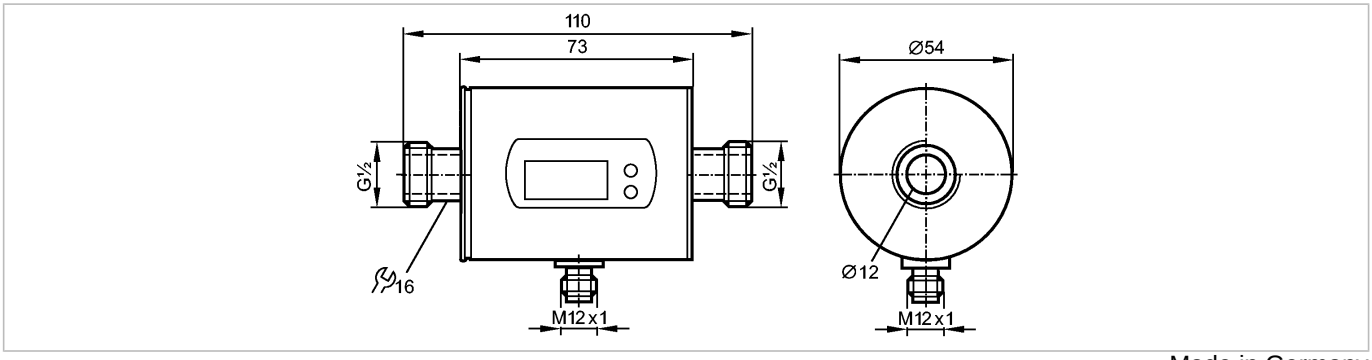
efector300

SM6000

SMR12GGXFRKG/US-100

Flow sensors



Made in Germany

Product characteristics

Magnetic-inductive flow meter

Connector

Process connection: G½ 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

0.1...25 l/min

Application

Application		Conductive liquids (conductivity:>= 20 µS/cm / viscosity: < 70 mm²/s at 40 °C)
Pressure rating	[bar]	16
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

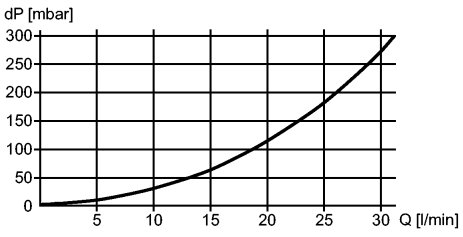
Output function		OUT1: normally open / closed programmable or pulse OUT2: normally open / closed programmable or analogue (4...20 mA / 0...10 V, scaleable)
Current rating	[mA]	2 x 200
Voltage drop	[V]	< 2
Short-circuit protection		pulsed
Overload protection		yes
Analogue output		4...20 mA; 0...10 V
Max.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

efector300

SM6000

SMR12GGXFRKG/US-100

Flow sensors

Measuring / setting range			
Flow monitoring			
Measuring range		0.10...25.00 l/min	0.005...1.500 m³/h
Display range		-30...30 l/min	-1.8...1.8 m³/h
Resolution		0.05 l/min	0.005 m³/h
Set point, SP		0.25...25.00 l/min	0.015...1.500 m³/h
Reset point, rP		0.10...24.90 l/min	0.005...1.495 m³/h
Analogue start point, ASP		0.00...20.00 l/min	0.000...1.200 m³/h
Analogue end point, AEP		5.00...25.00 l/min	0.300...1.500 m³/h
in steps of		0.05 l/min	0.005 m³/h
Volumetric flow quantity monitoring			
Pulse value		0.01 l...30 000 m³	
Pulse length	[s]	0.01...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 > 1 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 > 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	

efector300

SM6000

SMR12GGXFRKG/US-100

Flow sensors

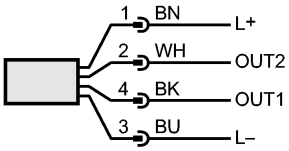
Environment		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection		IP 67
Tests / approvals		
Pressure equipment directive		Article 3, section 3 - sound engineering practice
EMC		EN 61000-4-2 ESD: 4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 10 V/m EN 61000-4-4 Burst: 2 kV EN 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]	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; EPDM/X
Weight	[kg]	0.538
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
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

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

SM6000

SMR12GGXFRKG/US-100

Flow sensors

Pack quantity	[piece]	1