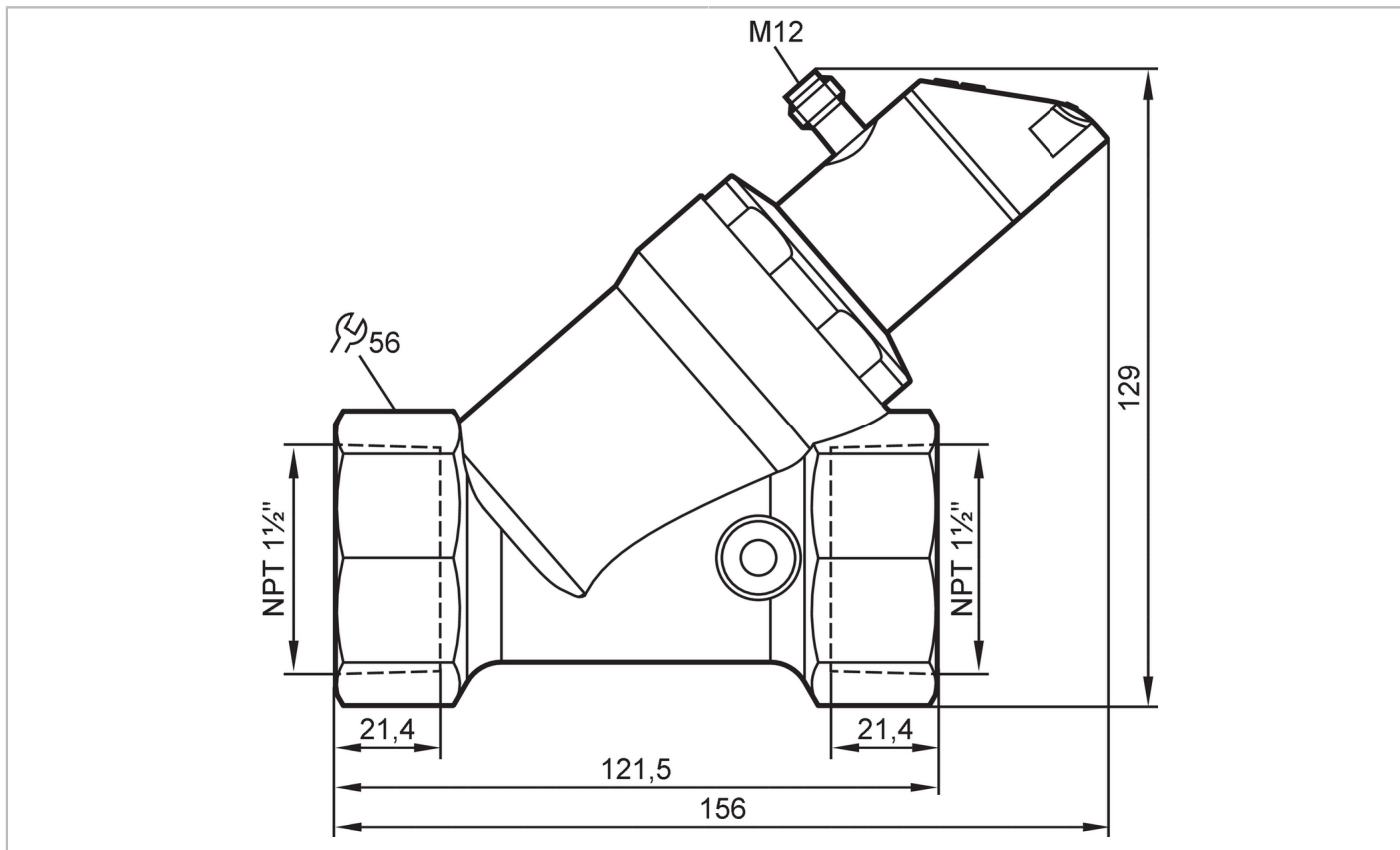


# SBN257



## 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 internal thread
Application	
Special feature	Gold-plated contacts
Application	for industrial applications
Media	Liquids; water; glycol solutions; coolants
Note on media	oil 1 with viscosity: 10 mm <sup>2</sup> /s (104 °F) oil 2 with viscosity: 46 mm <sup>2</sup> /s (104 °F)
Medium temperature [°F]	14...212
Pressure rating	25 bar   2.5 MPa
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
Power-on delay time [s]	< 3



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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)	
Repeatability	± 1 % MEW	



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<b>Temperature monitoring</b>		
Temperature drift		0,9802 °F / K
Accuracy	[K]	3 K (77 °F; Q > 1 l/min)
<b>Response times</b>		
<b>Flow monitoring</b>		
Response time	[s]	0.01
Damping process value dAP	[s]	0...5
Damping for the analogue output dAA	[s]	0...5
<b>Temperature monitoring</b>		
Dynamic response T05 / T09	[s]	T09 = 120 (Q > 1 l/min)
<b>Software / programming</b>		
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	
<b>Interfaces</b>		
Communication interface	IO-Link	
Transmission type	COM2 (38,4 kBaud)	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9 CDV	
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	2	
Process data binary	2	
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	default	680
<b>Operating conditions</b>		
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	
<b>Tests / approvals</b>		
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	

# SBN257



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Mechanical data	
Weight [g]	2258.35
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated
Materials (wetted parts)	stainless steel (316 / 1.4401); stainless steel (316L/1.4404); brass (2.0371); brass chemically nickel-plated; PPS; O-ring: FKM
Process connection	threaded connection 1 1/2" NPT internal thread

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: 4, gold-plated





## Flow meter with integrated backflow prevention and display

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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:

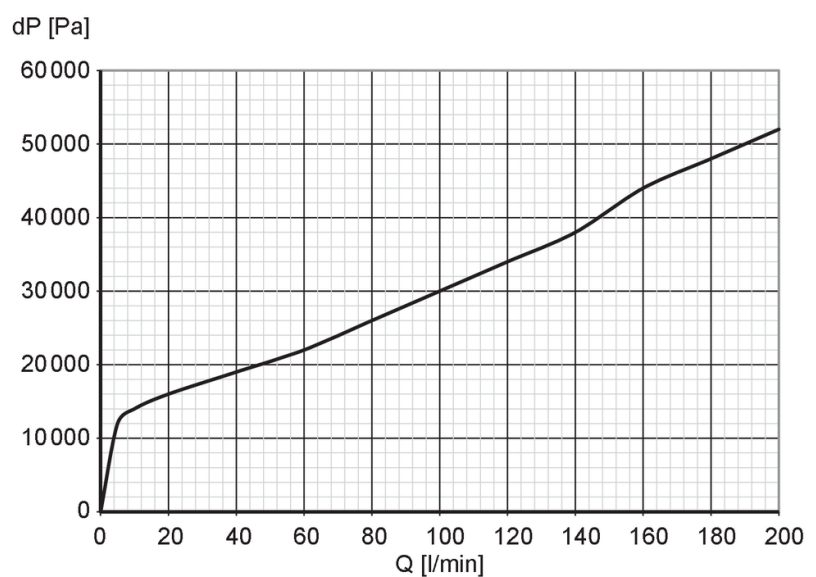
- switching output volumetric flow quantity monitoring
  - switching output Temperature monitoring
  - analogue output volumetric flow quantity monitoring
  - analogue output Temperature monitoring
- colours to DIN EN 60947-5-2

Core colours :

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

### Diagrams and graphs

#### Pressure loss



dP Pressure loss

Q volumetric flow quantity