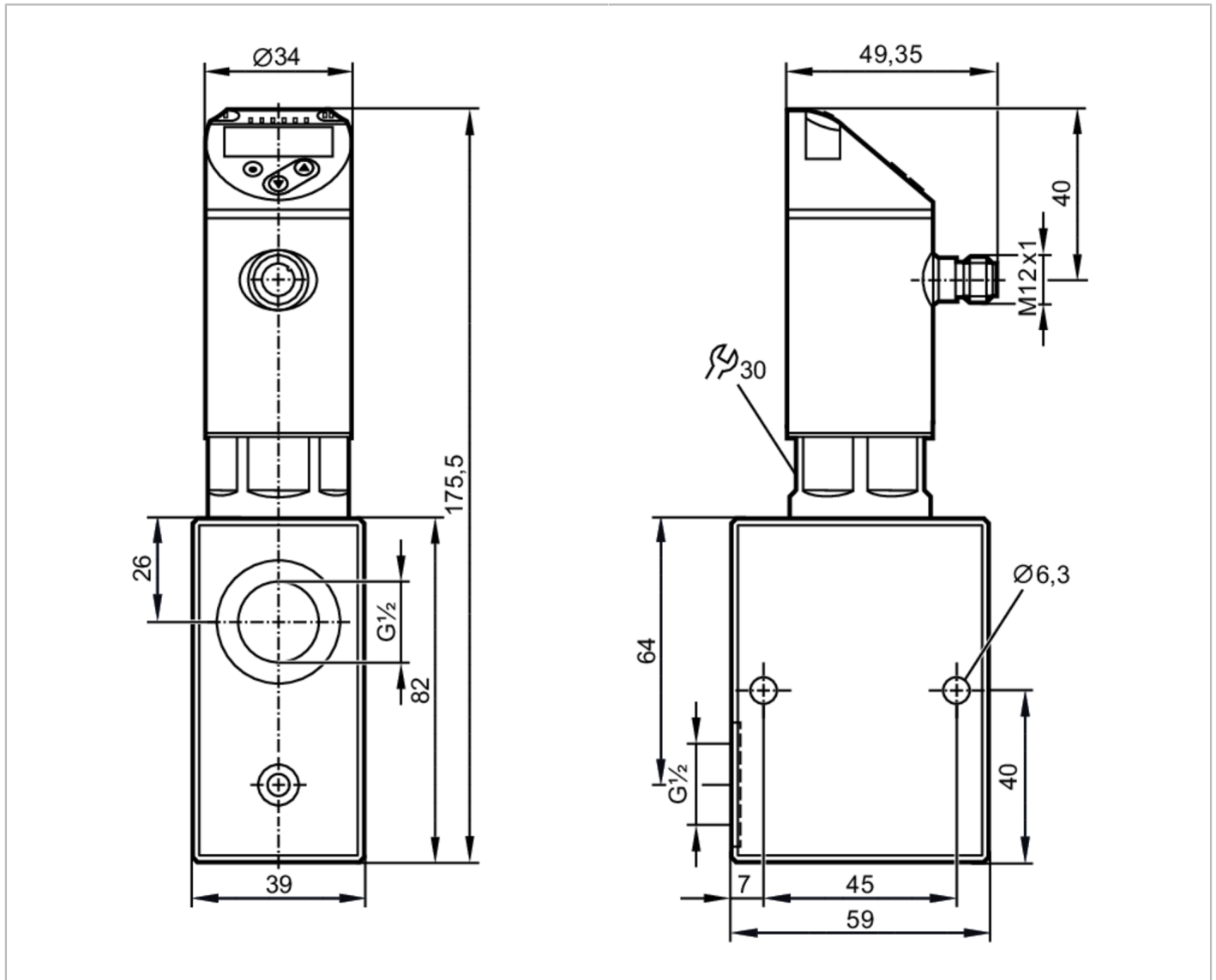


SBZ224



Flow meter with fast response and display

SBZ12IIBFRKG



Product characteristics	
Measuring range	1...50 l/min 0.06...3 m³/h 16...793 gph 0.26...13.2 gpm
Process connection	threaded connection G 1/2 Internal thread
Application	
System	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; analog signal; frequency signal; IO-Link
Output function	normally open / closed; (configurable)
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)
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	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; Mounting orientation 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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Reaction times		
Flow monitoring		
Response time	[s]	0.01
Damping process value dAP	[s]	0...5
In steps of	[s]	0.1
Damping for the analog 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 / closed; switching logic; current/frequency output; damping for the switching output / analog output; display can be rotated and switched off; standard unit of measurement; process value color; 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 - 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	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

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Housing	rectangular
Dimensions [mm]	175.5 x 59 x 39
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC
Materials (wetted parts)	stainless steel (1.4401 / 316); stainless steel (1.4404 / 316L); 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	Use of 200 micron filtration is recommended.
	All data refer to water (20 °C).
	Mounting orientation 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
- 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

