



Gas

GWF

Operating instructions

Diaphragm gas meters BK-G 2,5 to BK-G 25 and BK-G 2,5T to BK-G 25T

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. These instructions can also be found at www.gwf.ch.

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:

Warning
Indicates possible danger to life and limb.

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.

Transport

Diaphragm gas meters are always to be transported in the upright position. On receipt of the product, check that the delivery is complete (see «Part designations»). Report any transport damage immediately.

Storage

Diaphragm gas meters are always to be stored in the upright position and in a dry place. Ambient temperature: see «Technical data» overleaf.

Checking the usage

Diaphragm gas meters BK-G 2,5 to BK-G 25

Residential or commercial diaphragm gas meters BK for recording gas consumption values for natural gas, town gas, propane and butane, as gases of the first to third families pursuant to DIN EN 437:2003 [DVGW Code of Practice G260]. If used for internal measurements which are not subject to statutory testing, the gas meter is also suitable for hydrogen, nitrogen, air and inert gases.

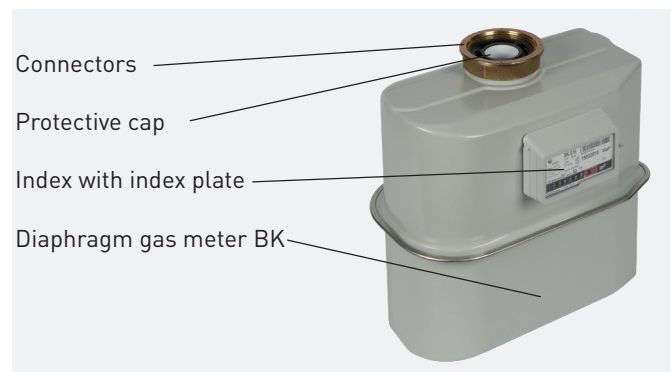
The meters are designed for use in air at normal atmospheric conditions. For use in other environments, please contact the manufacturer.

The meter function is only guaranteed when used under the specified operating conditions – see «Technical data» overleaf. Any other use is considered as non-compliant.

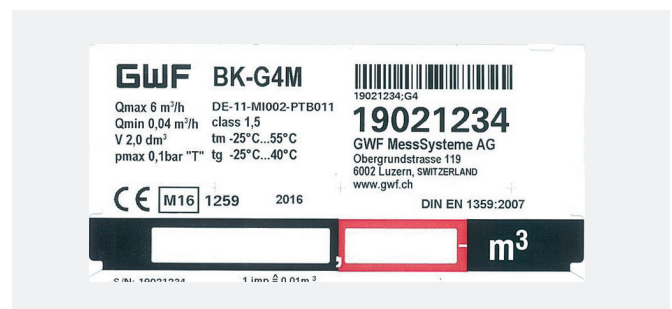
Type code

Code	Description
BK	Diaphragm gas meter
-G	Dimension
	Flow rate
2,5	0,025 – 4 m ³ /h
4	0,04 – 6 m ³ /h
6	0,06 – 10 m ³ /h
10	0,1 – 16 m ³ /h
16	0,16 – 25 m ³ /h
25	0,25 – 40 m ³ /h
M	Mechanical index
A	Absolute ENCODER index
T	with temperature conversion

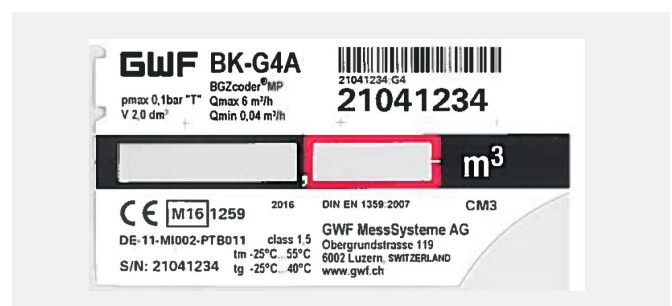
Part designations



Type label/Index plate diaphragm gas meters BK



Type label/Index plate diaphragm gas meters BK with Absolute ENCODER index BGZcoder® MP



Type label/Index plate diaphragm gas meters BK with Absolute ENCODER index BGZcoder® MP AE5



Installation

Warning

Please observe the following to ensure that neither persons nor the gas meter are damaged during installation and operation:

- Note the max. allowable operating pressure $p_{\max}$ and measuring range $Q_{\max}$, see «Type label/Index plate».
- Note the permitted ambient temperature t_m and gas temperature t_g , see «Type label/Index plate» or «Technical Data».
- The gas meter is suitable for mechanical ambient conditions of Class M1 of Directive 2014/32/EU. For gas meter versions with Absolute-ENCODER-index Class E2 for electromagnetic ambient conditions also applies.
- The dangers of chemical reactions between gas meter parts and the chemical substances in the environment are to be discussed by the manufacturer and the operator and must be eliminated.
- Use seals made from tested materials. Elastomer seals or Novapress 850 seals or asbestos-free flat seals from GWF are recommended.
- For meters resistant to high temperatures, only use seals tested to be resistant to high temperatures.
- Only use the seals once.
- For installation and operation, note the applicable national regulations and the directives of the gas supply company.

- If the calibration seal has been damaged or removed, the gas meter is no longer approved for measurements which are subject to statutory testing.
- If the gas meter is stored or installed outdoors, protect the site against rain. Condensing humidity is permitted.
- Meters marked H3 are designed for installation in the unprotected outside area.

1 Remove protective caps

- Installation in the vertical position: connectors must be pointing upwards.
- Note direction of flow (arrow).
- The gas meter must not be in contact with masonry or other parts.
- Ensure that there is sufficient installation space.
- Ensure unobstructed view of the index.
- The seal faces on the screw unions must be clean and damage-free.
- Make sure that the seal is positioned correctly.

Meters with one-pipe connection:

- The seal must be centred over the internal diameter.
- When using an elastomer seal, always use a pressure ring (type A).

- Note the special installation position of the pressure ring. The inner flange edge is oriented upwards.
- Replace damaged pressure rings when changing meters.

Meters with one-pipe and two-pipe connection:

- For the compression of seals and the resulting tightening torques for the screw unions, the seal manufacturers' specifications must be observed.

2 Install the gas meter free of mechanical stress

- When installing diaphragm meters to DIN EN 1359 with screw couplings to DIN 3376-1 and 3376-2, we recommend using GWF gaskets.

Tightening torques listed below are recommended. The maximum tightening torques for elastomers should not be significantly exceeded, as high surface pressures can damage the material. Expert installation with subsequent leak testing is required. The requirement of a „tight“ connection results in the actually necessary tightening torque. Storage of the seals: dry and dark; under UV shielding, max. 2 years.

Gas meter connection	Thread	AF size	Tightening torque for non-greased thread		
			DIN EN 549 (Elastomer, s = 2,5 mm) min-max [Nm]	DIN 3535-6 (AFM 30, s = 2 mm) min-max [Nm]	DIN 3535-6 (Novapress 850, s = 3 mm) min-max [Nm]
Two pipes	DN 20	G 1"	41	5 - 10	40 - 60
	DN 25	G 1¼"	46	8 - 20	60 - 100
	DN 32	G 1¾"	60	15 - 35	130 - 220
	DN 40	G 2"	65	20 - 40	160 - 280
	DN 50	G 2½"	80	30 - 60	300 - 500
One pipe	DN 25	G 2"	65	20 - 40	180 - 260
	DN 40	G 2¾"	90	50 - 80	520 - 800
	DN 50	M 10 (4x)	17	-	40 - 80

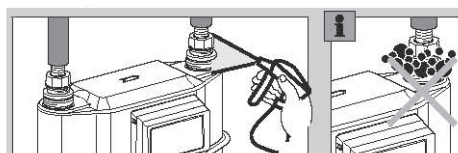
Other tightening torques may apply for other screw couplings with other seals.

Tightness test

- Check the pipework for leaks prior to installation of the gas meter, in case the pipework is tested with a greater test pressure than the max. allowable operating pressure $p_{\max}$ for the gas meter. Otherwise, the installed gas meter may be damaged.
- Ensure the customer's consumers are closed.

1 Apply the test pressure slowly to the gas meter

2



3 After the tightness test, slowly vent the gas meter

Commissioning

Once the tightness test has been successfully completed, the gas meter is ready for operation. Slowly open the manual valve.

Interface with mechanical index

For pulse tapping, the pulse transmitter IN-Z6x can be connected.

Interface with Absolute ENCODER index

Polarity-independent connection possible (excepted ECO).

Maintenance/Removal

Gas meters BK-G 2,5–25 from GWF are maintenance free.

- When used for custody transfer measurements, recalibration must be carried out in accordance with national directives.
- If the screw unions are loosened for maintenance work or retesting, replace the seals.
- After the gas meter has been removed, immediately close the connector with protective cap in order to prevent ingress of dirt particles.



Warning

A certain amount of gas may remain in the gas meter. Taking into consideration the risk of explosion, it is important to adopt safety measures:

- Following removal of the gas meter, purge it thoroughly with inert gas.
- For transporting the gas meter with gas residue, use a vehicle with an open or a ventilated loading area.

Accessories

We recommend using GWF accessories only!

Technical data

Diaphragm gas meter BK

Gas type: natural gas, town gas, propane and butane, as gases of the first to third families pursuant to DIN EN 437:2003 (DVGW Code of Practice G260).

- Max. allowable operating pressure $p_{\max}$
- Measuring range: $Q_{\min}/Q_{\max}$
- Max. allowable ambient temperature range t_m .
- Max. allowable gas temperature range t_g : see type plate.
Gas temperature t_g at which measuring errors still lie within the limits specified in the directive. If a gas temperature t_g is not given on the type plate, then $t_g = t_m$.

Other technical data

- Transitional flow rate $Q_t = 0,1 \times Q_{\max}$
- Max. allowable storage temperature range: -25 to + 60 °C
- Mechanical environment class: M1
- Electromagnetic environment class: E2



EU-Konformitätserklärung

EU declaration of conformity

Produkt
Product

Balgengaszähler (mit Absolut-ENCODER)
Diaphragma gas meter (with absolute ENCODER)
Balgengaszähler mit eingebauter Temperaturumwertung (mit Absolut-ENCODER)
Diaphragma gas meter with integrated temperature conversion (with absolute ENCODER)

Typ
Type

BK-G1,6 A – BK-G25 A
BK-G1,6 AT – BK-G25 AT

Produkt Kennzeichnung
Product marking

 1259
DE-11-MI002-PTB011 /
DE-11-MI002-PTB012

EU-Richtlinien
EU Directives

2014/32/EU - MID

2014/30/EU - EMC

2011/65/EU - RoHS

Normen
Standards

EN 1359:2017
EN 1359:1998 + A1:2006

IEC 61000-6-2:2005
IEC 61000-6-3: 2006 + A1:2010

EU-Baumusterprüfung
EU-type examination

DE-11-MI002-PTB011 / DE-11-MI002-PTB012
MID – 2014/32/EU Anhang II, Modul B / MID- 2014/32/EU Annex II, Module B
Physikalisch-Technische Bundesanstalt (PTB)
Notifizierte Stelle 0102 / Notified Body 0102

Prüfungen
Tests

Quinel AG:
No. E2176-05a-16 (ACM 5.1 ECO)
No. E2176-05a-16 (ACM 5.1.1 ECO)
No. E2176-05b-18 (ACM 5.2 M-BUS)
No. E2176-05a-18 (ACM 5.5 SCR)

Überwachungsverfahren
Surveillance procedure

2014/32/EU Anhang II, Modul D / 2014/32/EU Annex II, module D /
Eidgenössisches Institut für Metrologie (METAS-Cert) / Federal Institute of Metrology
(METAS-Cert)
Notifizierte Stelle 1259 / Notified Body 1259
Zertifikat / certificate : 6030-00273

Wir erklären als Hersteller: / We declare as manufacturer:

Die entsprechend gekennzeichneten Produkte sind nach den aufgeführten Richtlinien und Normen hergestellt. Sie stimmen mit dem geprüften Baumuster überein. Die Herstellung unterliegt dem genannten Überwachungsverfahren.
EN: Products labelled accordingly are manufactured according to the listed Directives and Standards. They correspond to the tested type samples. The production is subject to the stated surveillance procedure.

Luzern, 04.07.2024

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