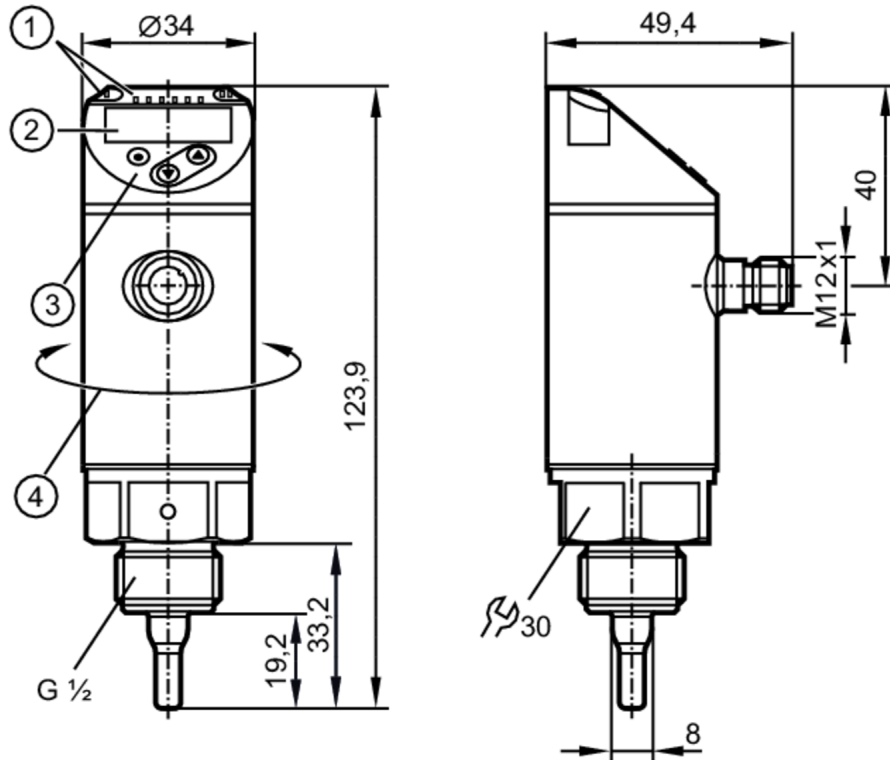


SA2000



Flow sensor

SAR12XDBFRKG/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 G 1/2 |
| 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 [bar] | 100 |
| MAWP (for applications according to CRN) [bar] | 85 |



Flow sensor

SAR12XDBFRKG/US-100

| Electrical data | | |
|---|-------|--|
| Operating voltage | [V] | 18...30 DC |
| 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 |
| 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] | 19.2 |
| 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 |



Flow sensor

SAR12XDBFRKG/US-100

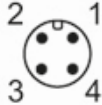
| Accuracy / deviations | | |
|----------------------------|-----------------|--|
| Flow monitoring | | |
| Temperature drift | [cm/s x 1/K] | 0,003 m/s x 1/K (< 20 °C; > 70 °C) |
| Temperature gradient | [K/min] | 100 |
| Accuracy | | ± (7 % MW + 2 % MEW); (Für Relativmodus im Bereich der größten Empfindlichkeit mit; 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) |
| 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 |
| IO-Link device ID | | 533 d / 00 02 15 h (REL) |
| 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 |
| 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 |
| Vibration resistance | | DIN EN 60068-2-6 |
| MTTF | [years] | 143 |
| UL approval | UL Approval no. | I003 |
| | File number UL | E174189 |

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Flow sensor

SAR12XDBFRKG/US-100

| Mechanical data | | |
|---|---|--|
| Weight [g] | 324 | |
| Materials | 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 G 1/2 | |
| 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 | |
| | 540 d / 00 02 1ch (LIQU) 547 d / 00 02 23 h (GAS) | |
| Pack quantity | 1 pcs. | |
| Electrical connection | | |
| Connector: 1 x M12; Contacts: gold-plated | | |
|  | | |

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Flow sensor

SAR12XDBFRKG/US-100

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 |