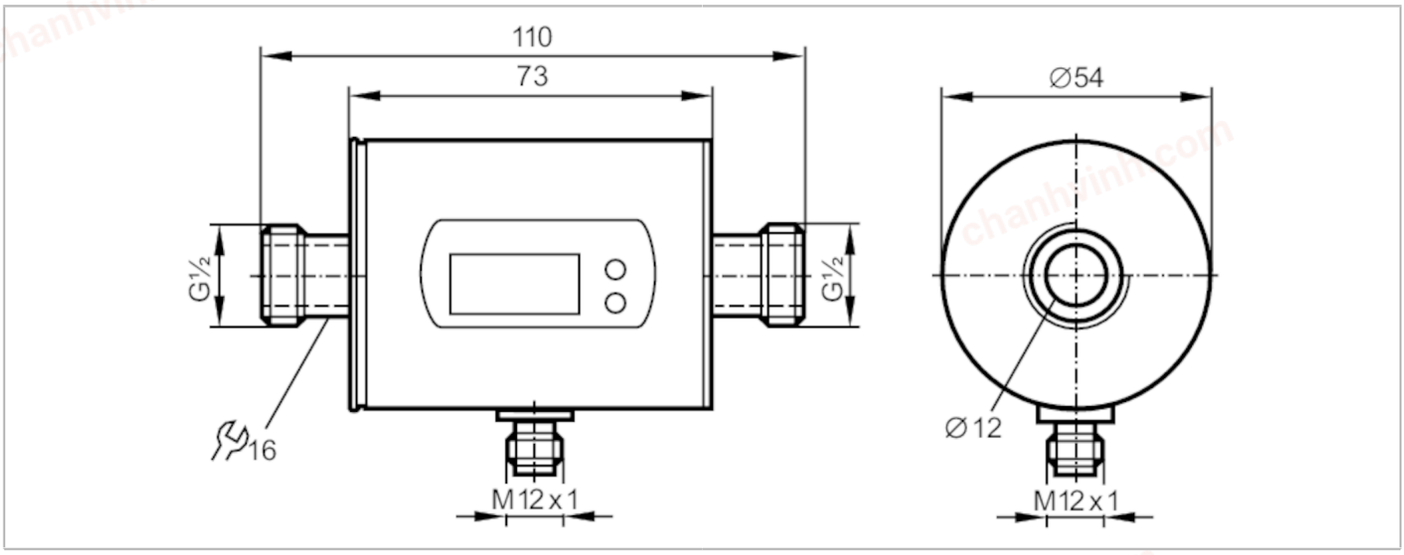
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SM6001

Magnetic-inductive flow meter

SMR12GGXFRKG/US-100



CE CRN cULus LISTED DNV DNV.COM/AF EC 1935/2004 IO-Link UKCA

Product characteristics				
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue 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				
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 mm²/s (40 °C)		
Medium temperature	[°F]	14...158		
Pressure rating		16 bar	232 psi	1.6 MPa
MAWP (for applications according to CRN)	[bar]	17.7		
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		

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Outputs			
Total number of outputs		2	
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		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
Analogue start point ASP		0...318 gph	0...5.3 gpm
Analogue 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	
Analogue start point	[°F]	-4...140.5	
Analogue 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)
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 > 0,26 gpm)
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: Process Data Variable; Device Identification, 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 / 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		cylindrical
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

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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

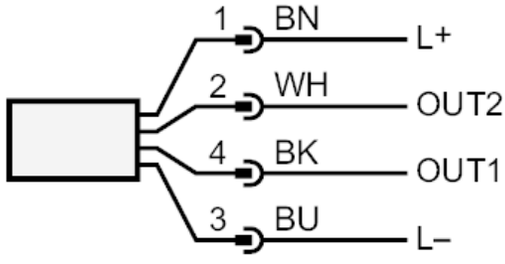
Remarks	
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

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



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

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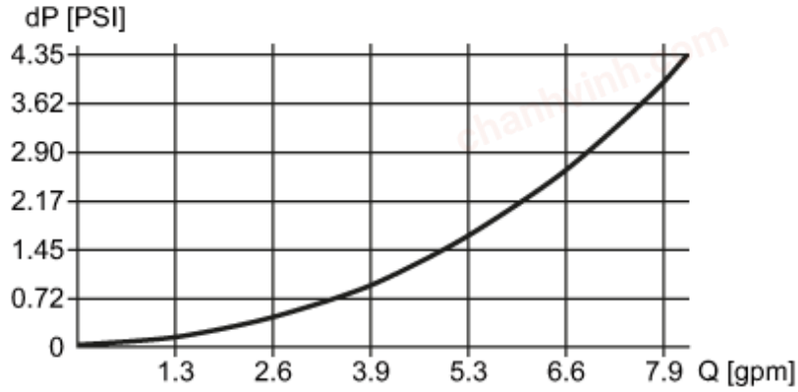
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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity