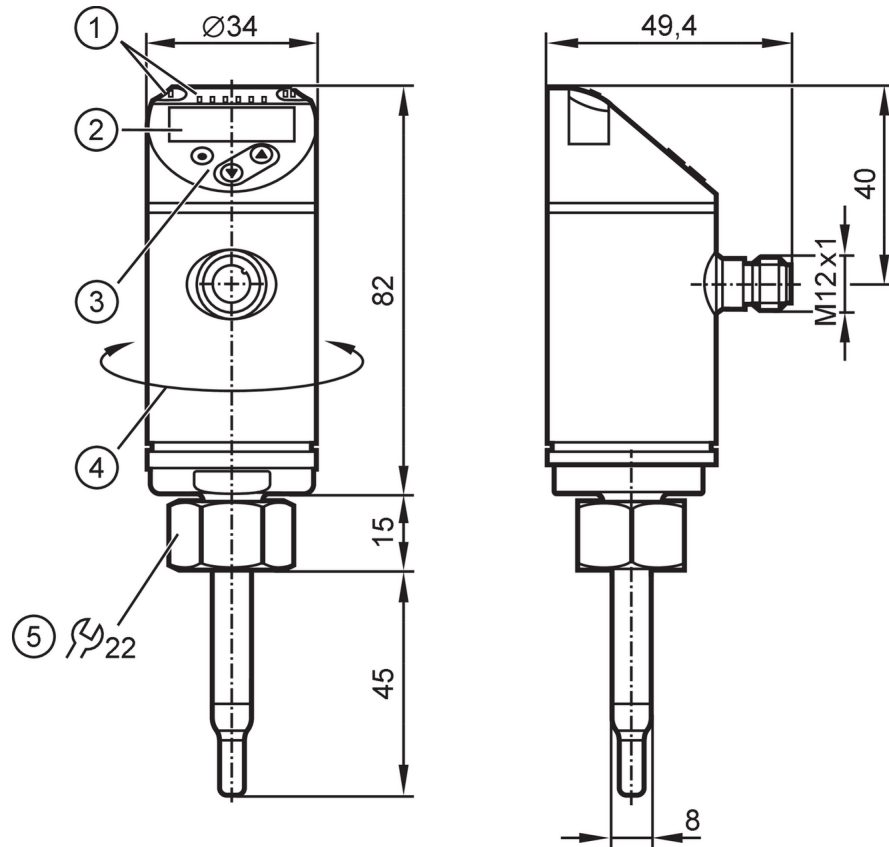


SA5000



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	
Liquids		
Measuring range	[m/s]	0.04...3
Gases		
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	100 bar	10 MPa
MAWP for applications according to CRN	[bar]	100

Electrical data

Operating voltage	[V]	18...30 DC
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SA5000



Flow sensor

SAD10XDBFRKG/US-100

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
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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

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)

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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								
Profiles		Smart Sensor - SSP 0 Generic Profiled Sensor								
	Function	Device identification								
	Function	Process data variable								
	Function	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		<table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / ModE = (REL)</td> <td>533</td> </tr> <tr> <td>ModE = (GAS)</td> <td>547</td> </tr> <tr> <td>ModE = (LIQU)</td> <td>540</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / ModE = (REL)	533	ModE = (GAS)	547	ModE = (LIQU)	540
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								
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								
Mechanical data										
Weight	[g]	257								
Housing		cylindrical								
Dimensions	[mm]	Ø 34 / L = 142								

SA5000



Flow sensor

SAD10XDBFRKG/US-100

Materials	stainless steel (316L/1.4404); stainless steel (301/1.4310); PBT-GF20; PBT-GF30	
Materials (wetted parts)	stainless steel (316L/1.4404); Gasket: FKM	
Process connection	threaded connection M18 x 1,5 internal thread	
Probe diameter [mm]	8	
Installation length EL [mm]	45	

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
	measured values	alphanumeric display, red/green 4-digit

Remarks

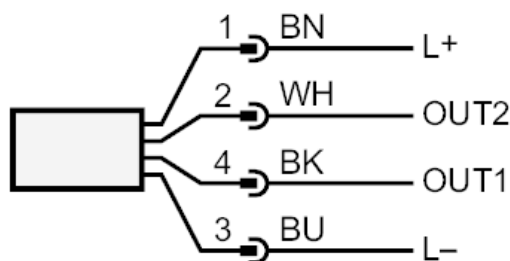
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



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