gas flow technology by **vögtlin**

Q-Flow product information

Variable Area Flowmeters for Gases

vögtlin instruments

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.

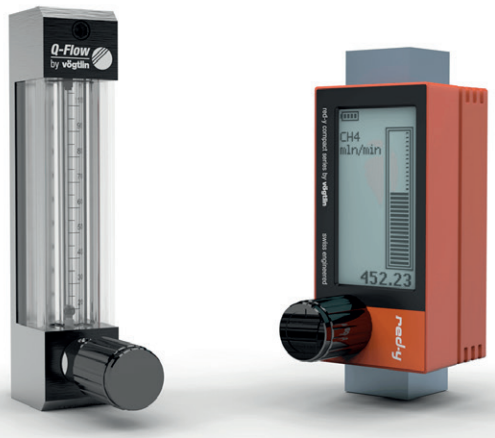
Customized versions

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?



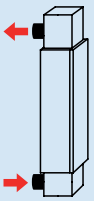
For high accuracy applications we recommend the thermal mass flow meters of the *red-y compact series*:

- **Measuring ranges from 25 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**

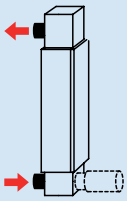
swiss safety center ISO 9001 certified system

Technical specifications variable area flowmeters Q-Flow

Setup



Standard setup **without valve**

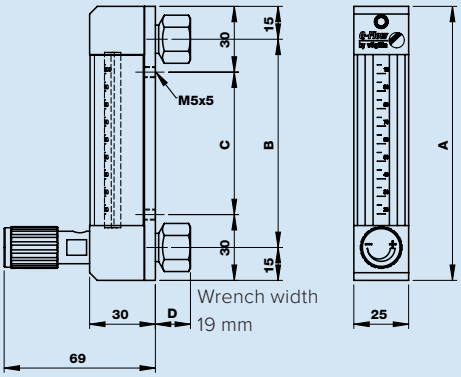


Standard setup **with valve at the inlet**

Features	
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

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 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**
G1/4" female for compression fittings	17	12

Find detailed dimensions in the Q-Flow Line manual online:
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 ln/min	Art.-N° 134-1233	Art.-N° 134-1248
0.3-2 ln/min	Art.-N° 134-1234	Art.-N° 134-1249
0.5-4 ln/min	Art.-N° 134-1235	Art.-N° 134-1250
1-7 ln/min	Art.-N° 134-1236	Art.-N° 134-1251
1-15 ln/min	Art.-N° 134-1238	Art.-N° 134-1253
2-24 ln/min	Art.-N° 134-1239	Art.-N° 134-1254
4-32 ln/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 ln/min	Art.-N° 134-1333	Art.-N° 134-1348
0.2-1.6 ln/min	Art.-N° 134-1334	Art.-N° 134-1349
0.2-2.2 ln/min	Art.-N° 134-1335	Art.-N° 134-1350
0.6-5.5 ln/min	Art.-N° 134-1336	Art.-N° 134-1351
1-7 ln/min	Art.-N° 134-1337	Art.-N° 134-1352
1.6-10 ln/min	Art.-N° 134-1338	Art.-N° 134-1353
2-27 ln/min	Art.-N° 134-1340	Art.-N° 134-1355
8-50 ln/min	Art.-N° 134-1342	Art.-N° 134-1357

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.

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	2.27
H2	3.5
CH4	0.97
C3H8	0.88
N2O	0.84

*Factors are indicative only.

Conversion factors for other units*

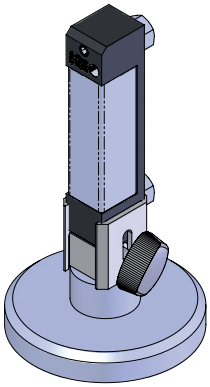
	To	
From	**mln/min**	**ln/min**
sccm	1	0.001
cm3/min	1	0.001
ln/min	1000	1
dm3/min	1000	1
ln/h	16.67	0.0166
dm3/h	16.67	0.0166
m3n/h	16670	16.67
CFM	28316	28.32
CFH	472	0.472

Reading example:

Measuring tube 10 ln/min Air / Used Gas: Helium
Conversion: 10 ln/min x Factor 2.27 = 22.7 ln/min for Helium

Options variable area flowmeters Q-Flow

Laboratory base



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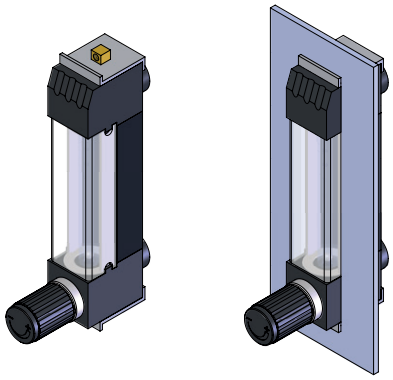
Panel mounting kit



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