

Solenoid valves for gas VG 10/15–65

OPERATING INSTRUCTIONS

Cert. Version 06.24 · Edition 06.24 · EN · 34424102



1 SAFETY

1.1 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.

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.

CONTENTS

1 Safety	1
2 Checking the usage	2
3 Installation	2
4 Wiring	4
5 Tightness test	4
6 Commissioning	5
7 Replacing the solenoid actuator	6
8 Replacing a defective damping unit	6
9 Maintenance	7
10 Assistance in the event of malfunction	8
11 Technical data	8
12 Designed lifetime	9
13 Logistics	9
14 Certification	10
15 Disposal	10

2 CHECKING THE USAGE

Gas solenoid valve for safeguarding gas or air on various appliances. This function is only guaranteed when used within the specified limits – see page 8 (11 Technical data).

Any other use is considered as non-compliant.

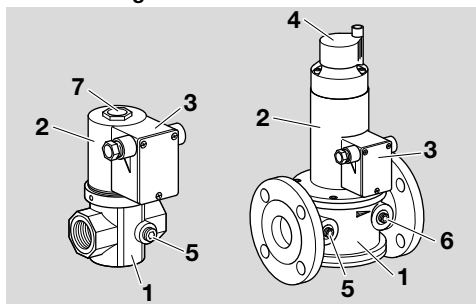
⚠ WARNING

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.

2.1 Type code

VG	Solenoid valve for gas
10/15-65	Nominal size
R	Rp internal thread
F	Flange to ISO 7005
02	p_u max. 200 mbar
03	p_u max. 360 mbar
10	p_u max. 1 bar
18	p_u max. 1.8 bar
L	Slow opening, quick closing
N	Quick opening, quick closing
T	Mains voltage 220/240 V AC, 50/60 Hz
Q	Mains voltage 120 V AC, 50/60 Hz
K	Mains voltage 24 V DC
3	Terminal connection box, IP 54
1	Screw plug at the inlet
3	Screw plug at the inlet and outlet
D	With flow adjustment
M	Suitable for biogas
V	Viton valve disc seal
Z	With rolling diaphragm

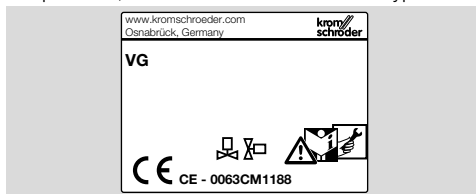
2.2 Part designations



- 1 Housing
- 2 Solenoid actuator
- 3 Connection box
- 4 Damping unit
- 5 Screw plug for inlet pressure p_u
- 6 Screw plug for outlet pressure p_d
- 7 VG 10/15–40/32: hexagonal nut (actuator)
VG 40–65: Cap

2.3 Type label

Rated voltage, electrical power consumption, installation position, max. inlet pressure $p_{u \text{ max.}}$, ambient temperature, enclosure and medium: see type label.

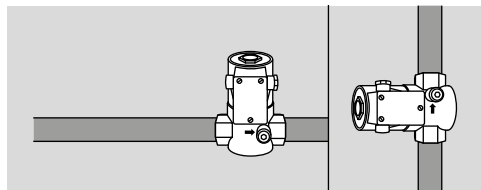


3 INSTALLATION

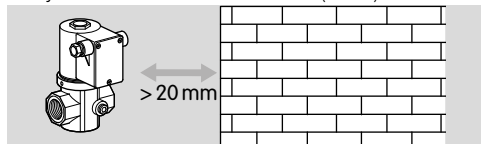
⚠ CAUTION

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

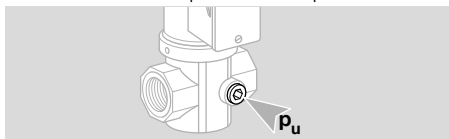
- Do not clamp the unit in a vice. Only secure the flange by holding the octagon with a suitable spanner. Risk of external leakage.
 - Do not install or store the unit in the open air.
 - Dropping the device can cause permanent damage. In this event, replace the entire device and associated modules before use.
 - Check max. ambient temperature – see type label.
 - Check max. inlet pressure – see type label.
- Installation position: black solenoid actuator in the vertical upright position or tilted up to the horizontal, not upside down.



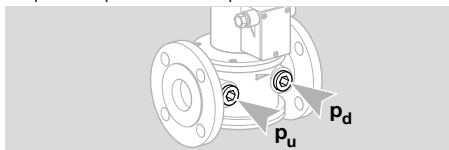
- The housing must not be in contact with masonry. Minimum clearance 20 mm (0.79").



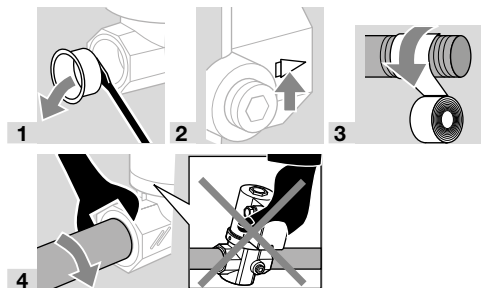
- Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the valve housing.
- Install a filter upstream of every system.
- Use approved sealing material only.
- Use a suitable spanner.
- Ensure that there is sufficient space for installation and adjustment.
- On VG 10/15–40/32, the inlet pressure p_u can be measured at the pressure test point.



- On VG 40–65, the inlet pressure p_u and the outlet pressure p_d can be measured at the respective pressure test point.



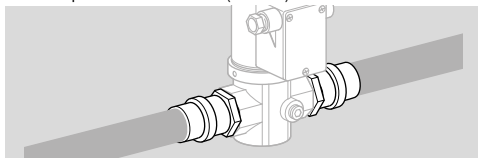
3.1 VG..R



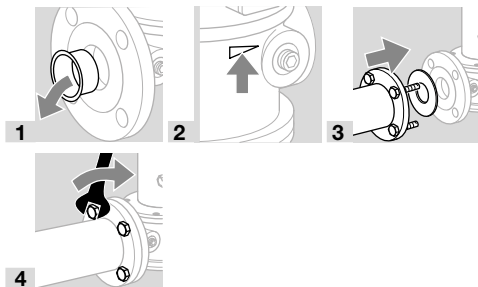
Gas compression fittings

- The seals in some gas compression fittings are approved for temperatures of up to 70°C (158°F). This temperature limit will not be exceeded if the flow through the pipe is at least 1 m³/h

(35.31 SCFH) of gas and the maximum ambient temperature is 50°C (122°F).



3.2 VG..F



4 WIRING

⚠ WARNING

Attention! Please observe the following to ensure that no damage occurs:

- Electric shocks can be fatal! Before working on possible live components, ensure the unit is disconnected from the power supply.
- The solenoid actuator heats up during operation. Surface temperature approx. 85°C (approx. 185°F) pursuant to EN 60730-1.

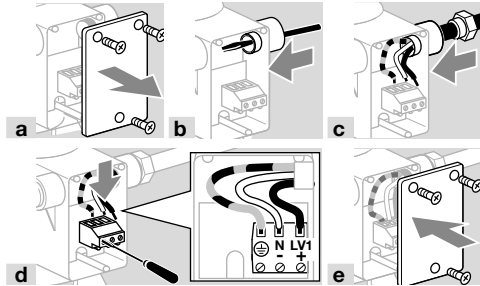
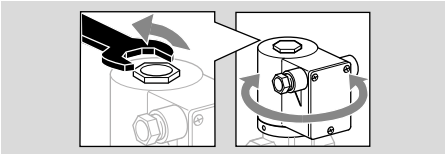


- Use temperature-resistant cable (> 80°C/176°F).
- Wiring to EN 60204-1.

1 Disconnect the system from the electrical power supply.

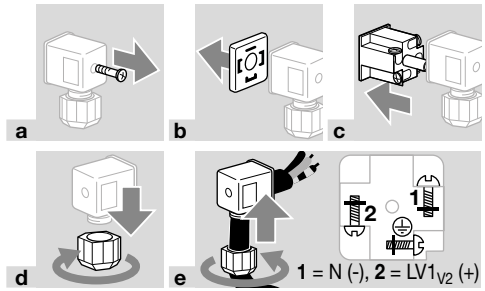
2 Shut off the gas supply.

- The solenoid actuator can be rotated to allow it to be repositioned for electrical connection. On VG..N, the hexagonal nut/cap on the solenoid actuator must be loosened for this.



- Set the solenoid actuator to the correct position again and screw the hexagonal nut/cap tight if applicable.

Socket



3 Follow the reverse procedure when reassembling.

5 TIGHTNESS TEST

⚠ CAUTION

Please observe the following to ensure that the VG is not damaged during the tightness test:

- Check max. inlet pressure – see type label.
- Test pressure $\leq 1.5 \times$ max. inlet pressure.

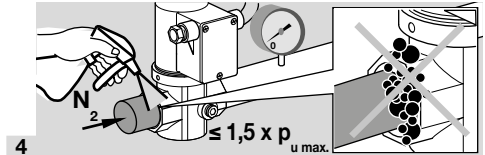
- The tightness test procedure on VG is functionally the same for all nominal diameters. The following figures apply to all VG variants by way of example.

1 Close the solenoid valve.

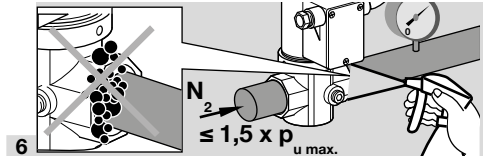
2 Shut off the gas supply.

3 To be able to check the tightness, shut off the downstream pipeline as close as possible to the valve.

Checking for external tightness



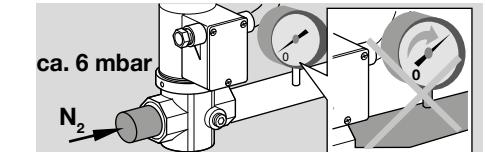
5 Open the solenoid valve.



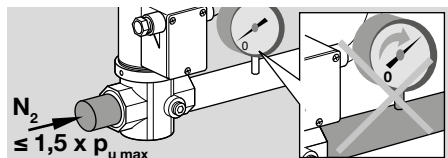
- Pipeline leaking: check the seal.

Checking for internal tightness

7 Close the solenoid valve.



8 After 60 seconds, increase the test pressure to $\leq 1.5 \times p_{u \text{ max.}}$



- Tightness OK: open the pipeline.
- Unit leaking: remove the VG and return it to the manufacturer.

6 COMMISSIONING

Setting the flow rate

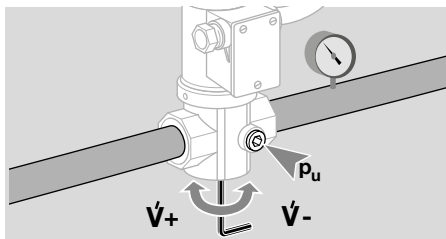
- At the factory, the gas solenoid valve is adjusted for maximum flow rate.

VG 10/15-40/32

- The minimum and maximum flow rates can be set within half a turn.

VG 40-65

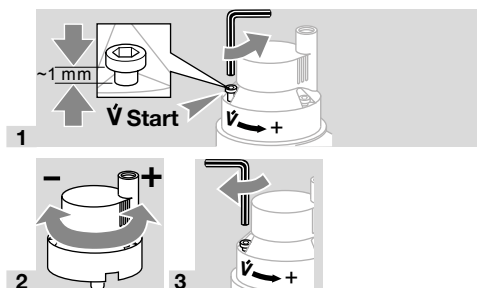
- The minimum and maximum flow rates can be set within 20 turns.



Setting the start gas rate

- The start gas rate can be set with a maximum of 3 turns.

VG..L



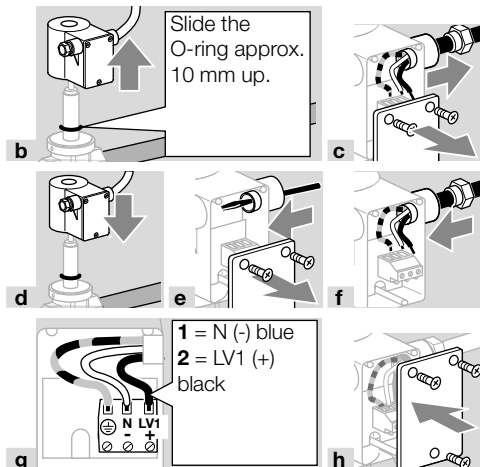
7 REPLACING THE SOLENOID ACTUATOR

- We recommend replacing the entire actuator set when replacing the solenoid actuator.
- The actuator set is available separately as a spare part.

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

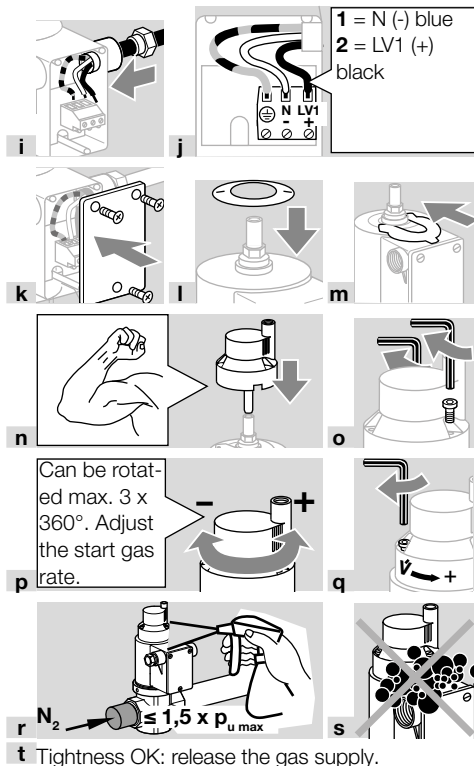
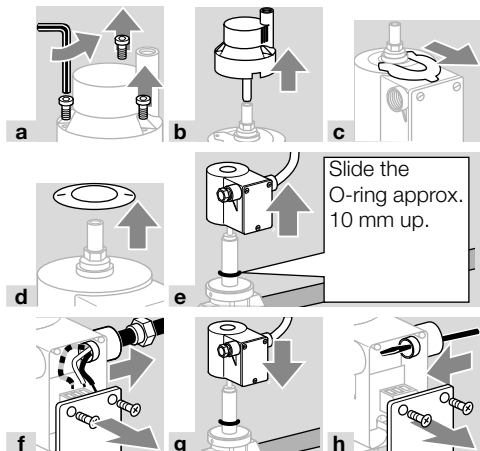
VG..N

- a To be able to remove the solenoid actuator, loosen the hexagonal nut/cap on the solenoid actuator.



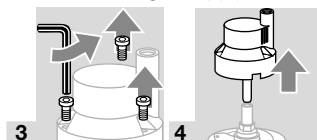
- i Screw the solenoid actuator into place.
- j Release the gas supply.

VG..L

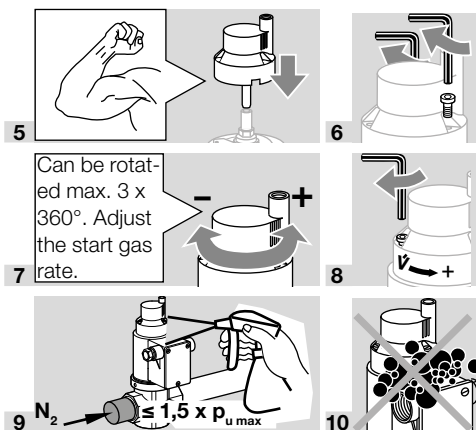


8 REPLACING A DEFECTIVE DAMPING UNIT

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



- We recommend replacing all parts from the spare parts kit.



9 MAINTENANCE

⚠ CAUTION

In order to ensure smooth operation, check the tightness and function of the VG every year, or every six months if operated with biogas.

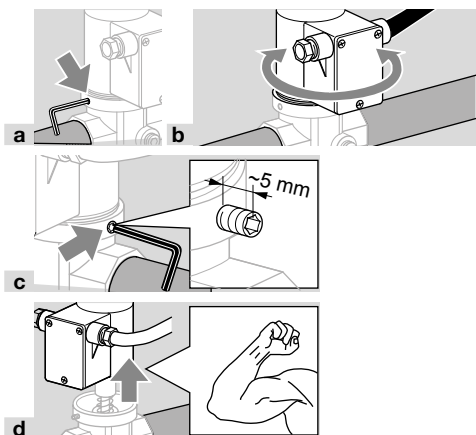
1 Disconnect the system from the electrical power supply.

2 Shut off the gas supply.

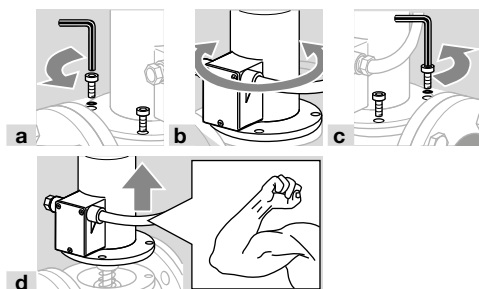
→ If the flow rate is correct, see page 4 (5 Tightness test).

→ If the flow rate has dropped, clean the strainer.

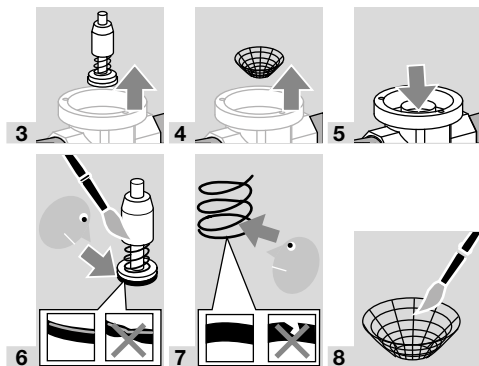
VG 10/15–40/32



VG 40–65



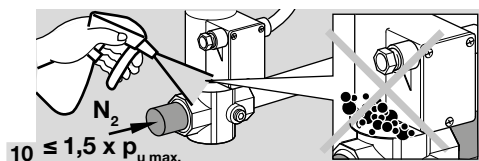
VG 10/15–65



9 Follow the reverse procedure when reassembling.

Checking tightness and function

→ When the solenoid actuator is removed, the gas-filled space in the VG is opened. Therefore, check for tightness once the actuator has been reinstalled.



→ In order to determine whether the VG is tight and closes securely, check the internal and external tightness, see page 4 (5 Tightness test).

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

10 ASSISTANCE IN THE EVENT OF MALFUNCTION

WARNING

Electric shocks can be fatal!
Before working on possible live components, ensure the unit is disconnected from the power supply. Fault-clearance must only be undertaken by authorized trained personnel. Unauthorized repairs or incorrect electrical connections can cause the solenoid valve to become defective. In this case, our warranty will be rendered void.

? Faults

- !** Cause
 - Remedy

? The solenoid valve does not open, there is no flow downstream of the solenoid valve.

- !** There is no power supply.
 - Have wiring checked by authorized trained personnel.
- !** Guiding elements bent. Incorrect handling when installing the unit.



- Remove the unit and return it to the manufacturer.

? The solenoid valve does not close securely, the flow downstream of the solenoid valve does not stop.

- !** Valve seat is dirty.
 - Clean the valve seat, see page 7 (9 Maintenance).
 - Install a filter upstream of the solenoid valve.
- !** Valve seat is damaged.
 - Remove the unit and return it to the manufacturer.
- !** Valve seal is damaged or hardened.
 - Remove the unit and return it to the manufacturer.
- !** Guiding elements bent. Incorrect handling when installing the unit.



- Remove the unit and return it to the manufacturer.

11 TECHNICAL DATA

11.1 Ambient conditions

Gas types: natural gas, town gas, LPG (gaseous), biogas (VG..M only; max. 0.1 %-by-vol. H₂S), hydrogen or clean air; other types of gas on request. The gas must be dry in all temperature conditions and must not contain condensate.

Ambient temperature: -20 to +60°C (5 to 140°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 (68 to 104°F).

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

Enclosure: IP 54.

11.2 Electrical data

Mains voltage:

220/240 V AC, +10/-15%, 50/60 Hz,

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

24 V DC, +10/-15%.

Power factor of the solenoid coil: $\cos \varphi = 1$.

11.3 Mechanical data

Opening time:

VG..N: quick opening, 0.5 s,

VG..L: slow opening, 10 s.

Closing time:

VG..N, VG..L: < 1 s.

Electrical connection of VG 15–40/32:

Plug with socket to EN 175301-803 (available as an accessory),

cable gland: PG 11,

connection terminal: 2.5 mm².

Electrical connection of VG 40–65:

Plug with socket to EN 175301-803 (available as an accessory),

cable gland: PG 13.5,

connection terminal: 2.5 mm².

Duty cycle: 100%.

Solenoid coil insulation: class F insulating material.

Switching frequency: VG..N: max. 30/min.

VG..L: there must be a period of 20 seconds between switching off and on again so that the damping is fully effective.

Valve housing: aluminium,

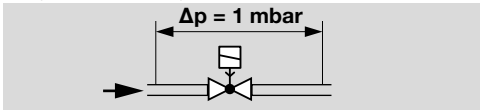
valve plate: NBR.

Internal thread: Rp to ISO 7-1.

Flange: ISO 7005 (DN 65 to DIN 2501), PN 16.

Air flow rate Q

For pressure loss $\Delta p = 1 \text{ mbar}$:



	Q [m³/h]
VG 10/15	3.0
VG 15	3.8
VG 15/12	2.3
VG 20	8.0
VG 25	10.0
VG 25/15	3.8
VG 40/32	18.0

	Q [m³/h]
VG 40	24.0
VG 40/33	13.6
VG 50	37
VG 50/39	23
VG 50/65	48.0
VG 65	57
VG 65/49	35.0
VG 80	85.0
VG 100	130.0

12 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 for VG:

Type	Designed lifetime	
	Switching cycles	Time (years)
VG 10/15–25	200,000	10
VG 40/32	100,000	10
VG 40–80	100,000	10
VG 100	50,000	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.

13 LOGISTICS

Transport

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

Transport temperature: see page 8 (11 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 8 (11 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.

14 CERTIFICATION

14.1 Certificate download

Certificates – see www.docuthek.com

14.2 Declaration of conformity



We, the manufacturer, hereby declare that the product VG, marked with product ID No. CE-0063BL1553, and valves VG for high pressures (1–1.8 bar), marked with product ID No. CE-0063CM1188, 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 161:2022

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

14.3 UKCA certified



Gas Appliances (Product Safety and Metrology etc. (Amendment etc.) (EU Exit) Regulations 2019)
BS EN 161:2011+A3:2013

14.4 Approval for Australia



Australian Gas Association, Approval No.: 3968

14.5 Eurasian Customs Union



The products VG 10/15 - VG 65 meet the technical specifications of the Eurasian Customs Union.

14.6 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.

14.7 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.

15 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.

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