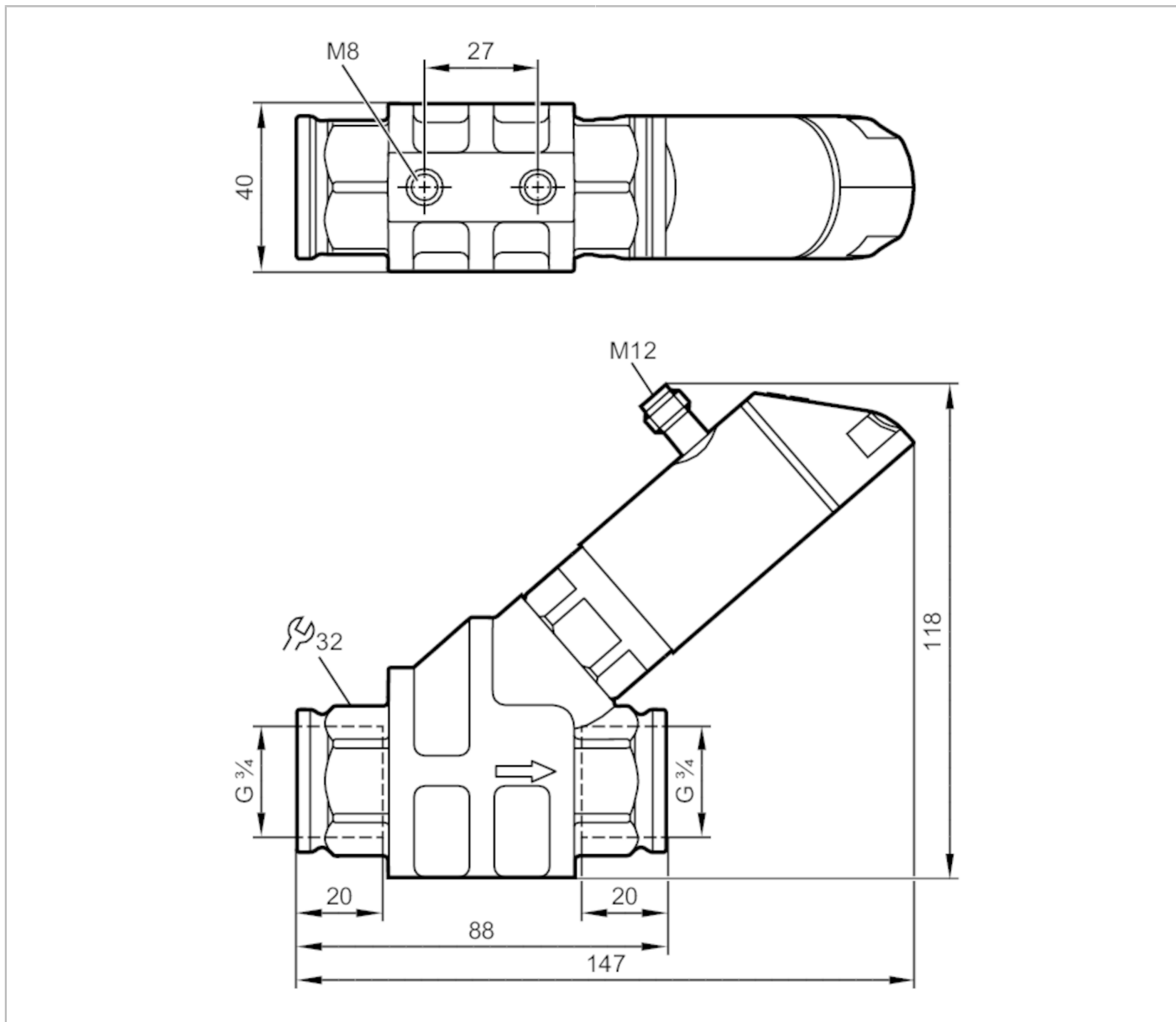


# SB2232



## Flow meter with fast response and display

SBG34KL0FRKG



Product characteristics				
Measuring range	0.3...15 l/min	0.018...0.9 m <sup>3</sup> /h	4.8...237.8 gph	0.08...3.965 gpm
Process connection	threaded connection G 3/4 Internal thread			
Application				
System	gold-plated contacts			
Media	Liquids; oils (viscosity 46 mm <sup>2</sup> /s at 40 °C)			
Medium temperature	[°C]	-10...100		
Pressure rating	[bar]	100		
Pressure rating	[MPa]	10		
Note on pressure rating	at medium temperature >70°C: 80 bar / 8 MPa			
Electrical data				
Operating voltage	[V]	18...30 DC; (to SELV/PELV)		



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Current consumption	[mA]	< 50
Protection class		III
Reverse polarity protection		yes
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)



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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: Process Data Variable; Device Identification, 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	<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>default</td> <td>1043</td> </tr> </tbody> </table>	Type of operation	DeviceID	default	1043	
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				
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					

# SB2232



## Flow meter with fast response and display

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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 <sup>2</sup> /s, 40 °C
	MW = Measured value
	MEW = Final value of the measuring range

Pack quantity	1 pcs.
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### Electrical connection

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



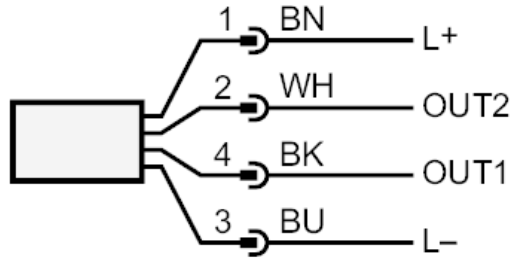
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### Connection



#### 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

