

PRECESSION VORTEX GAS FLOWMETER



- PRECESSION VORTEX · 0.3 ... 3600 M³/H · DN15 ... DN200
- STAINLESS STEEL OR ALUMINIUM · FLANGE · 1.6 ... 4.0 MPA
- IP65 · EX D IIB T4 · 4 ... 20 MA · PULSE · RS485

KEY DATA

Property	Value	Property	Value
Flow range	0.3 ... 3600 m ³ /h, by size	Nominal size	DN15 ... DN200
Accuracy	Class 1.0 or 1.5	Nominal pressure	1.6 · 2.5 · 4.0 MPa
Medium temperature	-20 ... +80 °C	Ambient temperature	-30 ... +65 °C
Output	4 ... 20 mA · pulse · alarm · RS485	Supply voltage	24 Vdc ± 15 % or battery
Protection grade	IP65	Explosion protection	Ex d IIB T4 · Ex ia IIC T4

A precession vortex meter: the gas is set spinning, the swirl centre precesses, and its frequency is counted. Pressure and temperature are measured in the same housing and the reading is corrected for both and for the compression factor. The class is the accuracy of the system after that correction; it is the fifth field of the order code. The battery version has neither a display nor an output.



MEASUREMENT

Measuring principle	Precession vortex
Flow range	0.3 ... 3600 m³/h, depending on the nominal size — see the range table
Accuracy	Class 1.0 or 1.5 · the accuracy of the system after temperature and pressure correction
Repeatability	Less than one third of the absolute value of the basic error limit
Nominal size	DN15 ... DN200
Compensation	Temperature, pressure and compression factor — automatic
Reference conditions	101.325 kPa · 293.15 K
Straight pipe run	10 × DN before the meter, 5 × DN after it
Mounting position	Horizontal, vertical or at any angle · the arrow gives the flow direction

MATERIALS AND PROCESS

Medium	Gas
Body	Stainless steel or aluminium alloy — the eighth field of the order code
Process connection	Flange
Nominal pressure	1.6 · 2.5 · 4.0 MPa
Medium temperature	-20 ... +80 °C
Ambient temperature	-30 ... +65 °C
Relative humidity	5 ... 95 %
Atmospheric pressure	86 ... 106 kPa
Protection grade	IP65
Cable entry	M20 × 1.5 internal thread
Explosion protection	Ex d IIB T4 · Ex ia IIC T4

ELECTRICAL PROPERTIES

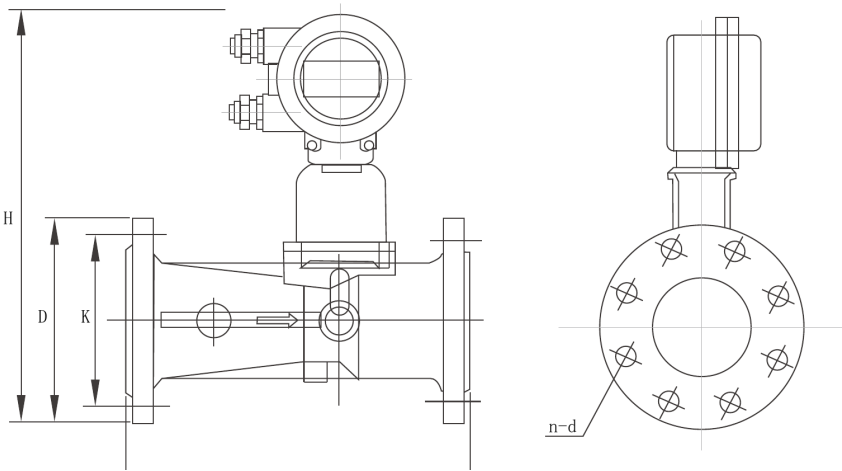
Supply · external	24 Vdc ± 15 % · ripple < 5 % · below 2 W
Supply · internal	One 3.6 V lithium cell ER26500 · 1 mW average, over two years · undervoltage warning below 3.0 V
Analogue output	4 ... 20 mA, isolated · 4 mA is 0 m³/h, 20 mA the set maximum standard flow
Pulse output	Isolated · high ≥ 20 V, low ≤ 1 V
Calibration pulse	High ≥ 2.8 V, low ≤ 0.2 V · 0.001 ... 100 m³ per pulse · ≤ 900 Hz
Alarm outputs	Upper and lower limit, isolated · 12 ... 24 V · 50 mA maximum
Communication	RS485, isolated · up to 1.2 km

DISPLAY

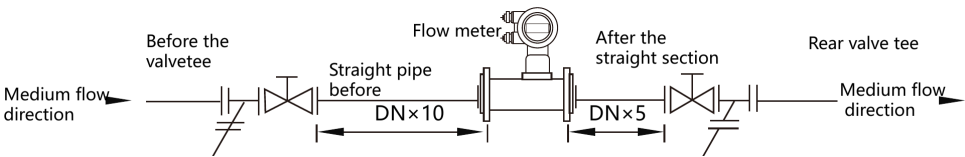
Display	Dot matrix
Shown	Working volume flow, standard volume flow, totals, pressure, temperature
Head	Turns 360°
Daily record	Five years
Monthly record	Five years
Interval records	1200



DIMENSIONS (mm)



Left the side view with the head, right the view along the pipe with the flange. The letters are the columns of the installation table.



The straight pipe run: ten times the nominal diameter before the meter and five times after it, valves and tees outside that.

FLOW RANGES

Nominal size	Flow range (m³/h)	Nominal size	Flow range (m³/h)
DN15	0.3 ... 12	DN65	20 ... 300
DN20	1.2 ... 15	DN80	30 ... 400
DN25	2.5 ... 30	DN100	50 ... 800
DN32	4.5 ... 60	DN125	80 ... 1000
DN40	7 ... 70	DN150	190 ... 1900
DN50	10 ... 130	DN200	240 ... 3600



INSTALLATION

L is the face-to-face length, H the height from the pipe axis to the top of the head, D the outside diameter of the flange, K the bolt circle.

INSTALLATION DIMENSIONS (mm)

Nominal size	Version	PN (MPa)	Length L	Height H	Flange Ø D	Bolt circle K	Holes n × d
DN15	A	1.6 · 2.5 · 4.0	160	280	95	65	4 × Ø 14
DN15	B	1.6 · 2.5 · 4.0	200 (180)	280	95	65	4 × Ø 14
DN20	A	1.6 · 2.5 · 4.0	160	335	105	75	4 × Ø 14
DN20	B	1.6 · 2.5 · 4.0	200 (180)	335	105	75	4 × Ø 14
DN25	A	1.6 · 2.5 · 4.0	180	350	115	85	4 × Ø 14
DN25	B	1.6 · 2.5 · 4.0	200	350	115	85	4 × Ø 14
DN32	A · B	1.6 · 2.5 · 4.0	198	355	140	100	4 × Ø 18
DN40	A · B	1.6 · 2.5 · 4.0	232	330	150	110	4 × Ø 18
DN50	A · B	1.6 · 2.5 · 4.0	230	380	165	125	4 × Ø 18
DN65	A	1.6	300	405	185	145	4 × Ø 18
DN65	B	2.5 · 4.0	290	405	185	145	8 × Ø 18
DN80	A · B	1.6 · 2.5 · 4.0	330	410	200	160	8 × Ø 18

INSTALLATION · CONTINUED

Nominal size	Version	PN (MPa)	Length L	Height H	Flange Ø D	Bolt circle K	Holes n × d
DN100	A	1.6	410	440	220	180	8 × Ø 18
DN100	B	2.5 · 4.0	410	440	235	190	8 × Ø 22
DN125	A	1.6	516	470	250	210	8 × Ø 18
DN125	B	2.5 · 4.0	516	470	270	220	8 × Ø 26
DN150	A	1.6	585	490	285	240	8 × Ø 22
DN150	B	2.5 · 4.0	575	490	300	250	8 × Ø 26
DN200	A · B	1.6	700 (670)	550	340	295	12 × Ø 22
DN200	A · B	2.5	700 (670)	550	360	310	12 × Ø 26
DN200	A · B	4.0	700 (670)	550	375	320	12 × Ø 30



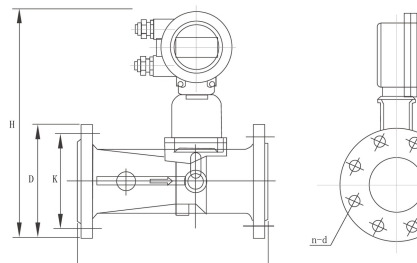
COMPLIANCE AND CERTIFICATION

Protection grade	IP65
Explosion protection	Ex d IIB T4 · Ex ia IIC T4
Measuring principle	Precession vortex
Accuracy	Class 1.0 or 1.5 of the system after temperature and pressure correction
Repeatability	Less than one third of the absolute value of the basic error limit
Wetted materials	Stainless steel or aluminium alloy
Pressure rating	1.6, 2.5 or 4.0 MPa by order code

ORDER CODE

Accessories

- Data collector: over RS485 one collector of the first kind serves 15 meters through a telephone line, one of the second kind serves 8 meters over a broadband network, and a management program reads and sets the parameters of every meter in the network. The cable entry is an M20 × 1.5 internal thread.



Cable entry
M20 × 1.5

Example: QGKB-025-A-F-E2-D2-P1-B1.

ORDER CODE

Field	Code	Meaning
1 Series	QGKB	QGKB precession vortex gas flowmeter
2 Size	015 ... 200	DN15 ... DN200 · 025 is DN25
3 Range	A · B	Type A or type B flow range
4 Connection	F	Flange
5 Accuracy	E1	Class 1.0
	E2	Class 1.5
6 Supply	D1	Internal 3.6 V battery — without output and display
	D2	24 Vdc
7 Pressure	P1	1.6 MPa
	P2	2.5 MPa
	P3	4.0 MPa
8 Body	B1	Stainless steel
	B2	Aluminium alloy

