

SA4120



Flow sensor

SAEXXXBFRKG/US-100



- L 100 mm
- 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	Clamp fitting $\varnothing$ 8 mm

Application

System	gold-plated contacts
Installation	Recommended for pipe diameters; (15...400 mm)
Media	air
Medium temperature [°C]	-20...100
Pressure rating	50 bar 5 MPa
MAWP (for applications according to CRN) [bar]	50

Electrical data

Operating voltage [V]	18...30 DC; (to SELV/PELV)
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Current consumption	[mA]	< 100
Protection class		III
Reverse polarity protection		yes
Power-on delay time	[s]	10
Measuring principle		calorimetric

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1
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Outputs

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

Measuring/setting range

Probe length L	[mm]	100
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

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

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Temperature monitoring		
Measuring range	[°C]	-20...100
Resolution	[°C]	0.2
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	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	5 g (10...2000 Hz)

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MTTF	[years]	131
UL approval	UL approval number	I017
	File number UL	E174189

Mechanical data		
Weight	[g]	295.05
Housing		tubular
Dimensions	[mm]	Ø 8 / L = 192
Material		stainless steel (1.4404 / 316L); PBT-GF20; PBT-GF30
Materials (wetted parts)		stainless steel (1.4404 / 316L)
Process connection		Clamp fitting Ø 8 mm

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



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