

# Flow sensor SFAH-

Part number: 8035300

FESTO



 General operating condition

## Data sheet

Overall data sheet – Individual values depend upon your configuration.

| Feature                                      | Value                                                                         |
|----------------------------------------------|-------------------------------------------------------------------------------|
| Approval                                     | RCM trademark<br>c UL us listed (OL)                                          |
| CE mark (see declaration of conformity)      | To EU EMC Directive<br>In accordance with EU RoHS Directive                   |
| UKCA marking (see declaration of conformity) | To UK instructions for EMC<br>To UK RoHS instructions                         |
| Certificate issuing authority                | UL E322346                                                                    |
| Note on materials                            | RoHS-compliant                                                                |
| Measured variable                            | Mass flow rate<br>Volumetric flow rate                                        |
| Flow direction                               | Bidirectional<br>Unidirectional                                               |
| Measuring principle                          | Thermal                                                                       |
| Measurement method                           | Heat transfer                                                                 |
| Start value for flow rate measuring range    | 0.002 l/min ... 4 l/min                                                       |
| End value for flow rate measuring range      | 0.1 l/min ... 200 l/min                                                       |
| Operating pressure                           | -0.9 bar ... 10 bar                                                           |
| Operating medium                             | Argon<br>Compressed air to ISO 8573-1:2010 [6:4:4]<br>Nitrogen                |
| Media temperature                            | 0 °C ... 50 °C                                                                |
| Ambient temperature                          | 0 °C ... 50 °C                                                                |
| Nominal temperature                          | 23 °C                                                                         |
| Accuracy of flow rate                        | ± (2% o.m.v. + 1% FS)                                                         |
| Repetition accuracy offset in ± %FS          | 0.2 %FS                                                                       |
| Repetition accuracy span in ± %FS            | 0.8 %FS                                                                       |
| Temperature coefficient span in ± %FS/K      | Typ. 0.15%FS/K                                                                |
| Pressure influence span in ± %FS/bar         | 1 %FS/b.                                                                      |
| Switching output                             | 2 x PNP or 2 x NPN, switchable                                                |
| Switching function                           | Window comparator<br>Threshold value comparator<br>Auto difference monitoring |
| Switching element function                   | N/C or N/O contact, switchable                                                |
| Max. output current                          | 100 mA                                                                        |
| Analogue output                              | 0 - 10 V<br>4 - 20 mA<br>1 - 5 V                                              |
| Flow characteristic curve start value        | -200 l/min                                                                    |

| Feature                                              | Value                                                                                                            |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| Flow characteristic curve end value                  | 200 l/min                                                                                                        |
| Max. load resistance current output                  | 500 Ohm                                                                                                          |
| Min. load resistance voltage output                  | 20 kOhm                                                                                                          |
| Short circuit current rating                         | yes                                                                                                              |
| Overload protection                                  | Available                                                                                                        |
| Protocol                                             | IO-Link®                                                                                                         |
| IO-Link, Protocol version                            | Device V 1.1                                                                                                     |
| IO-Link, Profile                                     | Smart sensor profile                                                                                             |
| IO-Link, Function classes                            | Binary data channel (BDC)<br>Process data variable (PDV)<br>Identification<br>Diagnostics<br>Teach channel       |
| IO-Link, communication mode                          | COM2 (38.4 kBaud)                                                                                                |
| IO-Link, SIO-Mode support                            | Yes                                                                                                              |
| IO-Link, Port class                                  | A                                                                                                                |
| IO-Link, Process data length IN                      | 3 bytes                                                                                                          |
| IO-Link, Process data content IN                     | 1 bit BDC (volume monitoring)<br>14 bit PDV (measured flow value)<br>2 bit BDC (flow monitoring)                 |
| IO-Link, Service data IN                             | 32-bit volume/mass measurement                                                                                   |
| IO-Link, Min. cycle time                             | 4 ms                                                                                                             |
| IO-Link, Data storage required                       | <500 Byte                                                                                                        |
| Operational voltage range DC                         | 22 V ... 26 V                                                                                                    |
| No-load supply current                               | ≤25 mA                                                                                                           |
| Reverse polarity protection                          | For all electrical connections                                                                                   |
| Electrical connection 1, connection type             | Plugs                                                                                                            |
| Electrical connection 1, connector system            | Connection pattern L1J<br>M8x1, A-coded, to EN 61076-2-104                                                       |
| Electrical connection 1, number of connections/cores | 4                                                                                                                |
| Electrical connection 1, type of mounting            | Snap-locking<br>Screw-type lock<br>Not rotatable                                                                 |
| Electrical connection 1, compatible type of mounting | Compatible with latching lock<br>Compatible with rotatable screw-type lock                                       |
| Type of mounting                                     | With accessories                                                                                                 |
| Mounting position                                    | optional                                                                                                         |
| Pneumatic connection                                 | Female thread G1/8<br>Female thread G1/4<br>For tubing O.D. 4 mm<br>For tubing O.D. 6 mm<br>For tubing O.D. 8 mm |
| Pneumatic connection, outlet direction               | Straight<br>Angled, adjustable                                                                                   |
| Product weight                                       | 60 g ... 90 g                                                                                                    |
| Material housing                                     | PA-reinforced                                                                                                    |
| Material in contact with the medium                  | NBR<br>PA-reinforced<br>Silicon<br>Silicon nitride<br>High-alloy stainless steel                                 |
| Display type                                         | Illuminated LCD, multi-colour                                                                                    |
| Displayable units                                    | g<br>g/min<br>l<br>l/h<br>l/min<br>scft<br>scft/h<br>scft/min                                                    |

| Feature                                            | Value                                                                                                                                                    |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Setting options                                    | IO-Link®<br>Teach-in<br>Via display and keys                                                                                                             |
| Protection against tampering                       | IO-Link<br>PIN code                                                                                                                                      |
| Degree of protection                               | IP40                                                                                                                                                     |
| Pressure drop                                      | 5 mbar ... 56 mbar                                                                                                                                       |
| Protection class                                   | III                                                                                                                                                      |
| Corrosion resistance class CRC                     | 2 - Moderate corrosion stress                                                                                                                            |
| LABS (PWIS) conformity                             | VDMA24364-B2-L                                                                                                                                           |
| Suitability for the production of Li-ion batteries | Suitable for battery production according to the Festo internal definition of the degree of severity F1A with restrictions regarding the use of Cu/Zn/Ni |
| Cleanroom class                                    | Class 4 according to ISO 14644-1                                                                                                                         |
| Pollution degree                                   | 3                                                                                                                                                        |