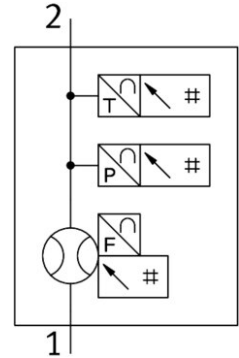


# Flow sensor SFAM-62-1000L-M-PNLK-PNVBA-M12

Part number: 8181241

**FESTO**



 [General operating condition](#)

## Data sheet

| Feature                                      | Value                                                                       |
|----------------------------------------------|-----------------------------------------------------------------------------|
| Symbol                                       | 00997525<br>00997562                                                        |
| Certification                                | RCM compliance mark                                                         |
| CE marking (see declaration of conformity)   | As per EU EMC directive<br>As per 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                                                                     |
| Method of measurement                        | Heat transfer                                                               |
| Pressure measuring range initial value       | 0 MPa                                                                       |
| Pressure measuring range initial value       | 0 bar                                                                       |
| Pressure measuring range initial value       | 0 psi                                                                       |
| Pressure measuring range end value           | 1.6 MPa                                                                     |
| Pressure measuring range end value           | 16 bar                                                                      |
| Pressure measuring range end value           | 232 psi                                                                     |
| Flow measuring range start value             | 10 l/min                                                                    |
| Flow measuring range end value               | 1000 l/min                                                                  |
| Temperature measuring range start value      | 0 °C                                                                        |
| Temperature measuring range 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                               | Compressed air as per ISO 8573-1:2010 [7:4:4]<br>Carbon dioxide<br>Nitrogen                                                                                                                                                                                 |
| Temperature of medium                          | 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 of temperature in ± °C                | 5 °C                                                                                                                                                                                                                                                        |
| Repetition accuracy of pressure value in ± %FS | 0.3 %FS                                                                                                                                                                                                                                                     |
| Zero point repetition accuracy in ± %FS        | 0.2 %FS                                                                                                                                                                                                                                                     |
| Repetition accuracy margin in ± %FS            | 0.8 %FS                                                                                                                                                                                                                                                     |
| Temperature co-efficient in ± %FS/K            | 0.05 %FS/K                                                                                                                                                                                                                                                  |
| Temperature co-efficient margin in ± %FS/K     | typ. 0. 1%FS/K                                                                                                                                                                                                                                              |
| Pressure influence of margin 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 contact/N/O contact switchable                                                                                                                                                                                                                          |
| Max. output current                            | 100 mA                                                                                                                                                                                                                                                      |
| Analog 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 initial value      | 0 V                                                                                                                                                                                                                                                         |
| End value output characteristic curve          | 10 V                                                                                                                                                                                                                                                        |
| Output characteristic curve initial value      | 4 mA                                                                                                                                                                                                                                                        |
| End value output characteristic curve          | 20 mA                                                                                                                                                                                                                                                       |
| Max. load resistance of current output         | 500 Ohm                                                                                                                                                                                                                                                     |
| Min. load resistance of voltage output         | 20 kOhm                                                                                                                                                                                                                                                     |
| Short-circuit protection                       | 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 diagnosis<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>Flow rate 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 contents IN                    | Volume / mass measured value 32-bit<br>Pneumatic energy measurement 32 bit<br>Pneumatic power measurement value 32 bit    |
| IO-Link®, minimum cycle time                          | 1.5 ms                                                                                                                    |
| IO-Link®, data memory required                        | 1000 byte                                                                                                                 |
| DC operating voltage range                            | 18 V ... 30 V                                                                                                             |
| Reverse polarity protection                           | for all electrical connections                                                                                            |
| Electrical connection 1, connection type              | Plug                                                                                                                      |
| Electrical connection 1, connection technology        | M12x1 A-coded as per EN 61076-2-101                                                                                       |
| Electrical connection 1, number of pins/wires         | 5                                                                                                                         |
| Electrical connection 1, type of mounting             | Screw-type lock                                                                                                           |
| Electrical connection 1, type of mounting             | Compatible with screw lock rotatable                                                                                      |
| Electrical connection for input 1, connection pattern | 00995386                                                                                                                  |
| Max. cable length                                     | 20 m for IO-Link® operation<br>30 m                                                                                       |
| Type of mounting                                      | On service unit                                                                                                           |
| Mounting position                                     | Any                                                                                                                       |
| Pneumatic connection                                  | Battery module                                                                                                            |
| Product weight                                        | 600 g                                                                                                                     |
| Housing material                                      | Die-cast aluminum<br>PA-reinforced                                                                                        |
| Display type                                          | Illuminated LCD, multi-color                                                                                              |
| Displayable unit(s)                                   | 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 pushbuttons                                                                       |
| 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                                                                                                         |