HD-BGZ

High-Pressure Diaphragm Gas Meters G4 – G6

Applications

- **Media:**
  Natural gas, nitrogen, air, and chemical gases according to G260; further gases on request
- **Branches:**
  Gas industry
- **Functions:**
  Measurement of very small gas volumes under high pressures

General

High-pressure diaphragm gas meters (HD-BGZ) G4 – G6 are manufactured for operating pressures up to 25 bar and are suitable for the measurement of natural gas, nitrogen, air, and chemical gases in accordance with the DVGW work sheet G260. The main component of these gas meters is the diaphragm gas meter measuring unit, which is installed in a pressure-resistant housing. The cover of the gas meters includes a temperature and pressure tap each as well as a manometer connection. The index head can be turned by 355° and has a built-in reed switch pulser as well as a power take-off coupling for the operation of additional devices. All high-pressure diaphragm gas meters are equipped with DIN flanges. The magnetic coupling in the HD-BGZ ensures a transfer between the measuring unit and the totalizer, which is both absolutely gastight and smoothly running. Elster's high pressure diaphragm gas meters meet the 97/23/EC directive on pressure devices as well as the regulation of the 79/196/EEC directive applying to electronic components that are used in explosion protection zones.

Overview

The G4 and G6 models are high-pressure diaphragm gas meters designed to meet the highest demands with respect to measuring accuracy and protection. They incorporate both innovative features and Elster's gas measurement know-how of many decades. The meters are supplied as two-pipe versions for horizontal installation. The measuring unit of the HD-BGZ operates according to the moving-iron principle. The dimensionally stable synthetic diaphragm has the proven stadium-shaped form. The patented slide control and the use of high-grade materials ensure a high quality standard. The system synchronises the operation of the slides with the current flow through the measuring chamber thus enabling minimum slide cross sections and an extremely high accuracy of measurement.

Due to the small slides, HD-BGZ are stable in the Q_{min} range and are not susceptible to contamination. The measuring unit is adjusted by a patented needle-and-scale system. Although the design is very robust, high-pressure diaphragm meters are still measuring instruments and as such should be handled with care.

General Working Principle

Four measuring chambers, which are separated by synthetic diaphragms, are filled and emptied periodically. The movement of the diaphragm is transferred via a gear to the corresponding crankshaft. The shaft drives the slides, which control the gas flow. The rotations of the gear are transferred, via a magnetic coupling, to the index.

The flange construction enables an easy installation of the meter in the piping. On account of the measuring principle, HD-BGZ do not require any intake and / or discharge lines. In case of dry gases, specific precautionary measures are not necessary. However, pipes for gases, which carry contamination's or are susceptible to the formation of condensate at the point of measurement should be equipped with a condensate trap and a filter upstream of the point of measurement.

Main Features

- **Corrosion-protected design**
- **Measuring range: 1:160**
- **Flow rates:**
  0.04 – 10 m^3/h
- **Nominal widths:**
  DN 20 and DN 25
- **Operating pressures:**
  PN 16 and PN 25;
  other pressure ratings:
  please contact us
- **Low pressure loss**
- **Reed switch pulser:**
  1 $m^3 \approx 100$ pulses
- **Protection class: IP54**
- **Maintenance-free measurement without any wear and tear**
- **Synthetic diaphragm**
- **Long service life**

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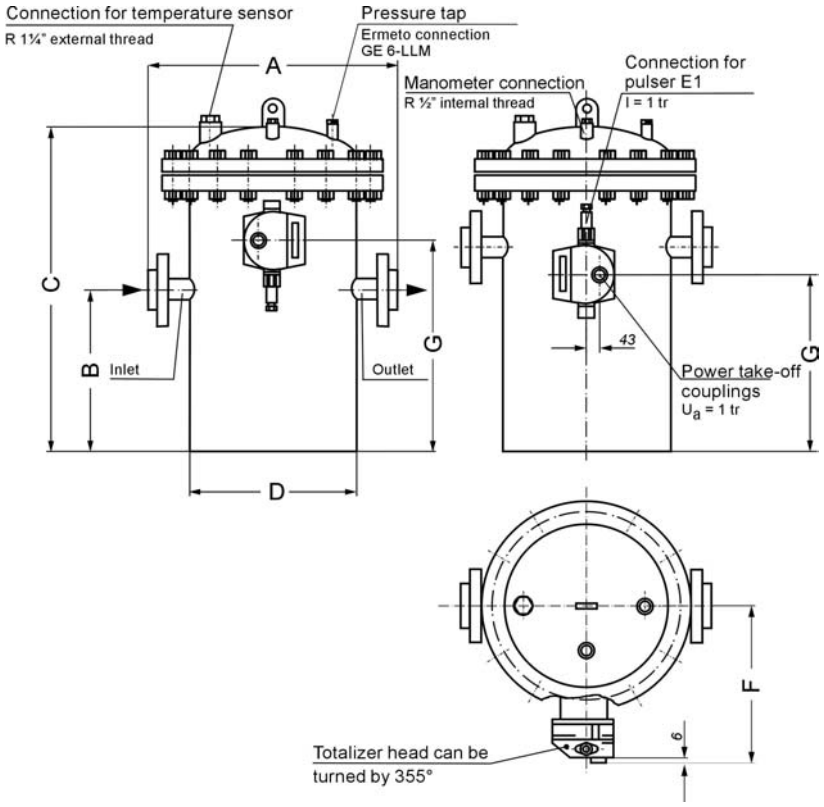


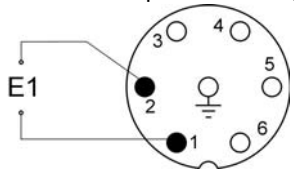
Technical Data

							Dimensions: see drawing					
	Measuring range	Volume chamber	1 tr. = m³ *	Connection DN	PN	DIN	A mm	B Mm	C mm	D mm	F mm	G mm
HD-BGZ G 4	0.04 – 6 m³/h *	2 l	0.01	20	16	2656	340	290	540	245	237	320
			0.01	20	25	2656	340	290	540	245	237	320
HD-BGZ G 6	0.06 – 10 m³/h *	3.5 l	0.01	25	16	2656	400	413	611	300	272	350
			0.01	25	25	2656	400	413	630	300	272	350
Range of application	Medium		Natural gas, nitrogen, air, and chemical gases to G260									
	Gas temperature Ambient temperature		-20 °C - + 50 °C -20 °C - + 60 °C									
	Accuracy Q_{min} – 0.2 Q_{max}		± 3 % of measured value									
	Accuracy 0.2 Q_{max} – Q_{max}		± 1.5% of measured value									
Output	Pulse output		100 pulses per m³									
Protection class	IP 54											
Weight	kg		G 4 PN 16= 38 kg		G 4 PN 25= 42 kg		G 6 PN 16= 55 kg		G 6 PN 25= 60 kg			

* Specific ranges of measurement on request

Pulse output E1

Pin assignment — Male recetacle 6-pole + earthing contakt



Switching voltage	U_{max}	= 24V
Switching capacity	P_{max}	= 0.25W/VA
Switching current	I_{max}	= 50mA
Resistance	R_i	= 100Ω ± 20%

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