

Control valve RV, control valve with solenoid valve RVS

OPERATING INSTRUCTIONS

· Edition 04.25 · EN · 03251497



CONTENTS

1 Safety	1
2 Checking the usage	2
3 Type label	2
4 Installation	2
5 Wiring	3
6 Tightness test	7
7 Commissioning	7
8 Readjusting the closed position	8
9 Accessories	8
10 Maintenance	9
11 Assistance in the event of malfunction	11
12 Technical data	11
13 Air flow rate Q	12
14 Designed lifetime	13
15 Certification	13
16 Logistics	13
17 Disposal	14

1 SAFETY

1.1 Read the operating instructions before use



Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This unit must be installed and commissioned in accordance with the regulations and standards in force. These instructions can also be found at www.docuthek.com.

1.2 Explanation of symbols

1, 2, 3, a, b, c = Action

→ = Instruction

1.3 Liability

We will not be held liable for damage resulting from non-observance of the instructions and non-compliant use.

1.4 Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

DANGER

Indicates potentially fatal situations.

WARNING

Indicates possible danger to life and limb.

CAUTION

Indicates possible material damage.

All interventions may only be carried out by qualified gas technicians. Electrical interventions may only be carried out by qualified electricians.

1.5 Conversion, spare parts

All technical changes are prohibited. Only use OEM spare parts.

2 CHECKING THE USAGE

2.1 Intended use

RV

The control valve RV is designed for regulating flow rates for modulating-controlled combustion processes on gas and air appliances which require a large control ratio of up to 100:1.

RVS

The RVS also features an integrated solenoid valve so that the gas can be safeguarded and controlled without any additional pressure loss.

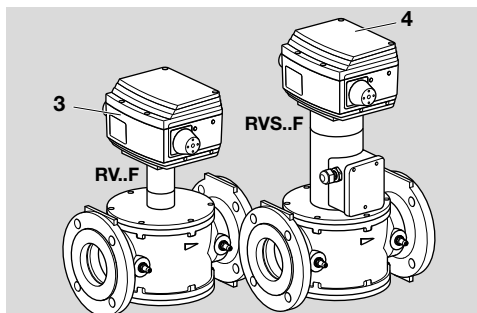
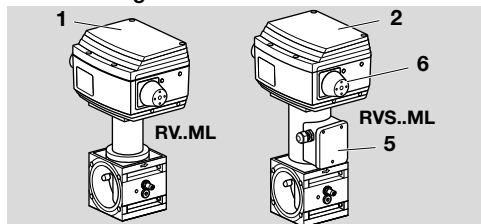
This function is only guaranteed when used within the specified limits – see page 11 (12 Technical data). Any other use is considered as non-compliant.

2.2 Type code

RVS	Control valve with solenoid valve
RV	Control valve
2	Size 2
3	Size 3
40–100	DN 40–100
/A-/Z	Valve seats A–Z
ML	MODULINE system
F	Flange to ISO 7005
01	p_u max. 150 mbar
02	p_u max. 200 mbar
03	p_u max. 360 mbar
05	p_u max. 500 mbar
10	p_u max. 1000 mbar
W	Mains voltage 230 V AC, 50/60 Hz
Q	Mains voltage 120 V AC, 50/60 Hz
H	Mains voltage: 24 V AC, 50/60 Hz
K	Mains voltage 24 V DC
30	30 s running time
60	60 s running time
S1	Three-point step control
E	Continuous control
-3	Solenoid valve terminal connection box
-6	Solenoid valve connection box with standard plug
V	Viton valve disc seal

V = Option

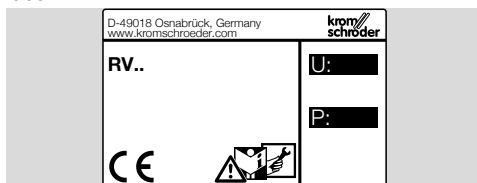
2.3 Part designations



- 1 Control valve RV..ML
- 2 Control valve with solenoid valve RVS..ML
- 3 Control valve RV..F
- 4 Control valve with solenoid valve RVS..F
- 5 Solenoid actuator for valve function
- 6 Position indicator/Cover cap for projecting shaft

3 TYPE LABEL

Mains voltage, enclosure, inlet pressure, medium, ambient temperature and running time – see type label.



4 INSTALLATION

⚠ CAUTION

Incorrect installation

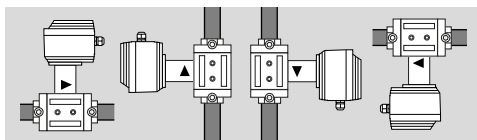
Please observe the following to ensure that the unit is not damaged during installation and operation:

- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the housing.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Use approved sealing material only.
- Install the unit in the pipe free of mechanical stress.
- Do not clamp the unit in a vice or use it as a lever. Only secure the flange by holding the octagon with a suitable spanner. Risk of external leakage.
- Check the inlet pressure – see type label.

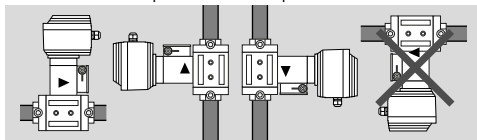
→ The control valve is supplied in the closed position (0%).

4.1 Installation position

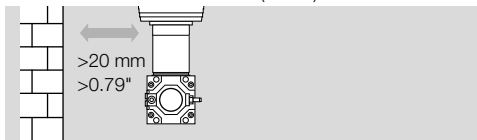
RV installation position: as required.



RVS installation position: not upside down.

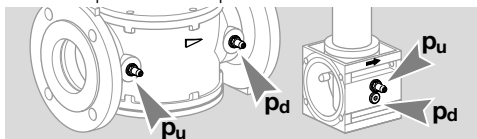


The housing must not be in contact with masonry.
Minimum clearance 20 mm (0.78").



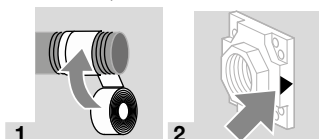
4.2 Test points

The inlet pressure p_u and the outlet pressure p_d can be measured using the pressure test points on both sides. There are two pressure test points on the RV..F and RVS..F, while the RV..ML and RVS..ML have one pressure test point at the inlet.

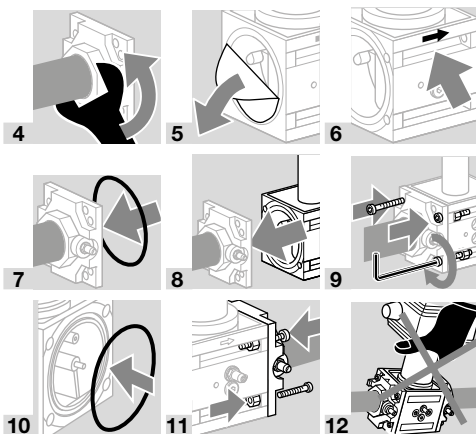


Measuring connections, see page 12 (12.2 Mechanical data).

4.3 RV..ML, RVS..ML without flanges

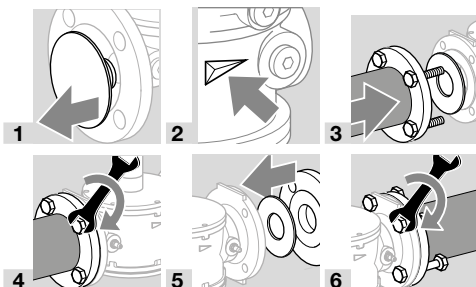


3 We recommend installing an inlet flange with integrated strainer.



4.4 RV..F, RVS..F with flanges

- A strainer is integrated in the RV..F, RVS..F.
- Remove the plugs or stickers protecting the device from dirt.



5 WIRING

⚠ DANGER

Electric shocks can be fatal!

- Before working on possible live components, ensure the unit is disconnected from the power supply.
- It must be possible to isolate the actuator from the power supply. Provide a double pole switch.

⚠ CAUTION

Please observe the following to ensure that no damage occurs:

- The solenoid actuator heats up during operation. Surface temperature approx. 85°C (approx. 185°F).



- Use temperature-resistant cables ($\geq 90^\circ\text{C}$).
- Install supply and signal lines separately.

- Conductors which have not been connected (spare conductors) must be insulated at their ends.
- Cables should be installed well away from high-voltage lines of other devices.
- Observe EMC Directive for installation of signal lines.
- Use cables with wire end ferrules.
- When operating two or more actuators in parallel, the three-point step controller (terminals 4 and 5) must be electrically isolated to avoid leakage currents. We recommend using relays.
- Interference suppression capacitors installed in the system must only be used in conjunction with a series resistor so as not to exceed the maximum current – see page 11 (12 Technical data).
- Running times are reduced by a factor of 0.83 at 60 Hz compared to 50 Hz.
- External devices can be activated or intermediate positions can be checked via two additional, floating, infinitely adjustable switches (cams N3 and N4).
- RV..E, RVS..E: the input signals for the control valve can be set using DIP switches.
- Wiring to EN 60204-1.
- Before opening the unit, the fitter should ground himself.

RV

Only the actuator is wired on control valve RV.

RVS

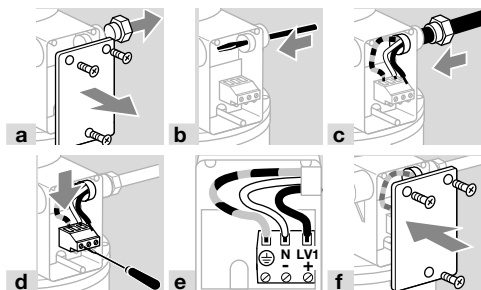
Wiring the solenoid actuator

The solenoid actuator is wired using the cable gland or the socket.

- 1 Disconnect the system from the electrical power supply.
- 2 Close the gas supply.

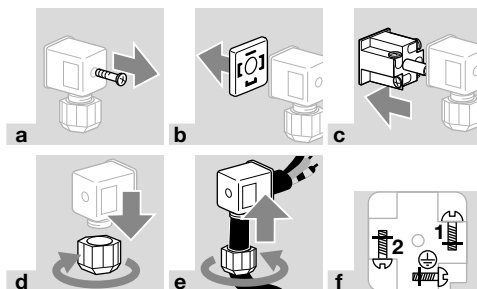
Cable gland

- Cable cross-section: max. 2.5 mm².



Socket

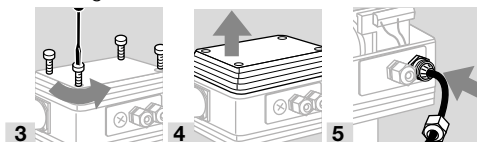
- 1 = N (-), 2 = L1V1 (+)



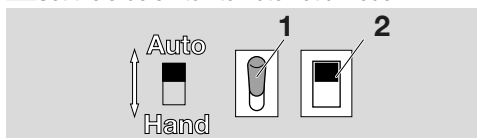
RV, RVS

Wiring the actuator

- 1 Disconnect the system from the electrical power supply.
 - 2 Close the gas supply.
- Cable cross-section: max. 1.5 mm².
 - RV..S = 2 x M20 cable glands, RV..E = 3 x M20 cable glands.



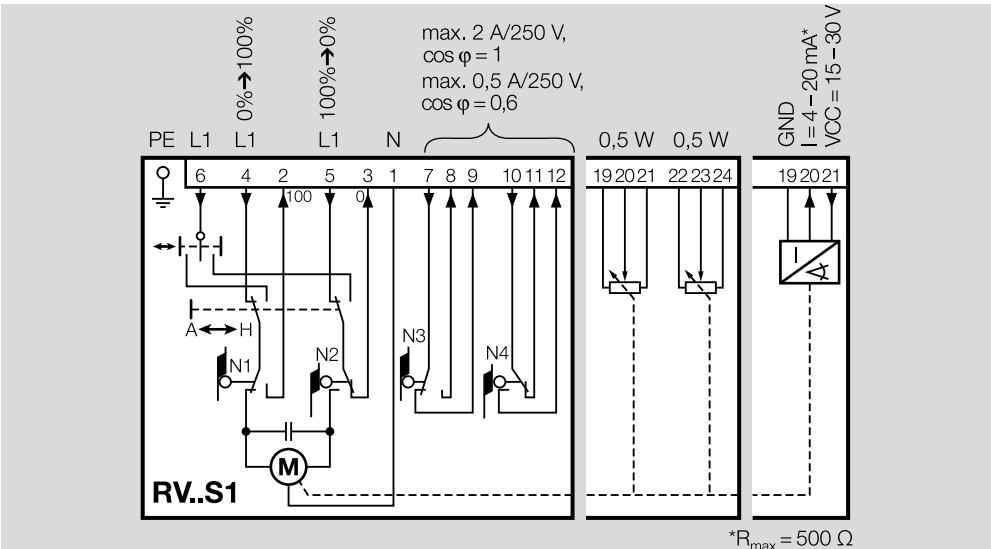
- 6 Set the slide switch to Automatic mode.



- 1 Toggle switch
- 2 Slide switch
- 7 Wire as shown on the connection diagram – see page 5 (5.1 Connection diagram for RV..S1, RVS..S1 actuator) or page 6 (5.2 Connection diagram for RV..E, RVS..E actuator).
- 8 Reinstall the housing cover after successfully completing the wiring and adjustment work.

5.1 Connection diagram for RV..S1, RVS..S1 actuator

The connection diagram refers to the closed control valve.



5.1.1 Three-point step control

In the case of default setting "Closed":

The control element opens when voltage is applied to terminal 4 (0 → 100%).

The control element closes when voltage is applied to terminal 5 (100 → 0%).

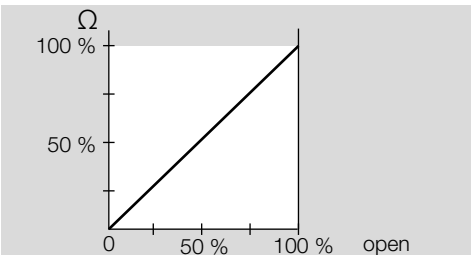
When the voltage is disconnected, the control valve remains in its current position.

Terminals 7 to 12 are intended for floating auxiliary switches.

5.1.2 Position feedback

As an option, potentiometers or a current sensor can be connected to terminals 19 to 24 for feedback. This allows the current position of the actuator to be monitored, see accessories for feedback: page 8 (9.2 Installation kit RP RV, feedback potentiometer) or page 9 (9.3 Installation kit RS RV, feedback current sensor).

The available feedback range of the feedback potentiometer depends on the adjustment of switching cams N1 and N2.

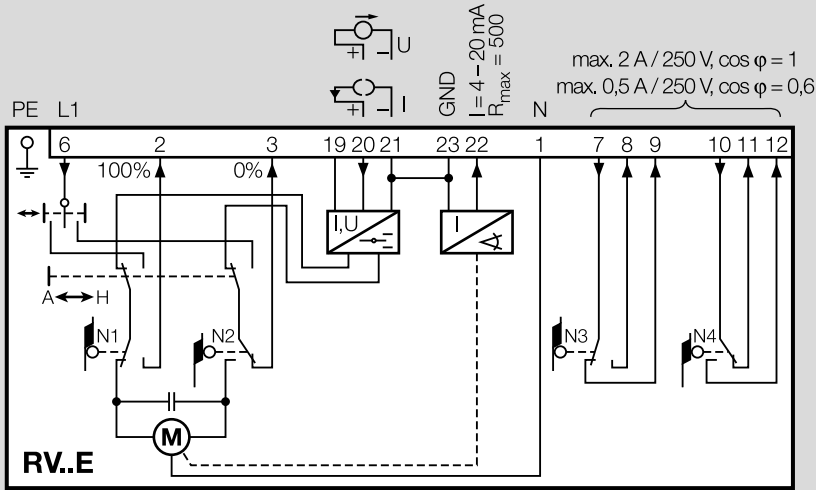


5.1.3 Leakage currents in parallel circuits

When operating two or more actuators in parallel, the three-point step controller (terminals 4 and 5) must be electrically isolated to avoid leakage currents. We recommend using relays.

5.2 Connection diagram for RV..E, RVS..E actuator

The connection diagram refers to the closed control valve.



5.2.1 Continuous control

Voltage is applied to terminal 6. The actuator reacts to the setpoint specification 0–10 V or 0 (4)–20 mA via terminals 20 and 21.

The continuous signal corresponds to the opening position to be approached (e.g. with a 0 to 20 mA signal, 10 mA correspond to 50% opening). Terminals 7 to 12 are intended for floating auxiliary switches.

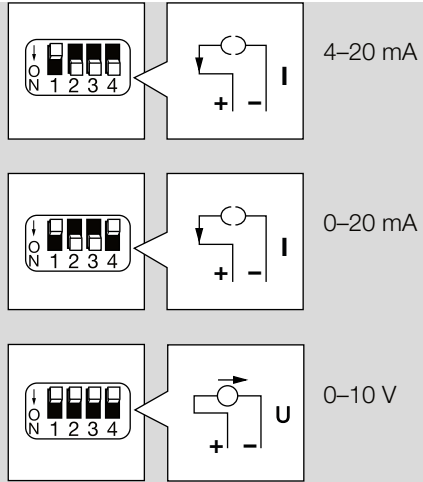
5.2.2 Position feedback

The current position of the actuator can be monitored via the continuous 4–20 mA output signal at terminals 22 and 23.

5.2.3 Selecting the input signal

RV..E, RVS..E

The input signal type is selected using DIP switches.



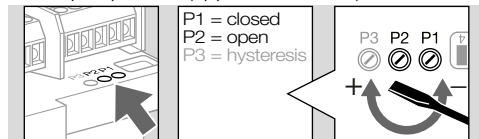
5.2.4 Setting the opening position to correspond to the input signal

RV..E, RVS..E

The minimum and maximum opening positions can be set using potentiometers P1 and P2.

P1 = closed position (approx. 0–50%)

P2 = open position (approx. 50–100%)

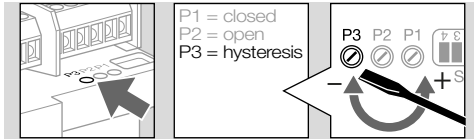


5.2.5 Setting the hysteresis for the input signal
RV..E, RVS..E

The positioning control hysteresis can be adjusted on a potentiometer. This suppresses fluctuations or interference in the input signal.

The hysteresis can be reduced and the control accuracy increased by turning the potentiometer screw clockwise.

After changing the setting, ensure that the actuator does not oscillate when operating.

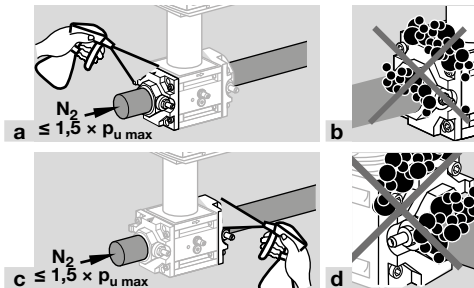


6 TIGHTNESS TEST

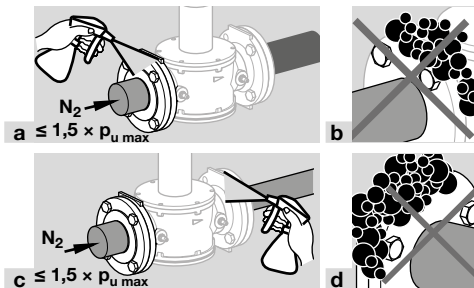
RV

- 1 Open the control valve.
- 2 To be able to check the tightness, shut off the downstream pipeline close to the valve.

RV..ML



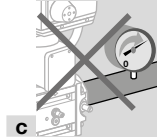
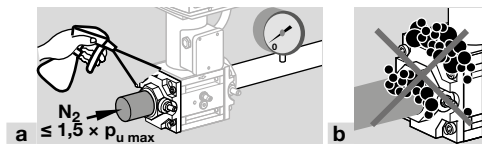
RV..F



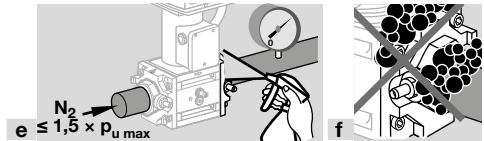
RVS

- 1 Close the gas solenoid valve.
- 2 To be able to check the tightness, shut off the downstream pipeline close to the valve.

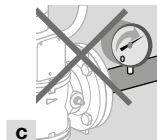
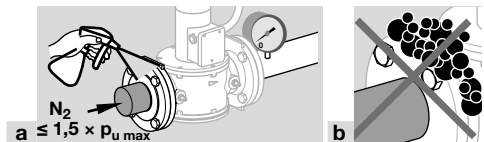
RVS..ML



d Open the solenoid valve and the control valve.



RVS..F



d Open the solenoid valve and the control valve.



RV, RVS

- 3 Tightness OK: open the pipeline.
- Pipeline leaking: replace the seal on the flange. Then check for tightness once again.
 - Unit leaking: remove the unit and return it to the manufacturer.

7 COMMISSIONING

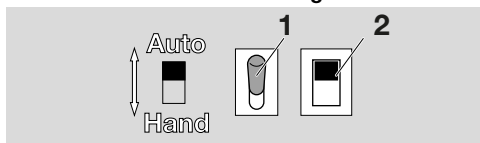
The minimum and maximum flow rates are adjusted using two infinitely adjustable switching cams.

- The maximum opening angle can be set using switching cam N1 and the minimum opening angle can be set using N2.
- Switching cams N3/N4 can be optionally adjusted.

⚠ WARNING

Risk of electric shock due to live components and cables.

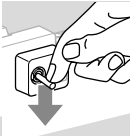
Manual mode facilitates setting



1 Toggle switch

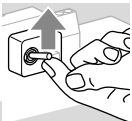
2 Slide switch

1 Set the slide switch to Manual mode.



2
3 Voltage must be continuously applied to terminals 1 and 6 to allow the control valve to open.

4 Press the toggle switch upwards.



5
→ The control valve opens.

6 Press the toggle switch downwards.

→ The control valve closes.

Setting the maximum opening position using switching cam N1

→ Only adjust N1 between 60% and 100%.

→ Feedback signal to terminal 2.

→ N1 can only be accessed when the control valve is open.

7 Set the control valve to its maximum opening position.

8 Adjust the trip point of cam N1 using a screwdriver.

→ Anticlockwise = smaller opening angle.

→ Clockwise = greater opening angle.



CAUTION

Remove the screwdriver again before attempting to actuate the switching cams.

Setting the minimum opening position using switching cam N2

→ Only adjust N2 between 0% and 40%.

→ Feedback signal to terminal 3.

9 Set the control valve to its minimum opening position.

10 Adjust the trip point of cam N2 using a screwdriver.

Setting intermediate positions using switching cams N3/N4

11 Adjust the trip point of cams N3/N4 using a screwdriver.

→ Adjustment is possible within the following range:
N3 between 30% and 100%,
N4 between 0% and 70%.

8 READJUSTING THE CLOSED POSITION

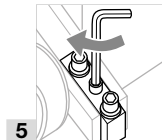
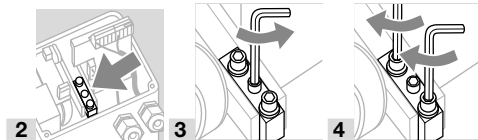
If the control valve is not completely closed at 0%, the closed position can be readjusted.

1 Remove the housing cover.

→ The control valve is in the closed position.

→ Undo the centre screw until the valve is closed and the flow rate has stopped.

→ Then tighten the outer retaining screws simultaneously or turn them alternately a little at a time and as uniformly as possible. The lever may jam if you tighten first one retaining screw and then the other.



5
→ The adjusting screw must be tightly secured.

6 Close the housing.

9 ACCESSORIES

9.1 Installation kits RP RV, RS RV

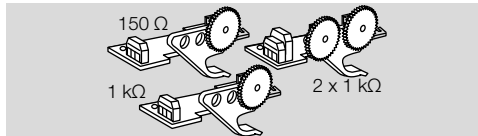
Older and current versions of installation kits RP RV and RS RV can be used in older and current gearboxes.

9.2 Installation kit RP RV, feedback potentiometer

Can only be retrofitted on RV..S1, RVS..S1.

The power consumption of the potentiometer is max. 0.5 W.

Order the potentiometer separately as an installation version or additional item.



Installation kit for resistance value as installation version:

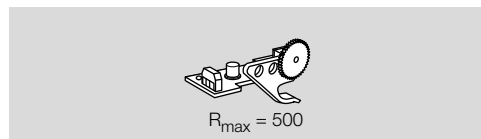
150 Ω, Order No. 74926118,

1 k Ω , Order No. 74926120,
 2 x 1 k Ω , Order No. 74926122.
 Installation kit for resistance value as additional item:
 150 Ω , Order No. 74926119,
 1 k Ω , Order No. 74926121,
 2 x 1 k Ω , Order No. 74926123.
 The resistance value is noted on the supplied type label.

9.3 Installation kit RS RV, feedback current sensor

Can only be retrofitted on RV..S1, RVS..S1.
 4 to 20 mA for feedback on the current position of the control valve.

→ Order the current sensor separately as an installation version or additional item.

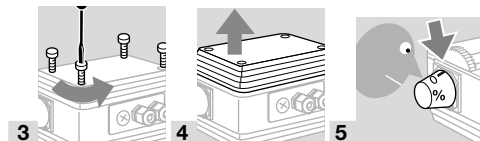


Current sensor installation kit as installation version:
 Order No. 74926116.

Current sensor installation kit as additional item:
 Order No. 74926117.

9.3.1 Installing the installation kit

- 1 Disconnect the system from the electrical power supply.
- 2 Close the gas supply.

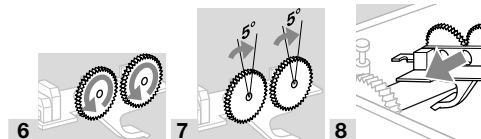


CAUTION

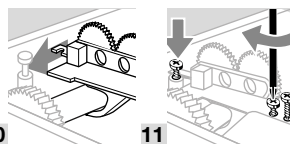
Please note the following to avoid damage:

- Before working on possible live components, ensure the unit is disconnected from the power supply.
- Adjusting cam N2 to an angle of less than 0% or cam N1 to an angle of over 100% will damage the potentiometer. The available range depends on the adjustment of switching cams N1 and N2.

- The pictures below may differ slightly depending on the installation kit.
- The control valve is in the closed position.
- Turn both potentiometers/current sensors as far as they will go, see Figure 6, and then turn them the other way a few teeth, see Figure 7.



- 9 Push the catch of the installation kit under the screw head.

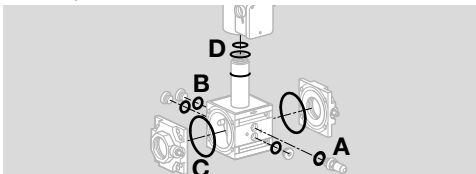


- 12 Wiring, see page 5 (5.1 Connection diagram for RV..S1, RVS..S1 actuator).

9.4 Seal set

We recommend replacing the seals during maintenance work.

RV..ML, RVS..ML



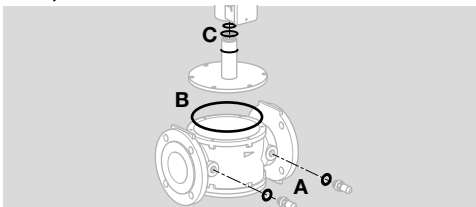
RV 2..ML, RVS 2..ML: Order No. 74926010

RV 3..ML, RVS 3..ML: Order No. 74926011

Scope of delivery:

- A 1 c
- B 3 x sealing rings for screw plugs
- C 2 x O-rings for inlet and outlet flanges
- D 3 x O-rings for guide tube (RVS only)

RV..F, RVS..F



RV 40, RVS 40: Order No. 74926012

RV 50, RVS 50: Order No. 74926013

RV 65, RVS 65: Order No. 74926014

RV 80, RV 100: Order No. 74926226

Scope of delivery:

- A 2 x flat seals for pressure test points
- B 1 x O-ring for housing cover
- C 3 x O-rings for guide tube (RVS 40–65)

10 MAINTENANCE

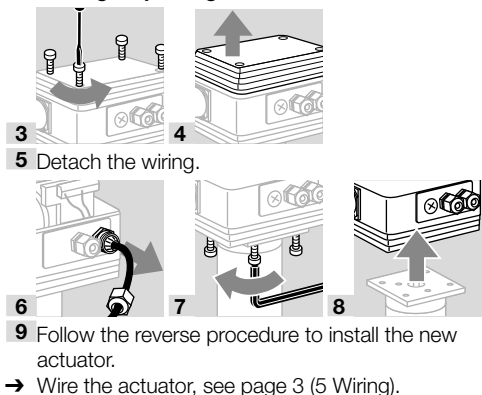
CAUTION

In order to ensure smooth operation, check the tightness and function of the unit:

- Once per year, twice per year in the case of biogas; check for internal and external tightness, see page 7 (6 Tightness test).
- Check electrical installations once a year in line with local regulations; pay particular attention to the PE wire, see page 3 (5 Wiring).

- 1 Disconnect the system from the electrical power supply.
- 2 Close the gas supply.

Removing/Replacing the actuator

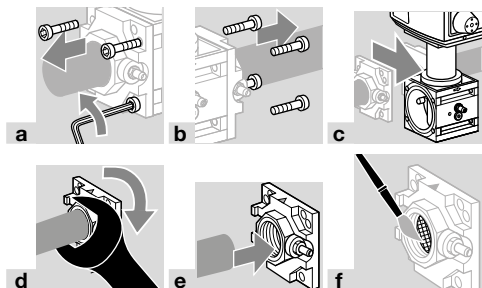


→ Wire the actuator, see page 3 (5 Wiring).

Cleaning the strainer

→ If the flow rate has dropped, clean the strainer in the inlet flange.

RV..ML

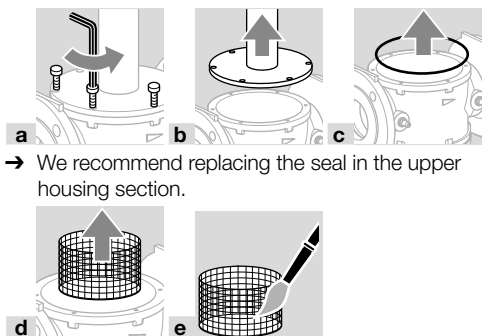


→ We recommend replacing the seals in the inlet and outlet.

g After the strainer has been cleaned, follow the reverse procedure to reinstall the unit in the pipe.

h Then check the unit for tightness, see page 7 (6 Tightness test).

RV..F



f After the strainer has been cleaned, follow the reverse procedure to reassemble the unit.

g Then check the unit for tightness, see page 7 (6 Tightness test).

Removing/Replacing the solenoid actuator

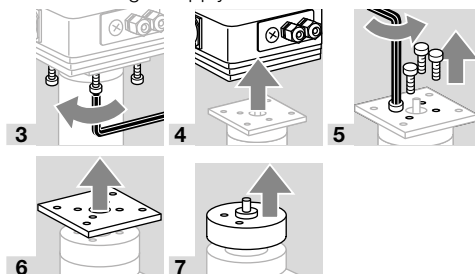
→ The number of retaining screws differs from the illustration.

RVS..ML: 4 x retaining screws,

RVS..F: 3 x retaining screws.

1 Disconnect the system from the electrical power supply.

2 Close the gas supply.



CAUTION

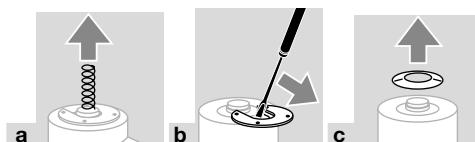
Risk of injury!

Please note the following to avoid damage:

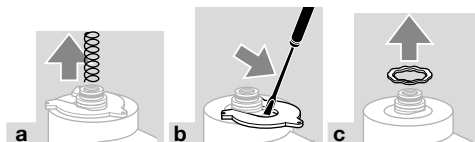
- When removing the parts, remember that the spring is compressed.

→ Secure removed parts to prevent losing them.

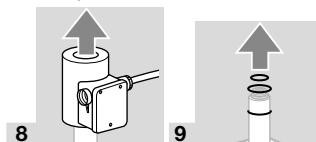
RVS..ML



RVS..F



RV..ML, RV..F

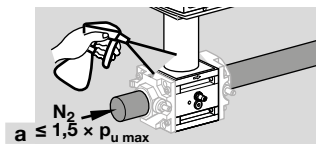


→ We recommend replacing all the seals, see accessories, page 9 (9.4 Seal set).

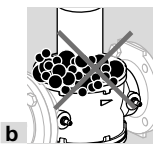
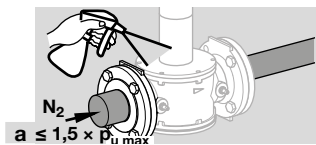
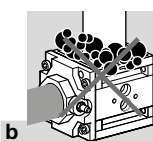
10 Once the seals and solenoid actuator have been replaced, follow the reverse procedure to reassemble the unit.

11 Gas-filled space has been opened. Therefore, the upper housing section must be checked for tightness after assembly.

RVS..ML



RVS..F



12 In order to determine whether the device is tight and closes securely, check the internal and external tightness, see page 7 (6 Tightness test).

→ Check electrical installations in line with local regulations; pay particular attention to the PE wire.

11 ASSISTANCE IN THE EVENT OF MALFUNCTION

⚠ WARNING

Please note the following to avoid damage:

- Electric shocks can be fatal! Before working on possible live components, ensure the unit is disconnected from the power supply.
- Never remove the circuit board!
- Unauthorized repairs or incorrect electrical connections may cause the control element to open resulting in defects.

Faults

- ! Cause
- Remedy

11.1 Control element does not move.

- ! The actuator is in Manual mode.
 - Set the slide switch to Automatic mode, see page 7 (7 Commissioning).
- ! Motor coil or electronics defective as a result of excessive ambient temperature and/or excessive operating voltage.
 - Check ambient temperature and/or operating voltage, see type label or page 11 (12 Technical data).
- ! Electrical fault!
 - Remember the minimum distance from ignition cables.
- ! DIP switch position is incorrect.
 - Set correct input signal using the DIP switches.
- ! The input signal on the 4–20 mA setpoint input is < 4 mA.
 - Check input signal, remedy cable discontinuity.

11.2 The motor and drive shaft of the actuator no longer function as required.

- ! The gear is defective.

- Remove the unit and return it to the manufacturer.

11.3 Feedback potentiometer or current sensor indicates incorrect values.

- ! Potentiometer is moving against its mechanical stop.
 - Install the potentiometer/current sensor installation kit as specified, see page 9 (9.3.1 Installing the installation kit).
- ! Connections on the terminal strip mixed up.
 - Check the contact assignment on the terminal strip.
- ! Incorrect potentiometer utilization.
 - Utilize the potentiometer as a voltage divider.
- ! The windings in the potentiometer are defective.
 - Replace the installation kit, see page 9 (9.3.1 Installing the installation kit).

11.4 Control element moves constantly.

- ! Input signal fluctuates.
 - Check control loop, if possible, attenuate it.
 - Increase the hysteresis using potentiometer P3, see page 6 (5.2.5 Setting the hysteresis for the input signal).
- ! 3-point step signal fluctuates.
 - Check/adjust the 3-point step controller.

11.5 Is it not possible for the fault to be eliminated with the measures described above?

- ! Internal error.
 - Remove the unit and return it to the manufacturer for inspection.

12 TECHNICAL DATA

12.1 Ambient conditions

Icing, condensation and dew in and on the unit are not permitted.

Avoid direct sunlight or radiation from red-hot surfaces on the unit. Note the maximum medium and ambient temperatures!

Avoid corrosive influences, e.g. salty ambient air or SO₂.

The unit may only be stored/installed in enclosed rooms/buildings.

The unit is suitable for a maximum installation height of 2000 m AMSL.

Ambient temperature: -20 to +60°C (-4 to +140°F).

With optional Viton valve plate seal:
0 to +60°C (32 to 140°F).

Long-term use in the upper ambient temperature range accelerates the ageing of the elastomer materials and reduces the service life (please contact manufacturer).

Transport temperature = ambient temperature.

Storage temperature: -20 to +40°C (-4 to +104°F).

Enclosure: IP 54 pursuant to IEC 529.

This unit is not suitable for cleaning with a high-pressure cleaner and/or cleaning products.

12.2 Mechanical data

Suitable gas types:

RV, RVS: natural gas, LPG (gaseous), biogas (max. 0.1 %-by-vol. H₂S) and air.
RV: hydrogen.

The gas must be clean and dry in all temperature conditions and must not contain condensate.

Medium temperature = ambient temperature.

Max. inlet pressure p_{u max.}: 150 to 1000 mbar.

Measuring connections:

RV..ML, RVS..ML: Rp 1/8 on both sides,

RV..F, RVS..F: Rp 1/4 on both sides.

Connection flanges:

RV..ML, RVS..ML: Rp internal thread to ISO 7-1,

RV..F, RVS..F: flange to ISO 7005, PN 16.

Max. tightening torque: 3 Nm on projecting shaft.

Housing: AISi.

Valve plate seal: Perbunan.

RVS, solenoid actuator:

Solenoid valve (on RVS) with spring-loaded valve plate, closed when de-energized, Class A, Group 1 to EN 161.

Closing time: < 1 s.

12.3 Electrical data

Mains voltage:

230 V AC, -15/+10%, 50/60 Hz,

120 V AC, -15/+10%, 50/60 Hz.

Safety class: I.

Power consumption:

RV	Voltage		
	24 V DC	120 V AC	230 V AC
RV 2-3.. ML RV 40- 100..F	58 W	4.8 W	4.8 W

RVS	Voltage		
	24 V AC	120 V AC	230 V AC
RVS 2..ML	3.6 W	41 W	47 W
RVS 3..ML RVS 40- 65..ML	3.6 W	78 W	91 W

RVS, solenoid actuator:

Cable cross-section: max. 2.5 mm².

Cable gland:

PG 13.5 – apart from RVS 232ML = PG 11,

plug with socket to EN 175301-803.

Duty cycle: 100%.

Electrical connection:

According to the data table, the electrical power is identical when switching on and in continuous operation. Power factor of the solenoid coil: cos φ = 1.

RV, RVS, actuator:

Cable cross-section: max. 1.5 mm².

Cable gland:

RV, RVS: 2 x M20,

RV..E, RVS..E: 3 x M20.

RV..E with integrated positioning control. The following signal types are processed:

0 (4) to 20 mA,

0 to 10 V.

Input resistance:

0 (4) to 20 mA: 50 Ω (load impedance),

0 to 10 V: 150 kΩ (input resistance).

Running time for 0 to 100% at 50 Hz: 30 s and 60 s.

Running times are reduced by a factor of 0.83 at

60 Hz compared to 50 Hz:

	Running time [s/90°]	
	50 Hz	60 Hz
RV..30, RVS..30	30	25
RV..60, RVS..60	60	50

Contact rating of the cam switches:

Voltage	Min. current (resistive load)	Max. current (resistive load)
24-230 V, 50/60 Hz	1 mA	2 A
24 V DC	1 mA	100 mA

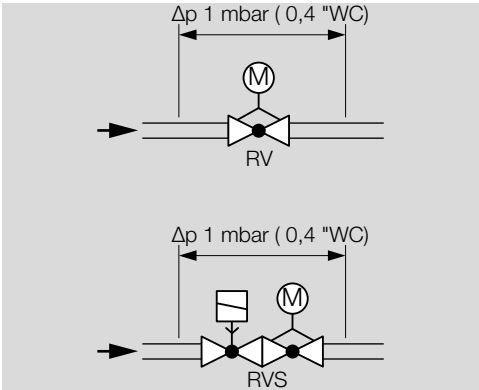
Typical designed lifetime of the cam switches:

Switch- ing current	Switching cycles	
	cos φ = 1	cos φ = 0.3
1 mA	1,000,000	–
22 mA ¹⁾	–	1,000,000
100 mA	1,000,000	–
2 A	100,000	–

1) Typical contactor application (230 V, 50/60 Hz, 22 mA, cos φ = 0.3)

13 AIR FLOW RATE Q

Air flow rate Q for a pressure loss of Δp = 1 mbar (0.4 "WC):



	Air flow rate	
	Q [m³/h]	Q [SCFH]
RV(S) 232/W	0.7	26.1
RV(S) 232/X	1.2	44.8
RV(S) 232/Y	1.8	67.2
RV(S) 232/Z	2.8	1.5
RV(S) 232/A	3.8	142
RV(S) 232/B	5.2	194
RV(S) 232/C	6.9	258
RV(S) 232/D	10	373
RV(S) 232/E	15	560
RV(S) 350/G	21	784
RV(S) 350/H	30	1120
RV(S) 350/I	42	1568
RV(S).../K	18	672
RV(S).../L	30	1120
RV(S).../M	42	1568
RV.../N	59	2203
RV.../O	80	2986
RV.../S	100	3733

14 DESIGNED LIFETIME

This information on the designed lifetime is based on using the product in accordance with these operating instructions. Once the designed lifetime has been reached, safety-relevant products must be replaced.

Designed lifetime (based on date of manufacture) in accordance with EN 161:

Type	Designed lifetime	
	Switching cycles	Time (years)
RVS 2, DN 25	500,000	10
RVS 2, DN 40 RVS 3, DN 50 RVS 3, DN 65 RVS..F	200,000	10

You can find further explanations in the applicable rules and regulations and on the afecor website (www.afecor.org).

This procedure applies to heating systems. For thermoprocessing equipment, observe local regulations.

15 CERTIFICATION

15.1 Certificate download

Certificates – see www.docuthek.com

15.2 Declaration of conformity



We, the manufacturer, hereby declare that the products RV, RVS with product ID No. CE-0085AR0109

comply with the requirements of the listed Directives and Standards.

Directives:

- 2014/35/EU – LVD
- 2014/30/EU – EMC
- 2011/65/EU – RoHS II
- 2015/863/EU – RoHS III

Regulation:

- (EU) 2016/426 – GAR

Standards:

- EN 161:2011+A3:2013
- EN 126:2012

The relevant product corresponds to the tested type sample.

The production is subject to the surveillance procedure pursuant to Regulation (EU) 2016/426 Annex III paragraph 3.

Elster GmbH

15.3 UKCA certified



Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019)

BS EN 126:2012

BS EN 161:2011

15.4 RVS..ML: AGA listed

Approval does not apply for 100 V AC and 200 V AC.



Australian Gas Association, Approval No.: 5319.

15.5 Eurasian Customs Union



The products RV, RVS meet the technical specifications of the Eurasian Customs Union.

15.6 REACH Regulation

The device contains substances of very high concern which are listed in the Candidate List of the European REACH Regulation No. 1907/2006. See Reach list HTS at www.docuthek.com.

15.7 China RoHS

Directive on the restriction of the use of hazardous substances (RoHS) in China. Scan of the Disclosure Table China RoHS2, see certificates at www.docuthek.com.

16 LOGISTICS

Transport

Protect the unit from external forces (blows, shocks, vibration).

Transport temperature: see page 11 (12 Technical data).

Transport is subject to the ambient conditions described.
Report any transport damage on the unit or packaging without delay.
Check that the delivery is complete.

Storage

Storage temperature: see page 11 (12 Technical data).
Storage is subject to the ambient conditions described.
Storage time: 6 months in the original packaging before using for the first time. If stored for longer than this, the overall service life will be reduced by the corresponding amount of extra storage time.

17 DISPOSAL

Devices with electronic components:
WEEE Directive 2012/19/EU – Waste Electrical and Electronic Equipment Directive



■ At the end of the product life (number of operating cycles reached), dispose of the packaging and product in a corresponding recycling centre. Do not dispose of the unit with the usual domestic refuse. Do not burn the product.
On request, old units may be returned carriage paid to the manufacturer in accordance with the relevant waste legislation requirements.

FOR MORE INFORMATION

The Honeywell Thermal Solutions family of products includes Honeywell Combustion Safety, Eclipse, Exothermics, Hauck, Kromschroder and Maxon. To learn more about our products, visit ThermalSolutions.honeywell.com or contact your Honeywell Sales Engineer.
Honeywell Thermal Solutions (HTS)
2101 CityWest Blvd
Houston, TX 77042
United States
ThermalSolutions.honeywell.com

