

ROOTS GAS FLOWMETER



- LOBED ROTOR · 20 ... 1600 M³/H
· DN25 ... DN200
- ALUMINIUM · FLANGE · 1.0 MPa
- TEMPERATURE AND PRESSURE
CORRECTED · RS485

KEY DATA

Property	Value	Property	Value
Flow range	20 ... 1600 m ³ /h, by size	Nominal size	DN25 ... DN200
Accuracy	Class 1.0 or 1.5	Rangeability	20:1 ... 120:1, by size
Nominal pressure	1.0 MPa	Reference	101.325 kPa · 20 °C
Output	Pulse · 4 ... 20 mA · RS485	Correction	Temperature, pressure, compression factor

A positive displacement meter: two lobed rotors scoop the gas into fixed portions and the electronics count them. Temperature and pressure are measured in the same body and the volume is corrected to the reference state.



MEASUREMENT

Measuring principle	Lobed rotor (Roots) · positive displacement
Flow range	20 ... 1600 m³/h, depending on the size — see the parameter table
Lowest flow	0.06 ... 1.2 m³/h, depending on the size
Rangeability	20:1 up to 120:1, depending on the size
Accuracy	Class 1.0 or 1.5
Correction	Temperature, pressure and compression factor — automatic
Reference state	101.325 kPa at 20 °C
Pressure loss	100 ... 500 Pa at the upper flow limit, depending on the size

MATERIALS AND PROCESS

Medium	Gas
Body	Aluminium alloy (DN25 ... DN100) · aluminium (DN150, DN200)
Process connection	Flange · bolt circle Ø 75 ... Ø 295 mm, 4 to 8 threaded holes
Nominal pressure	1.0 MPa
Structure form	I square or II round
Flow direction	Top down, in every size
Weight	9 kg at DN25 up to 125 kg at DN200

ELECTRICAL PROPERTIES

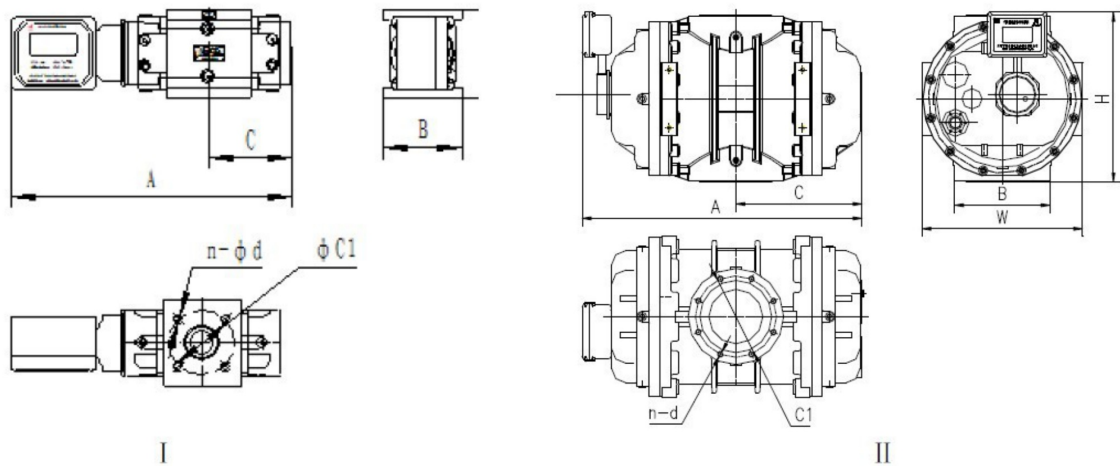
Supply	Internal battery or external supply
Output F	Pulse · RS485
Output A	4 ... 20 mA · pulse · RS485
Data storage	E2PROM · user parameters, factory parameters and history, kept through a battery change or a power failure

DISPLAY

Display	High-contrast LCD, three lines
Shown	Date, totalized standard volume, instantaneous standard flow, medium temperature, pressure, battery voltage



DRAWINGS AND FLOW TABLE



Left structure form I with the square body, right form II with the round one. The letters are the columns of the dimension table.

The size code is the upper flow limit and the second field of the order code. DN40, DN50, DN80, DN100 and DN150 each appear more than once: the same pipe size is offered with different rotors and therefore different flow limits.

FLOW AND PRESSURE LOSS

Size code	Nominal size	Lowest flow (m³/h)	Upper limit (m³/h)	Pressure loss (Pa)	Rangeability	Material
20	DN25	0.06	20	100	20:1	Aluminium alloy
30	DN40	0.06	30	100	30:1	Aluminium alloy
40	DN40	0.06	40	140	40:1	Aluminium alloy
60	DN50	0.07	60	100	60:1	Aluminium alloy
85	DN50	0.07	85	140	70:1	Aluminium alloy
100	DN80	0.07	100	110	70:1	Aluminium alloy
140	DN80	0.07	140	150	120:1	Aluminium alloy
200	DN80	0.1	200	180	100:1	Aluminium alloy
250	DN100	0.12	250	180	110:1	Aluminium alloy



FLOW . CONTINUED

Size code	Nominal size	Lowest flow (m³/h)	Upper limit (m³/h)	Pressure loss (Pa)	Rangeability	Material
300	DN100	0.15	300	130	110:1	Aluminium alloy
450	DN100	0.15	450	200	110:1	Aluminium alloy
650	DN150	0.6	650	350	80:1	Aluminium
1000	DN150	1	1000	450	80:1	Aluminium
1600	DN200	1.2	1600	500	80:1	Aluminium



DIMENSION TABLE

A is the overall length, C the flange face to the centre, W the width and H the height; B is the width of the body — from the size code 650 upwards B is a diameter, because those bodies are round. Every size is fed top down.

DIMENSIONS (mm)

Size code	A	B	C	W	H	Weight (kg)	Bolt circle Ø	Holes
20	409	135	107	135	144	9	Ø 75	4 × M10
30	433	135	119	135	144	11	Ø 90	4 × M12
40	463	135	134	135	144	13	Ø 100	4 × M12
60	470	180	137.5	180	172	15	Ø 125	4 × M12
85	507	180	156	180	172	16.5	Ø 125	4 × M12
100	539	180	172	180	172	18	Ø 160	8 × M16
140	575	180	190	180	172	20	Ø 160	8 × M16
200	569	210	187	210	245	24	Ø 160	8 × M16

DIMENSIONS . CONTINUED

Size code	A	B	C	W	H	Weight (kg)	Bolt circle Ø	Holes
250	647	210	226	210	245	30	Ø 180	8 × M16
300	647	210	226	210	245	30	Ø 180	8 × M16
450	743	210	274	210	245	36.5	Ø 180	8 × M16
650	745	Ø 285	275	370	380	92.5	Ø 240	8 × M16
1000	779	Ø 285	292	460	490	111	Ø 240	8 × M16
1600	875	Ø 340	340	460	510	125	Ø 295	8 × M20



COMPLIANCE AND CERTIFICATION

Measuring principle	Lobed rotor, positive displacement
Accuracy	Class 1.0 or 1.5
Wetted materials	Aluminium alloy or aluminium
Pressure rating	1.0 MPa

Example: QGKF-140-TP-10-A-F. The second field is the upper flow limit and not a nominal size — the same pipe size appears under several flow limits, so the size alone does not identify a device.

ORDER CODE

Field	Code	Meaning
1 Series	QGKF	QGKF Roots gas flowmeter
2 Flow	20 ... 1600	Upper flow limit — see the parameter table
3 Correction	TP	Automatic temperature and pressure compensation
4 Pressure	01 · 05	1 bar · 5 bar
	10	10 bar
5 Output	F	Pulse / RS485
	A	4 ... 20 mA / pulse / RS485
6 Structure	F	Square body — structure form I
	D	Round body — structure form II

