Quantometer Q

Short Pattern Turbine Gas Flow Meters

Applications

- **Media:**
  natural gas, methane, city gas oxygen (up to 10 bar*), , non-aggressive gases, further gases on request
- **Branches:**
  gas industry, chemicals, foodstuffs, industry, district heating, power plants, petrochemicals
- **Functions:**
  controlling, regulation, registration, analysis, monitoring, examining, evaluation

*special version

Operation

Elster Q quantometers are flow meters for gaseous media which display actual volume. The measurement is made with the help of a turbine wheel, whose revolutions are proportional to the actual volume flowing through the meter (or the volume at actual operating conditions). The revolutions of the turbine wheel are reduced by a gear. The volume is then displayed on an 8-digit mechanical roller counter.

Brief information

The Q series of quantometers is well known in the field of industry and commerce as a robust and accurate turbine meter. It has a low price and is particularly suitable for highly-accurate and reliable metering, also in higher flow and pressure ranges. The Q quantometer meets the highest industrial standards in terms of quality. Depending on the size of the meter and the conditions of application, the quantometer has self-lubricating, maintenance-free bearings or is lubricated by pressure oil (oil pump). It is possible to equip the quantometer with additional devices such as volume correctors or external pulsers.
The Q quantometer can be used in hazardous areas up to zone 1. It is easy to install in a pipeline and is capable of registering, monitoring and transferring measurement data. With a Q quantometer, volume (m^3) in production processes can be measured exactly. By constantly controlling and monitoring the gas flow, the use of energy in a production process, for example, can be optimized. The flow meters can be combined with an Elster DS-/DL- data storage device or EK210, EK230 and EK260 volume correctors if required.

Installation tips

Up to a diameter of DN 150, the quantometer can be installed in any position. From a diameter of DN 200 upwards we recommend a horizontal installation. The flow direction in the quantometer is marked by an arrow on the housing.

Main features

- **Low cost gas flow meter**
- **Meter sizes Q 65 - Q 16 000**
- **Flow ranges 5 - 25 000 m^3/h**
- **Rangeability up to 1:20, for higher pressure up to 1:100**
- **Nominal width DN 50 - DN 500**
- **Pressure rates up to 100 bar**
- **Flange connections according to DIN or ANSI**
- **Length 1.5 DN**
- **Housing made of spheroidal graphite cast iron, cast steel or welded steel**
- **Suitable for outdoor installation (IP 67)**
- **Two low frequency pulsers standard**
- **Approved by German DVGW**

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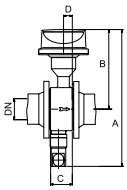
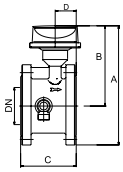


DN 50



DN 80 - 500

	Product group Q	65	100/160/250	250/400	400/650/1000	1000/1600	1600/2500/	4000 to 16000
Metering	Measuring range m³/h	6 to 100	Q 100: 10 to 160 Q 160: 13 to 250 Q 250: 20 to 400	Q 250: 20 to 400 Q 400: 32 to 650	Q 400: 32 to 650 Q 650: 50 to 1000 Q 1000: 80 to 1600	Q 1000: 80 to 1600 Q 1600: 130 to 2500	Q 1600: 130 to 2500 Q 2500: 200 to 4000 Q 4000: 320 to 6500	on request
	Accuracy in flow range Q_{min} – 0.2 Q_{max}	< 3 % from measured value						
	Accuracy in flow range 0.2 Q_{max} – Q_{min}	< 1.5 % from measured value						
	Gas temperature Ambient temperature	-20 °C to +60 °C (for GGG-40, welded steel DN 250 and up, or DN 200 ANSI 600), -20°C to +60°C (for cast steel) -20 °C to +70 °C						
Housing	Material	PN 10, PN 16, ANSI 150						
		GGG-40: spheroidal cast iron				cast steel	welded steel	
		ANSI 300, ANSI 600						
		cast steel				welded steel		
	Diameter DN *** mm	50	80	100	150	200	250	
	inch	2”	3”	4”	6”	8”	10”	
	Dimensions A mm	324	305	320	395	445	on request	
	B mm	188	205	215	250	275		
	(ANSI 300/600) C mm	60	120 (240)	150 (300)	180 (450)	200** (300)		
	D mm	24	50	57	76	87		
	Weight PN 10 kg	4	11	15	30	42		
	Assembly	Q 65: between two flanges Q 100 to Q 16000: flange connection						
Outputs/ pulse values (imp/m³)	LF E1 Reed switch imp/m³	10	1	1	1	0.1	0.1	
	HF A1R * Proximity switch imp/m³	28500	10500	6600	2500	1750	850	

* deviations possible ** PN 10/PN 16 and ANSI 150 +++ DN 50 – DN 150: permanent lubricated, from DN 200 on: oil pump lubrication.

Pulsers

Low frequency: Elster Quantometers are fitted with two low-frequency pulsers and one switch for monitoring any attempts at manipulation (PCM). The low-frequency pulses, which are generated by Reed switches in the plug-in pulser IN-S1x, are used to transmit the actual volume in m³ to a volume corrector, for example. The maximum frequency is 0.5 Hz.

Standard version: IN-S10 with a 2.5 m open-ended 6-wire cable.

Options:

IN-S11 with a 6-pin flange plug and a connector socket (Binder 423 system).

IN-S12 with two 6-pin flange plugs and two connector sockets (Binder 423 system).

High frequency (optional): If higher pulse rates or a higher resolution is required for control or regulation purposes, the turbine meter can be equipped with high-frequency pulsers. The maximum frequency is 2500 Hz. The plug for the high-frequency pulser is designed to save space. It is located at an angle on the side of the housing and can be rotated.

Pin assignment

Low-frequency pulser

IN-S10

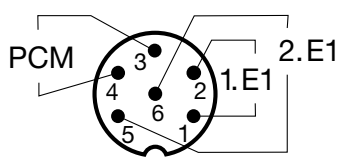
wire colors

1. E1: white - brown
2. E1: green - yellow

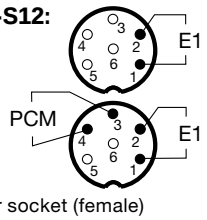
PCM: gray - pink

PG9 DIN 45322

IN-S11:

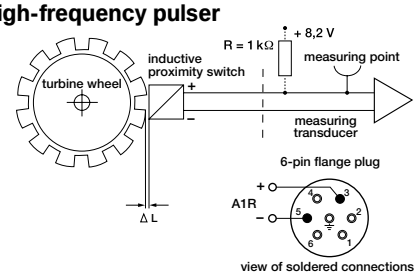


IN-S12:



View of soldered side of connector socket (female)

High-frequency pulser



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