Q-Flow

Compact unit with high-quality Components

Variable Area Flowmeters for Gases

The proven variable area flowmeters are characterised by their stable and flexible design. The impressive device design allows quick and easy replacement of the components.

Features

Measuring tubes in 2 sizes
The flowmeters are available with glass tube lengths of 80 mm and 140 mm.

Intelligent Instrument Design
The compact design allows quick and easy replacement of the components. The measuring tube can be replaced while installed.

Aluminium body
The bodies are available in aluminium. Sealing material FKM.

Tightly closing precision control valves
The devices are equipped with precise, hysteresis-free 15-way control valves.

Standard scale for air
The measuring glass is supplied with a standard scale for air (operating conditions 20°C / 1013mbar abs).
Conversion factors for other gases and other operating conditions are available.

Customized versions
- mm-scale with flow rate table
- Stainless steel versions
- Valve at the outlet
- Various valve rotary knobs
- Various connections
- Direct reading scales for other gases and pressures
- Other sealing materials: EPDM or FFKM

Specifications

Connections	On the rear, G 1/4" female
Scale	Direct reading standard scales for air
Float type	Spherical, readout in the middle
Valve	Precisely adjustable, 15-turn micro valve, practically hysteresis-free. The control range (Kv-value) is optimized for the full scale
Materials	Body: Anodized aluminium / Valve: Nickelized brass
Seals	FKM (EPDM sealing materials with FDA approval on request)
Mounting	Standard or installation into control panel, retractable
Connection	G 1/4" female suitable for mounting with compression fittings (SL)
Valve (at the inlet)	With rotary knob
Certificate of Compliance 2.1	Optionally available
Test Certificate 3.1	Not available
Custom solutions	We also offer custom designed products

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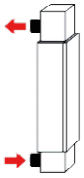
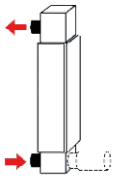
Q-Flow

Variable Area Flow-meters vs. digital Mass Flow Meters?

For high accuracy applications we recommend the thermal mass flow meters of the red-y compact series:

- Measuring ranges from 25 mln/min up to 450 ln/min (27 SCCM – 480 SLPM)
- Alarm functions with 3 configurable alarms
- Insensitive to pressure and temperature changes
- AA battery powered device
- Any mounting position possible

Setup	
Standard setup without valve	Standard setup with valve at the inlet
	

Technical data	Q-Flow 80	Q-Flow 140
Turndown ratio	approx. 10:1	approx. 10:1
Accuracy in % of full scale	±5 %	±5 %
Measuring tube length	80 mm	140 mm
Scale length	65 mm	120 mm
Float	spherical	spherical
Max. pressure	10 bar	10 bar
Temperature range	0-100 °C	0-100 °C
Max. pressure drop	approx. 30 mbar	approx. 30 mbar
Leak rate	better than 1 x 10^{-5} mbar l/s He	better than 1 x 10^{-5} mbar l/s He

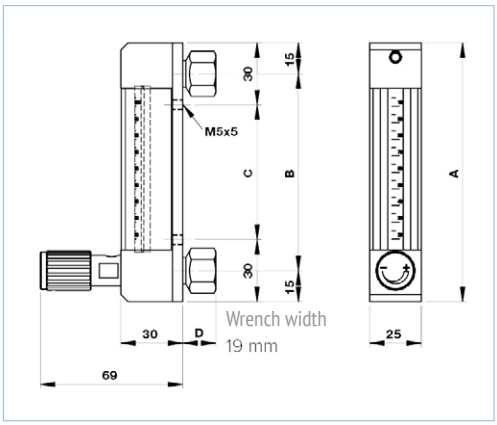
Dimensions (mm)

Variable area flowmeters Q-Flow

Type	A	B	C
Q-Flow 80	125	95	65
Q-Flow 140	185	155	125

Fittings

	D	Thread depth
G 1/4" female for compression fittings	17	12



Q-Flow

Kundenspezifische Lösungen

Contact our flow experts for your customized flow solution.
We are happy to advise you!

Q-Flow 80 · Measuring ranges with direct reading scales · Alu / FKM · Connection G1/4" SL
Operating conditions: 20°C, 1013 mbar abs / Air

	with valve*	without valve
0.2-1.5 ln/min	Art.-No. 414665	Art.-No. 414673
0.3-2 ln/min	Art.-No. 414666	Art.-No. 414674
0.5-4 ln/min	Art.-No. 414667	Art.-No. 414675
1-7 ln/min	Art.-No. 414668	Art.-No. 414676
1-15 ln/min	Art.-No. 414669	Art.-No. 414677
2-24 ln/min	Art.-No. 414670	Art.-No. 414678
4-32 ln/min	Art.-No. 414671	Art.-No. 414679

Q-Flow 140 · Measuring ranges with direct reading scales · Alu / FKM · Connection G1/4" SL
Operating conditions: 20°C, 1013 mbar abs / Air

	with valve*	without valve
0.06-1.2 ln/min	Art.-No. 414680	Art.-No. 414688
0.2-1.6 ln/min	Art.-No. 414681	Art.-No. 414689
0.2-2.2 ln/min	Art.-No. 414682	Art.-No. 414690
0.6-5.5 ln/min	Art.-No. 414683	Art.-No. 414691
1-7 ln/min	Art.-No. 414684	Art.-No. 414692
1.6-10 ln/min	Art.-No. 414685	Art.-No. 414693
2-27 ln/min	Art.-No. 414686	Art.-No. 414694
8-50 ln/min	Art.-No. 414687	Art.-No. 414695

The unit mln/min or ln/min always refers to standard conditions related to 0°C and 1013.25 mbar abs.
Accurate reading under operating conditions only (20°C and 1013.25 mbar abs (ambient pressure)).
Other pressures and temperatures must be corrected according to the below table.
Pressure min. 0.5 bar g (lower on request).
*Valve at the inlet, standard rotary knob

Conversion factors for alternating pressures and temperatures (pressure in the measuring tube)
Factors with measuring glasses calibrated to 20°C and 1013 mbar abs (operating conditions)

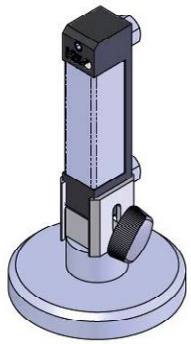
	0 bar g	1 bar g	2 bar g	3 bar g	4 bar g	5 bar g	6 bar g	7 bar g	8 bar g	9 bar g	10 bar g
0°C	1.035	1.45	1.78	2.06	2.30	2.52	2.72	2.91	3.08	3.25	3.41
10°C	1.017	1.43	1.75	2.02	2.26	2.47	2.67	2.86	3.03	3.19	3.35
20°C	1	1.41	1.72	1.99	2.22	2.43	2.63	2.81	2.98	3.14	3.29
30°C	0.983	1.38	1.69	1.95	2.18	2.39	2.59	2.76	2.93	3.09	3.23
40°C	0.967	1.36	1.66	1.92	2.15	2.35	2.54	2.72	2.88	3.04	3.18
50°C	0.95	1.33	1.63	1.89	2.11	2.31	2.50	2.67	2.83	2.98	3.13
60°C	0.934	1.31	1.61	1.86	2.07	2.27	2.46	2.62	2.78	2.93	3.07
70°C	0.918	1.29	1.58	1.82	2.04	2.23	2.41	2.58	2.74	2.88	3.02
80°C	0.903	1.27	1.55	1.79	2.00	2.19	2.37	2.54	2.69	2.84	2.97
90°C	0.887	1.25	1.53	1.76	1.97	2.16	2.33	2.49	2.64	2.79	2.92
100°C	0.872	1.23	1.50	1.73	1.94	2.12	2.29	2.45	2.60	2.74	2.87

The measured values refer to 0°C and 1013 mbar abs, according to DIN 1343.

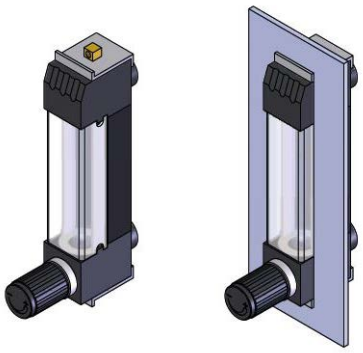
Q-Flow

Accessories

Laboratory base



Panel mounting kit



Conversion factors for other gases compared to air*

Factors related to measuring glasses, which are designed for operating conditions of 20°C and 1013 mbar abs.

Gas type	Factor
N2	1.019
O2	0.944
Ar	0.85
CO2	0.84
He	1.25
H2	3.5
CH4	0.97
C3H8	0.88
N2O	0.84

Conversion factors for other units*

From	To	
	mln/min	ln/min
sccm	1	0.001
cm3/min	1	0.001
ln/min	1000	1
dm3/min	1000	1
ln/h	16.67	0.0166
dm3/h	16.67	0.0166
m3n/h	16670	16.67
CFM	28316	28.32
CFH	472	0.472

*Factors are indicative only.

Reading example:
Measuring tube 10 ln/min Air / Used Gas: Helium
Conversion: 10 ln/min x Factor 1.25 = 12.5 ln/min for Helium

HTK Hamburg GmbH
Oehleckerring 32
22419 Hamburg

Phone: +49 (0)40 - 600 38 38 - 0
Fax: +49 (0)40 - 600 38 38 - 99
info@htk-hamburg.com