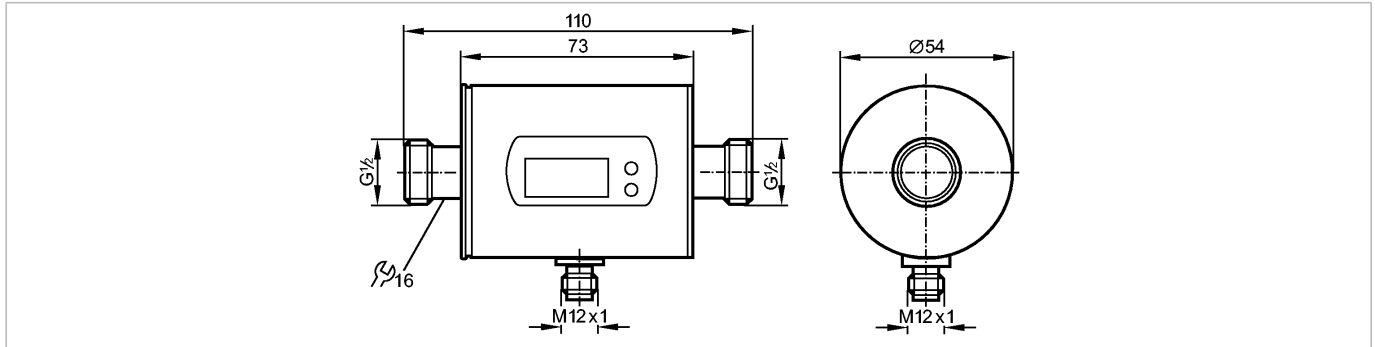


**SM6000**

Flow sensors



Made in Germany

**Product characteristics**

Magnetic-inductive flow sensor

Connector

Process connection: G $\frac{1}{2}$  flat seal

Function programmable

Totalizer function

2 outputs

OUT1 = flow monitoring (binary), flow rate meter (pulse), preset meter (binary)

OUT2 = flow monitoring or temperature monitoring (analogue or binary)

Input for counter reset

Measuring range

0.1...25 l/min

-20...80°C

connection to pipe by means of an adapter

**Application**

Application	Conductive liquids (conductivity: $\geq$ 20 $\mu$ S/cm / viscosity: < 70 mm <sup>2</sup> /s at 40 °C)
Medium temperature [°C]	-10...70

**Electrical data**

Electrical design	DC PNP/NPN
Operating voltage [V]	19...30 DC <sup>1)</sup>
Current consumption [mA]	120
Insulation resistance [M $\Omega$ ]	> 100 (500 V DC)
Protection class	III
Reverse polarity protection	yes

**Outputs**

Output function	OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable)
Current rating [mA]	2 x 200
Voltage drop [V]	< 2
Short-circuit protection	pulsed
Overload protection	yes
Analogue output	4...20 mA; 0...10 V
Max. load [ $\Omega$ ]	max. 500 / min. 2000
Pulse output	flow rate meter

**Measuring / setting range**

**SM6000**

Flow monitoring

Measuring range	0.10...25.00 l/min	0.005...1.500 m <sup>3</sup> /h
Display range	-30...30 l/min	-1.8...1.8 m <sup>3</sup> /h
Resolution	0.05 l/min	0.005 m <sup>3</sup> /h
Setting range		
Set point, SP	0.25...25.00 l/min	0.015...1.500 m <sup>3</sup> /h
Reset point, rP	0.10...24.90 l/min	0.005...1.495 m <sup>3</sup> /h
Analogue start point, ASP	0.00...20.00 l/min	0.000...1.200 m <sup>3</sup> /h
Analogue end point, AEP	5.00...25.00 l/min	0.300...1.500 m <sup>3</sup> /h
in steps of	0.05 l/min	0.005 m <sup>3</sup> /h

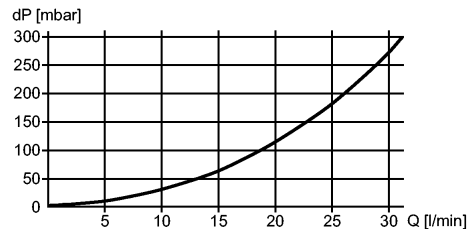
Temperature monitoring

Measuring range	[°C]	-20...80
Resolution	[°C]	0.2
Setting range		
Set point, SP	[°C]	-19.2...80.0
Reset point, rP	[°C]	-19.6...79.6
Analogue start point, ASP	[°C]	-20.0...60.0
Analogue end point, AEP	[°C]	0.0...80.0
in steps of	[°C]	0.2

**Accuracy / deviations**

Accuracy	± (2% MW + 0.5% MEW)
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Pressure loss (dP) / flow rate (Q)



Temperature monitoring

Accuracy	[K]	± 2.5 (Q > 1 l/min)
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**Reaction times**

Power-on delay time	[s]	5
Flow monitoring		
Start-up delay	[s]	0...50
Response time	[s]	< 0.150 (dAP = 0)
Damping, dAP	[s]	0.0...5.0
Temperature monitoring		
Response time	[s]	T09 = 30 (Q > 1 l/min)

**Software / programming**

Programming options	hysteresis / window function; N.O. / N.C.; output polarity; current / voltage / pulse output; start-up delay; display can be deactivated; display unit
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**Environment**

Pressure rating	[bar]	16
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection		IP 67

**SM6000**

**Tests / approvals**

EMC	EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-5 Surge: 0.5 kV EN 61000-4-6 HF conducted: 10 V
Shock resistance	DIN IEC 68-2-27: 20 g (11 ms)
Vibration resistance	DIN IEC 68-2-6: 5 g (10...2000 Hz)
MTTF [Years]	156

**Mechanical data**

Process connection	G½ flat seal
Materials (wetted parts)	stainless steel 316L / 1.4404; PEEK (polyether ether ketone); FKM
Housing materials	stainless steel 316L / 1.4404; PBT-GF 20; PC (Makrolon); EPDM/X (Santoprene)
Weight [kg]	0.506

**Displays / operating elements**

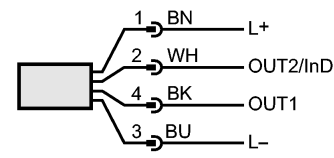
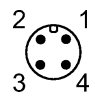
Display	Display unit 6 x LED green (l/min, m³/h, l, m³, 10³, °C) Switching status 2 x LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display
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**Electrical connection**

Connection	M12 connector; gold-plated contacts
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**Wiring**

- OUT1: 3 selection options
- switching output volumetric flow monitoring
  - pulse output volumetric flow
  - switching output preset counter
- OUT2/InD: 5 selection options
- switching output volumetric flow monitoring
  - switching output temperature monitoring
  - analogue output volumetric flow
  - analogue output temperature
  - input for an external reset signal



**Remarks**

Remarks	1) to EN50178, SELV, PELV MW = measured value MEW = final value of the measuring range
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**Other data**

Pulse value	0.01 l...30 000 m³
Pulse length [s]	min. 0.01 / max. 2
Repeatability	± 0.2% MEW