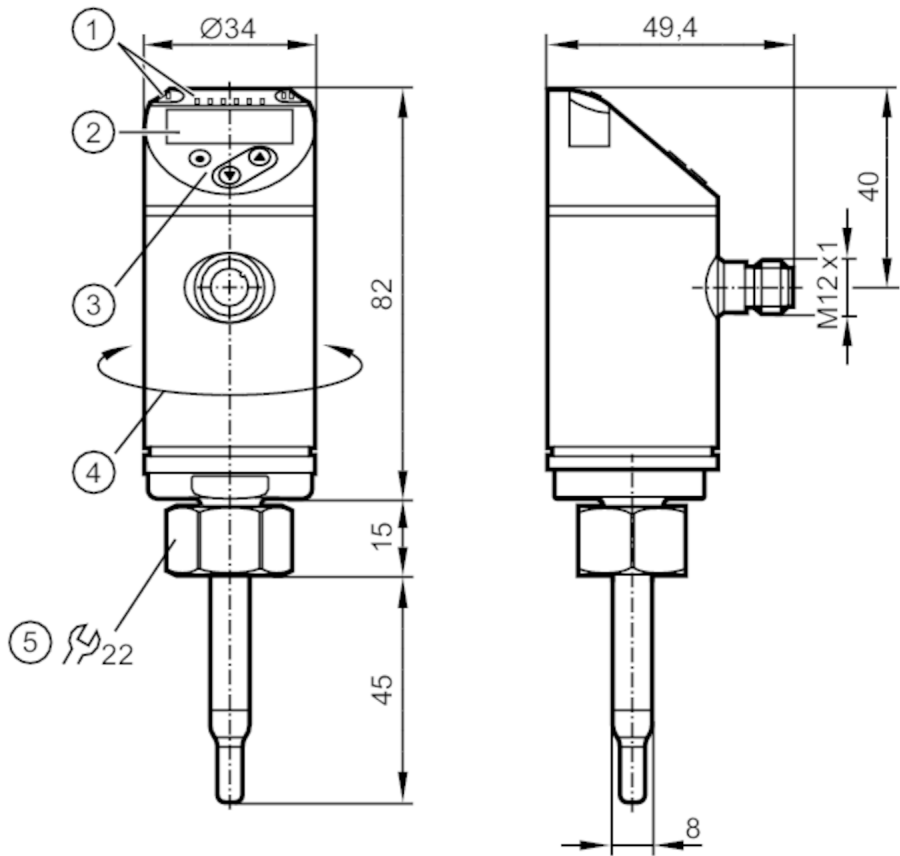


SA5014



Flow sensor

SAD10XDB50KG/US-100



- 1 LEDs Display unit
- I, II not used
- 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 analogue outputs: 2                           |            |
| Process connection                     | threaded connection M18 x 1,5 internal thread           |            |
| Application                            |                                                         |            |
| Special feature                        | Gold-plated contacts                                    |            |
| Media                                  | water; glycol solutions; air; oils                      |            |
| Note on media                          | low-viscosity oils with viscosity: ≤ 40 mm²/s (104 °F)  |            |
|                                        | high-viscosity oils with viscosity: > 40 mm²/s (104 °F) |            |
| Medium temperature                     | [°F]                                                    | -4...194   |
| Pressure rating                        | 100 bar                                                 | 10 MPa     |
| MAWP for applications according to CRN | 100 bar                                                 | 10 MPa     |
| Electrical data                        |                                                         |            |
| Operating voltage                      | [V]                                                     | 18...30 DC |
| Current consumption                    | [mA]                                                    | < 100      |
| Protection class                       |                                                         | III        |
| Reverse polarity protection            |                                                         | yes        |



## Flow sensor

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|                                               |        |                                                                                                                           |
|-----------------------------------------------|--------|---------------------------------------------------------------------------------------------------------------------------|
| Power-on delay time                           | [s]    | 10                                                                                                                        |
| Measuring principle                           |        | calorimetric                                                                                                              |
| <b>Inputs / outputs</b>                       |        |                                                                                                                           |
| Number of inputs and outputs                  |        | Number of analogue outputs: 2                                                                                             |
| <b>Outputs</b>                                |        |                                                                                                                           |
| Total number of outputs                       |        | 2                                                                                                                         |
| Output signal                                 |        | analogue signal                                                                                                           |
| Number of analogue outputs                    |        | 2                                                                                                                         |
| Analogue current output                       | [mA]   | 4...20; (scalable)                                                                                                        |
| Max. load                                     | [Ω]    | 350                                                                                                                       |
| Short-circuit protection                      |        | yes                                                                                                                       |
| Type of short-circuit protection              |        | pulsed                                                                                                                    |
| Overload protection                           |        | yes                                                                                                                       |
| <b>Measuring/setting range</b>                |        |                                                                                                                           |
| Probe length L                                | [mm]   | 45                                                                                                                        |
| Operating mode                                |        | relative; absolutely liquid; absolutely gaseous; (absolute: reference measurement recommended; Factory setting: relative) |
| <b>Liquids</b>                                |        |                                                                                                                           |
| Resolution                                    | [ft/s] | 0.05                                                                                                                      |
| Analogue start point ASP                      | [ft/s] | 0...7.95                                                                                                                  |
| Analogue end point AEP                        | [ft/s] | 1.9...9.85                                                                                                                |
| <b>Gases</b>                                  |        |                                                                                                                           |
| Resolution                                    | [ft/s] | 2                                                                                                                         |
| Analogue start point ASP                      | [ft/s] | 0...264                                                                                                                   |
| Analogue end point AEP                        | [ft/s] | 64...328                                                                                                                  |
| <b>Temperature monitoring</b>                 |        |                                                                                                                           |
| Measuring range                               | [°F]   | -4...194                                                                                                                  |
| Resolution                                    | [°F]   | 0.5                                                                                                                       |
| Analogue start point                          | [°F]   | -4...169                                                                                                                  |
| Analogue end point                            | [°F]   | 39...212                                                                                                                  |
| In steps of                                   | [°F]   | 0.5                                                                                                                       |
| <b>Liquid media - absolute operating mode</b> |        |                                                                                                                           |
| Setting range                                 | [ft/s] | 0.15...9.85                                                                                                               |
| Greatest sensitivity                          | [ft/s] | 0.15...9.85                                                                                                               |
| <b>Liquid media - relative operating mode</b> |        |                                                                                                                           |
| Setting range                                 | [ft/s] | 0.15...19.5                                                                                                               |
| Greatest sensitivity                          | [ft/s] | 0.15...9.85                                                                                                               |
| <b>Gases - operating mode "absolute"</b>      |        |                                                                                                                           |
| Setting range                                 | [ft/s] | 6...328                                                                                                                   |
| Greatest sensitivity                          | [ft/s] | 6...328                                                                                                                   |
| <b>Gases - operating mode "relative"</b>      |        |                                                                                                                           |
| Setting range                                 | [ft/s] | 6...656                                                                                                                   |



## Flow sensor

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|                                |                   |                                                                                                                                                                                                                                                                                  |
|--------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Greatest sensitivity           | [ft/s]            | 6...328                                                                                                                                                                                                                                                                          |
| <b>Accuracy / deviations</b>   |                   |                                                                                                                                                                                                                                                                                  |
| Temperature drift              | [cm/s x 1/K]      | 0,01 fps x 1/K (< 68 °F; > 158 °F)                                                                                                                                                                                                                                               |
| Temperature gradient           | [K/min]           | 100                                                                                                                                                                                                                                                                              |
| <b>Absolute operating mode</b> |                   |                                                                                                                                                                                                                                                                                  |
| Repeatability                  |                   | 0,05 m/s; (water; flow velocity: 0,05...3 m/s)                                                                                                                                                                                                                                   |
| <b>Relative operating mode</b> |                   |                                                                                                                                                                                                                                                                                  |
| Accuracy                       |                   | ± (7 % MW + 2 % MEW); (for relative mode in the range of maximum sensitivity under the following conditions:; water: 68...158 °F; inlet length: 5 ft; 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)                                                                                                                                                                                                                                   |
| <b>Temperature monitoring</b>  |                   |                                                                                                                                                                                                                                                                                  |
| Temperature drift              |                   | ± 0,003 K/°F                                                                                                                                                                                                                                                                     |
| Accuracy                       | [K]               | ± 0,3 / ± 1; (water; flow velocity: 1...9,85 fps / air; flow velocity: > 32,8 fps)                                                                                                                                                                                               |
| <b>Response times</b>          |                   |                                                                                                                                                                                                                                                                                  |
| Response time                  | [s]               | 0.5; (T09; water; glycol: 0,8 s; air: 7 s; oil: 1,8 s; each T09)                                                                                                                                                                                                                 |
| <b>Temperature monitoring</b>  |                   |                                                                                                                                                                                                                                                                                  |
| Dynamic response T05 / T09     | [s]               | 1,5 (T09); (water; flow velocity: 0,3...3 m/s)                                                                                                                                                                                                                                   |
| <b>Software / programming</b>  |                   |                                                                                                                                                                                                                                                                                  |
| Parameter setting options      |                   | medium selection; Damping; Teach function; display can be rotated and switched off; standard unit of measurement; process value colour                                                                                                                                           |
| <b>Operating conditions</b>    |                   |                                                                                                                                                                                                                                                                                  |
| Ambient temperature            | [°F]              | -40...176                                                                                                                                                                                                                                                                        |
| Storage temperature            | [°F]              | -40...212                                                                                                                                                                                                                                                                        |
| Protection                     |                   | IP 65; IP 67                                                                                                                                                                                                                                                                     |
| <b>Tests / approvals</b>       |                   |                                                                                                                                                                                                                                                                                  |
| 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]           | 179                                                                                                                                                                                                                                                                              |
| UL approval                    | UL approval no.   | I004                                                                                                                                                                                                                                                                             |
|                                | File number UL    | E174189                                                                                                                                                                                                                                                                          |
| <b>Mechanical data</b>         |                   |                                                                                                                                                                                                                                                                                  |
| Weight                         | [g]               | 278                                                                                                                                                                                                                                                                              |
| Housing                        |                   | cylindrical                                                                                                                                                                                                                                                                      |
| Dimensions                     | [mm]              | Ø 34 / L = 142                                                                                                                                                                                                                                                                   |
| 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                                                                                                                                                                                                                                    |
| Probe diameter                 | [mm]              | 8                                                                                                                                                                                                                                                                                |
| Installation length EL         | [mm]              | 45                                                                                                                                                                                                                                                                               |

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Flow sensor

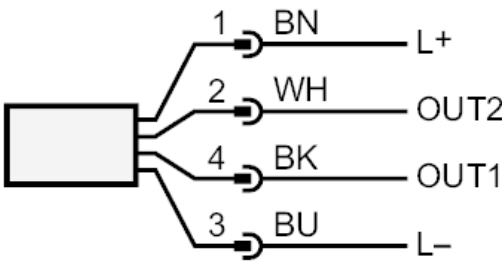
SAD10XDB50KG/US-100

| Displays / operating elements |                                          |                                                |
|-------------------------------|------------------------------------------|------------------------------------------------|
| Display                       | Display unit                             | 6 x LED, green (% , m/s, l/min, m³/h, °C, 10³) |
|                               | 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



Connection



|                               |                                                     |
|-------------------------------|-----------------------------------------------------|
| OUT1:                         | analogue output Temperature monitoring              |
| OUT2:                         | analogue output volumetric flow quantity monitoring |
| colours to DIN EN 60947-5-2 : |                                                     |
| Core colours :                |                                                     |
| BK =                          | black                                               |
| BN =                          | brown                                               |
| BU =                          | blue                                                |
| WH =                          | white                                               |