

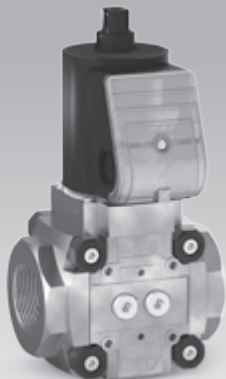
03250824

**krom  
schroder**

(D) (GB) (F) (NL) (I) (E) (DK) (S) (N) (P) (GR)  
(TR) (CZ) (PL) (RUS) (H) → www.docuthek.com

## Operating instructions

### Magnetic relief valve VAN



## Contents

<b>Magnetic relief valve VAN</b>	<b>1</b>
<b>Contents</b>	<b>1</b>
<b>Safety</b>	<b>1</b>
<b>Checking the usage</b>	<b>2</b>
Intended use	2
Part designations	2
<b>Installation</b>	<b>2</b>
<b>Wiring</b>	<b>3</b>
M20 cable gland	3
Plug	3
Socket	3
Closed position switch	4
<b>Tightness test</b>	<b>4</b>
<b>Replacing the actuator</b>	<b>5</b>
<b>Maintenance</b>	<b>5</b>
<b>Accessories</b>	<b>6</b>
Pressure switch for gas DG..VC	6
Seal set for sizes 1–2	6
<b>Technical data</b>	<b>7</b>
<b>Logistics</b>	<b>8</b>
<b>Certification</b>	<b>8</b>
<b>Contact</b>	<b>8</b>

## Safety

### Please read and keep in a safe place



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](http://www.docuthek.com).

### Explanation of symbols

■, **1**, **2**, **3**... = Action

▷ = Instruction

### Liability

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

### 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.

### Conversion, spare parts

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

## Changes to edition 10.16

The following chapters have been changed:

- Installation
- Certification

## Checking the usage

### Intended use

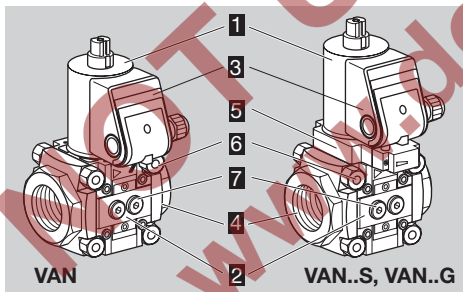
Magnetic relief valve, open when de-energized, for the monitoring of gas valves for tightness used in conjunction with a visual discharge unit. For purging excess or leakage gas.

This function is only guaranteed when used within the specified limits – see page 7 (Technical data). Any other use is considered as non-compliant.

### Type code

Code	Description
<b>VAN</b>	Magnetic relief valve
<b>1</b>	Size: 1
<b>2</b>	2
<b>T</b>	T-product
<b>10 – 50</b>	Nominal size DN
<b>R</b>	Rp internal thread
<b>N</b>	NPT internal thread
<b>N</b>	Quick opening, quick closing
<b>K</b>	Mains voltage: 24 V DC
<b>P</b>	100 V AC, 50/60 Hz
<b>Q</b>	120 V AC, 50/60 Hz
<b>Y</b>	200 V AC, 50/60 Hz
<b>W</b>	230 V AC, 50/60 Hz
	Closed position switch:
<b>S</b>	with visual position indicator
<b>G</b>	with visual position indicator and gold contacts
<b>R</b>	Viewing side: right
<b>L</b>	left
	Electrical connection:
<b>3</b>	M20 cable gland

### Part designations



- 1 Solenoid actuator
- 2 Flow body
- 3 Connection box
- 4 Connection flange
- 5 Closed position switch
- 6 Connection parts
- 7 Sealing plug

Mains voltage, electrical power consumption, ambient temperature, enclosure, inlet pressure and installation position: see type label.



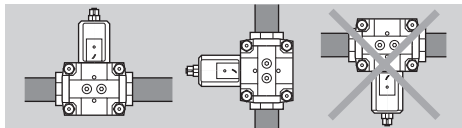
## Installation

### ! CAUTION

Please observe the following to ensure that the magnetic relief valve is not damaged during installation and operation:

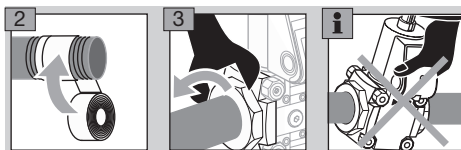
- Important! The gas must be dry in all conditions and must not contain condensate.
- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the valve housing.
- A filter must be installed upstream of every system.
- Do not store or install the unit in the open air.
- Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
- Do not clamp the unit in a vice. Only secure the flange by holding the octagon with a suitable spanner. Risk of external leakage.
- Solenoid valves with overtravel switch and visual position indicator VAN..SR/SL: actuator cannot be rotated.
- Cleaning work on the solenoid actuator may not be performed using high pressure and/or chemical cleaning agents. This can cause moisture to get into the solenoid actuator and may lead to a dangerous failure.

Installation position: black solenoid actuator in the vertical upright position or tilted up to the horizontal, not upside down.



- ▷ The housing must not be in contact with masonry. Minimum clearance 20 mm (0,78").

### 1 Note direction of flow.



## Wiring

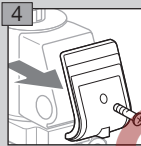
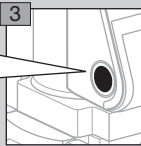
### ⚠ WARNING

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



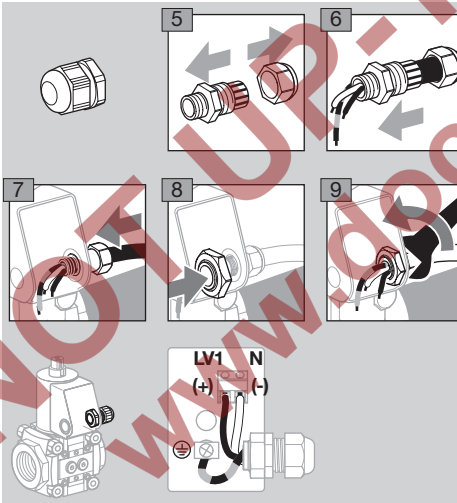
- ▷ Use temperature-resistant cable (> 80°C).
- 1** Disconnect the system from the electrical power supply.
- 2** Shut off the gas supply.
- ▷ Wiring to EN 60204-1.

First push through the knock-out – then unscrew the cover!



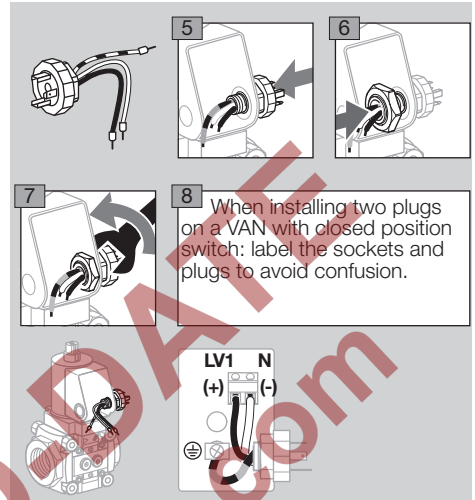
- ▷ If the M20 cable gland or plug is already fitted, it is not necessary to push through the knock-out.

### M20 cable gland



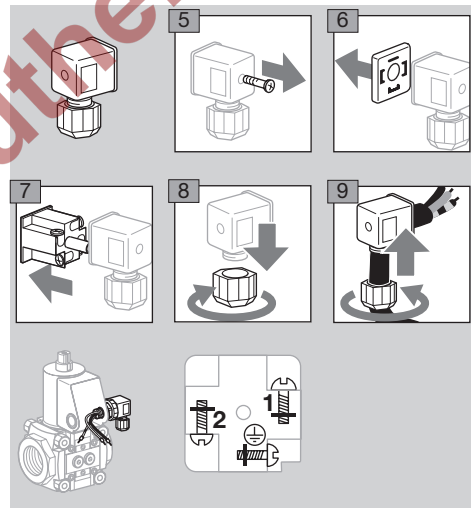
### Plug

LV1 (+) = black, N (-) = blue



### Socket

1 = N (-), 2 = LV1 (+)



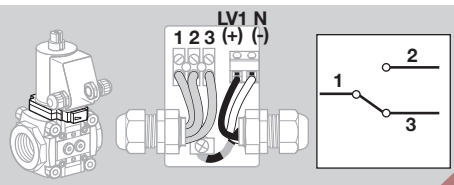
## Closed position switch

- ▷ VAN open: contacts **1** and **2** closed, VAN closed: contacts **1** and **3** closed.
- ▷ Indicator of closed position switch: red = VAN closed, white = VAN open.

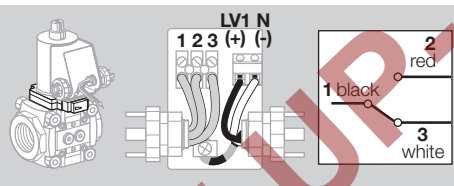
## ! CAUTION

Please observe the following to ensure smooth operation:

- Route valve and closed position switch cables separately through M20 cable glands or use two separate plugs. Otherwise, there is a risk of interference between valve voltage and closed position switch voltage.
- ▷ To make wiring easier, the connection terminal for the closed position switch can be removed.

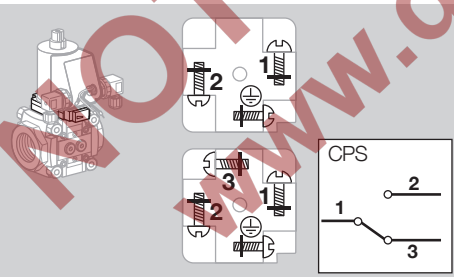


LV1 (+) = black, N (-) = blue



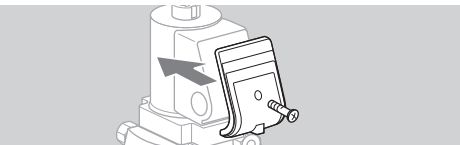
- ▷ Label the plugs to avoid confusion.

1 = N (-), 2 = LV1 (+)



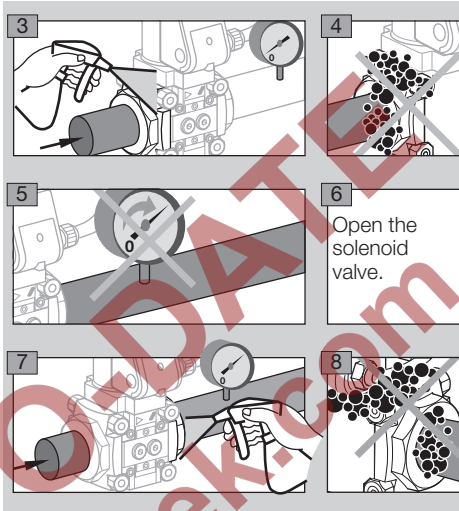
- ▷ Ensure that the connection terminal for the closed position switch has been reconnected.

## Finishing the wiring



## Tightness test

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

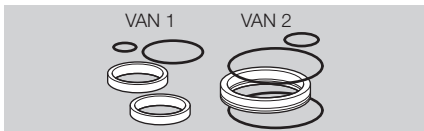


- 9** Tightness OK: open the pipeline.

- ▷ Pipeline leaking: replace O-ring on flange, see page 6 (Seal set for sizes 1–2). Then check for tightness once again.
- ▷ Unit leaking: remove the unit and return it to the manufacturer.

## Replacing the actuator

- ▷ The actuator adapter set is enclosed with new actuators.



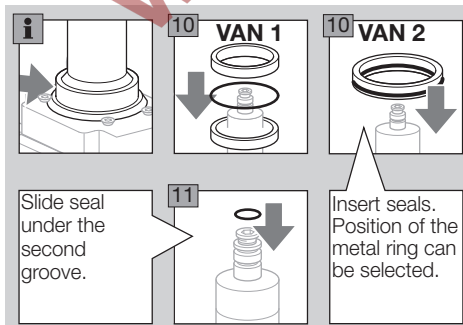
- ▷ The seals of the actuator adapter set are covered with a non-stick coating. No additional grease is required.

- 1** Disconnect the system from the electrical power supply.
  - 2** Shut off the gas supply.
- ▷ Remove the M20 cable gland or other type of connection.

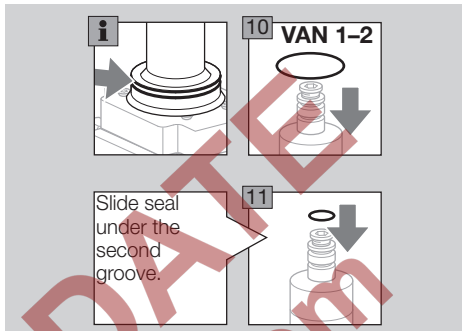


- ▷ Depending on the construction stage of the unit, there are two different methods for replacing the actuator:

If the unit concerned has no O-ring in this place (arrow), replace the actuator as described here. Otherwise, go to the next note.



- ▷ If the unit concerned has an O-ring in this place (arrow), replace the actuator as described here:
- ▷ VAN 1: use all seals from the actuator adapter set.
- ▷ VAN 2: use the small seal from the actuator adapter set and only one of the large seals.



- 12** Position new actuator.
- 13** Follow the reverse procedure when reassembling.
- 14** Fit the M20 cable gland or plug and socket.
- 15** Connect the VAN to the electrical power supply, see page 3 (Wiring).

## Maintenance

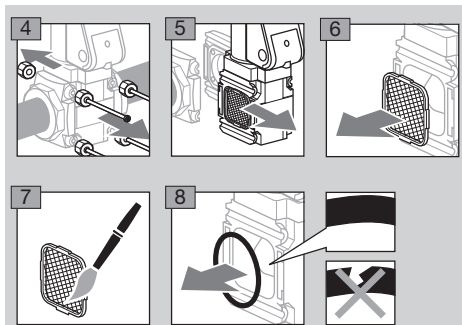
### ! CAUTION

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

- Once per year, twice per year in the case of biogas; check for internal and external tightness, see page 4 (Tightness test).
- Check electrical installations once a year in line with local regulations; pay particular attention to the PE wire, see page 3 (Wiring).

- ▷ If the flow rate has dropped, clean the strainer.
- ▷ We recommend replacing the seals, see page 6 (Seal set for sizes 1–2).

- 1** Disconnect the system from the electrical power supply.
- 2** Shut off the gas supply.
- 3** Undo connection parts.

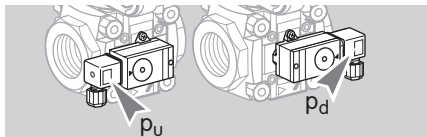


- 9 Once the seals have been replaced, follow the reverse procedure to reassemble the unit.
- 10 Then check the unit for internal and external tightness, see page 4 (Tightness test).

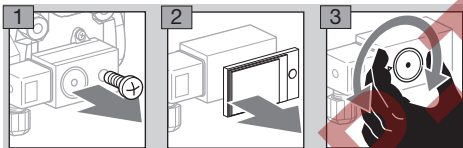
## Accessories

### Pressure switch for gas DG..VC

- ▷ The pressure switch for gas monitors the inlet pressure  $p_u$ , the outlet pressure  $p_d$  and the interspace pressure  $p_z$ .



- ▷ When retrofitting the pressure switch for gas, see enclosed operating instructions "Pressure switches for gas DG..C", section entitled "Mounting the DG..C..1, DG..C..9 on valVario gas solenoid valves".
- ▷ The switching point is adjustable via hand wheel.

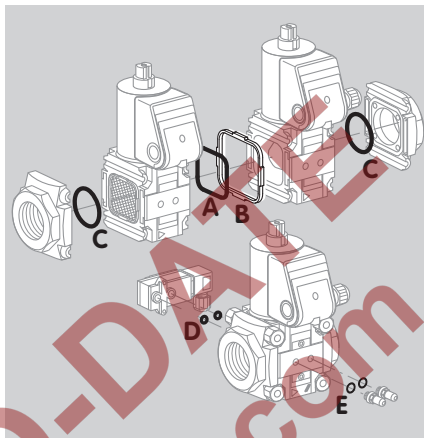


	Adjusting range (adjusting tolerance = $\pm 15\%$ of the scale value)		Mean switching differential at min. and max. setting	
	[mbar]	["WC]	[mbar]	["WC]
DG 17VC	2–17	0.8–6.8	0.7–1.7	0.3–0.8
DG 40VC	5–40	2–16	1–2	0.4–1
DG 110VC	30–110	12–44	3–8	0.8–3.2
DG 300VC	100–300	40–120	6–15	2.4–8

- ▷ Deviation from the switching point during testing pursuant to EN 1854 Gas pressure switches:  $\pm 15\%$ .

### Seal set for sizes 1–2

- ▷ When retrofitting accessories or a second valVario control or when servicing, we recommend replacing the seals.



- ▷ Order No. for size 1: Order No. 74921988, size 2: Order No. 74921989.
- ▷ Scope of delivery:
  - A** 1 x double block seal,
  - B** 1 x retaining frame (the retaining frame is not required for VAN),
  - C** 2 x O-rings (flange),
  - D** 2 x O-rings (pressure switch), for pressure test point/screw plug:
  - E** 2 x sealing rings (flat sealing), 2 x profiled sealing rings.

## Technical data

Gas types: natural gas, LPG (gaseous), biogas (max. 0.1 %-by-vol. H<sub>2</sub>S) or clean air; other types of gas on request.

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

Max. inlet pressure  $p_U$ :

max. 500 mbar (7.25 psig).

Leakage rate:  $\leq 500 \text{ cm}^3/\text{h}$  (0.132 gal/h).

Closing time: quick closing:  $< 1 \text{ s}$ .

Medium and ambient temperatures:

-20 to +50°C (-4 to +122°F).

No condensation permitted.

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

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

Enclosure: IP 65.

Valve housing: aluminium, valve seal: NBR.

Connection flanges with internal thread:

Rp to ISO 7-1, NPT to ANSI/ASME.

Class A, Group 2 safety valve pursuant to EN 13611 and EN 161.

Mains voltage:

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

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

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

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

24 V DC,  $\pm 20\%$ .

Cable gland: M20 x 1.5.

Electrical connection:

electrical cable with max. 2.5 mm<sup>2</sup> (AWG 12) or plug with socket to EN 175301-803.

Power consumption:

Type	Voltage	Power
VAN 1	24 V DC	25 W –
	100 V AC	25 W (26 VA)
	120 V AC	25 W (26 VA)
	200 V AC	25 W (26 VA)
	230 V AC	25 W (26 VA)
VAN 2	24 V DC	36 W –
	100 V AC	36 W (40 VA)
	120 V AC	40 W (44 VA)
	200 V AC	40 W (44 VA)
	230 V AC	40 W (44 VA)

Switching frequency: max. 15 x per minute,

duty cycle: 100%.

Power factor of the solenoid coil:  $\cos \varphi = 0.9$ .

Closed position switch contact rating:

Type	Voltage	Min. current (resistive load)	Max. current (resis- tive load)
VAN..S	12–250 V AC, 50/60 Hz	100 mA	3 A
VAN..G	12–30 V DC	2 mA	0.1 A

Closed position switch switching frequency:

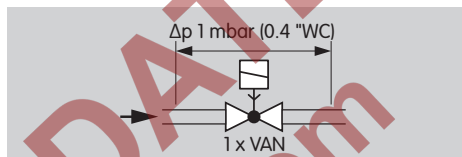
max. 5 x per minute.

Switching current [A]	Switching cycles*	
	$\cos \varphi = 1$	$\cos \varphi = 0.6$
0.1	500,000	500,000
0.5	300,000	250,000
1	200,000	100,000
3	100,000	–

\* Limited to max. 200,000 cycles for heating systems.

### Air flow rate Q

Air flow rate Q for a pressure loss of  $\Delta p = 1 \text{ mbar}$  (0.4 "WC)



Type	Air flow rate	
	Q [m <sup>3</sup> /h]	Q [SCFH]
VAN 110	4.4	155.4
VAN 115	5.6	197.7
VAN 120	8.3	293.1
VAN 125	10.0	353.1
VAN 225	15.5	547.3
VAN 232	19.5	688.5
VAN 240	21.0	741.5
VAN 250	22.5	794.5

### 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 13611, EN 161 for VAN:

Type	Designed lifetime	
	Switching cycles	Time [years]
VAN 110– VAN 225	500,000	10
VAN 232– VAN 250	200,000	10

You can find further explanations in the applicable rules and regulations and on the afecor website ([www.afecor.org](http://www.afecor.org)).

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



## Logistics

### Transport

Protect the unit from external forces (blows, shocks, vibration). On receipt of the product, check that the delivery is complete, see page 2 (Part designations). Report any transport damage immediately.

### Storage

Store the product in a dry and clean place.  
Storage temperature: see page 7 (Technical data).  
Storage time: max. 6 months before using for the first time.

### Packaging

The packaging material is to be disposed of in accordance with local regulations.

### Disposal

Components are to be disposed of separately in accordance with local regulations.

## Certification

### Declaration of conformity



We, the manufacturer, hereby declare that the product VAN, marked with product ID No. CE-0063BU1564, complies with the requirements of the listed Directives and Standards.

Directives:

- 2009/142/EC – GAD (valid until 20 April 2018)
- 2014/35/EU – LVD
- 2014/30/EU – EMC

Regulation:

- (EU) 2016/426 – GAR (valid from 21 April 2018)

Standards:

- EN 13611
- based on EN 161

The relevant product corresponds to the type tested by the notified body 0063.

The production is subject to the surveillance procedure pursuant to Directive 2009/142/EC Annex II paragraph 3 (valid until 20 April 2018) and to Regulation (EU) 2016/426 Annex III paragraph 3 (valid from 21 April 2018).

Elster GmbH

Scan of the Declaration of conformity (D, GB) – see [www.docuthek.com](http://www.docuthek.com)

### AGA approved



Australian Gas Association

### Eurasian Customs Union



The product VAN meets the technical specifications of the Eurasian Customs Union.

### 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](http://www.docuthek.com)

## Contact

If you have any technical questions, please contact your local branch office/agent. The addresses are available on the Internet or from Elster GmbH.

We reserve the right to make technical modifications in the interests of progress.

# Honeywell

**krom/  
schroder**

Elster GmbH

Strotheweg 1, D-49504 Lotte (Büren)

Tel. +49 541 1214-0

Fax +49 541 1214-370

[hts.lotte@honeywell.com](mailto:hts.lotte@honeywell.com), [www.kromschroeder.com](http://www.kromschroeder.com)