

# Pressure sensor SPAF-

Part number: 8181300

**FESTO**



## Data sheet

| Feature                                      | Value                                                                                                    |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------|
| 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                            | Relative pressure                                                                                        |
| Measurement method                           | Piezoresistive pressure sensor                                                                           |
| Start value for pressure measuring range     | -0.1 MPa<br>-1 bar<br>-14.5 psi                                                                          |
| End value for pressure measuring range       | 1 MPa<br>10 bar<br>145 psi                                                                               |
| Overload pressure                            | 1.5 MPa<br>15 bar<br>217.5 psi                                                                           |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]<br>Inert gases                                                 |
| Note on operating and pilot medium           | Ester oil < 0.1mg/m <sup>3</sup> , according to ISO 8573-1:2010 [---:2]<br>Lubricated operation possible |
| Media temperature                            | 0 °C...50 °C                                                                                             |
| Ambient temperature                          | 0 °C...50 °C                                                                                             |
| Accuracy in ± % FS                           | 1.5 %FS                                                                                                  |
| Repetition accuracy in ± %FS                 | 0.3 %FS                                                                                                  |
| Temperature coefficient in ± %FS/K           | 0.05 %FS/K                                                                                               |
| Switching output                             | PNP/NPN, switchable                                                                                      |
| Switching function                           | Window comparator<br>Threshold value comparator<br>Threshold value with variable hysteresis              |
| Switching element function                   | N/C or N/O contact, switchable                                                                           |
| Switch-on time                               | 3 ms                                                                                                     |
| Switch-off time                              | 3 ms                                                                                                     |
| Max. output current                          | 100 mA                                                                                                   |

| Feature                                              | Value                                                                                                                  |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Analogue output                                      | 0 - 10 V<br>1 - 5 V                                                                                                    |
| Output characteristic curve start value              | 0 V                                                                                                                    |
| Output characteristic curve end value                | 10 V                                                                                                                   |
| Accuracy analogue output in $\pm$ %FS                | 1.5 %FS                                                                                                                |
| Linearity error in $\pm$ %FS                         | 0.3 %FS                                                                                                                |
| Rise time                                            | 6 ms                                                                                                                   |
| Min. load resistance voltage output                  | 20 kOhm                                                                                                                |
| Display range start value                            | 0 %FS                                                                                                                  |
| Display range end value                              | 100 %FS                                                                                                                |
| Short circuit current rating                         | yes                                                                                                                    |
| 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>Smart sensor - SSP 4.1.1 |
| 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                   | 32 bit                                                                                                                 |
| IO-Link, Process data content IN                     | Pressure measured value 16 bit MDC<br>Pressure monitoring 2 bit SSC                                                    |
| IO-Link, Service data IN                             | Temperature 16 bit                                                                                                     |
| IO-Link, minimum cycle time                          | 0.9 ms                                                                                                                 |
| IO-Link, Data storage required                       | 0.5 KB                                                                                                                 |
| Operational voltage range DC                         | 15 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<br>M8x1, A-coded, to EN 61076-2-104                                                   |
| Electrical connection 1, number of connections/cores | 3 ...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                                             |
| Material connector housing                           | Nickel-plated brass                                                                                                    |
| Type of mounting                                     | Either:<br>Via male thread<br>With accessories                                                                         |
| Mounting position                                    | optional                                                                                                               |
| Pneumatic connection                                 | Male thread G1/8<br>QS-4<br>QS-6                                                                                       |
| Product weight                                       | 30 g...45 g                                                                                                            |
| Material housing                                     | PA-reinforced                                                                                                          |
| Material in contact with the medium                  | Stainless steel<br>NBR<br>PA-reinforced                                                                                |
| Display type                                         | Illuminated LCD blue<br>LED indicator                                                                                  |
| Ready status indication                              | Green LED                                                                                                              |
| Degree of protection                                 | IP65                                                                                                                   |
| Corrosion resistance class CRC                       | 2 - Moderate corrosion stress                                                                                          |
| LABS (PWIS) conformity                               | VDMA24364-B1/B2-L                                                                                                      |

| Feature                                            | Value                                                                                                                                                    |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitability for the production of Li-ion batteries | Metals with more than 1% by mass of copper are excluded from use.<br>Exceptions are printed circuit boards, cables, electrical plug connectors and coils |
| Cleanroom class                                    | Class 4 according to ISO 14644-1                                                                                                                         |