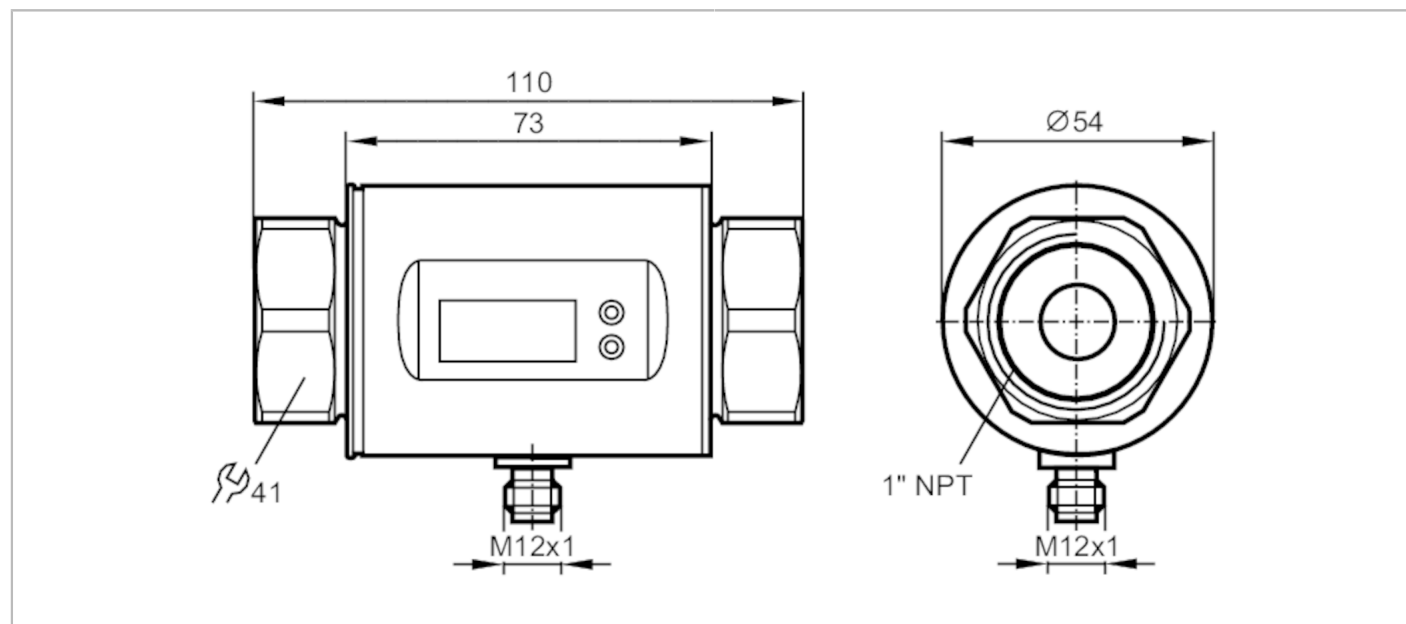


SM8601



Magnetic-inductive flow meter

SMN11GGXFRKG/US-100



CRN



DNV
DNV.COM/AF

EC 1935/2004

FCM

IO-Link

UK
CA

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	6...1584 gph	0.1...26.4 gpm
Process connection	threaded connection 1" NPT internal thread DN25	

Application

Special feature	Gold-plated contacts		
Application	totaliser function; for industrial applications		
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		
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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	6...1584 gph	0.1...26.4 gpm
Display range	-1902...1902 gph	-31.7...31.7 gpm
Resolution	2 gph	0.05 gpm
Set point SP	14...1586 gph	0.25...26.4 gpm
Reset point rP	6...1578 gph	0.1...26.25 gpm
Analogue start point ASP	0...1272 gph	0...21.2 gpm
Analogue end point AEP	312...1586 gph	5.2...26.4 gpm
In steps of	2 gph	0.05 gpm
Volumetric flow quantity monitoring		
Pulse value	0.01...100 000 000 gal	
Pulse length [s]	0,0025...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)	± (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 - 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	576
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 EN 60068-2-27	20 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	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]	698.5
Housing	cylindrical	
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 1" NPT internal thread DN25

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

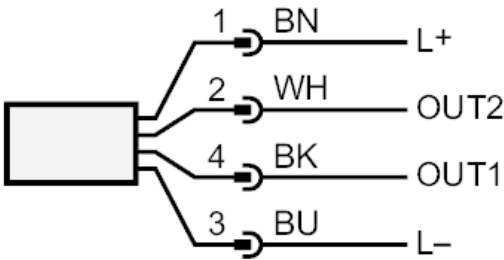
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

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

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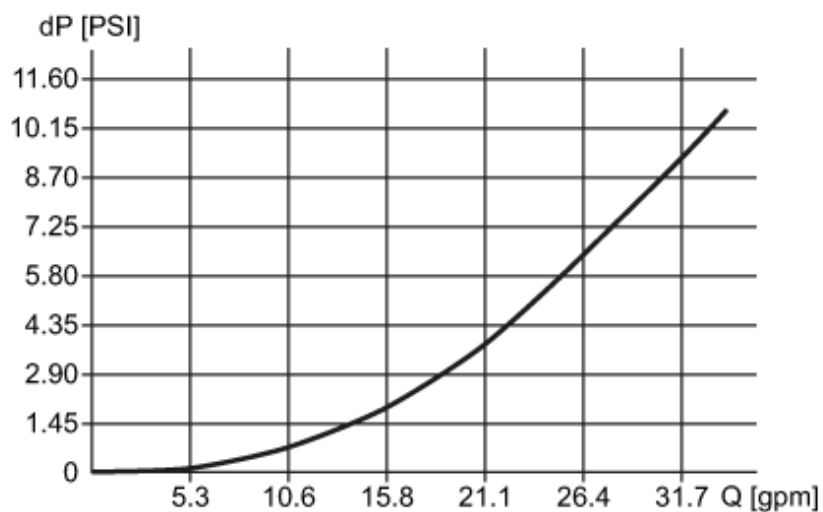


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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity