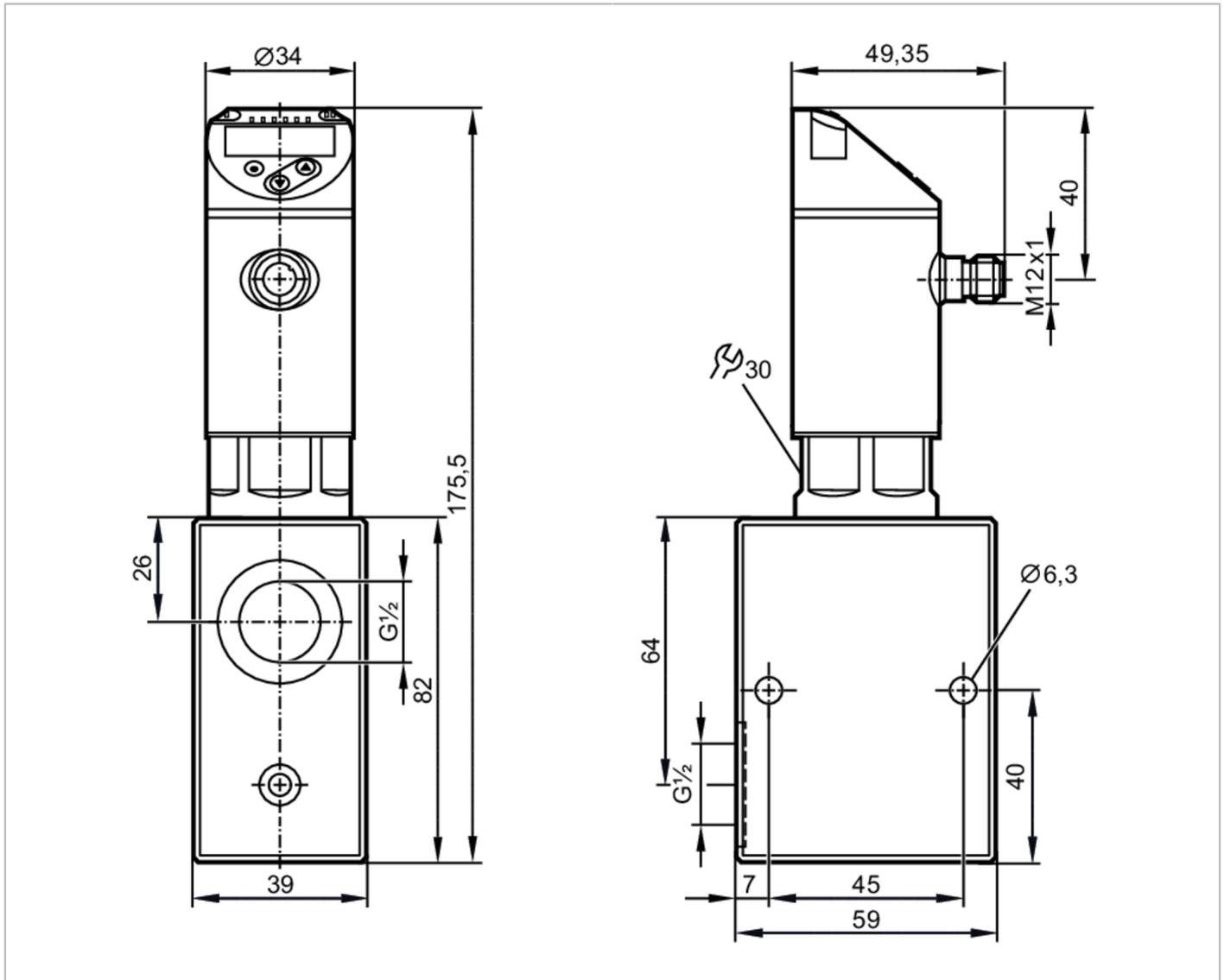


SBZ224



Flow meter with integrated backflow prevention and display

SBZ12IIBFRKG



Product characteristics

Measuring range	1...50 l/min	0.06...3 m ³ /h	16...793 gph	0.26...13.2 gpm
Process connection	threaded connection G 1/2 internal thread			

Application

Special feature	Gold-plated contacts
Media	Liquids; water; glycol solutions; coolants
Medium temperature [°C]	-10...100
Pressure rating	200 bar / 20 MPa

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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Outputs	
Total number of outputs	2
Output signal	switching signal; analogue signal; frequency signal; IO-Link
Output function	normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC [V]	2
Max. current load per output [mA]	150; (200: ...60 °C; Ambient temperature; 250: ...40 °C; Ambient temperature)
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	1...50 l/min	0.06...3 m³/h	16...793 gph	0.26...13.2 gpm
Display range	0...60 l/min	0...3.6 m³/h	0...951 gph	0...15.86 gpm
Resolution	0.01 l/min	0.001 m³/h	1 gph	0.01 gpm
Set point SP	0.35...50 l/min	0.02...3 m³/h	5...793 gph	0.08...13.2 gpm
Reset point rP	0...49.65 l/min	0...2.98 m³/h	0...787 gph	0...13.12 gpm
Frequency end point, FEP	3.35...50 l/min	0.2...3 m³/h	53...793 gph	0.88...13.2 gpm
In steps of	0.05 l/min	0.005 m³/h	1 gph	0.02 gpm
Frequency at the end point FRP [Hz]	10...10000			
In steps of [Hz]	10			
Measuring dynamics	1:50			

Temperature monitoring		
Measuring range	-10...100 °C	14...212 °F
Display range	-32...122 °C	-25.6...251.6 °F
Resolution	0.1 °C	0.1 °F
Set point SP	-9.3...100 °C	15.2...212 °F
Reset point rP	-10...99.3 °C	14...210.8 °F
In steps of	0.1 °C	0.2 °F
Frequency start point, FSP	-10...78 °C	14...172.4 °F
Frequency end point, FEP	12...100 °C	53.6...212 °F
Frequency at the end point FRP [Hz]	10...10000	
In steps of [Hz]	10	

Accuracy / deviations	
Flow monitoring	
Accuracy (in the measuring range)	± (4 % MW + 1 % MEW); (Q > 1 l/min; medium and operating temperature: + 22 °C ± 4K; Installation position upright)
Repeatability	± 1 % MEW
Temperature monitoring	
Temperature drift	0,029 °C / K
Accuracy [K]	3 K (25 °C; Q > 1 l/min)



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Response times						
Flow monitoring						
Response time	[s]	0.01				
Damping process value dAP	[s]	0...5				
In steps of	[s]	0.1				
Damping for the analogue output dAA	[s]	0...5				
In steps of	[s]	0.1				
Temperature monitoring						
Dynamic response T05 / T09	[s]	T09 = 120 (Q > 1 l/min)				
Software / programming						
Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; current/frequency output; damping for the switching output / analogue output; display can be rotated and switched off; standard unit of measurement; process value colour; calibration factor					
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, 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	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>default</td> <td>1447</td> </tr> </tbody> </table>	Type of operation	DeviceID	default	1447	
Type of operation	DeviceID					
default	1447					
Operating conditions						
Ambient temperature	[°C]	0...60				
Note on ambient temperature	medium temperature < 80 °C medium temperature < 100 °C: 0...40 °C					
Storage temperature	[°C]	-15...80				
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]	170				
Pressure Equipment Directive	Sound engineering practice					
Mechanical data						
Weight	[g]	1734.3				
Housing	rectangular					
Dimensions	[mm]	175.5 x 59 x 39				
Materials	stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC					

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Materials (wetted parts)	stainless steel (316 / 1.4401); stainless steel (316L/1.4404); O-ring: FKM
Process connection	threaded connection G 1/2 internal thread
Switching cycles mechanical	10 million

Displays / operating elements

Display	Display unit	6 x LED, green
	switching status	2 x LED, yellow
	measured values	alphanumeric display, red/green alternating indication 4-digit
	programming	alphanumeric display, 4-digit

Remarks

Remarks	Recommendation: use a 200-micron filter.
	All data refer to water (20 °C).
	Installation position upright
	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

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

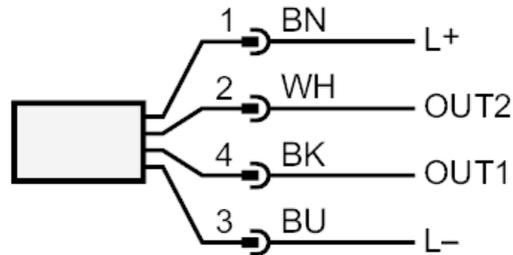




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Connection



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

