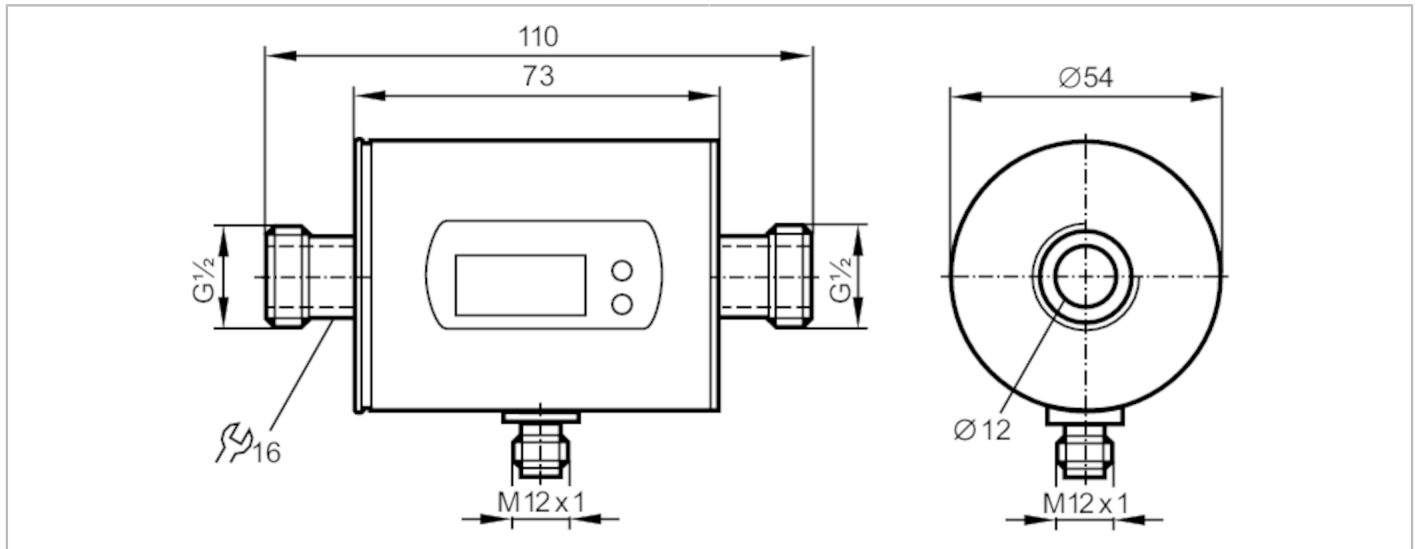


SM6001



Magnetic-inductive flow meter

SMR12GGXFRKG/US-100



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
Measuring range	1.5...396 gph 0.03...6.6 gpm
Process connection	threaded connection G 1/2 external thread DN15 flat seal
Application	
System	gold-plated contacts
Application	Totalizer function; for industrial applications
Installation	connection to pipe by means of an adapter
Media	Conductive liquids; water; water-based media
Note on media	conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)
Medium temperature [°F]	14...158
Pressure rating	16 bar 232 psi 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 analog outputs: 1
Inputs	
Inputs	counter reset

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Outputs		
Total number of outputs	2	
Output signal	switching signal; analog signal; pulse signal; IO-Link; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / closed; (configurable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	200	
Number of analog outputs	1	
Analog current output [mA]	4...20; (scalable)	
Max. load [Ω]	500	
Analog 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	yes (non-latching)	
Overload protection	yes	
Measuring/setting range		
Measuring range	1.5...396 gph	0.03...6.6 gpm
Display range	-475.5...475.5 gph	-7.925...7.925 gpm
Resolution	0.5 gph	0.01 gpm
Set point SP	3.5...396.5 gph	0.06...6.6 gpm
Reset point rP	1.5...394 gph	0.03...6.57 gpm
Analog start point ASP	0...318 gph	0...5.3 gpm
Analog end point AEP	78...396 gph	1.3...6.6 gpm
In steps of	0.5 gph	0.01 gpm
Volumetric flow quantity monitoring		
Pulse value	0.01...30 000 000 gal	
Pulse length [s]	0,01...2	
Temperature monitoring		
Measuring range [°F]	-4...176	
Resolution [°F]	0.1	
Set point SP [°F]	-2.5...176	
Reset point rP [°F]	-3.5...175	
Analog start point [°F]	-4...140.5	
Analog end point [°F]	31.5...176	
In steps of [°F]	0.5	
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	± (0,8 % MW + 0,5 % MEW)	
Repeatability	± 0,2% MEW	

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Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 0,26 gpm)
Reaction 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 > 0,26 gpm)
Software / programming		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / 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 class	A	
Process data analog	3	
Process data binary	2	
Min. process cycle time	[ms]	5
Supported DeviceIDs	Type of operation	DeviceID
	default	570
Operating conditions		
Ambient temperature	[°F]	14...140
Storage temperature	[°F]	-13...176
Protection	IP 67	
Tests / approvals		
EMC	DIN EN 60947-5-9	
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]	160
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	546
Housing	tubular	
Inlet pipe length	3 x DN	
Outlet pipe length	1 x DN	

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Dimensions	[mm]	Ø 54 / L = 110
Material		stainless steel (1.4404 / 316L); PBT-GF20; PC; FKM; TPE
Materials (wetted parts)		stainless steel (1.4404 / 316L); PEEK; FKM
Process connection		threaded connection G 1/2 external thread DN15 flat seal

Displays / operating elements

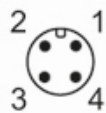
Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10 ³ , 1000 x 10 ³)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, 4-digit
	Programming	alphanumeric display, 4-digit

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: gold-plated



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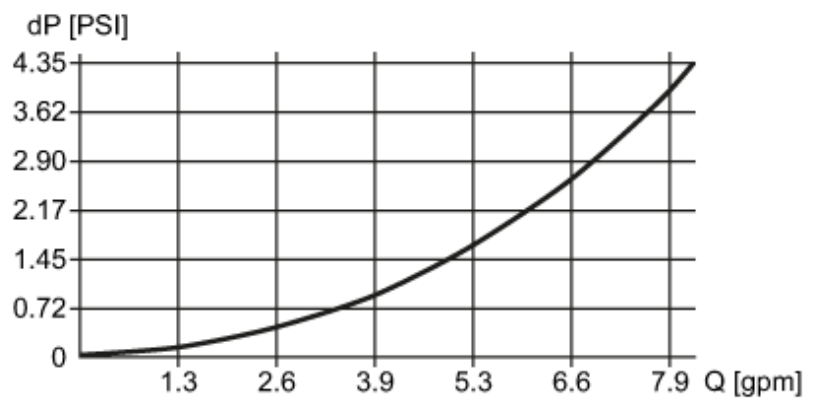
Connection



OUT1:	Colors to DIN EN 60947-5-2 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 analog output Volumetric flow quantity monitoring analog output Temperature monitoring Input counter reset
	Core colors :
BK =	black
BN =	brown
BU =	blue
WH =	white

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity