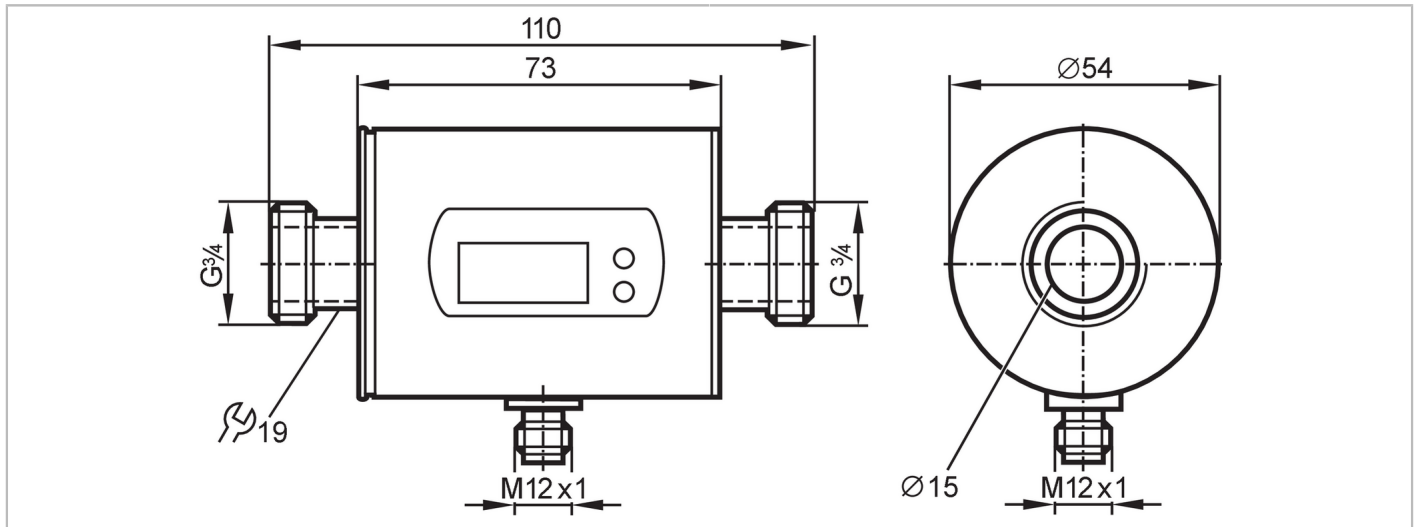


SM7001



Magnetic-inductive flow meter

SMR34GGXFRKG/US-100



Product characteristics	
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
Measuring range	3...792 gph 0.06...13.2 gpm
Process connection	threaded connection G 3/4 external thread DN20 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: $\geq 20 \mu\text{S/cm}$ 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	10.4 bar 1.04 MPa
Electrical data	
Operating voltage [V]	18...30 DC; (to SELV/PELV)
Current consumption [mA]	95; (24 V)
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
Output signal	switching signal; analogue signal; pulse signal; IO-Link; (configurable)

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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	3...792 gph	0.06...13.2 gpm
Display range	-951...951 gph	-15.84...15.84 gpm
Resolution	1 gph	0.02 gpm
Set point SP	7...792 gph	0.12...13.2 gpm
Reset point rP	3...788 gph	0.06...13.14 gpm
Analogue start point ASP	0...636 gph	0...10.6 gpm
Analogue end point AEP	156...792 gph	2.6...13.2 gpm
In steps of	1 gph	0.02 gpm

Volumetric flow quantity monitoring

Pulse value	0.01...99 990 000 gal
Pulse length [s]	0,005...2

Temperature monitoring

Measuring range [°F]	-4...176
Resolution [°F]	0.5
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)	$\pm (0,8 \% MW + 0,5 \% MEW)$
Repeatability	$\pm 0,2\% MEW$

Temperature monitoring

Accuracy [K]	$\pm 2,5 (Q > 0,26 \text{ gpm})$
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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 > 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 - 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 573
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]	145
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request
Mechanical data	
Weight [g]	586
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

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Materials (wetted parts)	stainless steel (316L/1.4404); PEEK; FKM
Process connection	threaded connection G 3/4 external thread DN20 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

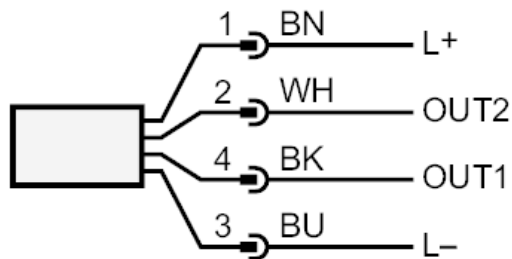
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

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



Connection



- OUT1: colours 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
 analogue output volumetric flow quantity monitoring
 analogue output Temperature monitoring
 input counter reset
 Core colours :
- BK = black
 BN = brown
 BU = blue
 WH = white

SM7001

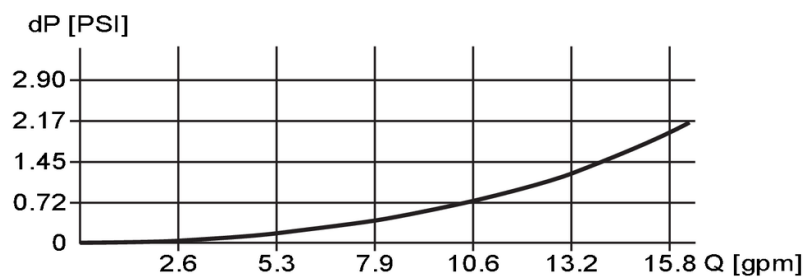


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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity