

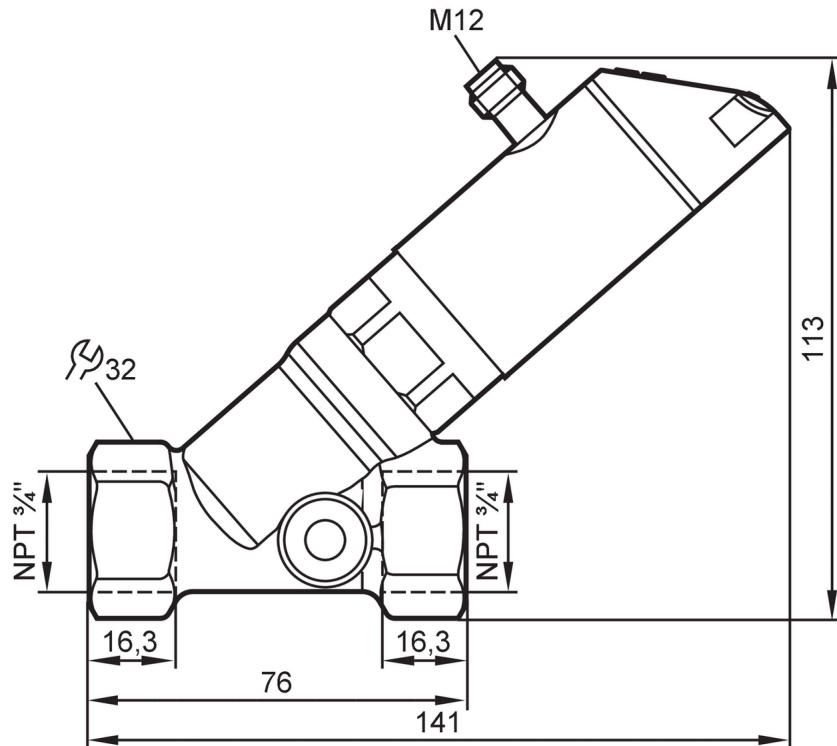
# SBN234



## 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 <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	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 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
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
Temperature monitoring		
Temperature drift		0,9802 °F / K
Accuracy	[K]	3 K (77 °F; Q > 1 l/min)



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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 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	<b>Type of operation</b>	<b>DeviceID</b>
	default	567
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)
MTTF	[years]	145
UL approval	UL approval number	I005
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	752.9

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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: gold-plated

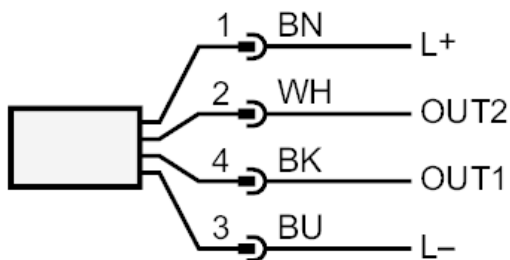




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### Connection



#### OUT1:

- Switching output Volumetric flow quantity monitoring
- Switching output Temperature monitoring
- Frequency output Volumetric flow quantity monitoring
- Frequency output Temperature monitoring
- IO-Link

#### OUT2:

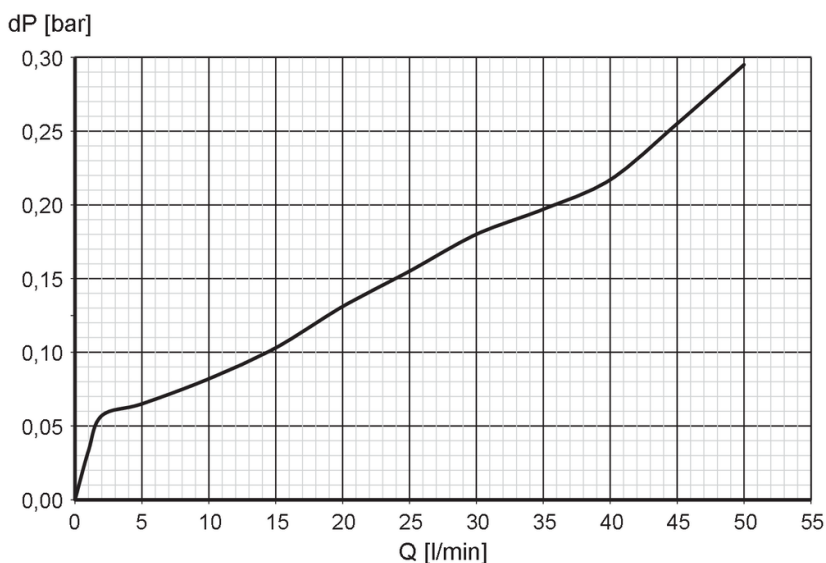
- Switching output Volumetric flow quantity monitoring
  - Switching output Temperature monitoring
  - analog output Volumetric flow quantity monitoring
  - analog output Temperature monitoring
- Colors to DIN EN 60947-5-2

Core colors :

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

### Diagrams and graphs

#### Pressure loss



dP Pressure loss

Q volumetric flow quantity