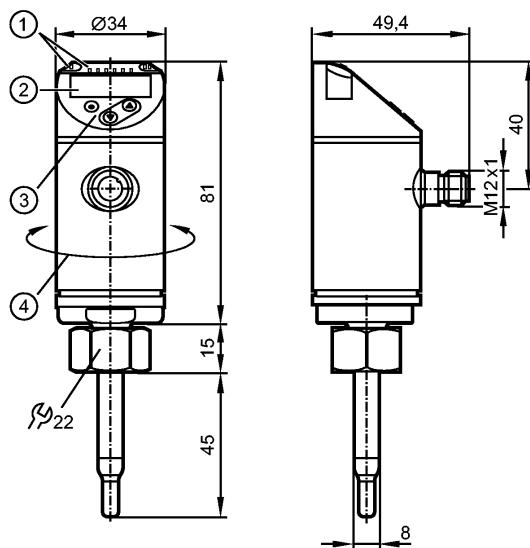


SA5000

SAD10XDBFRKG/US-100

Flow sensors



- 1: LEDs (display unit / switching status)
- 2: 4-digit alphanumeric display / alternating indication of red and green
- 3: Programming buttons
- 4: Upper part of the housing can be rotated by 345°

CE

Product characteristics

Flow sensor

M12 connector

Process connection: internal thread M18 x 1.5 for adapter

Probe length L: 45 mm

Operating modes: relative, absolutely liquid, absolutely gaseous

Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases)

Application

Application

water, glycol solutions, air, oils
 (low-viscosity oils with viscosity ≤ 40 mm²/s at 40°C;
 high-viscosity oils with viscosity > 40 mm²/s at 40°C)

Pressure rating [bar]

100

Medium temperature [°C]

-20...90

Electrical data

Electrical design

DC PNP/NPN

Operating voltage [V]

18...30 DC

Current consumption [mA]

< 100

Protection class

III

Reverse polarity protection

yes

Outputs

Output function

OUT1: normally open / normally closed programmable or frequency or IO-Link
 OUT2: normally open / normally closed programmable or frequency or analogue
 (4...20 mA scaleable)

Current rating [mA]

250

Voltage drop [V]

< 2.5

Short-circuit protection

pulsed

Overload protection

yes

Analogue output

4...20 mA

**SA5000**

SAD10XDBFRKG/US-100

Flow sensors

Max. load	[Ω]	350
Frequency range [Hz]		0...1000

Measuring / setting range

Flow monitoring		
Measuring range		0.05...3 m/s (liquids) 2...100 m/s (gases)
-		Setting range for relative mode: 0...6 m/s (liquids) and 0...200 m/s (gases)
Temperature monitoring		
Measuring range	[°C]	-20...90
Resolution	[°C]	0.2 [K]

Accuracy / deviations

Flow monitoring		
Accuracy		± (5 % MW + 2 % MEW) (value applies to water with 0.04...3 m/s flow velocity at the sensor tip; 20°C...70°C; DN25 to DIN 2448 with 1.5 m inlet length)
Temperature drift		0.003 m/s x 1/K (< 20 °C; > 70 °C)
Repeatability		0.05 m/s; Value applies to water with 0.05...3 m/s flow velocity
Max. temperature gradient of medium	[K/min]	100

Temperature monitoring		
Accuracy	[K]	± 0.3 *) ± 1 **)
Temperature drift		± 0.005 K/°C

Reaction times

Power-on delay time	[s]	10
Flow monitoring		
Response time	[s]	0.5 (T09) ***)
Temperature monitoring		
Response time	[s]	1.5 (T09) *)

Software / programming

Programming options		Hysteresis/window; NO/NC; switching logic; current / frequency output; fluid selection; damping; teach function; display can be rotated/switched off; standard unit of measurement/colour process value
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Interfaces

IO-Link device		
Transfer 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 ****)
Profiles		Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode		yes
Required master port class		A
Process data analogue		2
Process data binary		2
Min. process cycle time	[ms]	3

Environment

Ambient temperature	[°C]	-40...80
Storage temperature	[°C]	-40...100

SA5000

SAD10XDBFRKG/US-100

Protection

IP 65 / IP 67

Tests / approvals

EMC	DIN EN 61000-6-2 DIN EN 61000-6-3	
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]	180	

Mechanical data

Process connection	internal thread M18 x 1.5 for adapter
Materials (wetted parts)	stainless steel (316L / 1.4404); sealing ring: FKM
Probe length L [mm]	45
Housing materials	stainless steel (316L / 1.4404); 301 / 1.4310 (V2A); PBT-GF 20; PBT-GF 30
Weight [kg]	0.275

Displays / operating elements

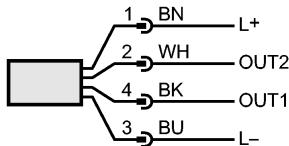
Display	Display unit 6 x LED green (%), m/s, l/min, m³/h, °C, 10³) Switching status 2 x LED yellow 4-digit alphanumeric display / alternating indication Measured values of red and green
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Electrical connection

Connection	M12 connector; Gold-plated contacts
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Wiring

Core colours	
BK	black
BN	brown
BU	blue
WH	white



Colours to DIN EN 60947-5-2

OUT1: 3 selection options

- switching output flow rate monitoring
- frequency output flow rate monitoring
- IO-Link

OUT2: 7 selection options

- switching output flow rate monitoring
- switching output temperature monitoring
- analogue output flow rate
- analogue output temperature
- frequency output flow rate monitoring
- frequency output temperature monitoring
- input "External Teach"

Remarks

Remarks	MW = measured value MEW = final value of the measuring range *) Value applies to water with 0.3...3 m/s flow velocity **) The value applies in case of air with > 10 m/s flow velocity ***) Value applies to water (other media: glycol 0.8 s; air: 7 s; oil: 1.8 s, T09 in each case) ****) The value applies if the relative mode in case of factory setting (REL) is selected, for other operating modes the following values apply: 540 d / 00 02 1ch (LIQU) 547 d / 00 02 23 h (GAS)
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**SA5000**

SAD10XDBFRKG/US-100

Flow sensors

Pack quantity

[piece]

1

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