3 poles from hot state

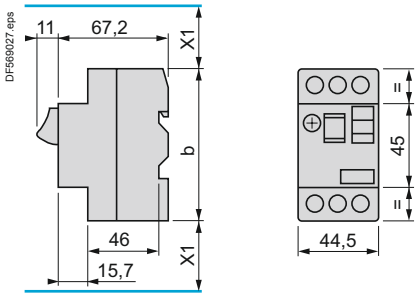
References:
pages B6/8 and B6/9

Dimensions:
page B6/75

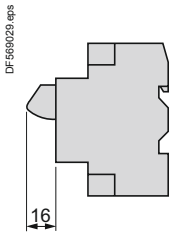
Schemes:
page B6/82

Dimensions

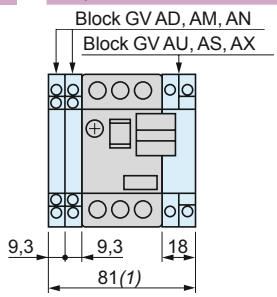
GV2 ME



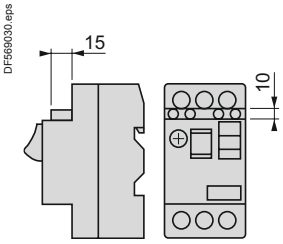
GV AX



GV AD, AM, AN, AU, AS, AX



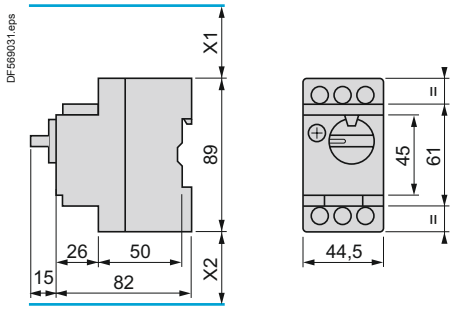
GV AE



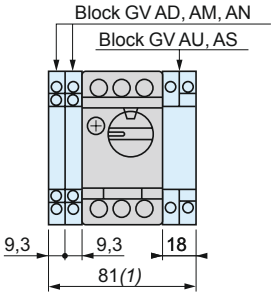
	b
GV2 ME●●	89
GV2 ME●●3	101

(1) Maximum.
X1 Electrical clearance = 40 mm for Ue ≤ 690 V

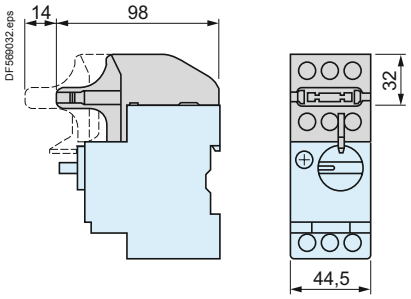
GV2 P



GV AD, AM, AN, AU, AS

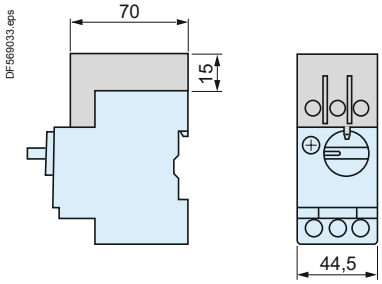


GV2 AK00



(1) Maximum.
X1 Electrical clearance = 40 mm for Ue ≤ 415 V, or 80 mm for Ue = 440 V, or 120 mm for Ue = 500 and 690 V
X2 = 40 mm

GV2 GH7



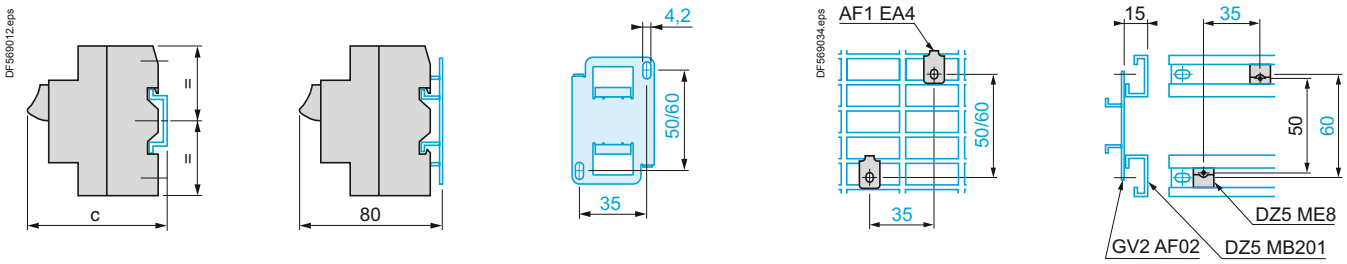
TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Mounting

GV2 ME

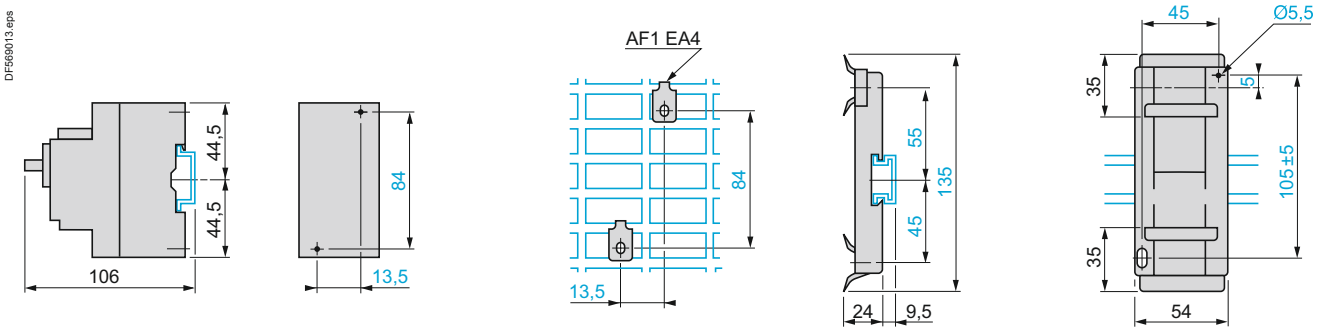
On 35 mm ⊥ rail | **On panel with adapter plate GV2 AF02** | **On pre-slotted plate AM1 PA** | **On rails DZ5 MB201**



c = 78.5 on AM1 DP200 (35 x 7.5)
c = 86 on AM1 DE200, ED200 (35 x 15)

GV2 P

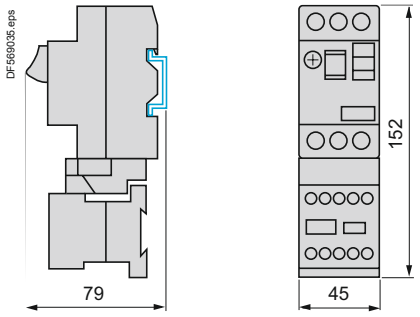
On rail AM1 DE200, ED200 (35 x 15) | **Panel mounted** | **On pre-slotted plate AM1 PA** | **Adapter plate GK2 AF01**



Dimensions

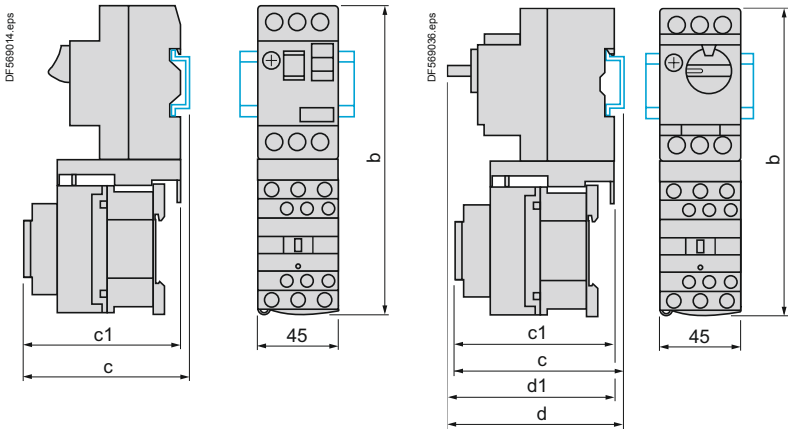
GV2 AF01

Combination GV2 ME + TeSys k contactor



GV2 AF3

Combination GV2 ME + TeSys d contactor | **Combination GV2 P + TeSys d contactor**



GV2 ME +	LC1 D09 ...D18	LC1 D25 and D32
b	176.4	186.8
c1	94.1	100.4
c	99.6	105.9

GV2 P +	LC1 D09 ...D18	LC1 D25 and D32
b	176.4	186.8
c1	100.1	106.4
c	105.6	111.9
d1	95	95
d	100.5	100.5

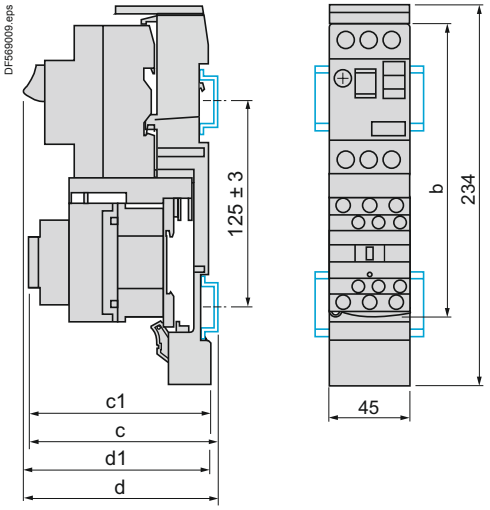
TeSys protection components

Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

Dimensions

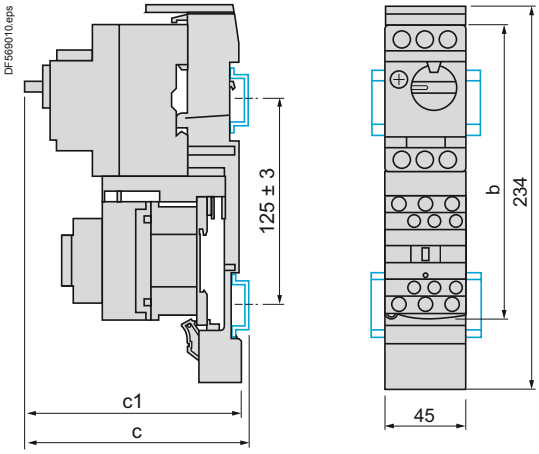
GV2 AF4 + LAD 311

Combination GV2 ME + TeSys d contactor



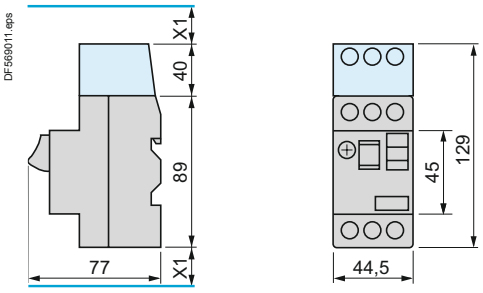
GV2 ME +	LC1 D09…D18	LC1 D25 and D32
b	176.4	186.8
c1	103.1	136.4
c	135.6	141.9
d1	107	107
d	112.5	112.5

Combination GV2 P + TeSys d contactor



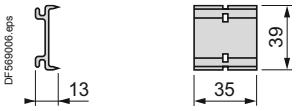
GV2 P +	LC1 D09…D18	LC1 D25 and D32
b	176.4	186.8
c1	136.5	142.4
c	141.6	147.9

GV2 ME + GV1 L3 (current limiter)



X1 = 10 mm for Ue = 230 V
or 30 mm for 230 V < Ue ≤ 690 V

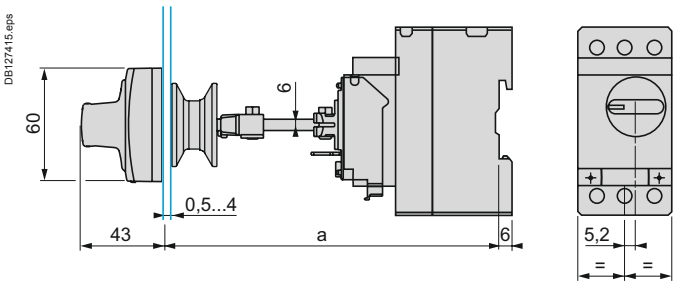
7.5 mm height compensation plate GV1 F03



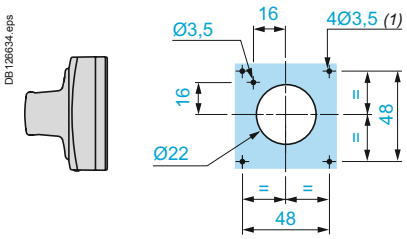
TeSys protection components
Thermal-magnetic motor circuit breakers GV2 P

Mounting

Mounting of external operator GV2 APN01, GV2 APN02 or GV2 APN04 for motor circuit breakers GV2 P

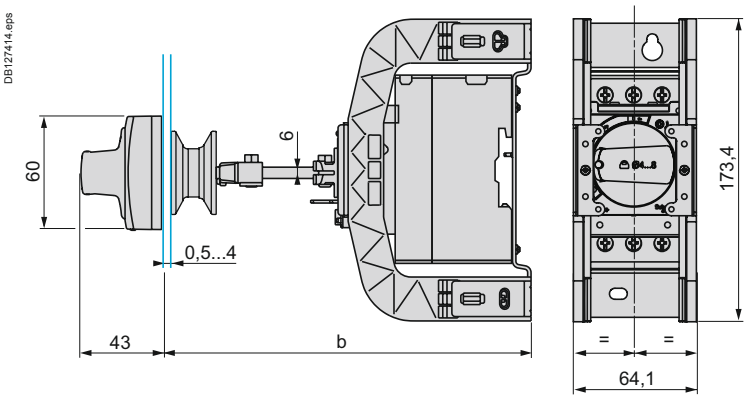


Door cut-out

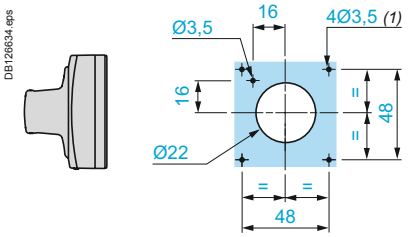


(1) For IP65 only.

Mounting of external operator GV APH02 for motor circuit breakers GV2 P



Door cut-out



(1) For IP65 only.

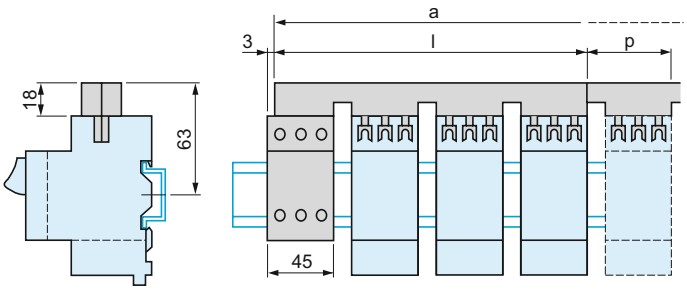
	a		b	
	Mini	Maxi	Mini	Maxi
GV2 APN●●	140	250		
GV2 APN●● + GV APH02			151	250
GV2 APN●● + GV APK11	250	434	-	-
GV2 APN●● + GV APH02 + GV APK11	-	-	250	445

TeSys protection components
Thermal-magnetic motor circuit breakers GV2 ME and GV2 P

GV2 ME, GV2 P

Sets of busbars GV2 G445, GV2 G454, GV2 G472, with terminal block GV2 G05

DF569037.eps

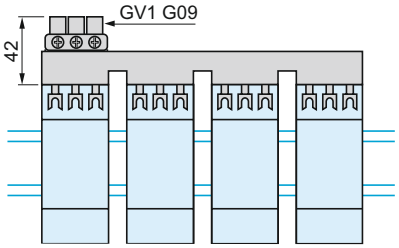


	l	p
GV2 G445 (4 x 45 mm)	179	45
GV2 G454 (4 x 54 mm)	206	54
GV2 G472 (4 x 72 mm)	260	72

	a			
Number of tap-offs	**5**	**6**	**7**	**8**
GV2 G445	224	269	314	359
GV2 G454	260	314	368	422
GV2 G472	332	404	476	548

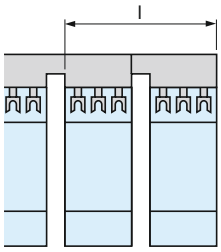
Sets of busbars GV2 G●●● with terminal block GV1 G09

DF569028.eps



Sets of busbars GV2 G245, GV2 G254, GV2 G272

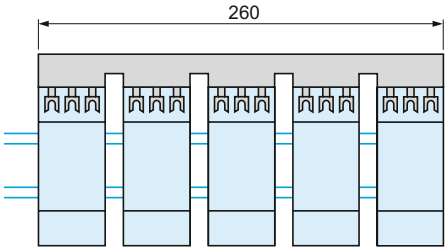
DF569038.eps



	l
GV2 G245 (2 x 45 mm)	89
GV2 G254 (2 x 54 mm)	98
GV2 G272 (2 x 72 mm)	116

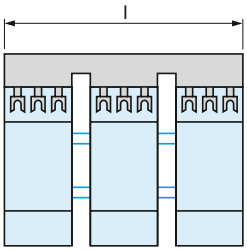
Sets of busbars GV2 G554

DF569039.eps



Sets of busbars GV2 G345 and GV2 G354

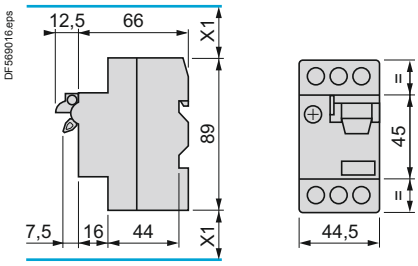
DF569040.eps



	l
GV2 G345 (3 x 45 mm)	134
GV2 G354 (3 x 54 mm)	152

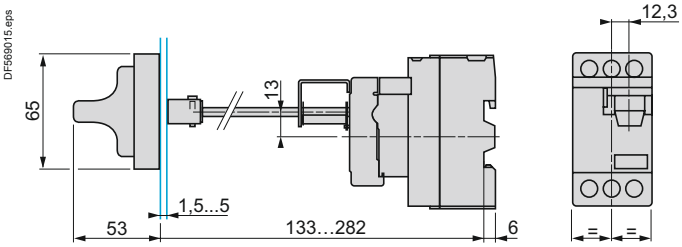
TeSys protection components
Thermal-magnetic motor circuit breakers GV2 RT

GV2 RT
Dimensions

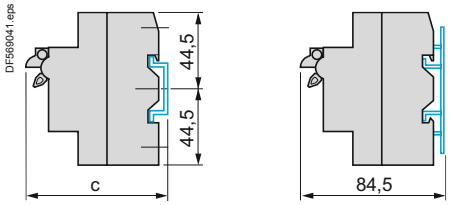


X1: Electrical clearance = 40 mm for Ue < 690 V

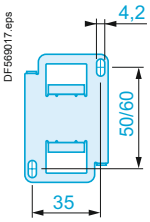
Mounting
Mounting of external operator GV2 AP03



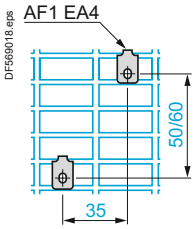
On 35 mm ⎍ rail



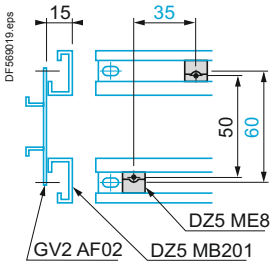
On panel with adapter plate GV2 AF02



On pre-slotted plate AM1 PA



On rails DZ5 MB

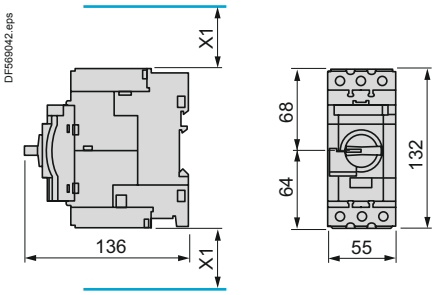


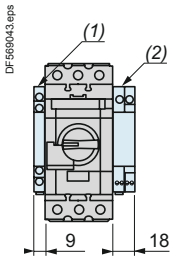
c = 80 on AM1 DP200 (35 x 7.5)
c = 88 on AM1 DE200, ED200 (35 x 15)

TeSys protection components
Thermal-magnetic motor circuit breakers GV3 P

GV3 P

Dimensions





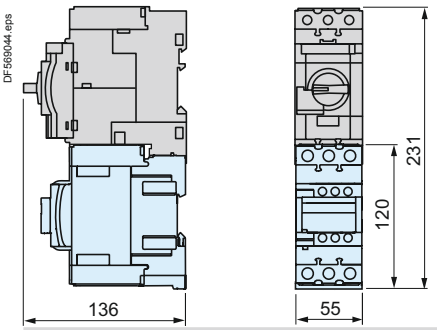
X1 = Electrical clearance (ISC max)
40 mm for Ue ⩽ 500 V, 50 mm for Ue ⩽ 690 V

(1) Blocks GV AN●● , GV AD●● and GV AM11.
(2) Blocks GV3 AU●● and GV3 AS●●.

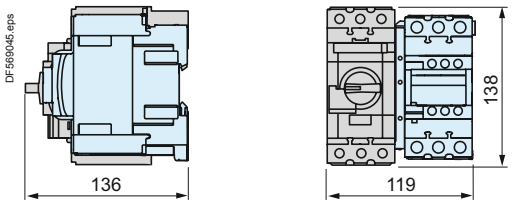
***Note:** Leave a gap of 9 mm between 2 circuit breakers: either an empty space or side-mounting add-on contact blocks.*
Horizontal mounting is possible up to 40 °C.

Mounting

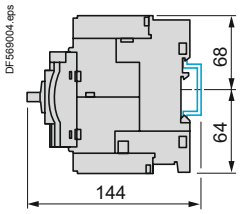
Mounting with TeSys contactor LC1 D40A…D65A



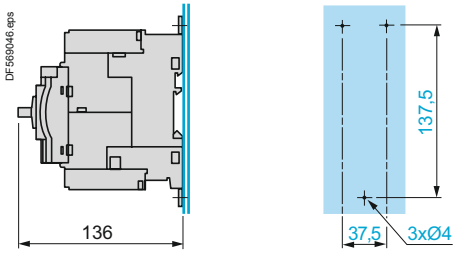
Side by side mounting with TeSys contactor LC1 D40A…D65A (S-shape busbar system GV3 S)



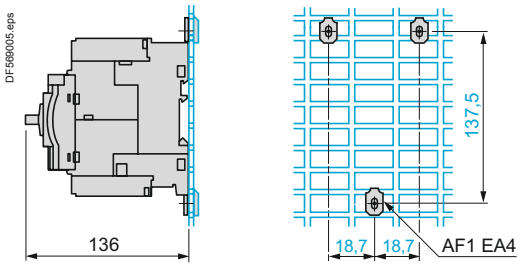
Mounting on rail AM1 DE200 or AM1 ED201



Panel mounting, using M4 screws



Mounting on pre-slotted plate AM1 PA

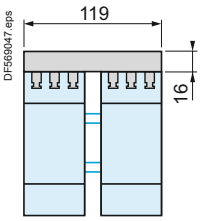


TeSys protection components
Thermal-magnetic motor circuit breakers GV3 P

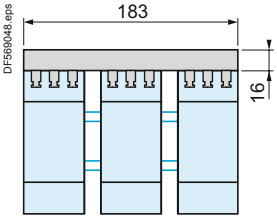
GV3 P

Busbar systems

Set of busbars GV3 G264



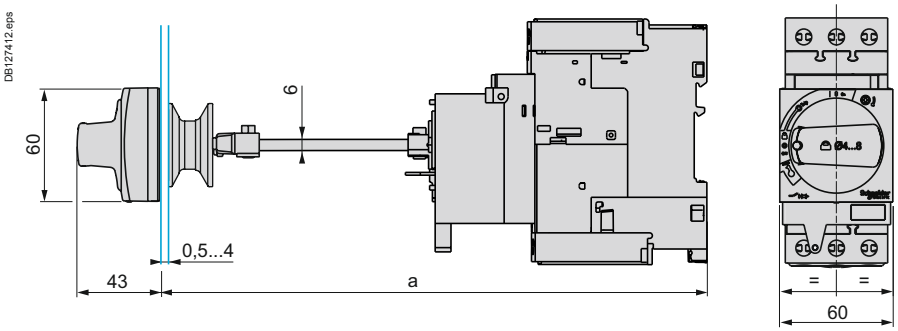
Set of busbars GV3 G364



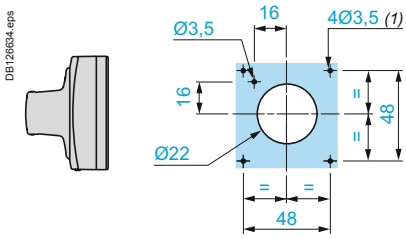
Note: Leave a space of 9 mm between 2 circuit breakers: either an empty space or side-mounting add-on contact blocks.
Horizontal mounting is possible up to 40 °C.

Mounting

Mounting of external operator GV3 APN01, GV3 APN02 or GV3 APN04 for motor circuit breakers GV3 P

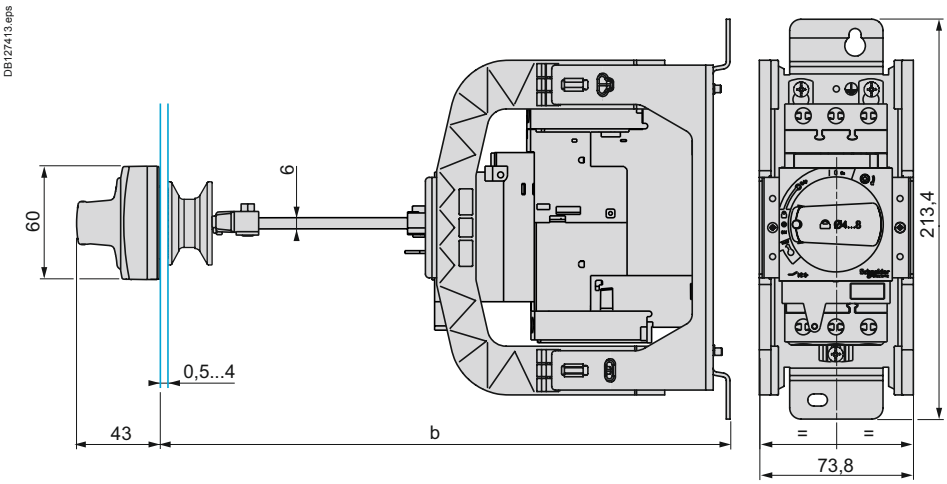


Door cut-out

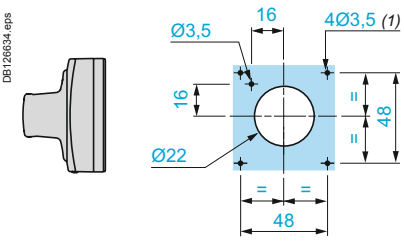


(1) For IP65 only.

Mounting of external operator GV APH03 for motor circuit breakers GV3 P



Door cut-out



(1) For IP65 only.

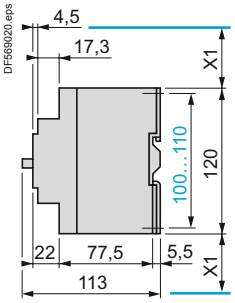
	a		b	
	Mini	Maxi	Mini	Maxi
GV3 APN●●	189	300	-	-
GV3 APN●● + GV APK12	300	481		
GV3 APN●● + GV APH03	-	-	200	300
GV3 APN●● + GV APH03 + GV APK12	-	-	300	492

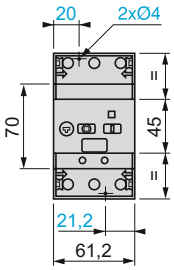
TeSys protection components

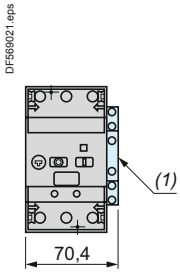
Thermal-magnetic motor circuit breakers GV3 ME80

GV3 ME80

Dimensions





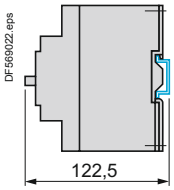


X1 = Electrical clearance (ISC max)
40 mm for Ue ≤ 500 V, 50 mm for Ue ≤ 690 V

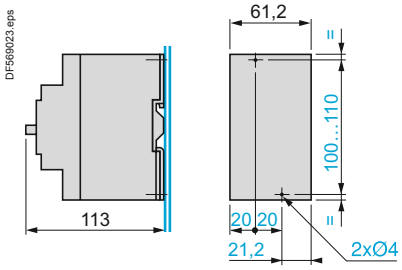
(1) Blocks GV3 A01…A07.

Mounting

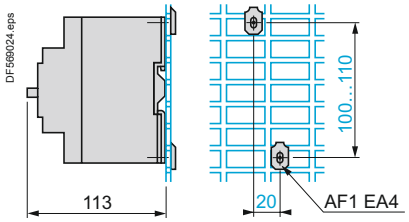
Mounting on rail AM1 DE200 or AM1 ED201



Panel mounting, using M4 screws



Mounting on pre-slotted plate AM1 PA

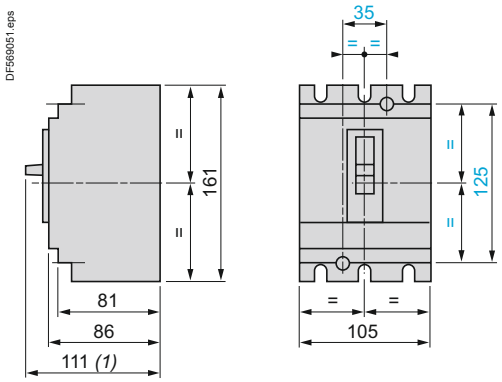


TeSys protection components

Thermal-magnetic motor circuit breakers GV7 R

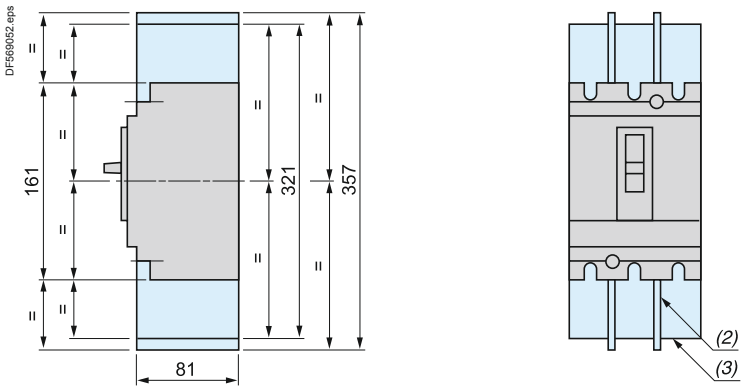
GV7 R

Dimensions



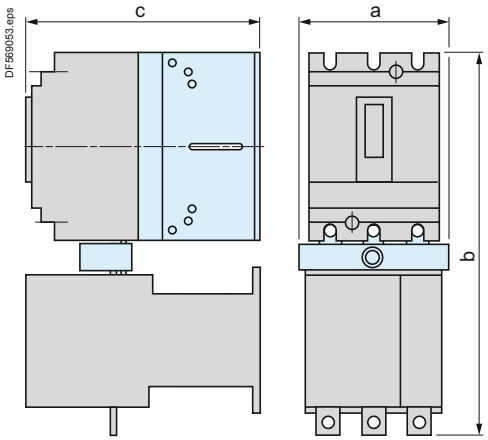
*(1) 126 for **GV7 R●220.***

Motor circuit breakers with terminal shields or phase barriers GV7 R + GV7 AC01 or AC04



*(2) Phase barriers: **GV7 AC04**.*
*(3) Terminal shields: **GV7 AC01**.*

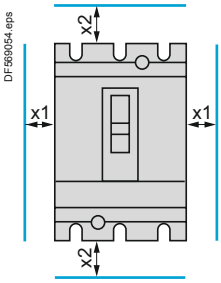
Combination of GV7 R and TeSys contactor LC1 F with kit GV7 AC0●



	a	b	c
GV7 R + LC1 F115 or F150 + GV7 AC06	119	334	181
GV7 R + LC1 F185 + GV7 AC06	119	338	188
GV7 R + LC1 F225 + GV7 AC07	131	358	188
GV7 R + LC1 F265 + GV7 AC07	131	364	215

Minimum distance between 2 circuit breakers mounted side by side = 0

Minimum electrical clearance

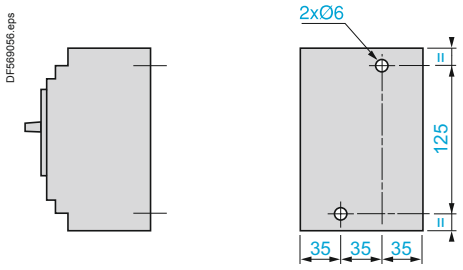


		x1	x2
Painted or insulated metal plate, insulation or insulated bar		0	30
Bare metal plate	U ≤ 440 V	5	35
	440 V < U < 600 V	10	35
	U ≥ 600 V	20	35

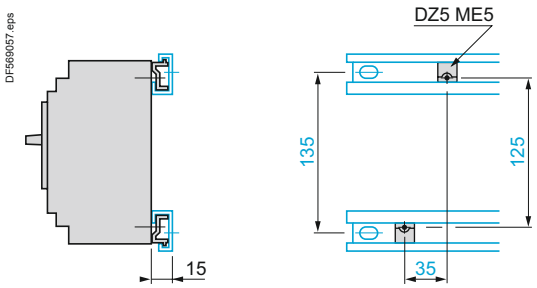
TeSys protection components
Thermal-magnetic motor circuit breakers GV7 R

GV7 R

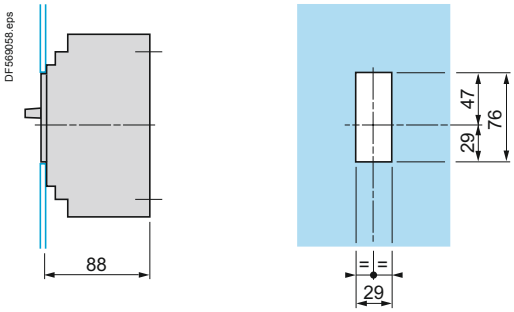
Panel mounting

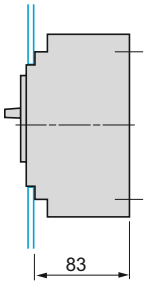


Mounting on 2 mounting rails DZ5 MB201

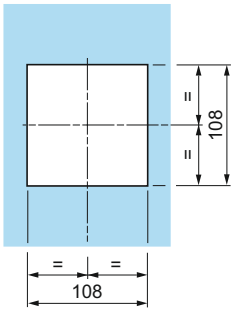


Flush-mounting

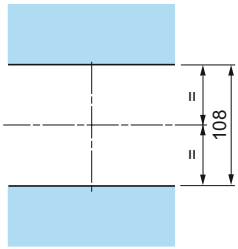




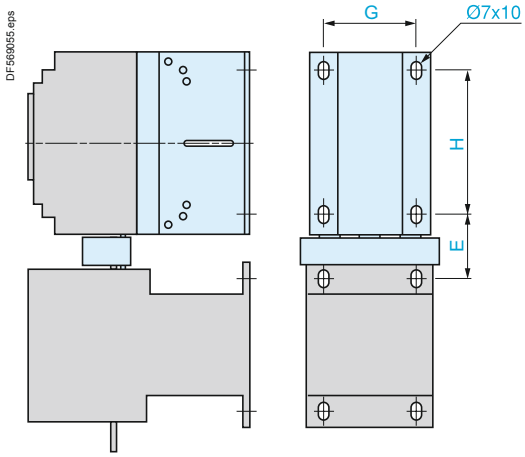
1 circuit breaker GV7 R



n circuit breakers GV7 R side by side



Combination of GV7 R and TeSys contactor LC1 F with kit GV7 AC0●

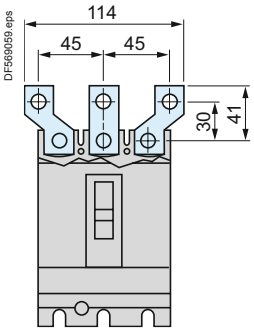


	E	G	H
GV7 R + LC1 F115 + GV7 AC06	44	85	120
GV7 R + LC1 F150 + GV7 AC06	46	85	120
GV7 R + LC1 F185 + GV7 AC06	48	85	120
GV7 R + LC1 F225 + GV7 AC07	57	85	120
GV7 R + LC1 F265 + GV7 AC07	60	85	120

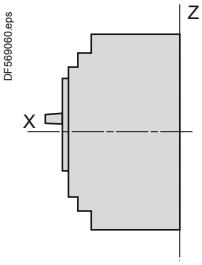
TeSys protection components
Thermal-magnetic motor circuit breakers GV7 R

GV7 R

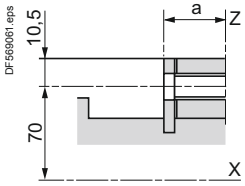
Spreaders GV7 AC03



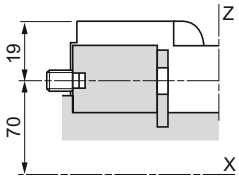
Connection



Smooth terminals

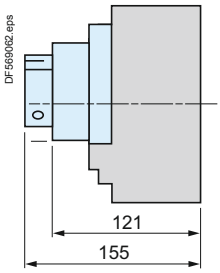


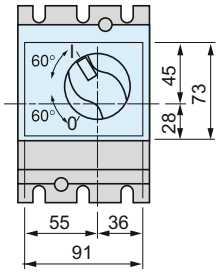
Connectors



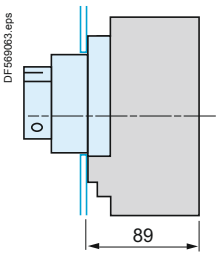
	a
GV7 R●40…R●150	19.5
GV7 R●220	21.5

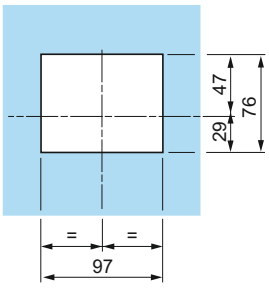
Direct rotary handle GV7 AP03, GV7 AP04



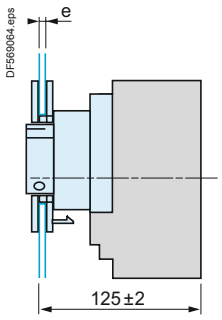


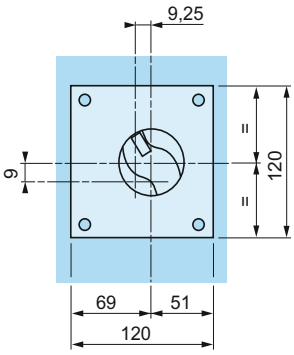
Flush-mounting



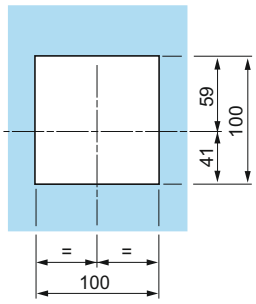


Direct rotary handle GV7 AP03 or GV7 AP04 with conversion accessory GV7 AP05

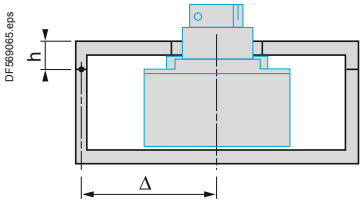




Front face cut-out



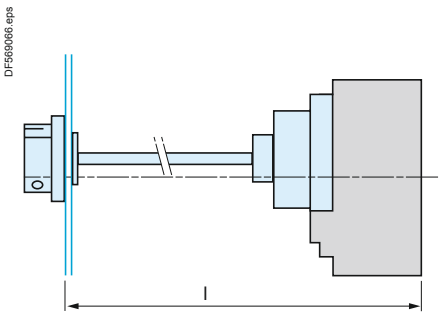
Enclosure viewed from top

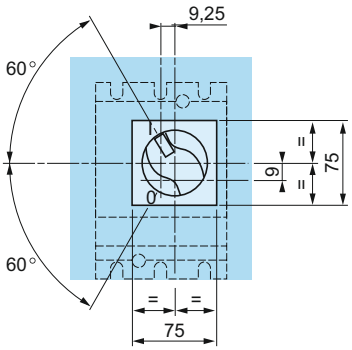


Door cut-outs require a minimum distance between the centre of the circuit breaker and the door hinge point Δ ≥ 100 + (h x 5)

e = 1 to 3 max

Extended rotary handle GV7 AP01, GV7 AP02





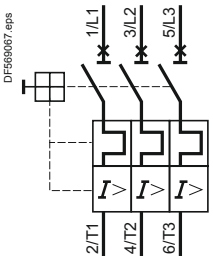
l : 185 min, 600 max
*The shaft of the extended rotary handle **GV7 AP01** or **GV7 AP02** must be cut to length: l – 126 mm.*

TeSys protection components

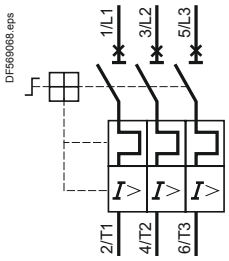
Thermal-magnetic motor circuit breakers GV2 ME, GV2 P, GV3 P and GV2 RT

Schemes

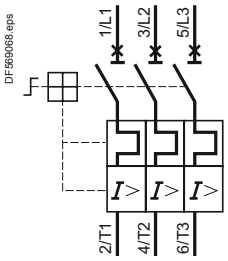
GV2 ME●● and GV2 RT



GV2 P●●

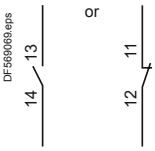


GV3 P●●

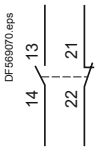


Front mounting add-on contact blocks
Instantaneous auxiliary contacts

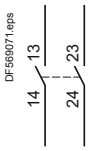
GV AE1



GV AE11

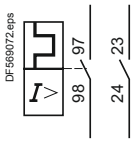


GV AE20

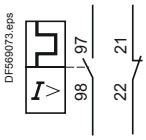


Front mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

GV AED101

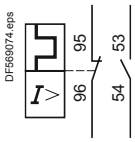


GV AED011

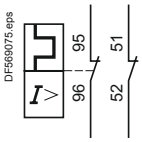


Side mounting add-on contact blocks
Instantaneous auxiliary contacts and fault signalling contacts

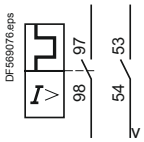
GV AD0110



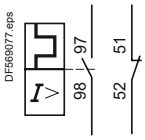
GV AD0101



GV AD1010

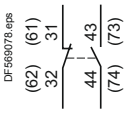


GV AD1001

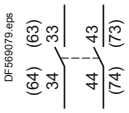


Instantaneous auxiliary contacts

GV AN11

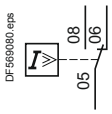


GV AN20



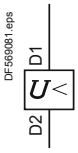
Short-circuit signalling contacts

GV AM11

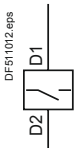


Voltage trips

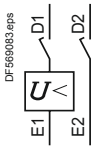
GV AU●●●



GV AS●●●

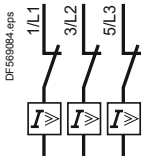


GV AX●●●

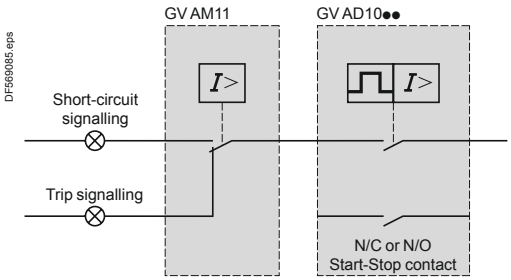


Current limiter

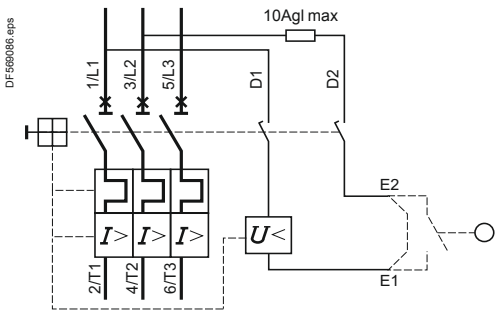
GV1 L3



Use of fault signalling contact and short-circuit signalling contact



Connection of undervoltage trip for dangerous machines (conforming to INRS) on GV2 ME only



Schneider Electric

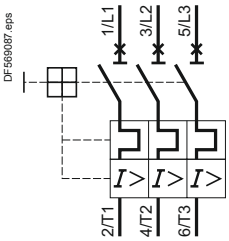
TeSys protection components

Thermal-magnetic motor circuit breakers GV3 ME80 and GV7 R

Schemes

Motor circuit breakers

GV3 ME80

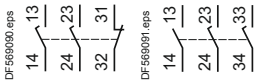


Auxiliary contact block modules

GV3 A01

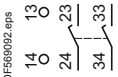
GV3 A02

GV3 A03

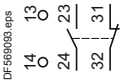


GV3 A05

GV3 A06

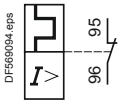


GV3 A07

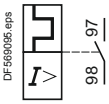


Fault signalling contacts

GV3 A08



GV3 A09



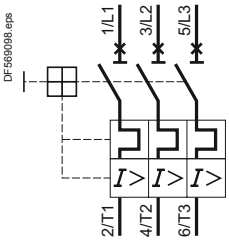
Voltage trips

GV3 B

GV3 D

Motor circuit breakers

GV7 R



Add-on auxiliary contacts according to their location [1]

GV7 AE11, GV7 AB11

Location 1
C/O contact

Location 2
Trip indication

Location 3
Electrical fault indication

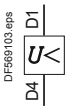
Location 4
C/O contact

A self-adhesive label, supplied with the contact, can be affixed to the front face of the circuit-breaker to allow personalised marking according to the function of the contact or contacts.

(1) See pages B6/91 and B6/17.

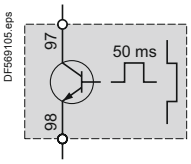
Electric trips

GV7 AU●●●



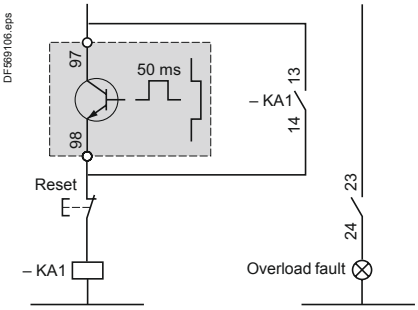
GV7 AS●●●

GV7 AD111, AD112



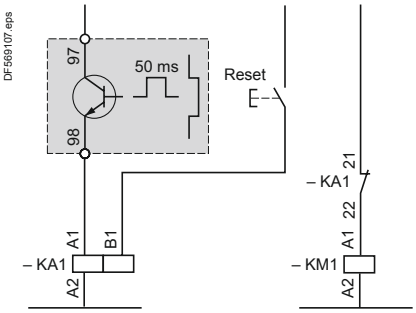
Recommended application schemes GV7 AD111, AD112

Fault indication



Associated components
KA1: CA2 KN or CAD N

Contactor opening on overload



Associated components
KA1: CAD + LAD 6K10 or RHK
KM1: LC1 D or LC1 F

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Presentation

GB2 thermal-magnetic circuit breakers protect and isolate the control circuits of industrial equipment with contactor coils, transformers….
They protect and isolate single-phase auxiliary circuits such as solenoid valves, electro-brakes, battery chargers, supplied from the control circuit voltage.

GB2 CB, GB2 CD, GB2 DB

12 ratings are available, from 0.5 to 20 A, in single-pole (GB2 CB), single-pole + neutral (GB2 CD) and 2-pole (GB2 DB) versions.
They have a magnetic tripping threshold set at between 12 and 16 In to withstand the current peaks generated by many industrial components.

GB2 CS

2 ratings are available, 0.5 and 1 A, in single-pole version.
The magnetic tripping threshold is set between 5 and 7 In.

Functions, installation

Clip-on fixing onto all types of 35 mm ⊥⊥ rails, on ⊏⊐ rails and on Telequick mounting plates.
Upstream and downstream marking by means of AB1 clip-in markers.
Clear indication of “I” and “O” positions on the operator.
Tamper-proof device which requires no special maintenance (fixed magnetic and thermal tripping thresholds).

Selection for the protection of circuits supplied by transformers

Single-phase transformers.
Magnetising peak: 20 In.
Operation of magnetic trips: 13 In.

Power	Primary (1)		Secondary			
VA	220/240 V	380/415 V	24 V	48 V	110 V	220 V
40	GB2 DB05	GB2 DB05	GB2 CD07	GB2 CD06	GB2 CD05	GB2 CD05
63	GB2 DB05	GB2 DB05	GB2 CD08	GB2 CD07	GB2 CD06	GB2 CD05
100	GB2 DB06	GB2 DB05	GB2 CD10	GB2 CD07	GB2 CD06	GB2 CD05
160	GB2 DB07	GB2 DB06	GB2 CD14	GB2 CD09	GB2 CD07	GB2 CD06
250	GB2 DB07	GB2 DB06	GB2 CD16	GB2 CD12	GB2 CD08	GB2 CD07
400	GB2 DB08	GB2 DB07	GB2 CD22	GB2 CD14	GB2 CD09	GB2 CD07
630	GB2 DB10	GB2 DB08	–	GB2 CD21	GB2 CD12	GB2 CD08
1000	GB2 DB14	GB2 DB09	–	–	GB2 CD16	GB2 CD10
1600	GB2 DB20	GB2 DB14	–	–	–	GB2 CD14
2000	GB2 DB21	GB2 DB14	–	–	GB2 CD22	GB2 CD16
2500	GB2 DB22	GB2 DB20	–	–	–	GB2 CD20
3000	GB2 DB22	GB2 DB20	–	–	–	GB2 CD21
4000	–	GB2 DB21	–	–	–	GB2 CD22
5000	–	GB2 DB22	–	–	–	–

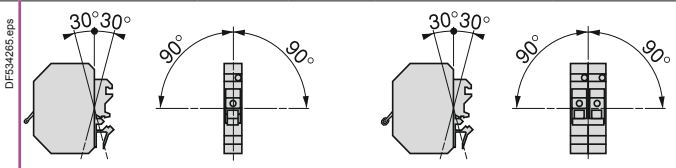
*(1) If the breaking capacity of the **GB2** is insufficient, use a **GV2 RT** with 2 poles connected in series, see page B6/8.*

Characteristics: pages B6/85 to B6/87
References: pages B6/26 and B6/27
Dimensions: page B6/88
Schemes: page B6/88

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Environment

Circuit breaker type			GB2 CB	GB2 CD	GB2 DB	GB2 CS
Conforming to standards			IEC 60947-1, 947-2, EN 60947-1, 60947-2			
Product certifications			CSA, NEMKO, UL	NEMKO, UL	–	–
Protective treatment			"TC"			
Degree of protection	Conforming to IEC 60529		IP 20			
Shock resistance	Conforming to IEC 60068-2-27		22 gn for 20 ms			
Vibration resistance	Conforming to IEC 60068-2-6		5 gn (5…110 Hz)			
Ambient air temperature around the device	Storage	°C	-40…+80			
	Operation	°C	-20…+60			
Flame resistance	Conforming to IEC 60695-2-1	°C	960			
Maximum operating altitude		m	3000			
Operating position	In relation to normal vertical mounting plane		 GB2 CB,CD, CS		GB2 DB	
Cabling			Minimum c.s.a.		Maximum c.s.a.	
	Solid cable	mm²	1 x 0.75		1 x 6 or 2 x 4	
	Flexible cable with cable end	mm²	1 x 0.75		1 x 4 or 2 x 2.5	
Tightening torque		N.m	1.2			

Technical characteristics

Utilisation category	Conforming to IEC 60947-2		A	A	A	A
Rated operational voltage (Ue)	Conforming to IEC 60947-2	V	250 (1)	250	415	250 (1)
	Conforming to CSA C22-2 Nr 14 and UL 1077	V	277	–	277	–
Rated operational frequency	Conforming to IEC 60947-2	Hz	50/60	50/60	50/60	50/60
Rated impulse withstand voltage (U imp)	Conforming to IEC 60947-2	kV	4	4	4	4
Total power dissipated per pole		W	2	2	2	1.9
Mechanical and electrical durability	C.O.: Closing - Opening	C.O.	8000	8000	8000	8000

Operational current correction coefficient (a or ---)	According to the permissible ambient temperature	°C	-20	-10	0	+10	+20	+30	+40	+50	+60
	Correction coefficient		1.2	1.15	1.1	1.05	1	0.95	0.90	0.85	0.80

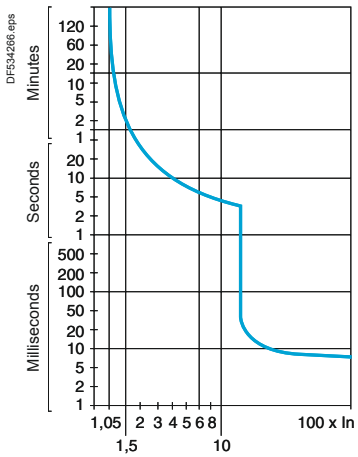
Tripping threshold	Of the magnetic trips		12…16 In	12…16 In	12…16 In	5…7 In

*(1) Ue = 415 V when a **GB2** circuit breaker is fitted on every live conductor.*

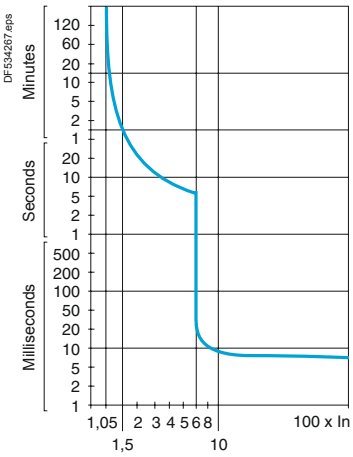
Tripping curves

Average operating time at 20 °C without prior current flow (cold state)

GB2 CB, GB2 CD, GB2 DB



GB2 CS



Presentation, selection: page B6/84
References: pages B6/26 and B6/27
Dimensions: page B6/88
Schemes: page B6/88

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Circuit breaker type				GB2											
				CB05	CB06	CB07	CB08	CB09	CB10	CB12	CB14	CB16	CB20	CB21	CB22
Rating			A	0.5	1	2	3	4	5	6	8	10	12	16	20
Breaking capacity conforming to IEC 60947-2 ∿ 50/60 Hz	110 V	Icu	kA	50	50	15	10	6	3	3	3	2	2	2	2
		Ics % (1)		100	50	50	50	50	75	75	75	75	75	75	75
	230/240 V	Icu	kA	50	50	15	3	3	2	1.5	1.5	1.5	1.5	1.5	1.5
		Ics % (1)		25	25	25	50	50	75	75	75	75	75	75	75
Associated fuses, if required if Isc > breaking capacity Icu conforming to IEC 60947-2	110 V	aM	A	★	★	20	25	25	40	40	50	50	63	63	63
		gG	A	★	★	25	32	32	50	50	63	63	80	80	80
	230/240 V	aM	A	★	★	16	20	20	32	32	40	40	50	50	50
		gG	A	★	★	25	32	32	40	40	50	50	63	63	63

Circuit breaker type				GB2											
				CD05	CD06	CD07	CD08	CD09	CD10	CD12	CD14	CD16	CD20	CD21	CD22
Rating			A	0.5	1	2	3	4	5	6	8	10	12	16	20
Breaking capacity conforming to IEC 60947-2 ∿ 50/60 Hz	110 V	Icu	kA	50	50	15	10	6	3	3	3	2	2	2	2
		Ics % (1)		100	50	50	50	50	75	75	75	75	75	75	75
	230/240 V	Icu	kA	50	50	15	3	3	2	1.5	1.5	1.5	1.5	1.5	1.5
		Ics % (1)		25	25	25	50	50	75	75	75	75	75	75	75
Associated fuses, if required if Isc > breaking capacity Icu conforming to IEC 60947-2	110 V	aM	A	★	★	20	25	25	40	40	50	50	63	63	63
		gG	A	★	★	25	32	32	50	50	63	63	80	80	80
	230/240 V	aM	A	★	★	16	20	20	32	32	40	40	50	50	50
		gG	A	★	★	25	32	32	40	40	50	50	63	63	63

Circuit breaker type				GB2											
				DB05	DB06	DB07	DB08	DB09	DB10	DB12	DB14	DB16	DB20	DB21	DB22
Rating			A	0.5	1	2	3	4	5	6	8	10	12	16	20
Breaking capacity conforming to IEC 60947-2 ∿ 50/60 Hz	110 V	Icu	kA	50	50	15	10	6	3	3	3	2	2	2	2
		Ics % (1)		100	50	50	50	50	75	75	75	75	75	75	75
	230/240 V	Icu	kA	50	50	15	3	3	2	1.5	1.5	1.5	1.5	1.5	1.5
		Ics % (1)		25	25	25	50	50	75	75	75	75	75	75	75
	400/415 V	Icu	kA	50	50	15	3	3	2	1.5	1.5	1.5	1.5	1.5	75
		Ics % (1)		25	25	25	50	50	75	75	75	75	75	1.5	75
Associated fuses, if required if Isc > breaking capacity Icu conforming to IEC 60947-2	110 V	aM	A	★	★	20	25	25	40	40	50	50	63	63	63
		gG	A	★	★	25	32	32	50	50	63	63	80	80	80
	230/240 V	aM	A	★	★	16	20	20	32	32	40	40	50	50	50
		gG	A	★	★	25	32	32	40	40	50	50	63	63	63
	400/415 V	aM	A	★	★	16	20	20	32	32	40	40	50	50	50
		gG	A	★	★	25	32	32	40	40	50	50	63	63	63

(1) As % of Icu.
★ Fuse not required. Breaking capacity Icu > Isc.

Presentation, selection: page B6/84
References: pages B6/26 and B6/27
Dimensions: page B6/88
Schemes: page B6/88

Protection components

Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Circuit breaker type				GB2											
				●●05	●●06	●●07	●●08	●●09	●●10	●●12	●●14	●●16	●●20	●●21	●●22
Breaking capacity (Icu) conforming to IEC 60947-2 ⎓		24 V	kA	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
		48 V	kA	1	1	1	1	1	1	1	1	–	–	–	–
Operational current conforming to IEC 60947-5-1 ⎓	DC-12	24 V	A	0.5	1	2	3	4	5	6	8	10	12	16	20
		48 V	A	0.5	1	2	3	4	5	6	8	10	12	16	20
	DC-13	24 V	A	0.5	1	2	3	4	5	6	8	10	12	16	20
		48 V	A	0.5	1	2	3	4	5	6	8	–	–	–	–

Circuit breaker type				GB2	
				CS05	CS06
Rating			A	0.5	1
Breaking capacity conforming to IEC 60947-2 ∿ 50/60 Hz	110 V	Icu	kA	50	50
		Ics % (1)		100	100
	230/240 V	Icu	kA	50	50
		Ics % (1)		25	25
	400/415 V (2)	Icu	kA	50	50
		Ics % (1)		25	25
Breaking capacity (Icu) conforming to IEC 60947-2 ⎓		24 V	kA	1.5	1.5
		48 V	kA	1	1
Operational current conforming to IEC 60947-5-1 ⎓	DC-12	24 V	A	0.5	1
		48 V	A	0.5	1
	DC-13	24 V	A	0.5	1
		48 V	A	0.5	1

Maximum permissible line length for star-delta starting (length of cable containing 2 or more conductors)										
	With contactors LC● D09 …D18	Operational voltage		V	48	110	230	48	110	230
		C.s.a.	0.60 mm²	m	(3)	31	365	6	85	230
			0.75 mm²	m	(3)	39	460	8	110	290
			1 mm²	m	(3)	52	610	10	145	380
			1.5 mm²	m	(3)	78	910	15	220	570
			2.5 mm²	m	(3)	130	1520	26	360	950
			4 mm²	m	(3)	200	2400	41	580	1500
	With contactors LC● D25…D32	Operational voltage		V	48	110	230	48	110	230
		C.s.a.	0.60 mm²	m	(3)	(3)	230	(3)	56	230
			0.75 mm²	m	(3)	(3)	290	(3)	70	290
			1 mm²	m	(3)	(3)	390	(3)	95	380
			1.5 mm²	m	(3)	(3)	580	(3)	140	570
			2.5 mm²	m	(3)	(3)	970	(3)	230	950
			4 mm²	m	(3)	(3)	1500	(3)	375	1500
	With contactors LC● D40…D80	Operational voltage		V	48	110	230	48	110	230
		C.s.a.	0.60 mm²	m	(3)	(3)	46	(3)	13	100
			0.75 mm²	m	(3)	(3)	60	(3)	17	130
			1 mm²	m	(3)	(3)	80	(3)	22	170
			1.5 mm²	m	(3)	(3)	120	(3)	34	250
			2.5 mm²	m	(3)	(3)	190	(3)	56	420
			4 mm²	m	(3)	(3)	310	(3)	90	680

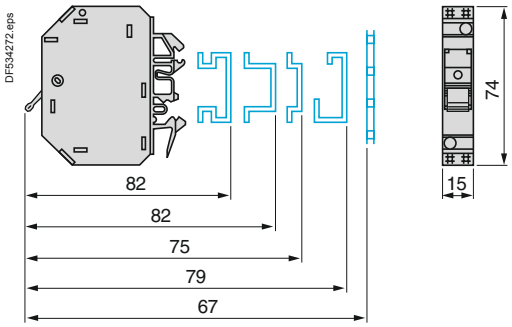
(1) As % of Icu.
*(2) One **GB2 CS** circuit breaker on each live conductor.*
(3) Use relays.

Protection components

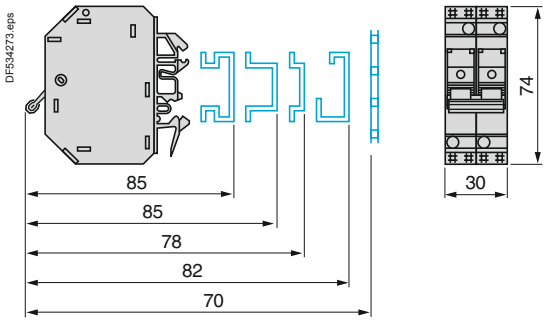
Thermal-magnetic circuit breakers TeSys GB2 for the protection of industrial equipment control circuits

Dimensions

GB2 CB••, GB2 CD••, GB2 CS••



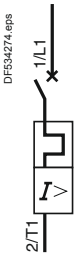
GB2 DB••



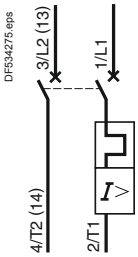
Marking: up to twelve AB1 R clip-in markers.

Schemes

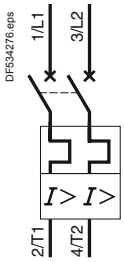
GB2 CB••



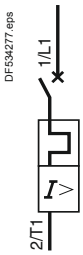
GB2 CD••



GB2 DB••



GB2 CS••



Presentation, selection:
page B6/84

References:
pages B6/26 and B6/27

Characteristics:
pages B6/85 to B6/87

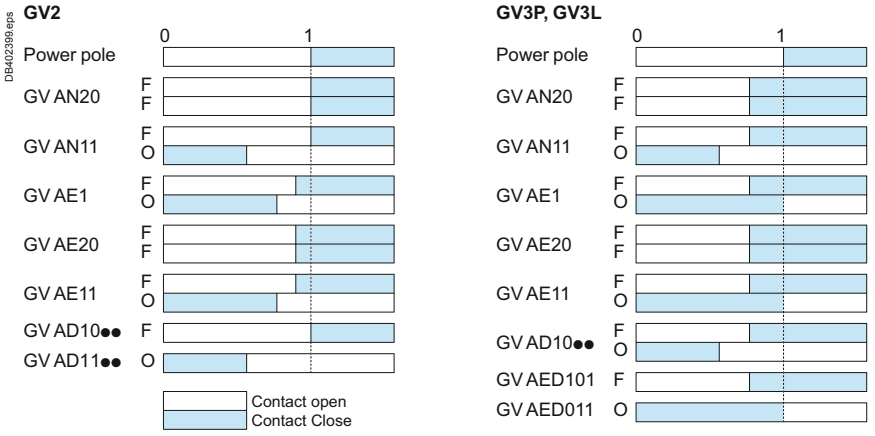
TeSys protection components

Thermal-magnetic motor circuit breakers GV2, GV3 P and GV3 L

Auxiliary contacts

Type of contacts			Instantaneous auxiliary GV AN, GV AD							Fault signalling GV AD, GV AM11 (1)				Instantaneous auxiliary GV AE			
Rated insulation voltage (Ui) (associated insulation coordination)	Conforming to IEC 60947-1	V	690							690				250 (690 in relation to main circuit)			
	Conforming to CSA C22-2 n° 14 and UL 508	V	600							300				300			
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	A	6							2.5				2.5			
	Conforming to CSA C22-2 n° 14 and UL 508	A	5							1				1			
Mechanical durability (C.O.: Close - Open)		C.O.	100 000							1000				100 000			
Operational power and current conforming to IEC 60947-5-1. a.c. operation			AC-15/100 000 C.O.							AC-14/1000 C.O.				AC-15/100 000 C.O.			
	Rated operational voltage (Ue)	**V**	**48**	**110 127**	**230 240**	**380 415**	**440**	**500**	**690**	**24**	**48**	**110 127**	**230 240**	**24**	**48**	**110 127**	**230 240**
	Operational power, normal conditions	VA	300	500	720	850	650	500	400	36	48	72	72	48	60	120	120
	Occasional breaking and making capacities, abnormal conditions	kVA	3	7	13	15	13	12	9	0.22	0.3	0.45	0.45	0.48	0.6	1.27	2.4
	Rated operational current (Ie)	A	6	4.5	3.3	2.2	1.5	1	0.6	1.5	1	0.5	0.3	2	1.25	1	0.5
Operational power and current conforming to IEC 60947-5-1. d.c. operation			DC-13/100 000 C.O.							DC-13/1000 C.O.				DC-13/100 000 C.O.			
	Rated operational voltage (Ue)	**V**	**24**	**48**	**60**	**110**	**240** (2)	**–**	**–**	**24**	**48**	**60**	**–**	**24**	**48**	**60**	**–**
	Operational power, normal conditions	W	140	240	180	140	120	–	–	24	15	9	–	24	15	9	–
	Occasional breaking and making capacities, abnormal conditions	W	240	360	240	210	180	–	–	100	50	50	–	100	50	50	–
	Rated operational current (Ie)	A	6	5	3	1.3	0.5	–	–	1	0.3	0.15	–	1	0.3	0.15	–
Low power switching reliability of contact			**GV AE**: Number of failures for "n" million operating cycles (17 V-5 mA): = 10^{-6}														
Minimum operational conditions d.c. operation		V	17														
		mA	5														
Short-circuit protection			By **GB2 CB●●** circuit breaker (rating according to operational current for Ue ≤ 415 V) or by gG fuse 10 A max											**GB2 CB06** or gG fuse 10 A max			
Cabling, screw clamp terminals	Number of conductors		**1**			**2**											
	Solid cable	mm²	1…2.5			1…2.5											
	Flexible cable without cable end	mm²	0.75…2.5			0.75…2.5											
	Flexible cable with cable end	mm²	0.75…1.5			0.75…1.5											
	Tightening torque	N.m	1.4 max			1.4 max											
Cabling, spring terminal connections			**GV AN** only														
	Flexible cable without cable end	mm²	0.75…2.5			0.75…2.5				–				0.75…1.5			

Operation of instantaneous auxiliary contacts



Operation of fault signalling contacts

GV AM11
Change of state following tripping on short-circuit.

GV AD10●● and **GV AD01●●**
Change of state following tripping on short-circuit, overload or undervoltage.

(1) For application example of fault signalling contact and short-circuit signalling contact, see page B6/82.
(2) Add an RC circuit type LA4 D to the load terminals, see page B8/17.

References:
page B6/11

Dimensions, schemes:
pages B6/38 to B6/48 and B6/70 to B6/83

TeSys protection components

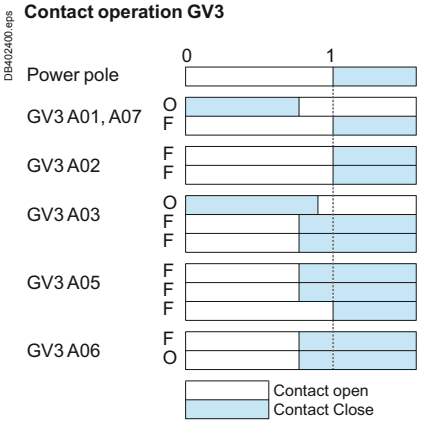
Thermal-magnetic motor circuit breakers GV3 ME80

Auxiliary contacts

Type of contacts			Instantaneous auxiliary contacts GV3 A01…A07							Fault signalling contacts GV3 A08 and A09						
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690							690						
	Conforming to CSA C22-2 n° 14, UL 508	**V**	600 (B600)							600 (B600)						
Conventional rated thermal current (Ith)	Conforming to IEC 60947-5-1	**A**	6							6						
	Conforming to CSA C22-2 n° 14, UL 508	**A**	5 (B600)							5 (B600)						
Mechanical durability (C.O.: Close - Open)		**C.O.**	100 000							1000						
Operational power and current conforming to IEC 60947-5-1 a.c. operation	**Rated operational voltage (Ue)**	**V**	**48**	**110 127**	**220 240**	**380 415**	**440**	**500**	**690**	**48**	**110 127**	**220 240**	**380 415**	**440**	**500**	**690**
	Operational power		AC-11/100 000 C.O.							AC-11/1000 C.O.						
		VA	350	500	800	850	700	700	400	240	460	800	850	450	450	200
	Occasional breaking and making capacities	**kVA**	4	12	20	20	15	15	10	2.4	8	12	15	12	12	8
	Operational current (Ie)	**A**	6	4.5	3.5	2.2	1.5	1.5	0.6	5	3.6	3.5	2.2	1	1	0.3
Operational power and current conforming to IEC 60947-5-1 d.c. operation	**Rated operational voltage (Ue)**	**V**	**24**	**48**	**60**	**110**	**220**			**24**	**48**	**60**	**110**	**220**		
	Operational power		DC-11/100 000 C.O.							DC-11/1000 C.O.						
		W	180	240	180	140	120			120	120	90	70	60		
	Occasional breaking and making capacities	**W**	240	360	240	210	180			180	180	135	105	90		
	Operational current (Ie)	**A**	6	5	3	1.3	0.5			5	2.5	1.5	0.7	0.3		
Short-circuit protection			By **GB2 CB08** circuit breaker or gG fuse, 6A max													
Connection	Number of conductors		**1**			**2**										
	Solid cable	**mm²**	1…2.5			1…2.5										
	Flexible cable without cable end	**mm²**	0.75…2.5			0.75…2.5										
	Flexible cable with cable end	**mm²**	0.75…2.5			0.75…1.5										

Contact operation GV3

GV3 A08 and **A09** change state following tripping on short-circuit or overload



References:
page B6/11

Schemes:
page B6/48

TeSys protection components

Thermal-magnetic motor circuit breakers GV7

Auxiliary contacts

Auxiliary contact characteristics

Type of contacts				GV7 AE11							GV7 AB11						
Rated insulation voltage(Ui) (associated insulation coordination)	Conforming to IEC 60947-1		V	690							690						
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1		A	6							6						
Mechanical durability (C.O.: Close - Open)			C.O.	50 000							50 000						
Operational current conforming to IEC 60947-5-1 a.c. operation				AC-12 or AC-15. 50 000 C.O.							AC-12 or AC-15. 50 000 C.O.						
	Rated operational voltage (Ue)		**V**	**24**	**48**	**110**	**230/240**	**380/415**	**440**	**690**	**24**	**48**	**110**	**230/240**	**380/415**	**440**	**690**
	Rated operational current (Ie)	AC-12	**A**	6	6	6	6	6	6	6	5	5	5	5	5	5	5
		AC-15	**A**	6	6	5	4	3	3	0.1	5	5	4	3	2.5	2.5	0.1
Operational current conforming to IEC 60947-5-1 d.c. operation				DC-12 or DC-14. 50 000 C.O.							DC-12 or DC-14. 50 000 C.O.						
	Rated operational voltage (Ue)		**V**	**24**		**48**		**110**		**250**	**24**		**48**		**110**		**250**
	Rated operational current (Ie)	DC-12	**A**	2.5		2.5		0.8		0.3	2		2		0.5		–
		DC-14	**A**	1		0.2		0.5		0.03	0.5		0.1		0.25		–
Minimum operational conditions d.c. operation			**V**	17							12						
			mA	5							5						
Short-circuit protection				By **GB2 CB●●** circuit breaker (rating according to operational current for Ue ≤ 415 V) or gG fuse, 10 A max.													
Cabling	Solid cable		**mm²**	1 x 1.5 conductor							1 x 1.5 conductor						
	Flexible cable without cable end		**mm²**	1 x 1.5 conductor							1 x 1.5 conductor						
	Flexible cable with cable end		**mm²**	1 x 1.5 conductor							1 x 1.5 conductor						

References:
page B6/23

Schemes:
page B6/83

TeSys protection components

Magnetic motor circuit breakers
GK3 EF80
Auxiliary contacts

Characteristics of Start-Stop and fault signalling contacts

Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	500					
Rated operational voltage (Ue)	Conforming to IEC 60947-1	**V**	500					
Conventional thermal current (Ith)	Conforming to IEC 60947-5-1	**A**	6					
Operational power and current conforming to IEC 60947-5-1 a.c. operation (C.O.: Close - Open)			AC-15. 20 000 C.O.					
	Rated operational voltage (Ue)	**V**	**48**	**110/127**	**220/240**	**380/415**	**440**	**500**
	Operational power	**VA**	360	500	800	850	700	700
	Occasional breaking and making capacities	**VA**	4000	12 000	20 000	20 000	15 000	15 000
	Rated operational current (Ie)	**A**	6	4.5	3.5	2.2	1.5	1.5
Operational power and current conforming to IEC 60947-5-1 d.c. operation (C.O.: Close - Open)			DC-13. 1000 C.O.					
	Rated operational voltage (Ue)	**V**	**24**	**48**	**60**	**110**	**220**	
	Operational power	**W**	180	240	180	140	120	
	Occasional breaking and making capacities	**W**	240	280	240	210	180	
	Rated operational current (Ie)	**A**	6	5	3	1.3	0.5	
Short-circuit protection	Conforming to IEC 60947-5-1		By **GB2 CB08** circuit breaker or gG fuse, 6 A max					
Cabling	Solid cable	**mm²**	1 x 1…4 conductor					
	Flexible cable without cable end	**mm²**	1 x 2.5 conductor					
	Flexible cable with cable end	**mm²**	1 x 1…2.5 conductor or 2 x 1…2.5 conductors					
Tightening torque		**N.m**	0.8					

References:
page B6/21

Dimensions:
page B6/47

TeSys protection components

Thermal-magnetic motor circuit breakers

Electric trips

Characteristics of electric trips

Circuit breaker type			GV2 ME, GV2 P GV3 P, GV3 L		GV2 ME only	GV3 ME80		GV7 R	
Type of trip			**GV AU**	**GV AS**	**GV AX** [(1)]	**GV3 B**	**GV3 D**	**GV7 AU**	**GV7 AS**
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	**V**	690	690	500	690	690	690	690
	Conforming to CSA C22-2 n° 14, UL 508	**V**	600	600	–	600 (B600)	600 (B600)	600	600
Operational voltage	Conforming to IEC 60947-1	**V**	0.85…1.1 Un	0.7…1.1 Un	0.85…1.1 Un	0.8…1.1 Un		0.85…1.1 Un	0.7…1.1 Un
Drop-out voltage		**V**	0.7…0.35 Un	0.75…0.2 Un	0.7…0.35 Un	0.7…0.35 Un		0.35…0.7 Ue	0.2…0.75 Ue
Inrush consumption	~	**VA**	12	14	12	12		< 10	
Sealed consumption	~	**VA**	3.5	5	3.5	7		< 5	
Operating time	Conforming to IEC 60947-1		From the moment the voltage reaches its operational value until opening of the circuit-breaker.						
		ms	10…15			10	15	< 50	
On-load factor			100 %			100 %		100 %	
Cabling	Number of conductors		2 or 4			1 or 2		1	
	Solid cable	**mm²**	1…2.5			1…2.5		1.5	
	Flexible cable without cable end	**mm²**	0.75…2.5			0.75…2.5		1.5	
	Flexible cable with cable end	**mm²**	0.75…1.5			0.75…2.5		1	
Tightening torque		**N.m**	1.4 max			1.2		1.2	
Mechanical durability (C.O.: Close - Open)		**C.O.**	30 000 (GV2 ME and GV2 P) 10 000 (GV3 P and GV3 L)			50 % of the mechanical durability of the circuit-breaker			

*(1) Wiring scheme of undervoltage trip for dangerous machines (conforming to INRS) on **GV2 ME** only, see page B6/82.*

References:
page B6/23

Schemes:
pages B6/82 to B6/83

TeSys protection components

Thermal-magnetic and magnetic motor circuit breakers GV2 and GV3

Accessories

Characteristics of 3-pole busbars GV2 G●●● and GV3 G●64

			GV2 G●●●	GV3 G●64
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	A	63	115
Permissible peak current (I peak)		kA	11	20
Permissible thermal limit (I^2t)		kA^2s	104	300
Degree of protection	Conforming to IEC 60529		IP 20	IP 20
Terminal block			Yes	–

Characteristics of terminal blocks GV2 G05 and GV1 G09 (for GV2 ME and GV2 P)

Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690
Conventional thermal current (Ith)	Conforming to IEC 60439-1	A	63
Degree of protection	Conforming to IEC 60529		IP 20
Connection	Solid cable	mm^2	1 x 1.5 to 25 conductor or 2 x 1.5 to 6 conductors
	Flexible cable without cable end	mm^2	1 x 1.5 to 16 conductor or 2 x 2.5 to 4 conductors
	Flexible cable with cable end	mm^2	1 x 1.5 to 10 conductor or 2 x 1.5 to 2 conductors
	Flexible or solid cable AWG		1 AWG 4
Tightening torque	Connector	N.m	2.2
	Screw clamp terminals	N.m	1.7

Characteristics of current limiters (GV2 ME and GV2 P)

Type			GV1 L3		LA9 LB920	
Rated insulation voltage (Ui)	Conforming to IEC 60947-1	V	690		690	
Conventional thermal current (Ith)	Conforming to IEC 60947-1	A	63		63	
Rated operational current (Ie)		A	32		32	
Operating threshold	rms current	A	1500 (non adjustable threshold)		1000 (non adjustable threshold)	
Connection			**1 conductor**	**2 conductors**	**1 conductor**	**2 conductors**
	Solid cable	mm^2	1.5…25	1.5…10	1.5…25	1.5…10
	Flexible cable without cable end	mm^2	1.5…25	2.5…10	1.5…25	1.5…10
	Flexible cable with cable end	mm^2	1.5…16	1.5… 4	1.5…16	1.5… 4
Tightening torque		N.m	2.2			

References:
page B6/13