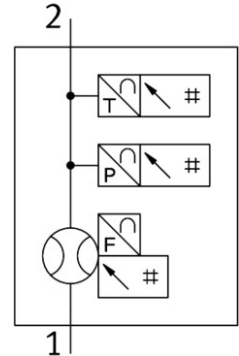
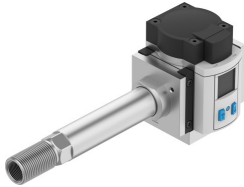


# Flow sensor SFAM-62-1000L-TG12-PNLK-PNVBA-M12

Part number: 8181244

**FESTO**



 General operating condition

## Data sheet

| Feature                                      | Value                                                                       |
|----------------------------------------------|-----------------------------------------------------------------------------|
| Symbol                                       | 00997525<br>00997562                                                        |
| Approval                                     | RCM trademark                                                               |
| 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                            | Pressure<br>Mass flow rate<br>Temperature<br>Volume<br>Volumetric flow rate |
| Flow direction                               | Unidirectional<br>From left to right                                        |
| Measuring principle                          | Thermal                                                                     |
| Measurement method                           | Heat transfer                                                               |
| Start value for pressure measuring range     | 0 MPa                                                                       |
| Start value for pressure measuring range     | 0 bar                                                                       |
| Start value for pressure measuring range     | 0 psi                                                                       |
| End value for pressure measuring range       | 1.6 MPa                                                                     |
| End value for pressure measuring range       | 16 bar                                                                      |
| End value for pressure measuring range       | 232 psi                                                                     |
| Start value for flow rate measuring range    | 10 l/min                                                                    |
| End value for flow rate measuring range      | 1000 l/min                                                                  |
| Temperature measurement start value          | 0 °C                                                                        |
| Temperature measurement end value            | 50 °C                                                                       |
| Operating pressure                           | 1.6 MPa                                                                     |
| Operating pressure                           | 16 bar                                                                      |
| Operating pressure                           | 232 psi                                                                     |
| Overload pressure                            | 2 MPa                                                                       |

| Feature                                        | Value                                                                                                                                                                                                                                                      |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Overload pressure                              | 20 bar                                                                                                                                                                                                                                                     |
| Overload pressure                              | 290 psi                                                                                                                                                                                                                                                    |
| Operating medium                               | Argon<br>Compressed air to ISO 8573-1:2010 [7:4:4]<br>Carbon dioxide<br>Nitrogen                                                                                                                                                                           |
| Media temperature                              | 0 °C ... 50 °C                                                                                                                                                                                                                                             |
| Ambient temperature                            | 0 °C ... 50 °C                                                                                                                                                                                                                                             |
| Nominal temperature                            | 23 °C                                                                                                                                                                                                                                                      |
| Accuracy of pressure value in ± %FS            | 1.5 %FS                                                                                                                                                                                                                                                    |
| Accuracy of flow rate                          | ± (3% o.m.v. + 0.3% FS)                                                                                                                                                                                                                                    |
| Accuracy temperature in ± °C                   | 5 °C                                                                                                                                                                                                                                                       |
| Repetition accuracy of pressure value in ± %FS | 0.3 %FS                                                                                                                                                                                                                                                    |
| Repetition accuracy offset in ± %FS            | 0.2 %FS                                                                                                                                                                                                                                                    |
| Repetition accuracy span in ± %FS              | 0.8 %FS                                                                                                                                                                                                                                                    |
| Temperature coefficient in ± %FS/K             | 0.05 %FS/K                                                                                                                                                                                                                                                 |
| Temperature coefficient span in ± %FS/K        | Typ. 0.1%FS/K                                                                                                                                                                                                                                              |
| Pressure influence span in ± %FS/bar           | 0.5 %FS/b.                                                                                                                                                                                                                                                 |
| Switching output                               | 2 x PNP or 2 x NPN, switchable                                                                                                                                                                                                                             |
| Switching function                             | Window comparator or threshold value comparator, adjustable                                                                                                                                                                                                |
| 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          | 0 l/min                                                                                                                                                                                                                                                    |
| Flow characteristic curve end value            | 1000 l/min                                                                                                                                                                                                                                                 |
| Temperature characteristic curve start value   | 0 °C                                                                                                                                                                                                                                                       |
| Temperature characteristic curve end value     | 100 °C                                                                                                                                                                                                                                                     |
| Output characteristic curve start value        | 0 V                                                                                                                                                                                                                                                        |
| Output characteristic curve end value          | 10 V                                                                                                                                                                                                                                                       |
| Output characteristic curve starting value     | 4 mA                                                                                                                                                                                                                                                       |
| Output characteristic curve end value          | 20 mA                                                                                                                                                                                                                                                      |
| 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, revision ID                           | V1.1                                                                                                                                                                                                                                                       |
| IO-Link, device profile                        | Firmware update<br>Function locator<br>Function Product URI<br>Function Quantity detection<br>Identification and diagnostics<br>Smart sensor - SSP 4.1.3                                                                                                   |
| IO-Link, transmission rate                     | COM3                                                                                                                                                                                                                                                       |
| IO-Link, SIO-Mode support                      | Yes                                                                                                                                                                                                                                                        |
| IO-Link, port type                             | Class A                                                                                                                                                                                                                                                    |
| IO-Link, process data length output            | 0 bit                                                                                                                                                                                                                                                      |
| IO-Link, process data length input             | 96 bit                                                                                                                                                                                                                                                     |
| IO-Link, Process data content IN               | Pressure measured value 16 bit MDC<br>Pressure monitoring 2 bit SSC<br>Flow rate measured value 16-bit MDC<br>Flow rate monitoring 2-bit SSC<br>Temperature measured value 16 bit MDC<br>Temperature monitoring 2-bit SSC<br>Volume / mass pulse 1 bit SSC |

| Feature                                              | Value                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| IO-Link, Service data IN                             | Volume/mass measured value 32 bit<br>Pneumatic energy measurement 32 bit<br>Pneumatic power measurement 32 bit            |
| IO-Link, minimum cycle time                          | 1.5 ms                                                                                                                    |
| IO-Link, Data storage required                       | 1000 Byte                                                                                                                 |
| Operational voltage range DC                         | 18 V ... 30 V                                                                                                             |
| Reverse polarity protection                          | For all electrical connections                                                                                            |
| Electrical connection 1, connection type             | Plugs                                                                                                                     |
| Electrical connection 1, connector system            | M12x1, A-coded to EN 61076-2-101                                                                                          |
| Electrical connection 1, number of connections/cores | 5                                                                                                                         |
| Electrical connection 1, type of mounting            | Screw-type lock                                                                                                           |
| Electrical connection 1, compatible type of mounting | Compatible with rotatable screw-type lock                                                                                 |
| Electrical connection 1, connection pattern          | 00995386                                                                                                                  |
| Max. cable length                                    | 20 m with IO-Link® operation<br>30 m                                                                                      |
| Type of mounting                                     | In-line installation                                                                                                      |
| Mounting position                                    | optional                                                                                                                  |
| Pneumatic connection                                 | G1/2                                                                                                                      |
| Product weight                                       | 600 g                                                                                                                     |
| Material housing                                     | Die-cast aluminium<br>PA-reinforced                                                                                       |
| Display type                                         | Illuminated LCD, multi-colour                                                                                             |
| Displayable units                                    | MPa<br>bar<br>kPa<br>kg<br>kg/min<br>l<br>l/min<br>m <sup>3</sup><br>m <sup>3</sup> /h<br>psi<br>scfm<br>scft<br>°C<br>°F |
| Setting options                                      | IO-Link®<br>Teach-in<br>Via display and keys                                                                              |
| Protection against tampering                         | IO-Link<br>PIN code                                                                                                       |
| Setting range threshold value                        | 0 % ... 100 %                                                                                                             |
| Setting range hysteresis                             | 0 % ... 90 %                                                                                                              |
| Degree of protection                                 | IP65                                                                                                                      |
| Pressure drop                                        | <100 mbar                                                                                                                 |
| Protection class                                     | III                                                                                                                       |
| Corrosion resistance class CRC                       | 2 - Moderate corrosion stress                                                                                             |
| LABS (PWIS) conformity                               | VDMA24364-B1/B2-L                                                                                                         |