

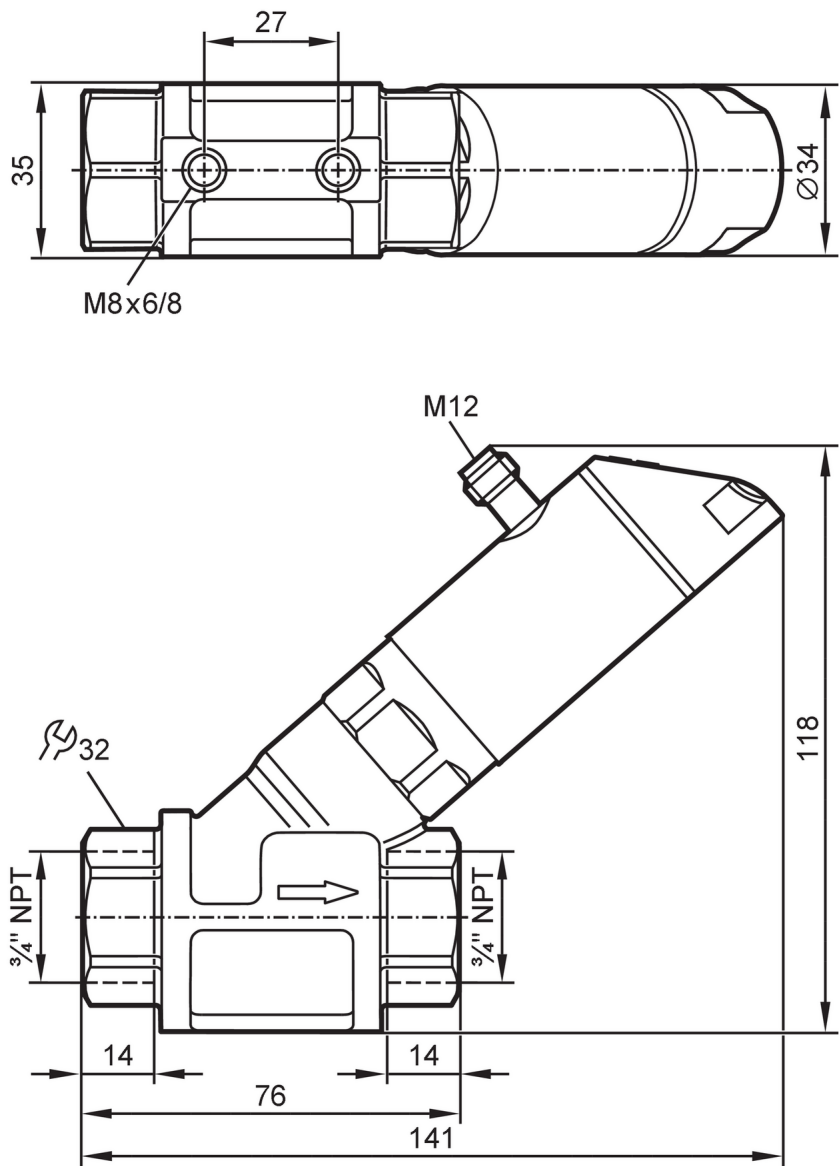
SBN234



Flow meter with fast response and display

SBN34IQ0FRKG

Please note the changed housing design!



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1	
Measuring range	10...600 gph	0.2...10 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	
Note on media	oil 1 with viscosity: 10 mm ² /s (104 °F)	
	oil 2 with viscosity: 46 mm ² /s (104 °F)	
Medium temperature	[°F]	14...212
Pressure rating	40 bar	4 MPa



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MAWP (for applications according to CRN)	[bar]	40
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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 analog outputs: 1
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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 (...140 °F); 2 x 250 (...104 °F))
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	10...600 gph	0.2...10 gpm
Display range	0...720 gph	0...12 gpm
Resolution	5 gph	0.1 gpm
Set point SP	5...600 gph	0.1...10 gpm
Reset point rP	0...595 gph	0...9.9 gpm
Frequency end point, FEP	40...600 gph	0.67...10 gpm
In steps of	5 gph	0.1 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
In steps of	[°F]	2
Frequency start point, FSP	[°F]	14...172
Frequency end point, FEP	[°F]	54...212



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Frequency at the end point FRP	[Hz]	10...10000
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		$\pm (4 \% \text{ MW} + 1 \% \text{ MEW})$; ($Q > 1 \text{ l/min}$; medium and operating temperature: $+71,6 \text{ }^{\circ}\text{F} \pm 4\text{K}$)
Repeatability		$\pm 1 \% \text{ MEW}$
Temperature monitoring		
Temperature drift		$0,9802 \text{ }^{\circ}\text{F} / \text{K}$
Accuracy	[K]	3 K ($77 \text{ }^{\circ}\text{F}$; $Q > 1 \text{ l/min}$)
Reaction times		
Flow monitoring		
Response time	[s]	0.01
Damping process value dAP	[s]	0...5
Damping for the analog 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 / 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 - SSP 0	Generic Profiled Sensor
	Function	Device identification
	Function	Process data variable
	Function	Device diagnosis
SIO mode		yes
Required master port class		A
Process data analog		2
Process data binary		2
Min. process cycle time	[ms]	3.2
Supported DeviceIDs	Type of operation	DeviceID
	default	567
Operating conditions		
Ambient temperature	[°F]	32...140
Note on ambient temperature		medium temperature $< 176 \text{ }^{\circ}\text{F}$
		medium temperature $< 212 \text{ }^{\circ}\text{F}$: 32...104 °F
Storage temperature	[°F]	5...176
Protection		IP 65; IP 67



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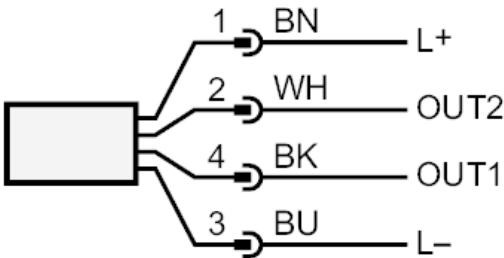
Tests / approvals		
EMC	DIN EN 61000-6-2	
	DIN EN 61000-6-3	
Shock resistance	DIN EN 60068-2-27	20 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF	[years]	145
UL approval	UL approval number	I005
	File number UL	E174189
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	752.9
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 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	Use of 200 micron filtration is recommended.	
	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: 4, 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:

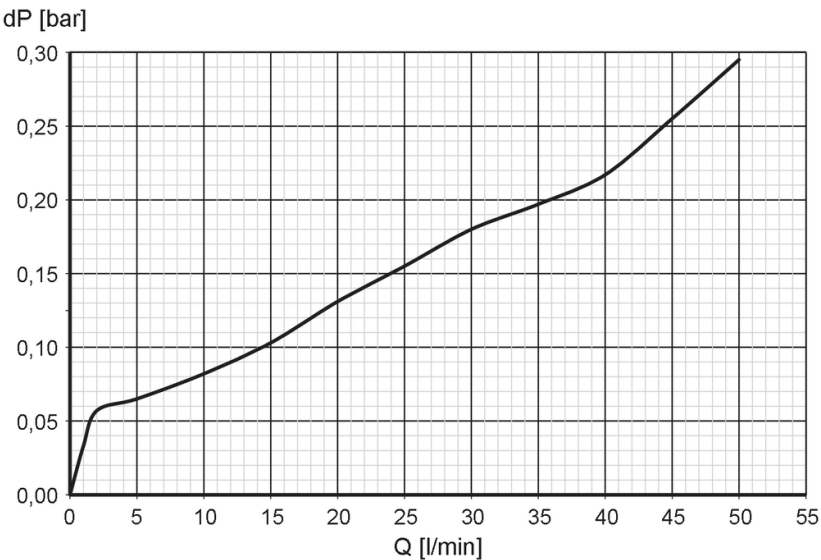
- Switching output Volumetric flow quantity monitoring
 - Switching output Temperature monitoring
 - analog output Volumetric flow quantity monitoring
 - analog output Temperature monitoring
- Colors to DIN EN 60947-5-2

Core colors :

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

Diagrams and graphs

Pressure loss



dP Pressure loss
Q volumetric flow quantity