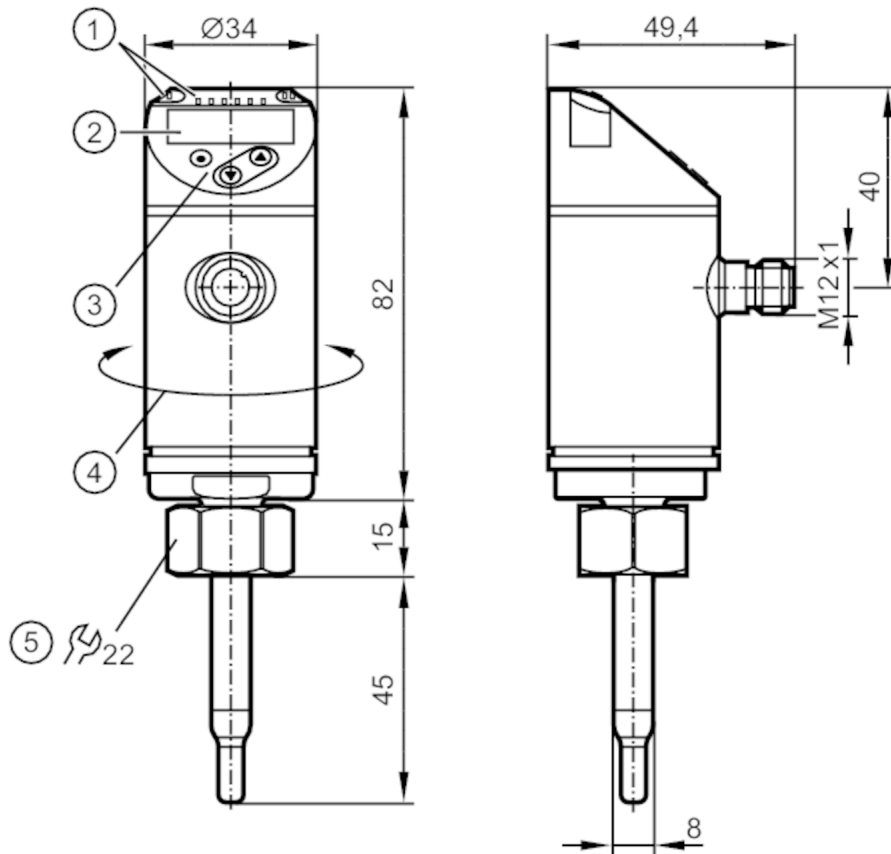


# SA5000



## Flow sensor

SAD10XDBFRKG/US-100



- 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	threaded connection M18 x 1,5 internal thread
<b>Liquids</b>	
Measuring range [m/s]	0.04...3
<b>Gases</b>	
Measuring range [m/s]	2...100

### 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...90
Pressure rating [bar]	100
MAWP (for applications according to CRN) [bar]	100

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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]	45
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...90
Resolution	[°C]	0.2

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## Flow sensor

SAD10XDBFRKG/US-100

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)		± (7 % MW + 2 % 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)	
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 / 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	
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	20 g (10...2000 Hz)
MTTF	[years]	132	
UL approval		UL Approval no.	I003
		File number UL	E174189

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### Mechanical data

Weight	[g]	311.5
Materials		stainless steel (1.4404 / 316L); stainless steel (1.4310 / 301); PBT-GF20; PBT-GF30
Materials (wetted parts)		stainless steel (1.4404 / 316L); Gasket: FKM
Process connection		threaded connection M18 x 1,5 internal thread

### Displays / operating elements

Display	Display unit	6 x LED, green (% , m/s, l/min, m <sup>3</sup> /h, °C, 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
	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



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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