

Gas meter ball valve with integrated gas flow monitor type K

Instructions for Use



for single-pipe gas meters

Model
G2112.1S

Year built:
from 01/1990

en_INT

viega

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1 About these instructions for use

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

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 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 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



Viega gas fittings conform with the requirements of DIN EN 331. The gas fittings are tested and certified in accordance with the following criteria by the DVGW:

- *leak tightness in acc. with 3537-1*
- *higher thermal resistance (HTR)*

The model is equipped as follows:

- casing made of brass
- dual-sided with threaded connection screw fitting with Rp internal thread
- test opening < 1 mm
- test screw in the dimension G 1/8
- wall bracket with fixing set
- gas flow monitor (GFM)

In addition, the model is equipped with a G 2 thread, onto which the gas meter is connected.

The model is lead-sealable and, in addition, can be locked using a commercially available padlock.

The yellow protective sleeve on the actuating lever shows the medium to be gas.

A gas flow monitor (GFM) type K is integrated into this model. A line compensation across the length to be protected is not required when a gas flow monitor type K is installed in metallic pipelines.

You can find more detailed information about the GFM in the technical data about the GFM ↗ *Chapter 2.2.6 „Technical data“ on page 10.*

The model is available in the dimension Rp 1 with the following GFM:
 $V_{\text{Gas}} 2.5 \text{ m}^3/\text{h} / 4.0 \text{ m}^3/\text{h} / 6.0 \text{ m}^3/\text{h}.$

2.2.2 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 3/4 and Rp 3/4.

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

Excessive use of sealants can be detrimental to the function of the integrated gas flow monitor.

2.2.3 Markings on components

The model is marked as follows:

- MOP5 for maximum operating pressure 0.5 MPa (5 bar)
- GT1 for operating pressure with HTR requirement max. 0.1 MPa (1 bar)
- Flow direction indicator
- DWGW writing
- HTR marking

GFM specification plate

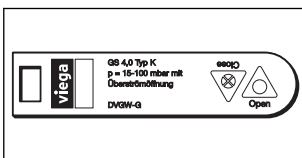


Fig. 1: Protective sleeve on the actuating lever

The protective sleeve on the actuating lever is marked with the following information about the GFM:

- Manufacturer
- GFM Type
- Nominal flow
- Operating pressure range
- Position indicator
- DVGW-G

2.2.4 Compatible components

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

2.2.5 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.

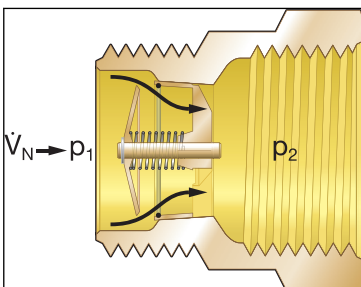


Fig. 2: Normal operation

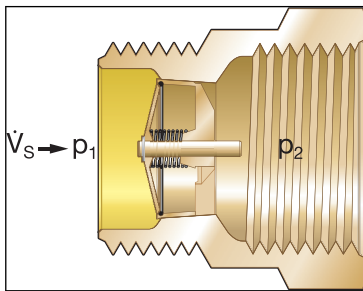


Fig. 3: Breakdown: Valve closed

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.

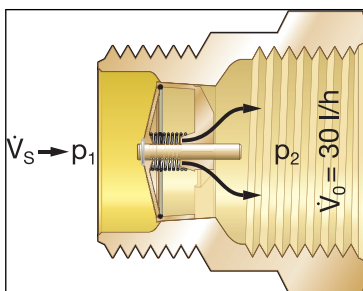


Fig. 4: Breakdown: Valve closed, overflowing gas

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).

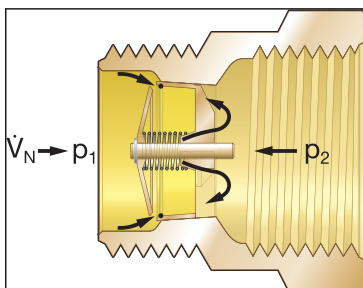


Fig. 5: Fault repaired

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.

2.2.6 Technical data

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

Use	Gas installation	Liquid gas installation
Operating temperature	-20° C up to +70° C	-20° C up to +70° C
Operating pressure	≤ 0.5 MPa (5 bar) (MOP5)	≤ 0.5 MPa (5 bar) (MOP5) ¹⁾
	≤ 0.1 MPa (1 bar) (HTR / GT1) ²⁾	≤ 0.1 MPa (1 bar) (HTR / GT1) ²⁾

¹⁾ Maximum pressure – equates to the pick-up pressure of the SAV in the pressure regulating valve

²⁾ Operating pressure at HTR requirement max. 0.1 MPa (1 bar) (GT1)

In accordance with DIN EN 331 the scope of the operating temperature is between -20 °C and max. +60 °C.

Integrated gas flow monitor

Installation position	horizontal
Design	I
Operating temperature	-20° C up to +70° C
Operating pressure	15–100 hPa (15–100 mbar)
Pressure loss	≤ 0.5 hPa (0.5 mbar)
Closing factor f_s	1.45
Overflow opening	≤ 30 l/h at 100 hPa (100 mbar)

The shut-off flow is dependent on the gas volume flow of the integrated GFM.

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:

- Observe flow direction indicator.
- Observe required space for the gas meters according to the manufacturer's instructions.
- Do not cover or paint the model.
- Do not install the model in heat zones (e. g. with hot emissions or strong heat radiation).
- Use suitable tools.

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



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 Mounting

3.2.1 Mounting the wall bracket



Mount the wall bracket first, then the fitting.

The model is equipped with a wall bracket and the required fixing set for mounting on masonry.

The fixing material must be adapted to the ground and to the ambient conditions.

Information about the ground and the ambient conditions are to be found in DVGW-TRGI 2008, Point 5.3.7.

- Hold the wall bracket in the correct position and mark the drill holes on the wall.
- Drill holes.
- Align the wall bracket horizontally and screw on.
- Mount the fitting on the wall bracket.

3.2.2 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
- DVFG-TRF 2012, Point 8 (Testing and commissioning of a liquid gas system)

The result must be documented.



By employing an overflow cap (model G2360), the continuous gas installation can also be tested without mounted gas meters.

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.