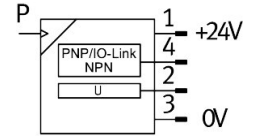


# Pressure sensor SPAF-B11R-Q4-L-PNLK-VB-M12

Part number: 8181232

**FESTO**



## Data sheet

| Feature                                      | Value                                                                                                             |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| 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                            | Relative pressure                                                                                                 |
| Method of measurement                        | Piezoresistive pressure sensor                                                                                    |
| Pressure measuring range initial value       | -0.1 MPa<br>-1 bar<br>-14.5 psi                                                                                   |
| Pressure measuring range end value           | 1 MPa<br>10 bar<br>145 psi                                                                                        |
| Overload pressure                            | 1.5 MPa<br>15 bar<br>217.5 psi                                                                                    |
| Operating medium                             | Compressed air as per ISO 8573-1:2010 [7:4:4]<br>Inert gas                                                        |
| Information on operating and pilot media     | Ester oil < 0.1mg/m <sup>3</sup> , according to ISO 8573-1:2010 [:-:2]<br>Operation with oil lubrication possible |
| Temperature of medium                        | 0 °C...50 °C                                                                                                      |
| Ambient temperature                          | 0 °C...50 °C                                                                                                      |
| Accuracy in ± % FS                           | 1.5 %FS                                                                                                           |
| Repetition accuracy in ± %FS                 | 0.3 %FS                                                                                                           |
| Temperature co-efficient 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 contact/N/O contact switchable                                                                                |
| On time                                      | 3 ms                                                                                                              |
| Switch-off time                              | 3 ms                                                                                                              |
| Max. output current                          | 100 mA                                                                                                            |

| Feature                                        | Value                                                                                                                  |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Analog output                                  | 0 - 10 V<br>1 - 5 V                                                                                                    |
| Output characteristic curve initial value      | 0 V                                                                                                                    |
| End value output characteristic curve          | 10 V                                                                                                                   |
| Precision analog output in $\pm$ %FS           | 1.5 %FS                                                                                                                |
| Linearity error in $\pm$ % FS                  | 0.3 %FS                                                                                                                |
| Rise time                                      | 6 ms                                                                                                                   |
| Min. load resistance of voltage output         | 20 kOhm                                                                                                                |
| Display range start value                      | 0 %FS                                                                                                                  |
| Display range end value                        | 100 %FS                                                                                                                |
| Short-circuit protection                       | 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>Flow rate monitoring 2-bit SSC                                                   |
| IO-Link®, service data contents IN             | Temperature 16 bit                                                                                                     |
| IO-Link®, minimum cycle time                   | 0.9 ms                                                                                                                 |
| IO-Link®, data memory required                 | 0.5 KB                                                                                                                 |
| DC operating voltage range                     | 15 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  | 4                                                                                                                      |
| Electrical connection 1, type of mounting      | Screw-type lock<br>not rotatable<br>Compatible with screw lock rotatable                                               |
| Material of plug housing                       | Brass, nickel-plated                                                                                                   |
| Type of mounting                               | With accessories                                                                                                       |
| Mounting position                              | Any                                                                                                                    |
| Pneumatic connection                           | QS-4                                                                                                                   |
| Product weight                                 | 30 g                                                                                                                   |
| Housing material                               | PA-reinforced                                                                                                          |
| Materials in contact with the media            | Stainless steel<br>NBR<br>PA-reinforced                                                                                |
| Display type                                   | Illuminated LCD blue                                                                                                   |
| Displayable unit(s)                            | MPa<br>bar<br>kPa<br>psi                                                                                               |
| Ready status indication                        | through backlighting                                                                                                   |
| 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 %                                                                                                            |

| Feature                                            | Value                                                                                                                                              |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Setting range hysteresis                           | 0 %...90 %                                                                                                                                         |
| Degree of protection                               | IP65                                                                                                                                               |
| Corrosion resistance class (CRC)                   | 2 - Moderate corrosion stress                                                                                                                      |
| LABS (PWIS) conformity                             | VDMA24364-B1/B2-L                                                                                                                                  |
| Suitability for the production of Li-ion batteries | Metals with more than 1% by mass of copper are excluded from use.<br>Exception are printed circuit boards, cables, electrical connectors and coils |
| Cleanroom class                                    | Class 4 according to ISO 14644-1                                                                                                                   |