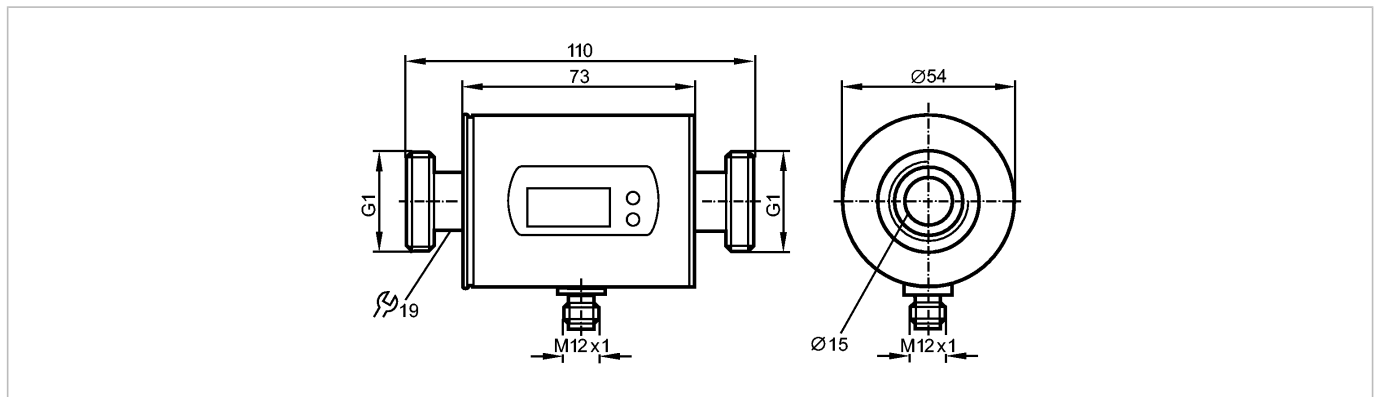


SM8000

SMR11GGXFRKG/US-100

Flow sensors



Made in Germany



Product characteristics

Magnetic-inductive flow meter
Connector
Process connection: G1 flat seal
connection to pipe by means of an adapter
Function programmable
Totaliser 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
0.2...100 l/min

Application

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

Electrical data

Electrical design	DC PNP/NPN
Operating voltage [V]	19...30 DC ¹⁾
Current consumption [mA]	120
Insulation resistance [MΩ]	> 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 [Ω]	500
Min. load [Ω]	2000
Pulse output	flow rate meter

SM8000

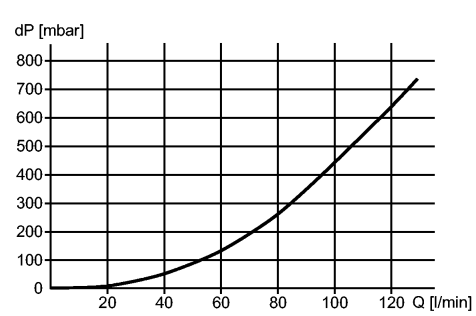
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Measuring / setting range

Flow monitoring		
Measuring range	0.2...100.0 l/min	0.010...6.000 m ³ /h
Display range	-120...120 l/min	-7.2...7.2 m ³ /h
Resolution	0.1 l/min	0.005 m ³ /h
Set point, SP	0.7...100.0 l/min	0.040...6.000 m ³ /h
Reset point, rP	0.2...99.5 l/min	0.010...5.970 m ³ /h
Analogue start point, ASP	0.0...80.0 l/min	0.000...4.800 m ³ /h
Analogue end point, AEP	20.0...100.0 l/min	1.200...6.000 m ³ /h
in steps of	0.1 l/min	0.005 m ³ /h
Volumetric flow quantity monitoring		
Pulse value	0.01 l...100 000 m ³	
Pulse length [s]	0.0025...2	
Temperature monitoring		
Measuring range [°C]	-20...80	
Resolution [°C]	0.2	
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

Flow monitoring		
Accuracy	± (2% MW + 0.5% MEW)	
Repeatability	± 0.2% MEW	
Pressure loss (dP) / flow rate (Q)		

Temperature monitoring		
Accuracy [K]	± 2.5 (Q > 5 l/min)	

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 > 5 l/min)	

Software / programming

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Flow sensors

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

Tests / approvals	
EC pressure equipment directive 97/23/EC	Article 3, section 3 - sound engineering practice
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]	151

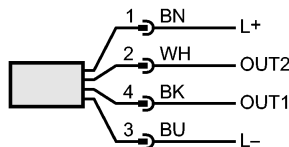
Mechanical data	
Process connection	G1 flat seal
Materials (wetted parts)	stainless steel 316L / 1.4404; Hastelloy; PEEK (polyether ether ketone); FKM
Housing materials	stainless steel 316L / 1.4404; PBT-GF 20; PC; EPDM/X
Weight [kg]	0.631

Displays / operating elements	
Display	Display unit 6 x LED green (l/min, m ³ /h, l, m ³ , 10 ³ , °C) Switching status 2 x LED yellow Measured values 4-digit alphanumeric display Programming 4-digit alphanumeric display

Electrical connection	
Connection	M12 connector; Gold-plated contacts

Wiring

Core colours
 BK black
 BN brown
 BU blue
 WH white



Colours to DIN EN 60947-5-6

 OUT1: 3 selection options
 switching output flow rate monitoring
 pulse output quantity meter
 signal output preset counter

OUT2: 5 selection options
 switching output flow rate monitoring
 switching output temperature monitoring
 analogue output flow rate
 analogue output temperature
 Input for counter reset

**SM8000**

SMR11GGXFRKG/US-100

Flow sensors**Remarks**

Remarks	1) to EN50178, SELV, PELV MW = measured value MEW = final value of the measuring range
Pack quantity [piece]	1