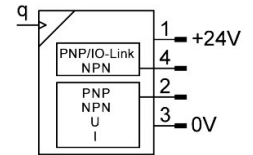


# Flow sensor SFAH-1B-Q4S-PNLK-PNVBA-M8

Part number: 8158413

**FESTO**



## Data sheet

| 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                         |
| Note on materials                            | RoHS-compliant                                                                |
| Measured variable                            | Mass flow rate<br>Volumetric flow rate                                        |
| Flow direction                               | Bidirectional                                                                 |
| Measuring principle                          | Thermal                                                                       |
| Measurement method                           | Heat transfer                                                                 |
| Start value for flow rate measuring range    | 0.02 l/min                                                                    |
| End value for flow rate measuring range      | 1 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                                                                        |

| Feature                                              | Value                                                                                                                         |
|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Analogue output                                      | 0 - 10 V<br>4 - 20 mA<br>1 - 5 V                                                                                              |
| Flow characteristic curve start value                | -1 l/min                                                                                                                      |
| Flow characteristic curve end value                  | 1 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                       | 0.5 KB                                                                                                                        |
| Operational voltage range DC                         | 22 V...26 V                                                                                                                   |
| Reverse polarity protection                          | For all electrical connections                                                                                                |
| Electrical connection 1, connection type             | Plugs                                                                                                                         |
| Electrical connection 1, connector system            | 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                                 | For tubing O.D. 4 mm                                                                                                          |
| Pneumatic connection, outlet direction               | Straight                                                                                                                      |
| Product weight                                       | 60 g                                                                                                                          |
| Material housing                                     | PA-reinforced                                                                                                                 |
| Material in contact with the medium                  | Anodised wrought aluminium alloy<br>Epoxy<br>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                                                                             |
| Setting options                                      | IO-Link®                                                                                                                      |

| Feature                                                   | Value                            |
|-----------------------------------------------------------|----------------------------------|
| Protection against tampering                              | IO-Link<br>PIN code              |
| Degree of protection                                      | IP40                             |
| Pressure drop                                             | 5 mbar                           |
| Corrosion resistance class CRC                            | 2 - Moderate corrosion stress    |
| LABS (PWIS) conformity                                    | VDMA24364-B2-L                   |
| Cleanroom suitability, measured according to ISO 14644-14 | Class 4 according to ISO 14644-1 |