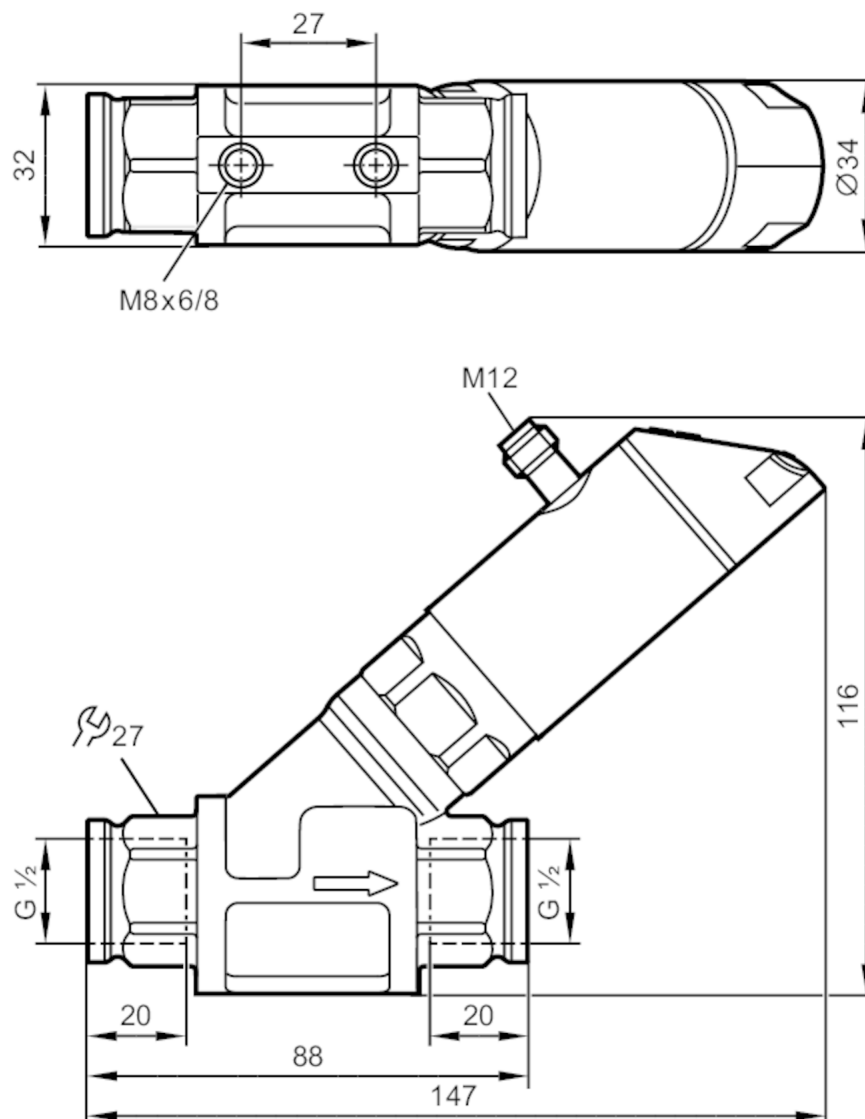


Flow meter with integrated backflow prevention and display

SBG12IF0FRKG

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	0.5...25 l/min	0.03...1.5 m³/h
Process connection	threaded connection G 1/2 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 mm²/s (40 °C)	
	oil 2 with viscosity: 46 mm²/s (40 °C)	
Medium temperature	[°C]	-10...100



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Min. bursting pressure	[bar]	160
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
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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 (...60 °C); 2 x 250 (...40 °C))
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	0.5...25 l/min	0.03...1.5 m³/h
Display range	0...30 l/min	0...1.8 m³/h
Resolution	0.1 l/min	0.01 m³/h
Set point SP	0.2...25 l/min	0.01...1.5 m³/h
Reset point rP	0...24.8 l/min	0...1.49 m³/h
Frequency end point, FEP	1.7...25 l/min	0.1...1.5 m³/h
In steps of	0.1 l/min	0.01 m³/h
Frequency at the end point FRP	[Hz]	10...10000
Measuring dynamics		1:50

Temperature monitoring

Measuring range	[°C]	-10...100
Display range	[°C]	-32...122
Resolution	[°C]	1
Set point SP	[°C]	-9...100
Reset point rP	[°C]	-10...99



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In steps of	[°C]	1
Frequency start point, FSP	[°C]	-10...78
Frequency end point, FEP	[°C]	12...100
Frequency at the end point FRP	[Hz]	10...10000

Accuracy / deviations

Flow monitoring

Accuracy (in the measuring range)	$\pm (4 \% \text{ MW} + 1 \% \text{ MEW})$; ($Q > 0,5 \text{ l/min}$; medium and operating temperature: $+22 \text{ °C} \pm 4\text{K}$)
Repeatability	$\pm 1 \% \text{ MEW}$

Temperature monitoring

Temperature drift	0,029 °C / K
Accuracy	[K] 3 K (25°C; $Q > 1 \text{ l/min}$)

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

Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; current/frequency 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	<table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>561</td></tr> </table>	Type of operation	DeviceID	default	561
Type of operation	DeviceID				
default	561				

Operating conditions

Ambient temperature	[°C] 0...60
Note on ambient temperature	medium temperature $< 80 \text{ °C}$ medium temperature $< 100 \text{ °C}$: 0...40 °C
Storage temperature	[°C] -15...80
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]	750	
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 G 1/2 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 (20 °C).	
	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:

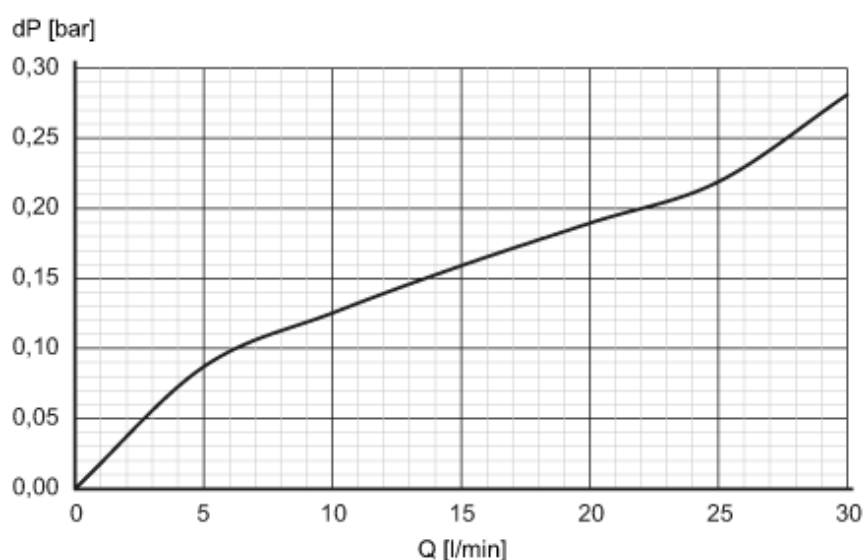
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- colours to DIN EN 60947-5-2

Core colours :

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

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity