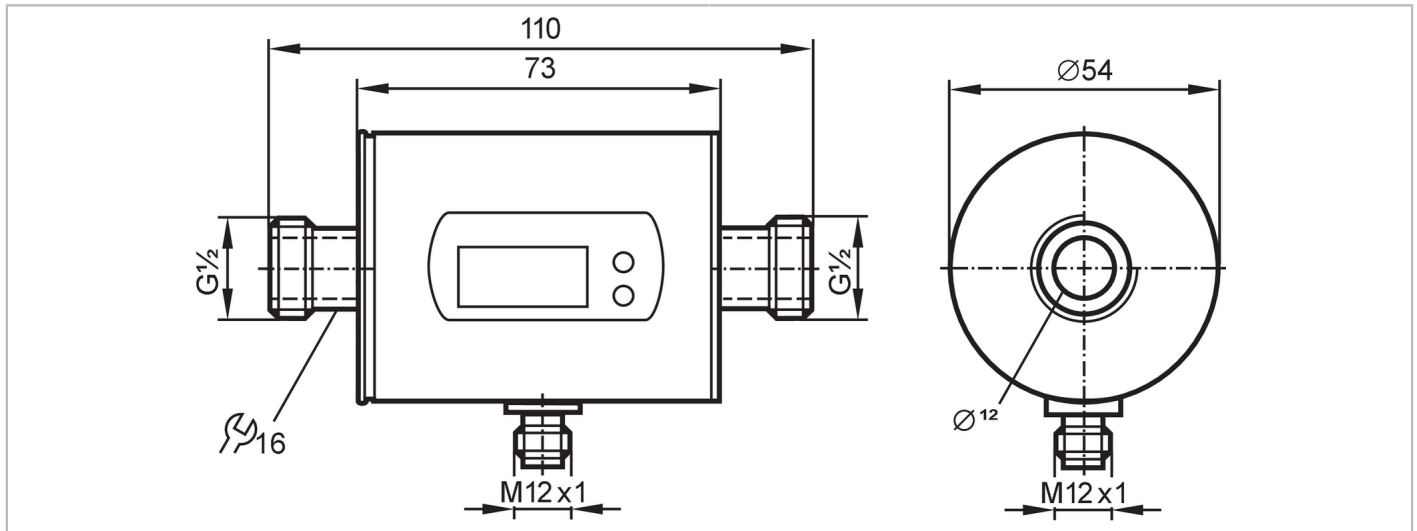


SM6000



Magnetic-inductive flow meter

SMR12GGXFRKG/US-100



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Measuring range	0.1...25 l/min 0.005...1.5 m ³ /h
Process connection	threaded connection G 1/2 external thread DN15 flat seal
Application	
Special feature	Gold-plated contacts
Application	totaliser function; for industrial applications
Installation	connection to pipe by means of an adapter
Media	conductive liquids; water; hydrous media
Note on media	conductivity: ≥ 20 µS/cm viscosity: < 70 mm ² /s (40 °C)
Medium temperature [°C]	-10...70
Pressure rating	16 bar 1.6 MPa
MAWP for applications according to CRN	15.3 bar 1.53 MPa
Electrical data	
Operating voltage [V]	18...30 DC; (to SELV/PELV)
Current consumption [mA]	95; (24 V)
Min. insulation resistance [MΩ]	100; (500 V DC)
Protection class	III
Reverse polarity protection	yes
Power-on delay time [s]	5
Measuring principle	magnetic-inductive
Inputs / outputs	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Inputs	
Inputs	counter reset
Outputs	
Total number of outputs	2

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Output signal	switching signal; analogue signal; pulse signal; IO-Link; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	200	
Number of analogue outputs	1	
Analogue current output [mA]	4...20; (scalable)	
Max. load [Ω]	500	
Analogue voltage output [V]	0...10; (scalable)	
Min. load resistance [Ω]	2000	
Pulse output	flow rate meter	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	

Measuring/setting range

Measuring range	0.1...25 l/min	0.005...1.5 m ³ /h
Display range	-30...30 l/min	-1.8...1.8 m ³ /h
Resolution	0.02 l/min	0.002 m ³ /h
Set point SP	0.25...25 l/min	0.015...1.5 m ³ /h
Reset point rP	0.1...24.9 l/min	0.005...1.495 m ³ /h
Analogue start point ASP	0...20 l/min	0...1.2 m ³ /h
Analogue end point AEP	5...25 l/min	0.3...1.5 m ³ /h
In steps of	0.02 l/min	0.002 m ³ /h

Volumetric flow quantity monitoring

Pulse value	0.00001...30 000 m ³	
Pulse length [s]	0,01...2	

Temperature monitoring

Measuring range [°C]	-20...80	
Resolution [°C]	0.2	
Set point SP [°C]	-19.2...80	
Reset point rP [°C]	-19.6...79.6	
Analogue start point [°C]	-20...60	
Analogue end point [°C]	0...80	
In steps of [°C]	0.2	

Accuracy / deviations

Flow monitoring

Accuracy (in the measuring range)	± (0,8 % MW + 0,5 % MEW)	
Repeatability	± 0,2% MEW	

Temperature monitoring

Accuracy [K]	± 2,5 (Q > 1 l/min)	
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Response times		
Flow monitoring		
Response time	[s]	0.15; (dAP = 0, T19)
Delay time programmable dS, dr	[s]	0...50
Damping process value dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 20 (Q > 1 l/min)
Software / programming		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/voltage/pulse output; start-up delay; display can be deactivated; Display unit	
Interfaces		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9	
Profiles	Smart Sensor - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
SIO mode	yes	
Required master port type	A	
Process data analogue	3	
Process data binary	2	
Min. process cycle time	[ms]	5
Supported DeviceIDs	Type of operation	DeviceID
	default	569
Operating conditions		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection	IP 67	
Tests / approvals		
EMC	DIN EN 60947-5-9	
CPA approval	model number	001MI
	accuracy class	-
	maximum allowable error	± 1,5 % FS
	Q (min)	0,005 m³/h
	Q (t)	-
	Q (max)	1,5 m³/h
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]	162
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

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Mechanical data	
Weight [g]	544
Housing	cylindrical
Inlet pipe length	3 x DN
Outlet pipe length	1 x DN
Dimensions [mm]	Ø 54 / L = 110
Materials	stainless steel (316L/1.4404); PBT-GF20; PC; FKM; TPE
Materials (wetted parts)	stainless steel (316L/1.4404); PEEK; FKM
Process connection	threaded connection G 1/2 external thread DN15 flat seal

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	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

Remarks	
Remarks	MW = measured value MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated





Magnetic-inductive flow meter

SMR12GGXFRKG/US-100

Connection



colours to DIN EN 60947-5-2

OUT1:

- switching output volumetric flow quantity monitoring
- Pulse output quantity meter
- signal output Preset counter
- IO-Link

OUT2:

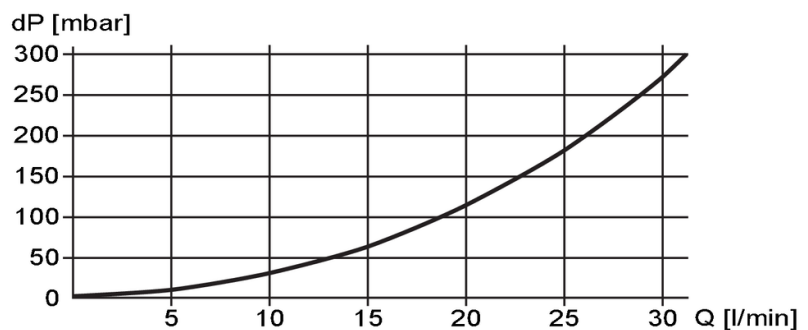
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- input counter reset

Core colours :

- BK = black
- BN = brown
- BU = blue
- WH = white

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity