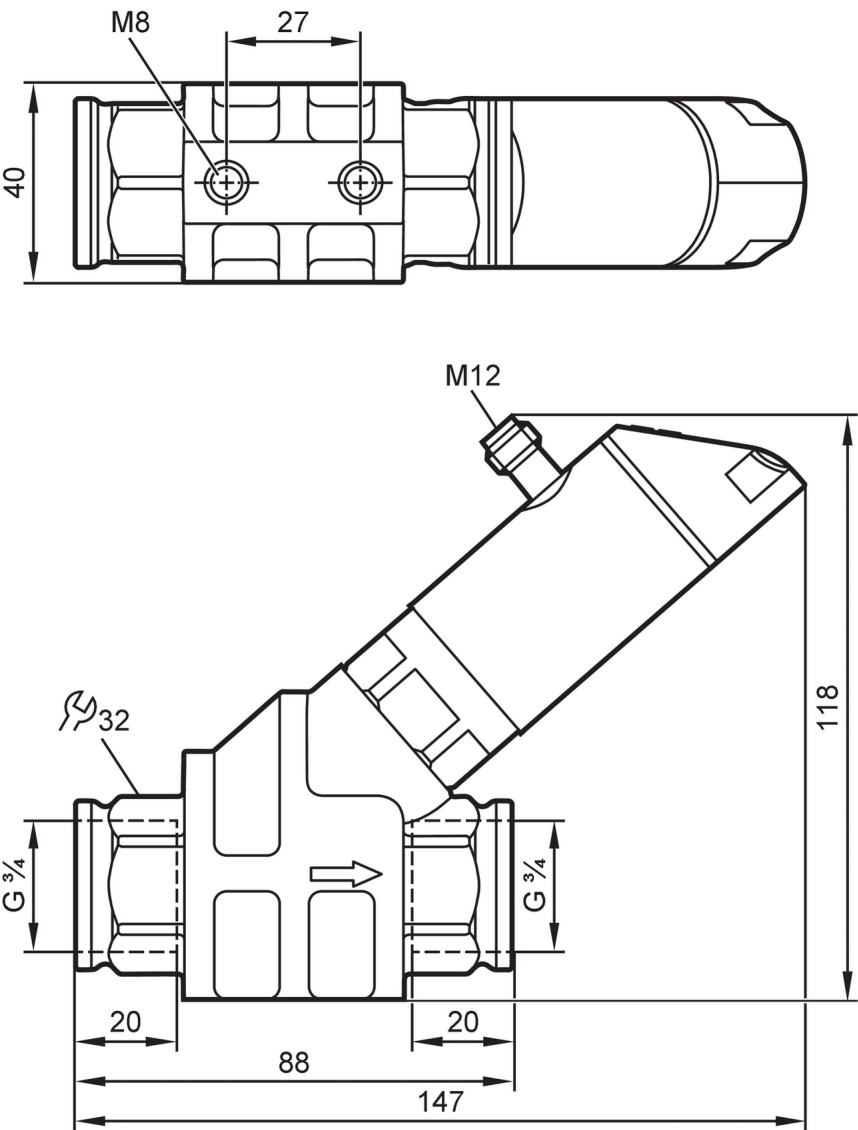


SB2232



Flow meter with fast response and display

SBG34KL0FRKG



CRN



IO-Link

Product characteristics

Measuring range	0.3...15 l/min	0.018...0.9 m³/h	4.8...237.8 gph	0.08...3.965 gpm
Process connection	threaded connection G 3/4 Internal thread			

Application

Special feature	gold-plated contacts	
Media	Liquids; oils (viscosity 46 mm²/s at 40 °C)	
Medium temperature [°C]	-10...100	
Pressure rating	100 bar	10 MPa
Note on pressure rating	at medium temperature >70°C: 80 bar / 8 MPa	

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			
Outputs					
Total number of outputs		2			
Output signal		switching signal; analog signal; frequency signal; IO-Link			
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		0.3...15 l/min	0.018...0.9 m³/h	4.8...237.8 gph	0.08...3.965 gpm
Display range		0...18 l/min	0...1.08 m³/h	0...285.4 gph	0...4.755 gpm
Resolution		0.01 l/min	0.001 m³/h	0.1 gph	0.001 gpm
Set point SP		0.1...15 l/min	0.006...0.9 m³/h	1.6...237.8 gph	0.025...3.965 gpm
Reset point rP		0...14.9 l/min	0...0.894 m³/h	0...236.2 gph	0...3.935 gpm
Frequency end point, FEP		1...15 l/min	0.06...0.9 m³/h	15.8...237.8 gph	0.265...3.965 gpm
In steps of		0.01 l/min	0.001 m³/h	0.2 gph	0.005 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			
Accuracy / deviations					
Flow monitoring					
Accuracy (in the measuring range)		± 5 % MEW; (Q > 1 l/min; 20...70 °C Medium temperature)			
Repeatability		± 1 % MEW			
Temperature monitoring					
Temperature drift		0,029 °C / K			
Accuracy	[K]	3 K (25°C; Q > 1 l/min)			
Reaction times					
Flow monitoring					
Response time	[s]	0.01			



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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)
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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
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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 - 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	1043

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
UL approval	UL approval number	I005
	File number UL	E174189
Pressure equipment directive	sound engineering practice	

Mechanical data

Weight	[g]	996.5
Material	stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; brass chemically nickel-plated	

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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 G 3/4 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 oil with the following nominal viscosity: 46 mm ² /s, 40 °C
	MW = Measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, 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

