



**Q-Flow** product information

# Variable Area Flowmeters for Gases

# 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.

## Measuring tubes in 2 sizes



The flowmeters are available with glass tube lengths of 80mm and 140mm.

## 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.

## 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.



## Intelligent Instrument Design

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

## Customized versions

We offer customer-specific designs:

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

**Get in touch with us for further information!**

## Variable Area Flowmeters 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 ml/min up to 450 l/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**

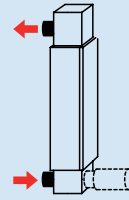


## Technical specifications variable area flowmeters Q-Flow

### Setup



Standard setup **without valve**



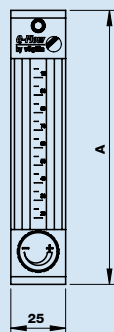
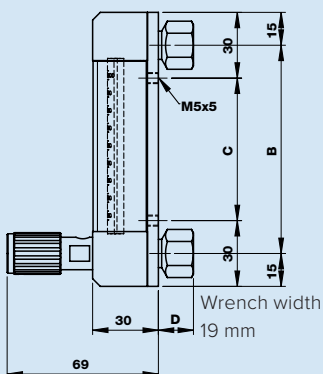
Standard setup **with valve at the inlet**

### Features

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

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

## Dimensions variable area flowmeters Q-Flow



Type	A	B	C
<b>Q-Flow 80</b>	125	95	65
<b>Q-Flow 140</b>	185	155	125

Fittings	D	Thread depth
G1/4" female for compression fittings	17	12

Find detailed dimensions in the Q-Flow Line manual online:

[www.voegtlin.com/downloads](http://www.voegtlin.com/downloads)

# Measuring ranges variable area flowmeters Q-Flow

## 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 l/min	Art.-N° 134-1233	Art.-N° 134-1248
0.3-2 l/min	Art.-N° 134-1234	Art.-N° 134-1249
0.5-4 l/min	Art.-N° 134-1235	Art.-N° 134-1250
1-7 l/min	Art.-N° 134-1236	Art.-N° 134-1251
1-15 l/min	Art.-N° 134-1238	Art.-N° 134-1253
2-24 l/min	Art.-N° 134-1239	Art.-N° 134-1254
4-32 l/min	Art.-N° 134-1240	Art.-N° 134-1255

## 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 l/min	Art.-N° 134-1333	Art.-N° 134-1348
0.2-1.6 l/min	Art.-N° 134-1334	Art.-N° 134-1349
0.2-2.2 l/min	Art.-N° 134-1335	Art.-N° 134-1350
0.6-5.5 l/min	Art.-N° 134-1336	Art.-N° 134-1351
1-7 l/min	Art.-N° 134-1337	Art.-N° 134-1352
1.6-10 l/min	Art.-N° 134-1338	Art.-N° 134-1353
2-27 l/min	Art.-N° 134-1340	Art.-N° 134-1355
8-50 l/min	Art.-N° 134-1342	Art.-N° 134-1357

The unit l/min or In/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.

## 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
N <sub>2</sub>	1.019
O <sub>2</sub>	0.944
Ar	0.85
CO <sub>2</sub>	0.84
He	1.25
H <sub>2</sub>	3.5
CH <sub>4</sub>	0.97
C <sub>3</sub> H <sub>8</sub>	0.88
N <sub>2</sub> O	0.84

\*Factors are indicative only.

## Conversion factors for other units\*

From	To	
	mln/min	ln/min
sccm	1	0.001
cm <sup>3</sup> /min	1	0.001
ln/min	1000	1
dm <sup>3</sup> /min	1000	1
ln/h	16.67	0.0166
dm <sup>3</sup> /h	16.67	0.0166
m <sup>3</sup> /h	16670	16.67
CFM	28316	28.32
CFH	472	0.472

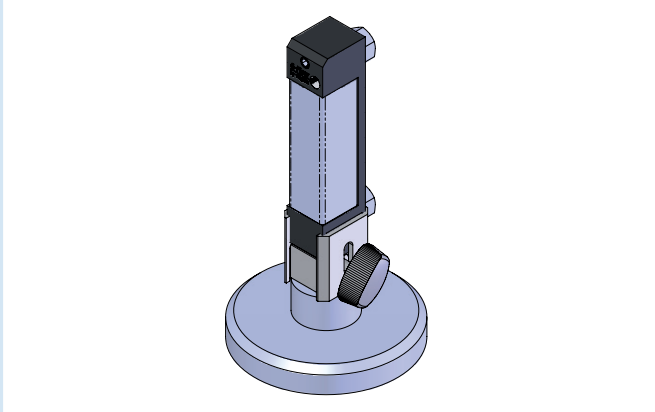
## Reading example:

Measuring tube 10 l/min Air / Used Gas: Helium

Conversion: 10 l/min x Factor 1.25 = 12.5 l/min for Helium

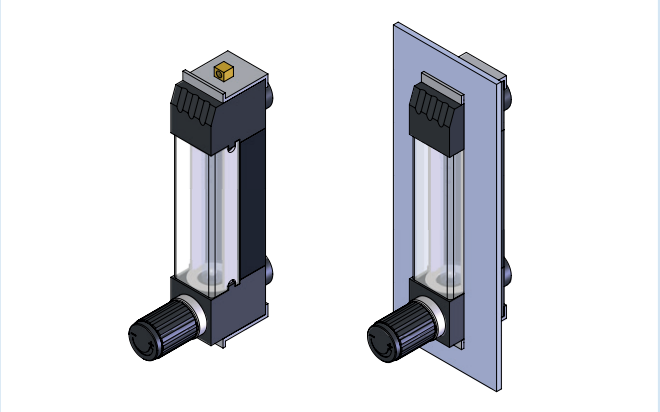
## Options variable area flowmeters Q-Flow

### Laboratory base



Art.-N° 138-4103

### Panel mounting kit



Art.-N° 138-4104

### Custom flow solutions



**Contact our flow experts for your customized flow solution!**



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