

Gas flow monitor type K

Instructions for Use



for retro-fitting of GFM in existing system with double-pipe gas meter, shutting off the flow of gas when the gas flow volume exceeds a prescribed value due to an unintended release of gas

Model
2649S

Year built:
from 12/2008

en_INT

viega

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1 About this instruction for use

Trade mark rights exist for this document, further information can be found at www.viega.com/legal-notice.

1.1 Target groups

The information in this instruction manual is directed at the following groups of people:

- contract installers registered in the installers' register of a utility company
- professional specialist companies for the construction, maintenance and alteration of a natural or liquid gas system

Liquid gas systems may only be constructed, maintained or altered by companies that have the necessary qualification and experience.

It is not permitted for individuals without the abovementioned training or qualification to mount, install and, if required, service this product. This restriction does not extend to possible operating instructions.

The installation of Viega products must take place in accordance with the general approved rules of engineering and the Viega instructions for use.

1.2 Labelling of notes

Warning and advisory texts are set aside from the remainder of the text and are labelled with the relevant pictographs.



DANGER!

This symbol warns against possible life-threatening injury.



WARNING!

This symbol warns against possible serious injury.



CAUTION!

This symbol warns against possible injury.



NOTICE!

This symbol warns against possible damage to property.



Notes give you additional helpful tips.

1.3 About this translated version

This instruction for use contains important information about the choice of product or system, assembly and commissioning as well as intended use and, if required, maintenance measures. The information about the products, their properties and application technology are based on the current standards in Europe (e. g. EN) and/or in Germany (e. g. DIN/DVGW).

Some passages in the text may refer to technical codes in Europe/Germany. These should serve as recommendations in the absence of corresponding national regulations. The pertinent national laws, standards, regulations and guidelines, as well as other technical guidelines, have priority over German/European guidelines in this manual: The information is not binding for other countries and territories and should, as mentioned, be considered as support.

2 Product information

2.1 Intended use



The use of the model for areas of use and media other than those described must be approved by the Viega Service Center.

2.1.1 Areas of use

Use is possible in the following areas among others:

- Gas installations
- Liquid gas systems

The model can be used in existing double-pipe gas meters when retrofitting gas flow monitors in gas installations. The old gas meter connection can be replaced by this model.

The general rules of engineering must be observed for planning, execution, alteration and operation gas installations.

e. g. the following regulations apply:

- DVGW-TRGI 2008 for gas installations
- DVFG-TRF 2012 for liquid gas systems

2.1.2 Media

The model is suitable for the following media, amongst others:

- Gases
in acc. with DVGW Worksheet G 260
- Liquid gases, only in the gaseous state for domestic and commercial applications
in acc. with DVGW-AB G 260

2.2 Product description

2.2.1 Overview

The model is equipped as follows:

- Casing made of brass
- Inlet side with R external thread
- Outlet side with connection screw fitting with thread G 1¼

The model is available in the following dimensions:

DN	R	G	V _{Gas} [m ³ /h]
25	1	1 ¼	2.5
25	1	1 ¼	4
25	1	1 ¼	6

2.2.2 Sealing elements

The model is fitted with a nyhalit seal. The seal is higher thermal resistant (HTR).



The nyhalit seals may only be used once. The seals in the meter threaded connections must be exchanged when replacing a gas meter (model G2932).

2.2.3 Threaded connection

Prerequisite for a threaded connection, which seals via a thread, is a threaded pair in acc. with DIN EN 10226-1. In acc. with DIN EN 10226-1 comprises a permitted threaded pair consisting of a conical external thread and a cylindrical internal thread, e. g. R ¾ and Rp ¾.

Only use commercially available and chloride-free, DVGW approved sealant in acc. with DIN 30660 and DIN EN 751-2 to seal threads.

2.2.4 Markings on components

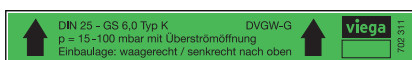


Fig. 1: GFM sticker

The gas flow monitor has a sticker. The sticker contains the following technical details required in accordance with DVGW-VP 305-1:

- GFM nominal value V_{Gas} (coloured marking)
- Flow direction indicator
- Nominal width in DN
- GFM Type
- DWGW writing
- Operating pressure range
- Installation position

The coloured marking of the sticker is determined by the V_{Gas} value of the GFM.

V_{Gas} [m ³ /h]	Coloured marking
2.5	yellow
4.0	light brown
6.0	green

2.2.5 Compatible components

Please contact the Viega Service Center for questions on this subject.

2.2.6 Operating mode

Gas flow monitor (GFM)

A gas flow monitor is an active protective measure in a gas installation. A GFM interrupts the flow of gas if an unintended release of gas occurs. The GFM is tested in acc. with DVGW-VP 305-1.

The GFM is fully open in normal operation. It is based on the nominal volume flow V_N .

The operating volume flow is stable. The Δp from p_1 and p_2 is constant.

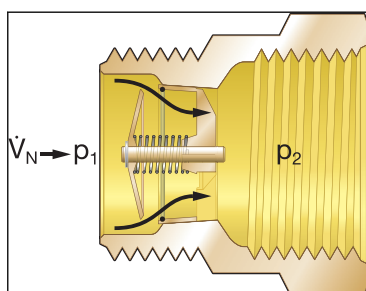


Fig. 2: Normal operation

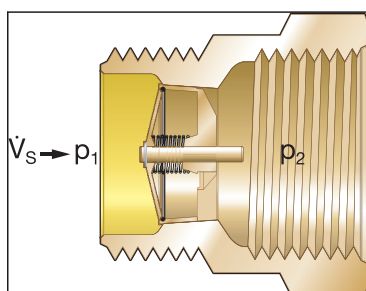


Fig. 3: Breakdown: Valve closed

In the case of a fault, there is a drop in the pressure in the following pipes so that the flow rate increases sharply. The shut-off flow V_S is reached due to the pressure loss in the range p_2 . p_1 presses against the valve plate and interrupts the flow.

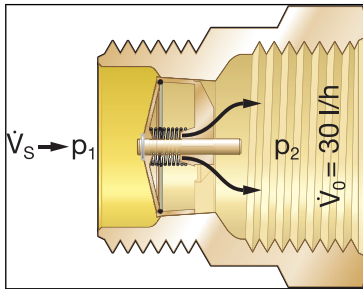


Fig. 4: Breakdown: Valve closed, overflowing gas

After the fault has been rectified, pressures p_1 and p_2 re-balance, by gas flowing from the overflow opening.

$V_0 = 30 \text{ l/h}$ at 100 hPa (100 mbar).

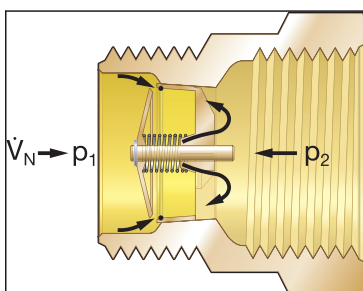


Fig. 5: Fault repaired

The valve plate opens with help from p_2 and the spring force against p_1 .

The gas flow monitor is back in normal operation.

2.2.7 Technical data

Observe the following operating conditions for the installation of the model:

Installation position	vertically downwards
Design	I
Operating pressure range p	15–100 hPa (15–100 mbar)
Operating temperature range T	-20 up to +70 °C
Pressure loss	$\Delta p \leq 0.5 \text{ hPa}$ (0.5 mbar)
Shut-off flow V_S	maximum 45 % above V_{Gas} ($f_S \leq 1.45$)
Overflow opening V_O	$\leq 30 \text{ l/h}$ at 100 hPa (100 mbar)

In acc. with DVGW -VP 305-1 the scope for the operating temperature is between -20° C and max. +60° C.

2.3 Information for use

2.3.1 Corrosion

Depending on the area of use, corrosion protection measures may have to be taken into account.

One differentiates between external pipelines (underground and over-ground external pipelines), as well as internal pipelines.

The general rules of engineering must be observed for corrosion protection.

The following regulations apply, e.g.:

- DIN 30672
- DVGW-TRGI 2008, Point. 5.2.7.1 (for external pipelines)
- DVGW-TRGI 2008, Point. 5.2.7.2 (for internal pipelines)
- DVFG-TRF 2012, Point. 7.2.7.1 (for external pipelines)
- DVFG-TRF 2012, Point 7.2.7.2 (for internal pipelines)

Overground pipes and fittings in rooms do not normally require external corrosion protection.

There are exceptions in the following cases:

- There is external contact with materials containing chloride.
- Stainless steel pipes must not come into contact with building materials or mortar containing chloride.
- There is contact with aggressive building materials such as materials containing nitrite or ammonium.
- in aggressive surroundings

3 Handling

3.1 Assembly information

3.1.1 Mounting instructions

Checking system components

System components may, in some cases, become damaged through transportation and storage.

- Check all parts.
- Replace damaged components.
- Do not repair damaged components.
- Contaminated components may not be installed.

Mounting conditions

Observe the following when mounting:

- Only install gas flow monitors that are compatible with the device connected and the installation.
- The excessive use of sealant can impair the function.
- Do not cover or paint the model.
- Use suitable tools.

Exceptions, selection criteria and order of the components are described in DVGW-TRGI 2008 and DVFG-TRF 2012.

Installation position and shut-off flow

The model must be installed directly **downstream from** the gas meter ball valve and **upstream from** the gas meter inlet.

When mounting the model, observe the flow direction indicator. The flow direction is shown on the coloured sticker.

The model may only be installed vertically facing downwards in direction of flow.

A power match across the protectable length is not required.



NOTICE!

Active and possibly passive protection measures are required to protect a gas installation from tampering by unauthorised persons

Active protective measures must always be taken.

Passive protective measures must be selected and employed depending on the installation.

The use of active and passive protective measures is regulated in DVGW-TRGI 2008, Point 5.3.9.

3.2 Assembly

3.2.1 Leakage test

The installer must perform a leakage test before commissioning.

This test is carried out on a unit that is finished but not yet covered.

The general rules of engineering must be observed.

E. g. the following regulations apply:

- DVGW-TRGI 2008, Point 5.6
- DVG-TRF 2012, Point 8 (Testing and commissioning of a liquid gas system)

The result must be documented.

3.3 Maintenance

The gas installation must be given a visual inspection, e. g. by the owner, once a year.

Serviceability and leak tightness must be checked every 12 years by an installation contractor.

Gas installations must be operated and maintained as intended to ensure and maintain a safe operating condition. Detailed information on this topic can be found in DVGW-TRGI 2008 appendix 5c.

3.4 Disposal

Separate the product and packaging materials (e. g. paper, metal, plastic or non-ferrous metals) and dispose of in accordance with valid national legal requirements.