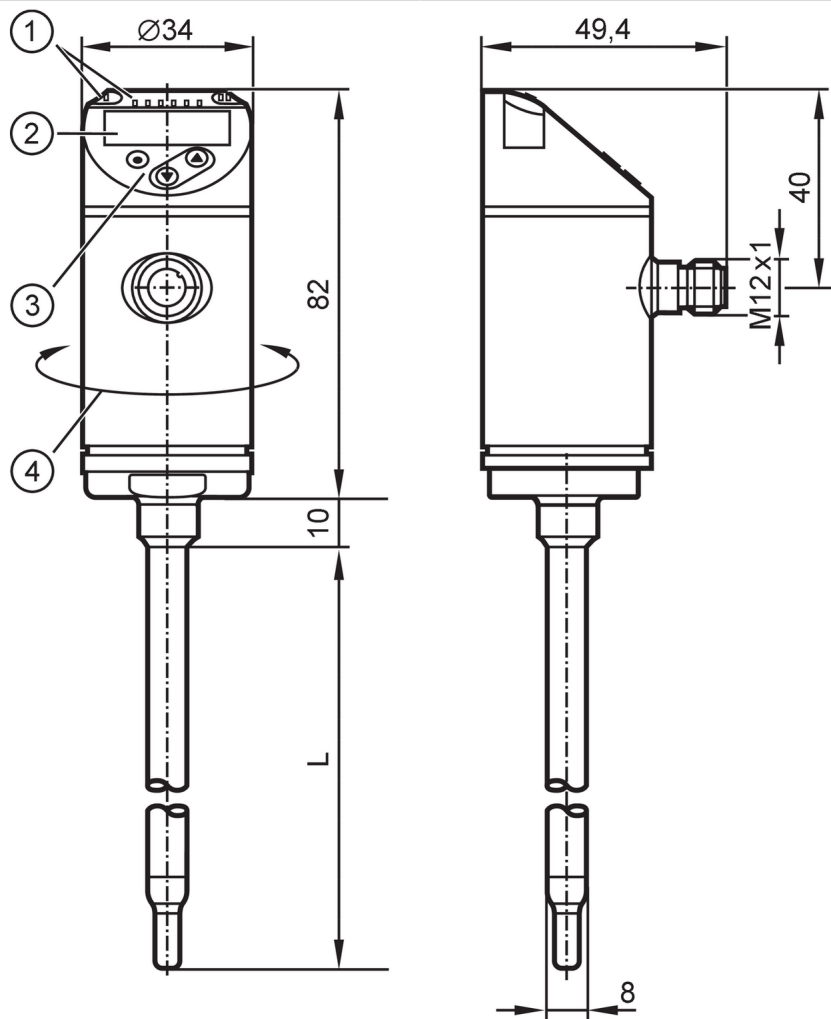


SA4100



Flow sensor

SAEXXXBFRKG/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 DNV EC 1935/2004 FCM IO-Link KTW/W270 Reg31

Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
Process connection	Clamp fitting $\varnothing 8$ mm

Application

Special feature	gold-plated contacts
Media	water; glycol solutions; air; oils
Note on media	low-viscosity oils with viscosity: $\leq 40 \text{ mm}^2/\text{s}$ (40 °C) high-viscosity oils with viscosity: $> 40 \text{ mm}^2/\text{s}$ (40 °C)
Medium temperature [°C]	-20...100
Pressure rating	50 bar 5 MPa
MAWP (for applications according to CRN) [bar]	50

Electrical data

Operating voltage [V]	18...30 DC
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Current consumption	[mA]	< 100
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	10
Measuring principle		calorimetric

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
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Outputs

Total number of outputs	2
Output signal	switching signal; analog signal; frequency signal; IO-Link; (configurable)
Electrical design	PNP/NPN
Number of digital outputs	2
Output function	normally open / closed; (configurable)
Max. voltage drop switching output DC	[V] 2.5
Permanent current rating of switching output DC	[mA] 250
Number of analog outputs	1
Analog current output	[mA] 4...20; (scalable)
Max. load	[Ω] 350
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
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; (absolute: reference measurement recommended; Factory setting: relative)

Temperature monitoring

Measuring range	[°C] -20...100
Resolution	[°C] 0.2

Liquid media - absolute operating mode

Setting range	[m/s] 0.04...3
Greatest sensitivity	[m/s] 0.04...3

Liquid media - relative operating mode

Setting range	[m/s] 0.04...6
Greatest sensitivity	[m/s] 0.04...3

Gases - operating mode "absolute"

Setting range	[m/s] 2...100
Greatest sensitivity	[m/s] 30...100

Gases - operating mode "relative"

Setting range	[m/s] 2...200
Greatest sensitivity	[m/s] 30...100

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Accuracy / deviations		
Temperature drift	[cm/s x 1/K]	0,003 m/s x 1/K (< 20 °C; > 70 °C)
Max. temperature gradient of medium	[K/min]	100
Absolute operating mode		
Repeatability		0,05 m/s; (water; Flow velocity: 0,05...3 m/s)
Relative operating mode		
Accuracy		± (7 % MW + 2 % MEW); (for relative mode in the range of maximum sensitivity under the following conditions:; 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)
Reaction times		
Response time	[s]	0.5; (T09; water; glycol: 0,8 s; air: 7 s; oil: 1,8 s; each T09)
Temperature monitoring		
Dynamic response T05 / T09	[s]	1,5 (T09); (water; Flow velocity: 0,3...3 m/s)
Software / programming		
Parameter setting options		hysteresis / window; normally open / closed; switching logic; current/frequency output; medium selection; Damping; Teach function; display can be rotated and switched off; standard unit of measurement; process value color
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9
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
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / ModE = (REL)	533
	ModE = (GAS)	547
	ModE = (LIQU)	540
Operating conditions		
Ambient temperature	[°C]	-40...80
Storage temperature	[°C]	-40...100
Protection		IP 65; IP 67

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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 number	I017
	File number UL	E174189
Mechanical data		
Weight [g]		243
Housing		tubular
Dimensions [mm]		Ø 8 / L = 192
Material		stainless steel (1.4404 / 316L); PBT-GF20; PBT-GF30
Materials (wetted parts)		stainless steel (1.4404 / 316L)
Process connection		Clamp fitting 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
Pack quantity		1 pcs.
Electrical connection		
Connector: 1 x M12; coding: A; Contacts: 4, gold-plated		

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Connection



Colors 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
- analog output Volumetric flow quantity monitoring
- analog output Temperature monitoring
- Frequency output Volumetric flow quantity monitoring
- Frequency output Temperature monitoring
- Input External Teach

Core colors :

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