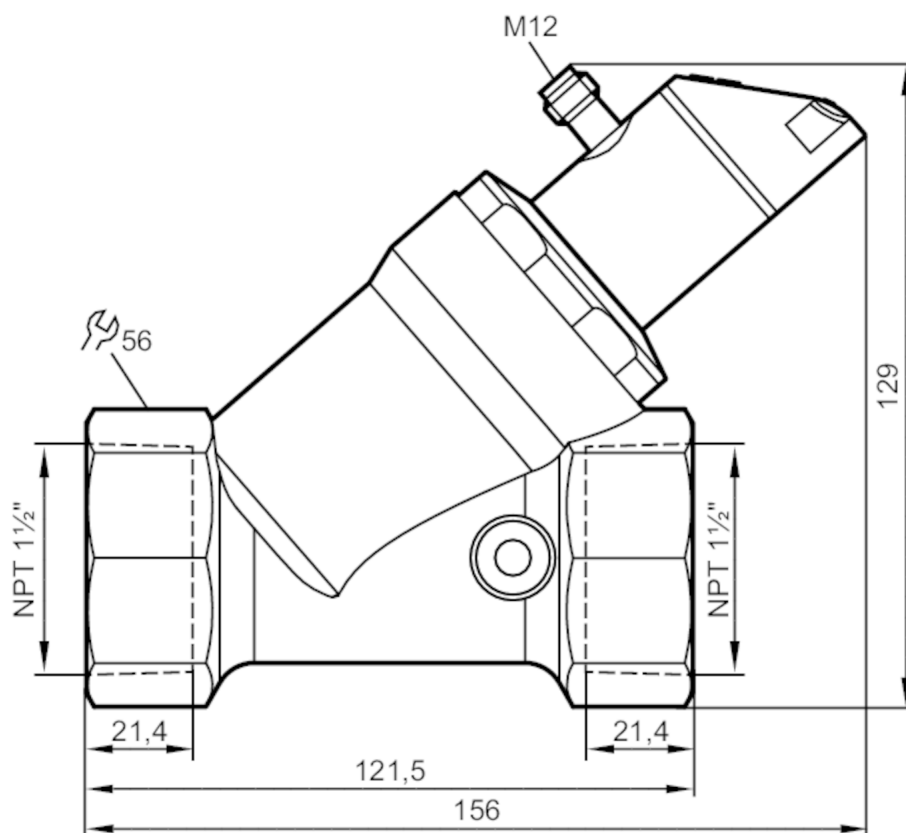


SBN257



Flow meter with fast response and display

SBN32IF0FRKG



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1	
Measuring range	60...3000 gph	1...50 gpm
Process connection	threaded connection 1 1/2" NPT	

Application

System	gold-plated contacts	
Application	for industrial applications	
Media	water; glycol solutions; Coolants; oils	
Note on media	oil 1 with viscosity: 10 mm²/s (40 °C)	
	oil 2 with viscosity: 46 mm²/s (40 °C)	
Medium temperature	[°F]	14...212
Pressure rating	[bar]	25
Pressure rating	[Mpa]	2.5
MAWP (for applications according to CRN)	[bar]	25



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Electrical data		
Operating voltage	[V]	18...30 DC; (according to EN 50178 SELV/PELV)
Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	< 3
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
Outputs		
Total number of outputs		2
Output signal		switching signal; analog signal; frequency signal; IO-Link; (configurable)
Number of digital outputs		2
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC	[V]	2
Permanent current rating of switching output DC	[mA]	150; (per output 2 x 200 (...60 °C); 2 x 250 (...40 °C))
Switching cycles (mechanical)		10 million
Number of analog outputs		1
Analog 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		10...10000
Measuring dynamics		1:50



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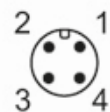
Temperature monitoring		
Measuring range	[°F]	14...212
Display range	[°F]	-26...252
Resolution	[°F]	2
Set point SP	[°F]	16...212
Reset point rP	[°F]	14...210
In steps of	[°F]	2
Frequency start point, FSP	[°F]	14...172
Frequency end point, FEP	[°F]	54...212
Frequency at the end point FRP	[Hz]	10...10000
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	± (4 % MW + 1 % MEW); (Q > 1 l/min; medium and operating temperature: +22 °C ± 4K)	
Repeatability	± 1 % MEW	
Temperature monitoring		
Temperature drift	0,029 °C / K	
Accuracy	[K]	3 K (25°C; Q > 1 l/min)
Reaction times		
Flow monitoring		
Response time	[s]	0.01
Damping for the switching output dAP	[s]	0...5
Damping for the analog 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 / closed; switching logic; current output; medium selection; damping for the switching output / analog output; display can be rotated and switched off; standard unit of measurement; process value color	
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 class	A	
Process data analog	2	
Process data binary	2	
Min. process cycle time	[ms]	5
Supported DeviceIDs	Type of operation	DeviceID
	default	680



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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 number	I007
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	1817.5
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated	
Materials (wetted parts)	stainless steel (1.4401 / 316); 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	Use of 200 micron filtration is recommended.	
	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; Contacts: gold-plated		
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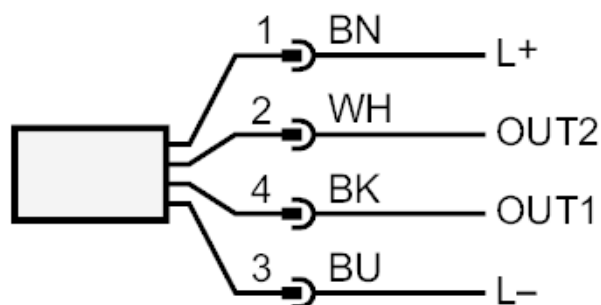




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Connection



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
- analog output Volumetric flow quantity monitoring
- analog output Temperature monitoring

Colors to DIN EN 60947-5-2

Core colors :

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

SBN257

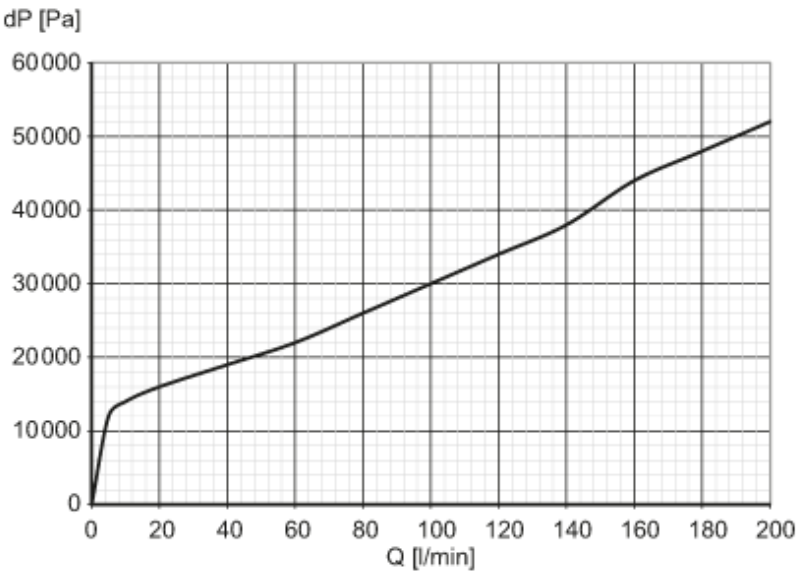


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Diagrams and graphs

Pressure loss



dP Pressure loss
Q volumetric flow quantity