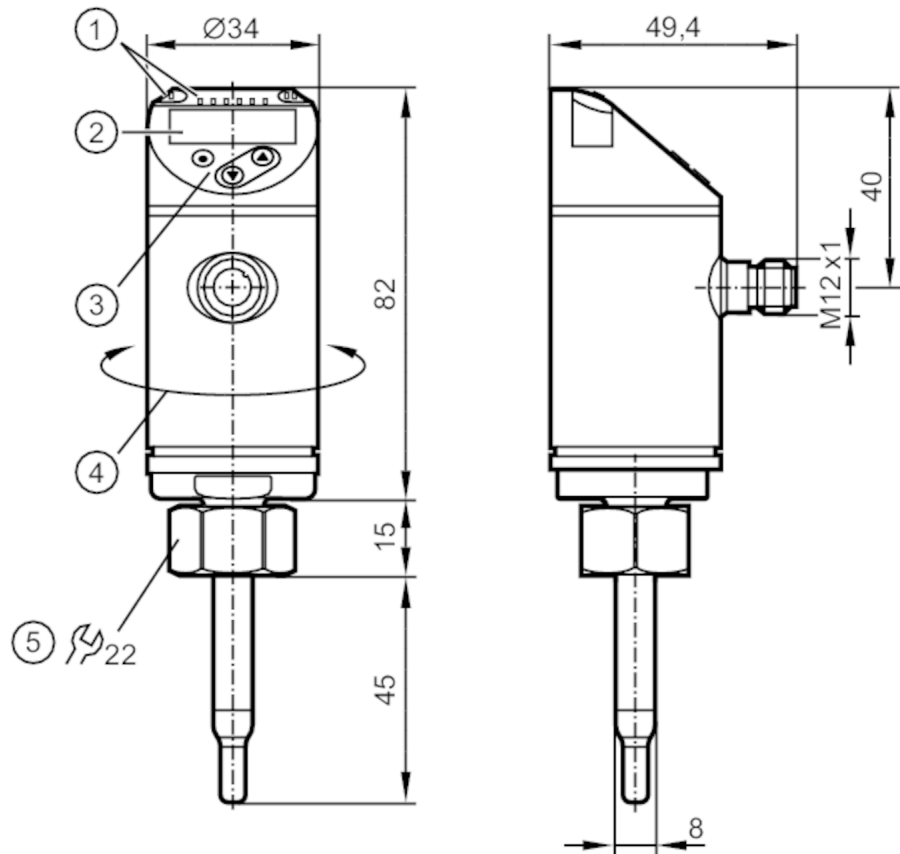


SA5020



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
Application	
Special feature	Gold-plated contacts
Installation	Recommended for pipe diameters; (15...51 mm)
Media	air
Medium temperature [°C]	-20...90
Pressure rating [bar]	100
Pressure rating [MPa]	10
MAWP (for applications according to CRN) [bar]	100
Electrical data	
Operating voltage [V]	18...30 DC; (to SELV/PELV)
Current consumption [mA]	< 100
Protection class	III
Reverse polarity protection	yes



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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 gaseous; (absolute: reference measurement recommended; Factory setting: relative)
Display range	[m/s]	0...36
Resolution	[m/s]	0.2
Set point SP	[m/s]	2...30
Reset point rP	[m/s]	0.6...28.6
Analogue start point ASP	[m/s]	0...24
Analogue end point AEP	[m/s]	6...30
Frequency end point, FEP	[m/s]	6.6...30
Frequency at the end point FRP	[Hz]	100...1000
Gases - operating mode "absolute"		
Setting range	[m/s]	0...30
Greatest sensitivity	[m/s]	0.6...30
Gases - operating mode "relative"		
Setting range	[m/s]	0...60
Greatest sensitivity	[m/s]	0.6...30
Temperature monitoring		
Measuring range	[°C]	-20...90
Resolution	[°C]	0.2



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Accuracy / deviations		
Gases - operating mode "absolute"		
Repeatability		$\pm (3 \% \text{ MW} + 0,6 \% \text{ MEW})$
Gases - operating mode "relative"		
Accuracy		$\pm (10 \% \text{ MW} + 2 \% \text{ MEW})$; (reference conditions: DN50; Inside diameter 51 mm; within the range of maximum sensitivity: 20 °C / < 6 bar; Insertion depth: 15 mm; inlet pipe length: 2.5 m; standard velocity to DIN ISO 2533 at the sensor tip)
Repeatability		$\pm (3 \% \text{ MW} + 0,6 \% \text{ MEW})$
Temperature monitoring		
Temperature drift		$\pm 0,005 \text{ K/}^\circ\text{C}$
Accuracy	[K]	$\pm 2 / + 8$; (flow velocity > 20 % VMR and 20 °C: ± 2)
Response times		
Response time	[s]	7
Temperature monitoring		
Dynamic response T05 / T09	[s]	30 (T09); (flow velocity: $\geq 10 \text{ m/s}$)
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: 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)	1237
	ModE = (ABS)	1238
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]	131
UL approval	UL Approval no.	I003
	File number UL	E174189

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Mechanical data		
Weight	[g]	309.1
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	
Displays / operating elements		
Display	Display unit	6 x LED, green (% , m/s, l/min, m³/h, °C, 10³)
	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