

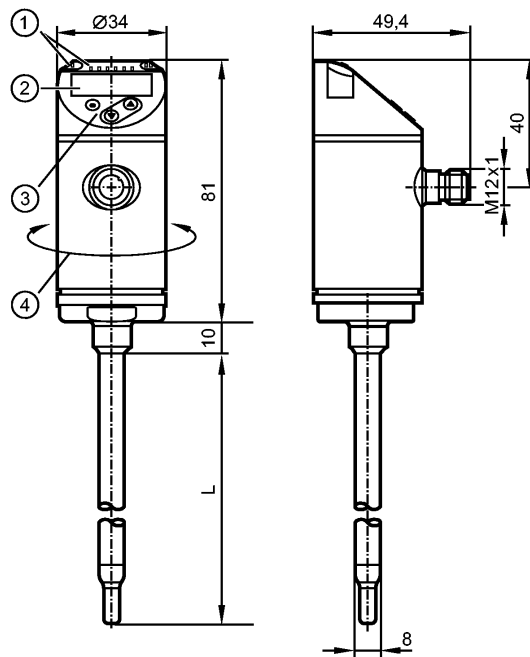


SA4300

SAEXXXBFRKG/US-100



Flow sensors



L: 200 mm

- 1: LEDs (display unit / switching status)
- 2: 4-digit alphanumeric display / alternating indication of red and green
- 3: Programming buttons
- 4: Upper part of the housing can be rotated by 345°



Product characteristics

Flow sensor
M12 connector
Process connection: Ø 8 mm
Probe length L: 200 mm
Flow sensor suitable for progressive ring fittings
Operating modes: relative, absolutely liquid, absolutely gaseous
Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases)

Application

Application	water, glycol solutions, air, oils (low-viscosity oils with viscosity ≤ 40 mm ² /s at 40°C; high-viscosity oils with viscosity > 40 mm ² /s at 40°C)
Pressure rating [bar]	50
Medium temperature [°C]	-20...100 *)

Electrical data

Electrical design	DC PNP/NPN
Operating voltage [V]	18...30 DC
Current consumption [mA]	< 100
Protection class	III
Reverse polarity protection	yes

Outputs

Output function	OUT1: normally open / normally closed programmable or frequency or IO-Link OUT2: normally open / normally closed programmable or frequency or analog (4...20 mA scaleable)
Current rating [mA]	250



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Flow sensors

Voltage drop [V]	< 2.5
Short-circuit protection	yes (non-latching)
Overload protection	yes
Analog output	4...20 mA
Max. load [Ω]	350
Frequency range [Hz]	0...1000

Measuring / setting range

Flow monitoring	
Measuring range	0.05...3 m/s (liquids) 2...100 m/s (gases)
–	Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases)
Temperature monitoring	
Measuring range [$^{\circ}\text{C}$]	-20...100
Resolution [$^{\circ}\text{C}$]	0.2 [K]

Accuracy / deviations

Flow monitoring	
Accuracy	$\pm (5 \% \text{ MW} + 2 \% \text{ MEW})$ (value applies to water with 0.04...3 m/s flow velocity at the sensor tip; 20°C...70°C; DN25 to DIN 2448 with 1.5 m inlet length)
Temperature drift	0.003 m/s x 1/K (< 20 °C; > 70 °C)
Repeatability	0.05 m/s; Value applies to water with 0.05...3 m/s flow velocity
Max. temperature gradient of medium [K/min]	100
Temperature monitoring	
Accuracy [K]	$\pm 0.3^{**}$ $\pm 1^{***}$
Temperature drift	$\pm 0.005 \text{ K}/^{\circ}\text{C}$

Reaction times

Power-on delay time [s]	10
Flow monitoring	
Response time [s]	0.5 (T09) ****)
Temperature monitoring	
Response time [s]	1.5 (T09) **)

Software / programming

Programming options	Hysteresis/window; NO/NC; switching logic; current / frequency output; fluid selection, damping; teach function; display can be rotated/switched off; standard unit of measurement/colour process value
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Interfaces

IO-Link Device	
Transfer 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 *****)
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes
Required master port class	A
Process data analogue	2
Process data binary	2
Min. process cycle time [ms]	3



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Environment

Ambient temperature	[°C]	-40...80
Storage temperature	[°C]	-40...100
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 50 g (11 ms)
Vibration resistance		DIN EN 60068-2-6 2 g (10...2000 Hz)
MTTF	[Years]	180
UL approval number		I003

Mechanical data

Process connection		Ø 8 mm
Materials (wetted parts)		stainless steel (316L / 1.4404)
Probe length L	[mm]	200
Housing materials		stainless steel (316L / 1.4404); PBT-GF 20; PBT-GF 30
Weight	[kg]	0.317

Displays / operating elements

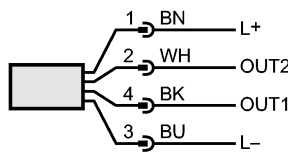
Display		Display unit 6 x LED green (% , m/s, l/min, m ³ /h, °C, 10 ³) Switching status 2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green
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Electrical connection

Connection		M12 connector; gold-plated contacts
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Wiring

Core colors
 BK black
 BN brown
 BU blue
 WH white



Colours to DIN EN 60947-5-2

OUT1: 3 selection options

- switching output flow rate monitoring
- frequency output flow rate monitoring
- IO-Link

OUT2: 7 selection options

- switching output flow rate monitoring
- switching output temperature monitoring
- analogue output flow rate
- analogue output temperature
- frequency output flow rate monitoring
- frequency output temperature monitoring
- input "External Teach"

Remarks

Remarks		MW = measured value MEW = final value of the measuring range *) Für Medientemperaturen > 90°C: Abstand zwischen Rohrleitung und Sensorgehäuse ≥ 50 mm **) Value applies to water with 0.3...3 m/s flow velocity
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Flow sensors

***) The value applies in case of air with > 10 m/s flow velocity
****) Value applies to water (other media: glycol 0.8 s; air: 7 s; oil: 1.8 s, T09 in each case)
*****) The value applies if the relative mode in case of factory setting (REL) is selected, for other operating modes the following values apply:
540 d / 00 02 1c h (LIQU)
547 d / 00 02 23 h (GAS)

Pack quantity	[piece]	1
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