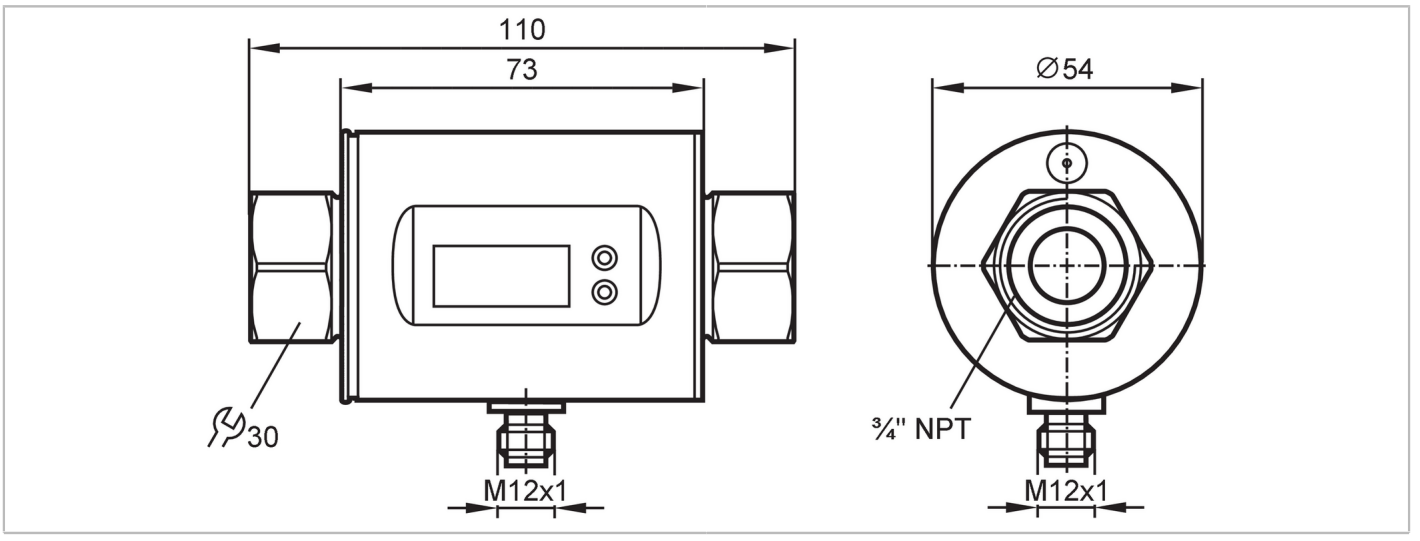
SM7601

Magnetic-inductive flow meter

SMN34GGXFRKG/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 3/4" NPT internal thread DN20		
Application			
Special feature	Gold-plated contacts		
Application	totaliser function; for industrial applications		
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	10.4 bar	1.04 MPa	
Electrical data			
Operating voltage [V]	18...30 DC; (to SELV/PELV)		
Current consumption [mA]	95; ((24))		
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)		
Electrical design	PNP/NPN		

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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)		± (0,8 % MW + 0,5 % MEW)
Repeatability		± 0,2% MEW
Temperature monitoring		
Accuracy	[K]	± 2,5 (Q > 0,26 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 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]	588.5	
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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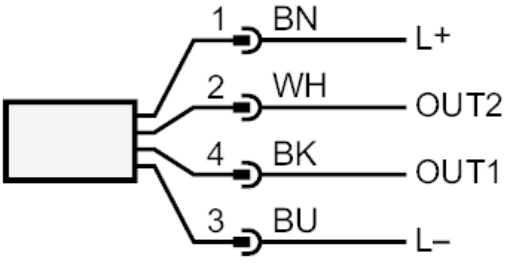
Materials (wetted parts)	stainless steel (316L/1.4404); PEEK; FKM	
Process connection	threaded connection 3/4" NPT internal thread DN20	
Displays / operating elements		
Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10^3, 1000 x 10^3)
	switching status	2 x LED, yellow
	measured values	alphanumeric 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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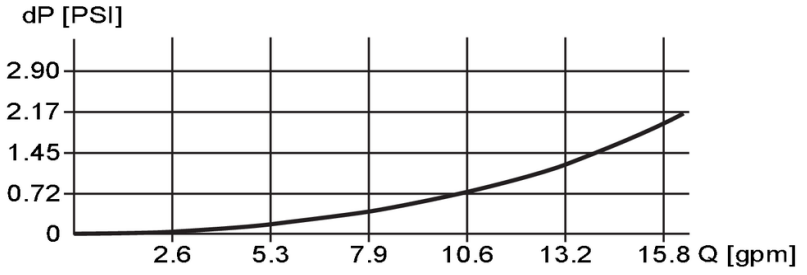
Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity