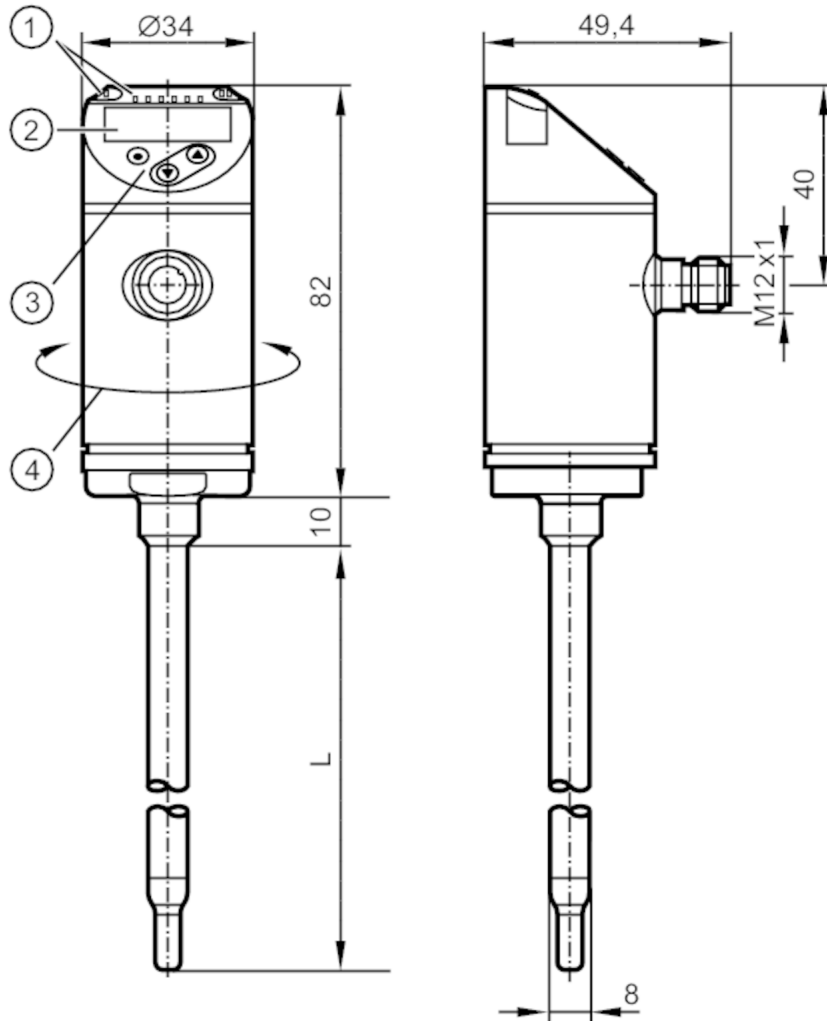


SA4110



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°



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
Process connection	Ø 8 mm

Application

System	gold-plated contacts
Media	water; glycol solutions; air; oils
Note on media	low-viscosity oils with viscosity: ≤ 40 mm ² /s (104 °F) high-viscosity oils with viscosity: > 40 mm ² /s (104 °F)
Medium temperature [°F]	-4...212
Pressure rating [bar]	50
Pressure rating [psi]	725
MAWP (for applications according to CRN) [bar]	50

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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 analog outputs: 1
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 [$^{\circ}$ F]		-4...212
Resolution [$^{\circ}$ F]		0.5
Liquid media - absolute operating mode		
Setting range [ft/s]		0...9.85
Greatest sensitivity [ft/s]		0.15...9.85
Liquid media - relative operating mode		
Setting range [ft/s]		0...19.5
Greatest sensitivity [ft/s]		0.15...9.85
Gases - operating mode "absolute"		
Setting range [ft/s]		0...328
Greatest sensitivity [ft/s]		6...328
Gases - operating mode "relative"		
Setting range [ft/s]		0...656

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Greatest sensitivity	[ft/s]	6...328								
Accuracy / deviations										
Temperature drift	[cm/s x 1/K]	0,01 fps x 1/K (< 68 °F; > 158 °F)								
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: 68...158 °F; inlet length: 5 ft; 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		± 0,003 K/°F								
Accuracy	[K]	± 0,3 / ± 1; (water; Flow velocity: 1...9,85 fps / air; Flow velocity: > 32,8 fps)								
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: 1...9,85 fps)								
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: 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								
Supported DeviceIDs		<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / ModE = (REL)</td> <td>537</td> </tr> <tr> <td>ModE = (GAS)</td> <td>551</td> </tr> <tr> <td>ModE = (LIQU)</td> <td>544</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / ModE = (REL)	537	ModE = (GAS)	551	ModE = (LIQU)	544
Type of operation	DeviceID									
Factory setting / ModE = (REL)	537									
ModE = (GAS)	551									
ModE = (LIQU)	544									
Operating conditions										
Ambient temperature	[°F]	-40...176								
Storage temperature	[°F]	-40...212								
Protection		IP 65; IP 67								
Tests / approvals										
EMC		DIN EN 60947-5-9								

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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]		143
UL approval	UL approval number	I017
	File number UL	E174189

Mechanical data

Weight [g]	296.5
Material	stainless steel (1.4404 / 316L); PBT-GF20; PBT-GF30
Materials (wetted parts)	stainless steel (1.4404 / 316L)
Process connection	Ø 8 mm

Displays / operating elements

Display	Display unit	6 x LED, green (% , fps, gpm, cfm, °F, 10 ³)
	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: 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