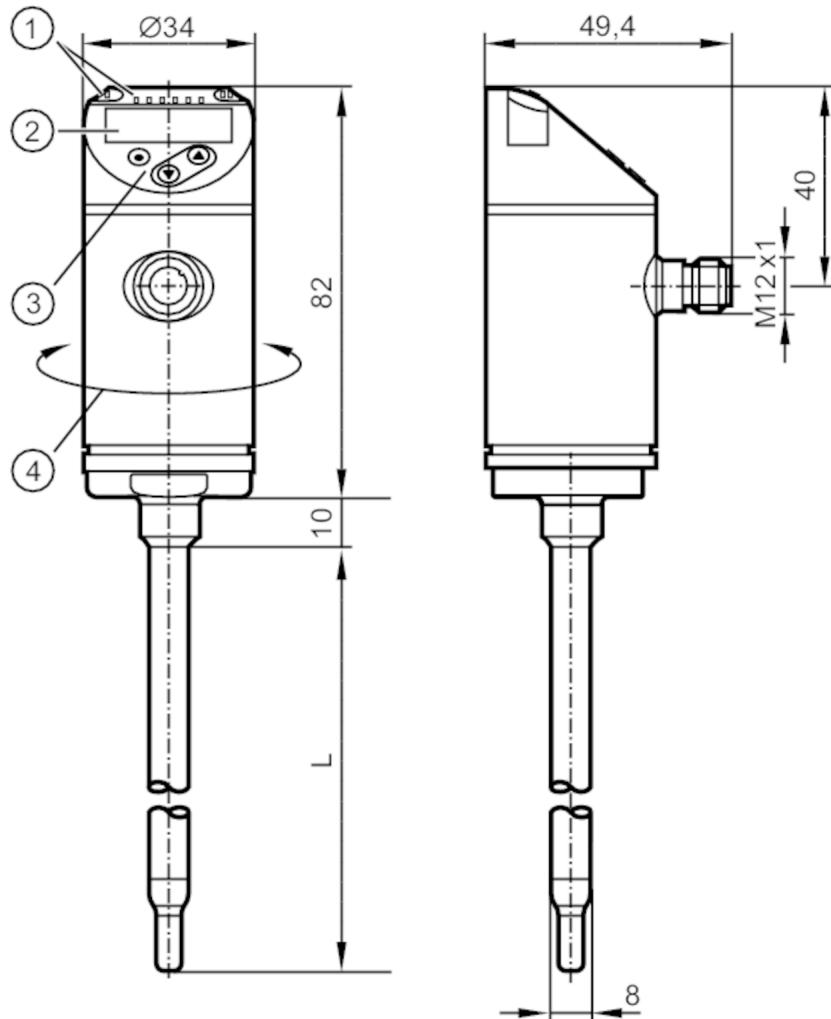


SA4100



Flow sensor

SAEXXXXBFRKG/US-100



- L 100 mm
1 LEDs Display unit / switching status
2 alphanumeric display 4-digit red/green
3 programming buttons
4 upper part of the housing can be rotated 345°

ACS CRN KTW/W270 Reg31

Application

Media	water; glycol solutions; air; oils	
Note on media	low-viscosity oils with viscosity: ≤ 40 mm ² /s (40 °C) high-viscosity oils with viscosity: > 40 mm ² /s (40 °C)	
Medium temperature [°C]		-20...100
Pressure rating [bar]		50
MAWP (for applications according to CRN) [bar]		50

SA4100



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Electrical data		
Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 100
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	10
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analogue outputs: 1
Outputs		
Total number of outputs		2
Output signal		switching signal; analogue signal; frequency signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	250
Number of analogue outputs		1
Analogue current output	[mA]	4...20; (scalable)
Max. load	[Ω]	350
Short-circuit protection		yes
Type of short-circuit protection		pulsed
Overload protection		yes
Frequency of the output	[Hz]	0...1000
Measuring/setting range		
Probe length L	[mm]	100
Operating mode		relative; absolutely liquid; absolutely gaseous
Note on setting range		Operating mode: relative
Liquids		
Measuring range	[m/s]	0.04...3
Setting range	[m/s]	0...6
Gases		
Measuring range	[m/s]	2...100
Setting range	[m/s]	0...200
Temperature monitoring		
Measuring range	[°C]	-20...100
Resolution	[°C]	0.2

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Accuracy / deviations

Flow monitoring

Temperature drift	[cm/s x 1/K]	0,003 m/s x 1/K (< 20 °C; > 70 °C)
Temperature gradient	[K/min]	100
Accuracy (in the measuring range)	$\pm (7 \% \text{ MW} + 2 \% \text{ MEW})$; (for relative mode in the measuring range with: water: 20...70 °C; inlet length: 1,5 m; DN25 (DIN 2448); mounting position according to instructions; Accuracy can differ for other media and mounting positions.)	
Repeatability	0,05 m/s; (water; flow velocity: 0,05...3 m/s)	

Temperature monitoring

Temperature drift		± 0,005 K/°C
Accuracy	[K]	± 0,3 / ± 1; (water; flow velocity: 0,3...3 m/s / air; flow velocity: > 10 m/s)

Response times

Flow monitoring

Response time	[s]	0.5; (T09; water; glycol: 0,8 s; air: 7 s; oil: 1,8 s; each T09)
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Temperature monitoring

Dynamic response T05 / T09	[s]	1,5 (T09); (water; flow velocity: 0,3...3 m/s)
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Software / programming

Parameter setting options	hysteresis / window; normally open / normally closed; switching logic; current/frequency output; medium selection; Damping; Teach function; 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	
IO-Link device ID	533 d / 00 02 15 h (REL)	
Profiles	Smart Sensor; Process Data Variable; Device Identification, Device Diagnosis	
SIO mode	yes	
Required master port type	A	
Process data analogue	2	
Process data binary	2	
Min. process cycle time	[ms]	3

Operating conditions

Ambient temperature	[°C]	-40...80
Storage temperature	[°C]	-40...100
Protection		IP 65; IP 67

Tests / approvals

EMC	DIN EN 60947-5-9	
Shock resistance	DIN EN 60068-2-27	50 g (11 ms)
Vibration resistance	DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF	[years]	180
UL approval	UL Approval no.	I003

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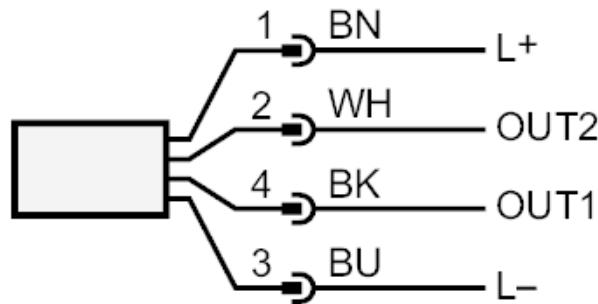
Mechanical data				
Weight	[g]	299.5		
Materials	stainless steel (1.4404 / 316L); PBT-GF20; PBT-GF30			
Materials (wetted parts)	stainless steel (1.4404 / 316L)			
Process connection	diameter Ø 8 mm			
Displays / operating elements				
Display	Display unit	6 x LED, green (% , m/s, l/min, m³/h, °C, 10³)		
	switching status	2 x LED, yellow		
	measured values	alphanumeric display, red/green 4-digit		
Remarks				
Remarks	MW = measured value			
	MEW = Final value of the measuring range			
	540 d / 00 02 1ch (LIQU) 547 d / 00 02 23 h (GAS)			
Pack quantity	1 pcs.			
Electrical connection				
Connector: 1 x M12; Contacts: gold-plated				



Flow sensor

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Connection



colours to DIN EN 60947-5-2

OUT1:

- switching output volumetric flow quantity monitoring
- frequency output volumetric flow quantity monitoring
- IO-Link

OUT2:

- switching output volumetric flow quantity monitoring
- switching output Temperature monitoring
- analogue output volumetric flow quantity monitoring
- analogue output Temperature monitoring
- frequency output volumetric flow quantity monitoring
- frequency output Temperature monitoring
- input External Teach

Core colours :

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