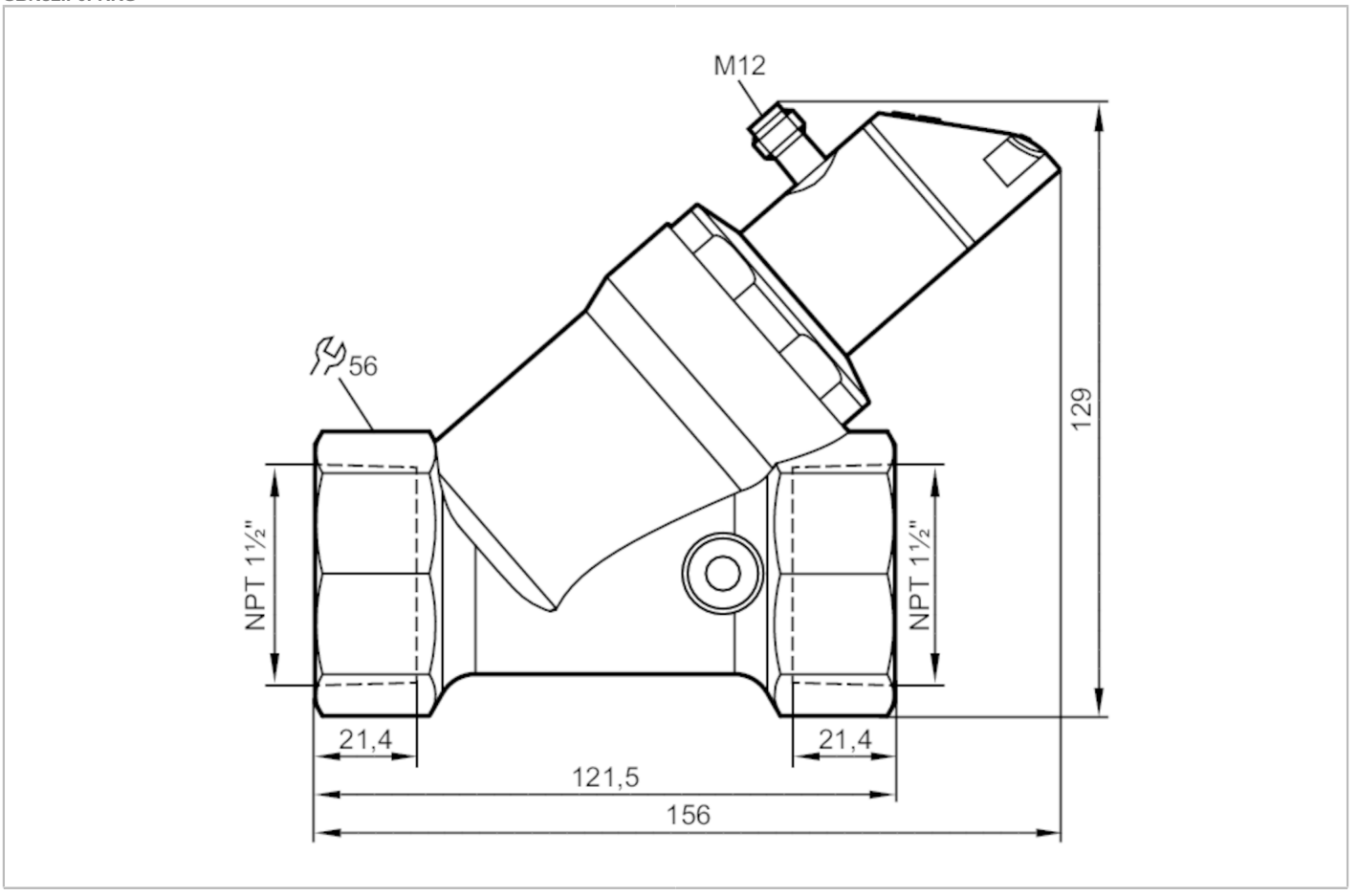
SBN257

Flow meter with integrated backflow prevention and display

SBN32IF0FRKG



Product characteristics			
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range		60...3000 gph	1...50 gpm
Process connection		threaded connection 1 1/2" NPT	
Application			
Special feature		Gold-plated contacts	
Application		for industrial applications	
Media		Liquids; water; glycol solutions; coolants	
Note on media		oil 1 with viscosity: 10 mm²/s (104 °F)	
		oil 2 with viscosity: 46 mm²/s (104 °F)	
Medium temperature	[°F]	14...212	
Pressure rating	[bar]	25	
Pressure rating	[MPa]	2.5	
MAWP (for applications according to CRN)	[bar]	25	
Electrical data			
Operating voltage	[V]	18...30 DC; (to SELV/PELV)	
Current consumption	[mA]	< 50	
Protection class		III	
Reverse polarity protection		yes	

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Power-on delay time	[s]	< 3
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1
Outputs		
Total number of outputs		2
Output signal		switching signal; analogue signal; frequency signal; IO-Link; (configurable)
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]	150; (per output 2 x 200 (...140 °F); 2 x 250 (...104 °F))
Switching cycles (mechanical)		10 million
Number of analogue outputs		1
Analogue current output	[mA]	4...20
Max. load	[Ω]	500
Short-circuit protection		yes
Overload protection		yes
Frequency of the output	[Hz]	0...10000

Measuring/setting range			
Measuring range		60...3000 gph	1...50 gpm
Display range		0...3600 gph	0...60 gpm
Resolution		20 gph	0.2 gpm
Set point SP		20...3000 gph	0.4...50 gpm
Reset point rP		0...2980 gph	0...49.6 gpm
Frequency end point, FEP		200...3000 gph	3.4...50 gpm
In steps of		20 gph	0.2 gpm
Frequency at the end point FRP	[Hz]	10...10000	
Measuring dynamics		1:50	
Temperature monitoring			
Measuring range	[°F]	14...212	
Display range	[°F]	-26...252	
Resolution	[°F]	2	
Set point SP	[°F]	16...212	
Reset point rP	[°F]	14...210	
In steps of	[°F]	2	
Frequency start point, FSP	[°F]	14...172	
Frequency end point, FEP	[°F]	54...212	
Frequency at the end point FRP	[Hz]	10...10000	

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (4 % MW + 1 % MEW); (Q > 1 l/min; medium and operating temperature: +71,6 °F ± 4K)

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Repeatability		± 1 % MEW	
Temperature monitoring			
Temperature drift		0,9802 °F / K	
Accuracy	[K]	3 K (77 °F; Q > 1 l/min)	
Response times			
Flow monitoring			
Response time	[s]	0.01	
Damping process value dAP	[s]	0...5	
Damping for the analogue output dAA	[s]	0...5	
Temperature monitoring			
Dynamic response T05 / T09	[s]	T09 = 120 (Q > 1 l/min)	
Software / programming			
Parameter setting options		hysteresis / window; normally open / normally closed; switching logic; current output; medium selection; damping for the switching output / analogue output; display can be rotated and switched off; standard unit of measurement; process value colour	
Interfaces			
Communication interface		IO-Link	
Transmission type		COM2 (38,4 kBaud)	
IO-Link revision		1.1	
SDCI standard		IEC 61131-9 CDV	
Profiles		Smart Sensor: Process Data Variable; Device Identification	
SIO mode		yes	
Required master port type		A	
Process data analogue		2	
Process data binary		2	
Min. process cycle time	[ms]	5	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	680
Operating conditions			
Ambient temperature	[°F]	32...140	
Note on ambient temperature		medium temperature < 176 °F	
		medium temperature < 212 °F: 32...104 °F	
Storage temperature	[°F]	5...176	
Protection		IP 65; IP 67	
Tests / approvals			
EMC		DIN EN 61000-6-2	
		DIN EN 61000-6-3	
Shock resistance		DIN EN 60068-2-27	20 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	5 g (10...2000 Hz)
UL approval		UL Approval no.	I007
Pressure Equipment Directive		Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data			
Weight	[g]	2258.35	

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Materials	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated	
Materials (wetted parts)	stainless steel (316 / 1.4401); stainless steel (1.4404 / 316L); brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM	
Process connection	threaded connection 1 1/2" NPT	
Displays / operating elements		
Display	Display unit	3 x LED, green
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green 4-digit
	programming	alphanumeric display, 4-digit
Remarks		
Remarks	Recommendation: use a 200-micron filter.	
	All data refer to water (68 °F).	
	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

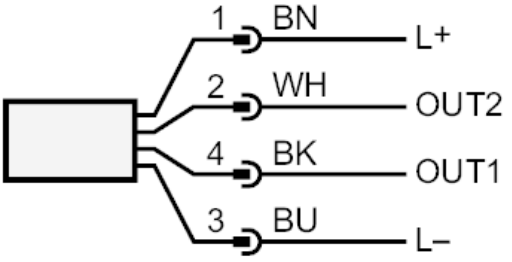


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Connection



OUT1:
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- frequency output volumetric flow quantity monitoring
- frequency output Temperature monitoring
- IO-Link

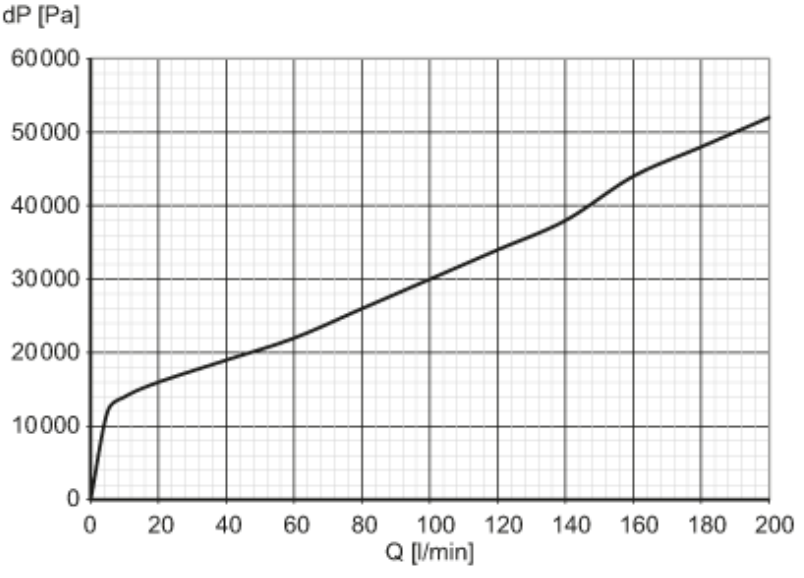
OUT2:
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring

colours to DIN EN 60947-5-2
Core colours :

BK = black
BN = brown
BU = blue
WH = white

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity