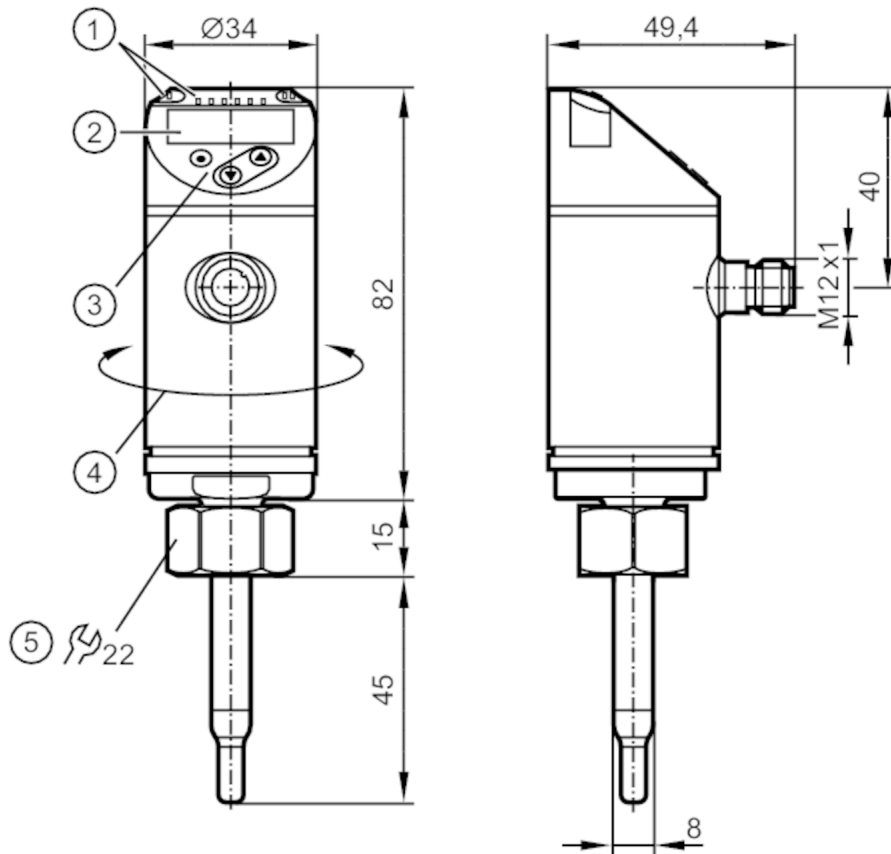


# SA5020



## 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 analog outputs: 1
Process connection	threaded connection M18 x 1,5 Internal thread

### Application

System	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

# SA5020



## Flow sensor

SAD10XDBFRKG/US-100

Power-on delay time	[s]	10
<b>Inputs / outputs</b>		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
<b>Outputs</b>		
Total number of outputs		2
Output signal		switching signal; analog signal; frequency signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC	[V]	2.5
Permanent current rating of switching output DC	[mA]	250
Number of analog outputs		1
Analog current output	[mA]	4...20; (scalable)
Max. load	[Ω]	350
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)
Overload protection		yes
Frequency of the output	[Hz]	0...1000
<b>Measuring/setting range</b>		
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
Analog start point ASP	[m/s]	0...24
Analog 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
<b>Gases - operating mode "absolute"</b>		
Setting range	[m/s]	0...30
Greatest sensitivity	[m/s]	0.6...30
<b>Gases - operating mode "relative"</b>		
Setting range	[m/s]	0...60
Greatest sensitivity	[m/s]	0.6...30
<b>Temperature monitoring</b>		
Measuring range	[°C]	-20...90
Resolution	[°C]	0.2

# SA5020



## Flow sensor

SAD10XDBFRKG/US-100

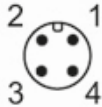
Accuracy / deviations								
Gases - operating mode "absolute"								
Repeatability		± (3 % MW + 0,6 % MEW)						
Gases - operating mode "relative"								
Accuracy		± (10 % MW + 2 % MEW); (reference conditions: DN50; Inside diameter 51 mm; within the range of maximum sensitivity: 20 °C / < 6 bar; Insertion depth: 15 mm; inlet pipe length: 2.5 m; standard velocity to DIN ISO 2533 at the sensor tip)						
Repeatability		± (3 % MW + 0,6 % MEW)						
Temperature monitoring								
Temperature drift		± 0,005 K/°C						
Accuracy	[K]	± 2 / + 8; (flow velocity > 20 % VMR and 20 °C: ± 2)						
Reaction times								
Response time	[s]	7						
Temperature monitoring								
Dynamic response T05 / T09	[s]	30 (T09); (Flow velocity: ≥ 10 m/s)						
Software / programming								
Parameter setting options		hysteresis / window; normally open / closed; switching logic; current/frequency output; medium selection; Damping; Teach function; display can be rotated and switched off; standard unit of measurement; process value color						
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 class		A						
Process data analog		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>1237</td> </tr> <tr> <td>ModE = (ABS)</td> <td>1238</td> </tr> </tbody> </table>	Type of operation	DeviceID	Factory setting / ModE = (REL)	1237	ModE = (ABS)	1238
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		<table border="1"> <tbody> <tr> <td>UL approval number</td> <td>I003</td> </tr> <tr> <td>File number UL</td> <td>E174189</td> </tr> </tbody> </table>	UL approval number	I003	File number UL	E174189		
UL approval number	I003							
File number UL	E174189							

# SA5020



## Flow sensor

SAD10XDBFRKG/US-100

Mechanical data		
Weight	[g]	309.1
Material	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	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; coding: A; Contacts: gold-plated		
		

# SA5020



## Flow sensor

SAD10XDBFRKG/US-100

### Connection



Colors 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
- analog output Volumetric flow quantity monitoring
- analog output Temperature monitoring
- Frequency output Volumetric flow quantity monitoring
- Frequency output Temperature monitoring
- Input External Teach

Core colors :

- BK = black
- BN = brown
- BU = blue
- WH = white