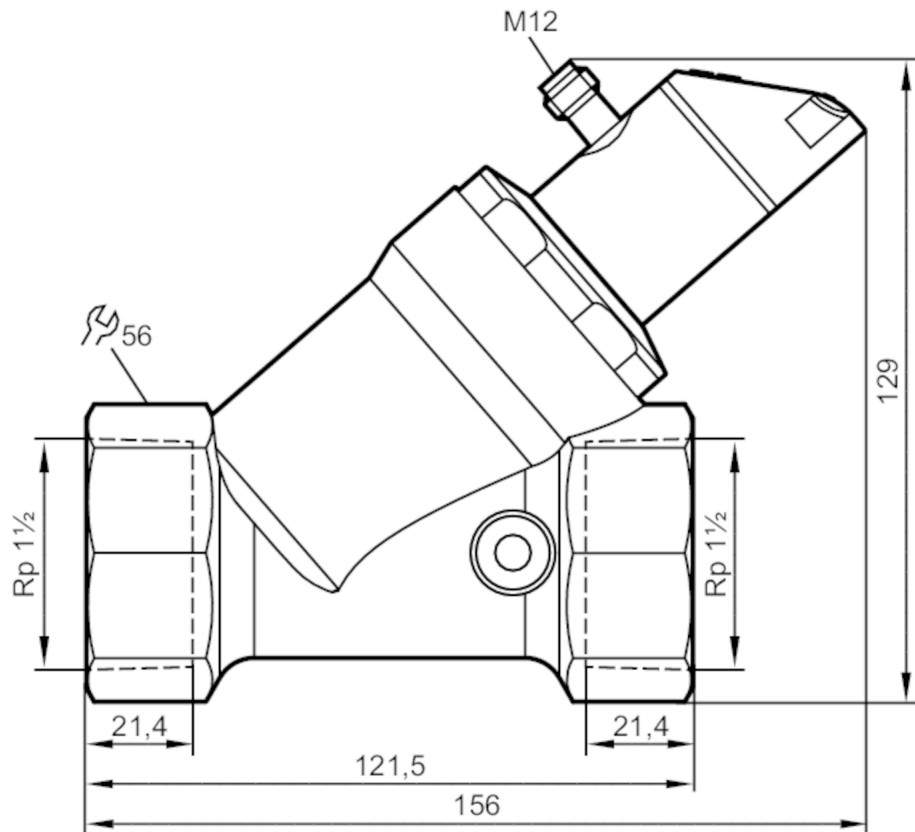


SBY257



Flow meter with integrated backflow prevention and display

SBY32IF0FRKG



Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	4...200 l/min	0.24...12 m³/h
Process connection	threaded connection Rp 1 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
Pressure rating	[bar]	25
Pressure rating	[MPa]	2.5
MAWP (for applications according to CRN)	[bar]	25
Electrical data		
Operating voltage	[V]	18...30 DC; (to SELV/PELV)
Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes



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Power-on delay time	[s]	< 3
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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	2
Permanent current rating of switching output DC	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	4...200 l/min	0.24...12 m³/h
Display range	0...240 l/min	0...14.4 m³/h
Resolution	1 l/min	0.05 m³/h
Set point SP	2...200 l/min	0.1...12 m³/h
Reset point rP	0...198 l/min	0...11.9 m³/h
Frequency end point, FEP	13...200 l/min	0.8...12 m³/h
In steps of	1 l/min	0.05 m³/h
Frequency at the end point FRP	[Hz]	10...10000
In steps of	[Hz]	10
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
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
In steps of	[Hz]	10



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Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	± (4 % MW + 1 % MEW); (Q > 1 l/min; medium and operating temperature: +22 °C ± 4K)	
Repeatability	± 1 % MEW	
Temperature monitoring		
Temperature drift	0,029 °C / K	
Accuracy [K]	3 K (25°C; Q > 1 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 l/min)	
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	
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	Type of operation	DeviceID
	default	564
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]	145	



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UL approval	UL Approval no.	I007
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	

Mechanical data		
Weight	[g]	2234.1
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; PP-GF30; O-ring: FKM	
Process connection	threaded connection Rp 1 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	
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:

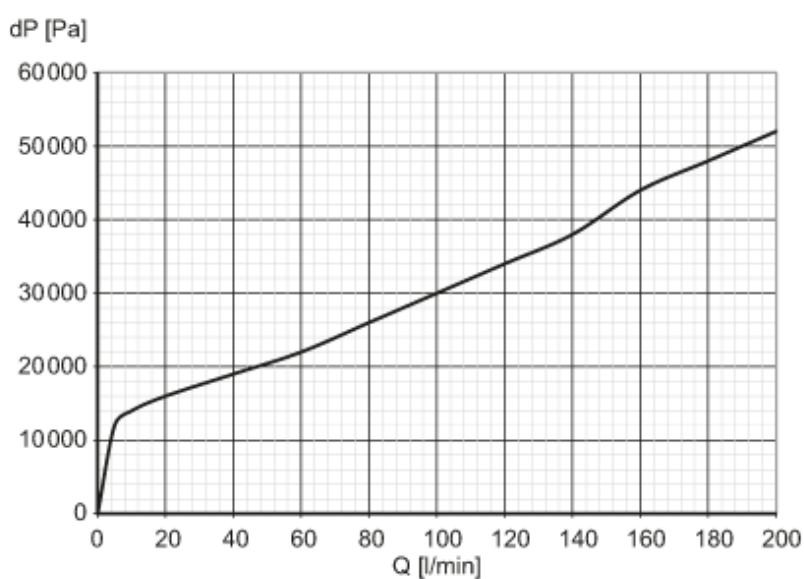
- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- colours to DIN EN 60947-5-2

Core colours :

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

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity