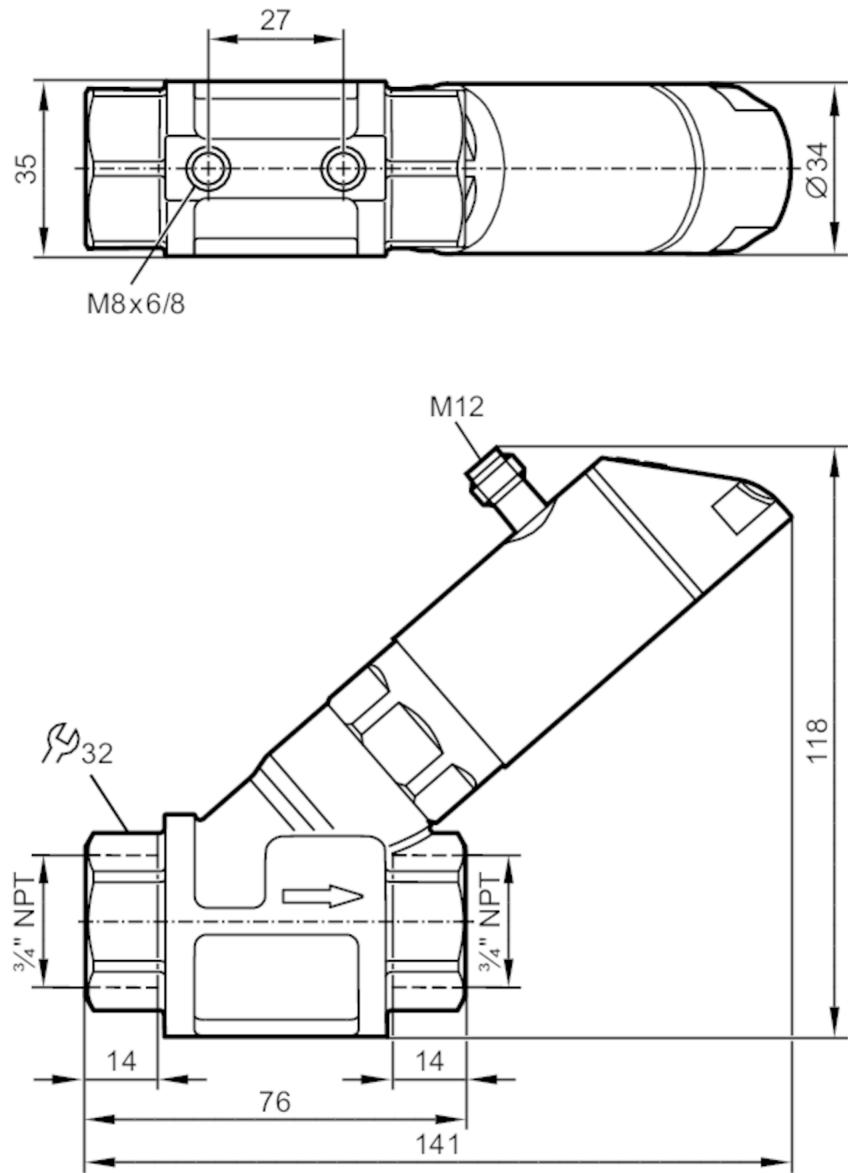




Flow meter with integrated backflow prevention and display

SBN34IQ0FRKG

Please note the changed housing design!



Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	5...240 gph	0.1...4 gpm
Process connection	threaded connection 3/4" NPT internal thread	
Application		
Special feature	Gold-plated contacts	
Application	for industrial applications	
Media	Liquids; water; glycol solutions; coolants	



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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	40 bar	4 MPa
MAWP (for applications according to CRN) [bar]	40	
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	
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	5...240 gph	0.1...4 gpm
Display range	0...288 gph	0...4.8 gpm
Resolution	1 gph	0.05 gpm
Set point SP	2...240 gph	0.05...4 gpm
Reset point rP	0...238 gph	0...3.95 gpm
Frequency end point, FEP	16...240 gph	0.25...4 gpm
In steps of	1 gph	0.05 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	



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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)		$\pm (4 \% \text{ MW} + 1 \% \text{ MEW})$; ($Q > 0,3 \text{ l/min}$; medium and operating temperature: $+71,6 \text{ °F} \pm 4\text{K}$)
Repeatability		$\pm 1 \% \text{ MEW}$

Temperature monitoring		
Temperature drift		0,9802 °F / K
Accuracy	[K]	3 K (77 °F; $Q > 1 \text{ l/min}$)

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 ($Q > 1 \text{ l/min}$)

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
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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	565

Operating conditions

Ambient temperature	[°F]	32...140
Note on ambient temperature		medium temperature $< 176 \text{ °F}$ medium temperature $< 212 \text{ °F}$: 32...104 °F
Storage temperature	[°F]	5...176



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Protection	IP 65; IP 67
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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)
MTTF [years]		145
UL approval	UL Approval no.	I005
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data

Weight [g]	696
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 3/4" 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
Notes	Please note the changed housing design!
Pack quantity	1 pcs.

Electrical connection

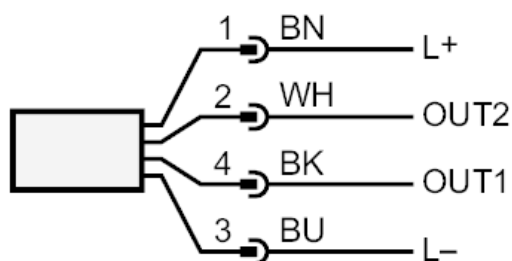
Connector: 1 x M12; coding: A; Contacts: gold-plated



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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:

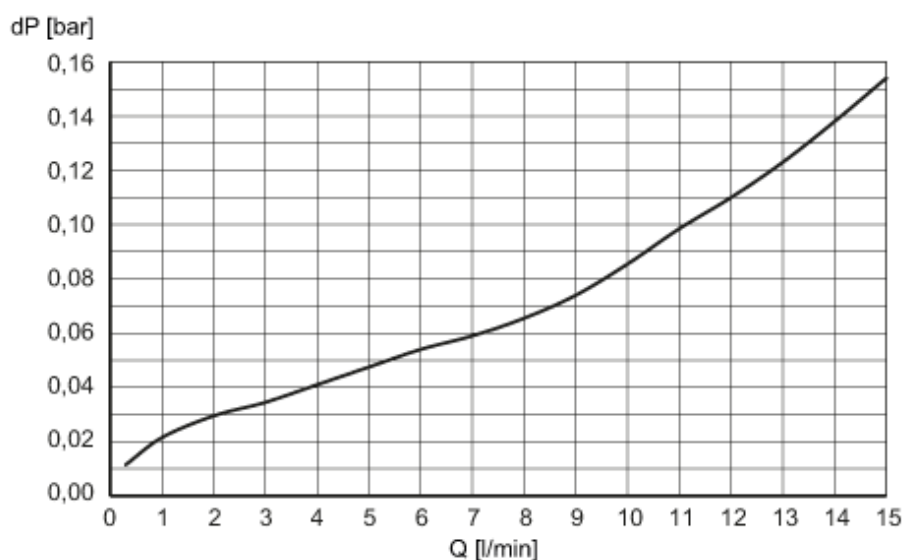
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- colours to DIN EN 60947-5-2

Core colours :

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

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity