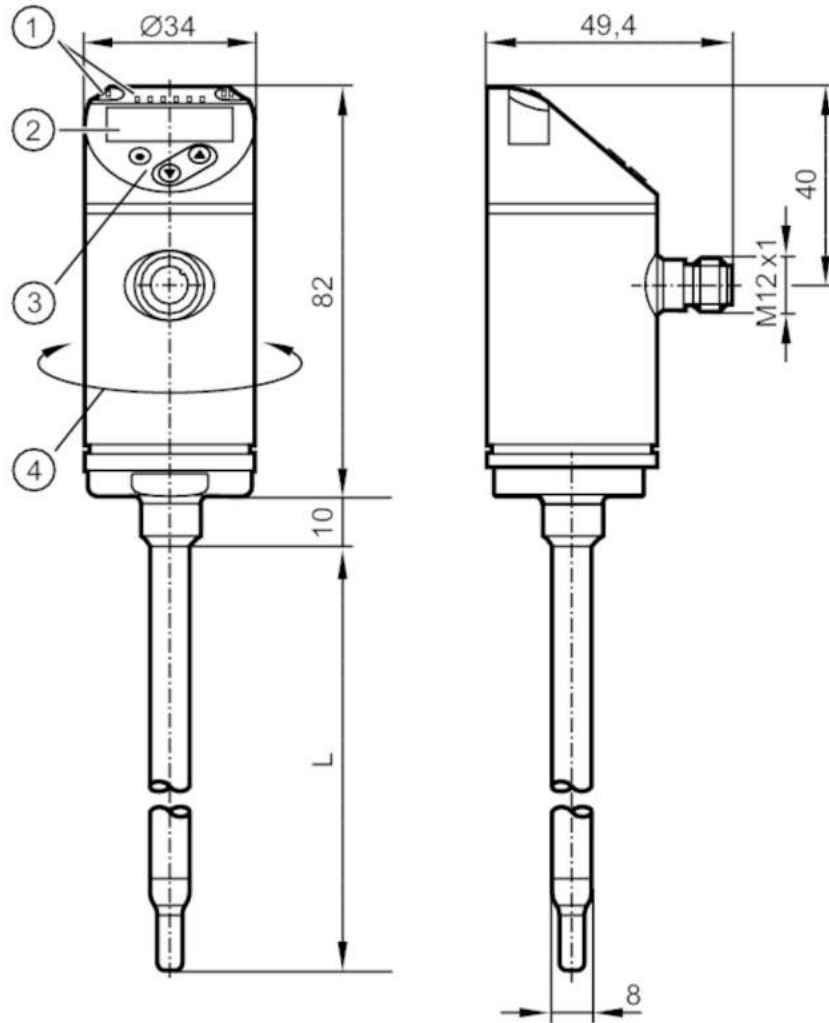


# SA4110



## 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 analogue outputs: 1
Process connection	diameter $\varnothing$ 8 mm

### Application

Special feature	Gold-plated contacts
Media	water; glycol solutions; air; oils
Note on media	low-viscosity oils with viscosity: $\leq 40 \text{ mm}^2/\text{s}$ (104 °F) high-viscosity oils with viscosity: $> 40 \text{ mm}^2/\text{s}$ (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 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 [ $\Omega$ ]	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; (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
<b>Accuracy / deviations</b>		
Temperature drift	[cm/s x 1/K]	0,01 fps x 1/K (< 68 °F; > 158 °F)
Temperature gradient	[K/min]	100
<b>Absolute operating mode</b>		
Repeatability		0,05 m/s; (water; flow velocity: 0,05...3 m/s)
<b>Relative operating mode</b>		
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)
<b>Temperature monitoring</b>		
Temperature drift		± 0,003 K/°F
Accuracy	[K]	± 0,3 / ± 1; (water; flow velocity: 1...9,85 fps / air; flow velocity: > 32,8 fps)
<b>Response times</b>		
Response time	[s]	0.5; (T09; water; glycol: 0,8 s; air: 7 s; oil: 1,8 s; each T09)
<b>Temperature monitoring</b>		
Dynamic response T05 / T09	[s]	1,5 (T09); (water; flow velocity: 1...9,85 fps)
<b>Software / programming</b>		
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
<b>Interfaces</b>		
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 type		A
Process data analogue		2
Process data binary		2
Min. process cycle time	[ms]	3
Supported DeviceIDs	Type of operation	DeviceID
	Factory setting / ModE = (REL)	537
	ModE = (LIQU)	544
	ModE = (GAS)	551
<b>Operating conditions</b>		
Ambient temperature	[°F]	-40...176
Storage temperature	[°F]	-40...212
Protection		IP 65; IP 67
<b>Tests / approvals</b>		
EMC		DIN EN 60947-5-9

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## Flow sensor

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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 no.	I017
	File number UL	E174189

### Mechanical data

Weight [g]	296.5
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 (% , fps, gpm, cfm, °F, 10 <sup>3</sup> )
	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



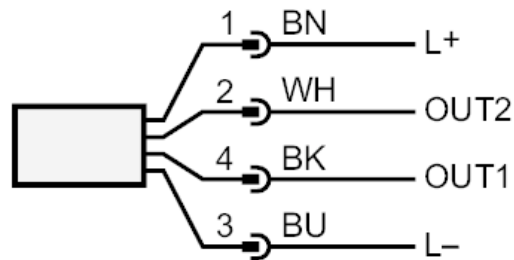
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### Connection



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