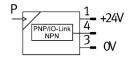
## **Pressure sensor** SPAF-B11R-Q6-N-PNLK-M12 Part number: 8181217

**FESTO** 





## **Data sheet**

Feature	Value
Certification	RCM compliance mark
CE marking (see declaration of conformity)	As per EU EMC directive As per EU RoHS directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC 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 -1 bar -14.5 psi
Pressure measuring range end value	1 MPa 10 bar 145 psi
Overload pressure	1.5 MPa 15 bar 217.5 psi
Operating medium	Compressed air as per ISO 8573-1:2010 [7:4:4] Inert gas
Information on operating and pilot media	Ester oil < 0.1mg/m³, according to ISO 8573-1:2010 [-:-:2] Operation with oil lubrication possible
Temperature of medium	0 ℃50 ℃
Ambient temperature	0 ℃50 ℃
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 Threshold value comparator 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
Short-circuit protection	yes

O-Link, revision ID	Feature	Value
Firmware update   Firmware u	Protocol	IO-Link®
Function Locator Function Quantity detection Smart Sensor · SSP 4.1.1  OLink, transmission rate  OLink, port type  OLink, port type  OLink, process data length output  OLink, port sess data length output  OLink, port sess data length input  OLink, port sess data length input  OLink, port sess data length input  OLink, porcess data contents IN  I emperature 16 bit  OLink, port sess data contents IN  I emperature 16 bit  OLink, minimum cycle time  O.9 ms  OLink, data memory required  O.5 KB  OLink, data memory required  O.5 KB  OLink, data memory required  O.5 KB  Con perarting voltage range  Reverse polarity protection  for all electrical connections  Electrical connection 1, connection type  Plug  Electrical connection 1, connection tethnology  M12x1 A-coded as per EN 61076-2-101  Electrical connection 1, type of mounting  Screw-type lock not rotatable  Material of plug housing  Brass, nicked plated  Mumming position  Any  Preumatic connection  OS-6  Product weight  OS-6  Product weight  Prevention in connection  Display type  LED display  ELD	IO-Link, revision ID	V1.1
Ves	IO-Link, device profile	Function Locator Function Product URI Function Quantity detection
Class A	IO-Link, transmission rate	COM3
10-Link, process data length output   0 bit	IO-Link®, SIO mode support	Yes
10-Link, process data length input   32 bit   Pressure measured value 16 bit MDC   Flow rate monitoring 2-bit SSC   10-Link®, process data content IN   Pressure measured value 16 bit MDC   Flow rate monitoring 2-bit SSC   10-Link®, service data contents IN   Temperature 16 bit   10-Link®, minimum cycle time   0.9 ms   10-Link®, data memory required   0.5 KB   10-Link®, data memory required   0.5 KB   15 V30 V   15	IO-Link, port type	Class A
Pressure measured value 16 bit MDC   Flow rate monitoring 2-bit SSC	IO-Link, process data length output	0 bit
Flow rate monitoring 2-bit SSC	IO-Link, process data length input	32 bit
10-Link®, minimum cycle time   0.9 ms   0.5 kB     10-Link®, data memory required   0.5 kB     10-Link®, data memory required   0.5 kB     10-Link® reaches   15 V30 V     10-Link® reaches   15 V30 V     10-Link® reaches   15 V30 V     10-Link® reaches   10-Link® reaches   10-Link® reaches   10-Link® residuation   10-Link® reaches   10-Link® residuation	IO-Link®, process data content IN	
DC Link®, data memory required DC operating voltage range 15 V30 V Reverse polarity protection Electrical connection 1, connection type Electrical connection 1, connection technology Electrical connection 1, number of pins/wires Electrical connection 1, type of mounting Electrical connection 2, so the mounting Electrical El	IO-Link®, service data contents IN	Temperature 16 bit
DC operating voltage range  15 V30 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 not rotatable Compatible with screw lock rotatable  Material of plug housing  Brass, nickel-plated  Type of mounting  With accessories  Mounting position  Any  Preumatic connection  QS-6  Product weight  30 8  Housing material  PA-reinforced  Materials in contact with the media  Stainless steel NBR PA-reinforced  Display type  LED display  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  To-Link®  Teach-in  Protection against tampering  IO-Link®  Setting range threshold value  O %100 %  Degree of protection  LABS (PWIS) conformity  VDMA24364-81/B2-L  Suitability for the production of Li-ion batteries  Materials in reprinted circuit boards, cables, electrical connectors and coils	IO-Link®, minimum cycle time	0.9 ms
Reverse polarity protection Electrical connection 1, connection type Plug 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 not rotatable Compatible with screw lock rotatable Material of plug housing Brass, nickel-plated Type of mounting With accessories Mounting position Any Preumatic connection QS-6 Product weight 30 g Housing material PA-reinforced  Materials in contact with the media Stainless steel NBR PA-reinforced Display type LED display Ready status indication LED green Switching status indication LED green Feach-in Protection against tampering IO-Link® Setting ange threshold value 0 %100 % Setting range threshold value 0 %100 % Degree of protection Corrosion resistance class (CRC) 2 - Moderate corrosion stress LABS (PWIS) conformity VDMA24364-B1/B2-L Suitability for the production of Li-ion batteries Electrical connections Acceptable with acceptable as per EN 61076-2-101  M12x1 A-coded as per EN 61076-2-101  M12x1 A-coded as per EN 61076-2-101  Acceptable with screw lock rotatable  Screw-type lock not rotatable Corrosion resistance class (CRC) 2 - Moderate corrosion stress VDMA24364-B1/B2-L Suitability for the production of Li-ion batteries Electrical connections Corrosion reprinted circuit boards, cables, electrical connectors and coils	IO-Link®, data memory required	0.5 KB
Electrical connection 1, connection type Electrical connection 1, connection technology Electrical connection 1, number of pins/wires  4 Electrical connection 1, type of mounting or totatable Compatible with screw lock rotatable Electrical of plug housing  Brass, nickel-plated With accessories  Mounting position  Any  Pneumatic connection  QS-6  Product weight  30 g  PA-reinforced  Stainless steel NRR PA-reinforced  Stainless steel NRR PA-reinforced  Display type  ED display EED green  Switching status indication  EED green  Switching status indication  EED yellow  Setting options  10-Link® Teach-in  Protection against tampering  10-Link® Setting range threshold value  0 %100 %  Setting range hysteresis  0 %90 %  Degree of protection  IP65  Corrosion resistance class (CRC)  2 - Moderate corrosion stress  LABS (PWIS) conformity  VDMA24364-B1/B2-L  Metals with more than 1% by mass of copper are excluded from use, Exception are printed circuit boards, cables, electrical connectors and coils	DC operating voltage range	15 V30 V
Electrical connection 1, connection technology  Electrical connection 1, number of pins/wires  4  Electrical connection 1, type of mounting  Screw-type lock not rotatable Compatible with screw lock rotatable Brass, nickel-plated  Type of mounting  With accessories  Mounting position  Any  Pneumatic connection  QS-6  Product weight  Housing material  Materials in contact with the media  Stainless steel NBR PA-reinforced  Brass, rickel plated  PA-reinforced  Stainless steel NBR PA-reinforced  Stainless steel NBR PA-reinforced  LED green  Switching status indication  LED yellow  Setting range threshold value  Setting range threshold value  O %100 %  Setting range hysteresis  O %90 %  Degree of protection  Corrosion resistance class (CRC)  2 - Moderate corrosion stress  Metals with more than 1% by mass of copper are excluded from use, Exception are printed circuit boards, cables, electrical connectors and coils	Reverse polarity protection	for all electrical connections
Electrical connection 1, number of pins/wires  Electrical connection 1, type of mounting  Screw-type lock not rotatable Compatible with screw lock rotatable Embedding of plug housing  Brass, nickel-plated  Type of mounting  With accessories  Mounting position  Any  Premutatic connection  QS-6  Product weight  Housing material  PA-reinforced  Materials in contact with the media  Stainless steel NBR PA-reinforced  Display type  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Feach-in  Protection against tampering  Setting range threshold value  O %100 %  Setting range hysteresis  O %90 %  Degree of protection  LP65  Corrosion resistance class (CRC)  2 - Moderate corrosion stress  Metals with more than 1% by mass of copper are excluded from use. Exception are printed circuit boards, cables, electrical connectors and coils	Electrical connection 1, connection type	Plug
Electrical connection 1, type of mounting  Screw-type lock not rotatable Compatible with screw lock rotatable Brass, nickel-plated Type of mounting With accessories Mounting position Any Pneumatic connection QS-6 Product weight 30 g Housing material PA-reinforced Materials in contact with the media Stainless steel NBR PA-reinforced Display type LED display Ready status indication LED green Switching status indication LED yellow Setting options IO-Link® Teach-in Protection against tampering Setting range threshold value O %100 % Setting range hysteresis O %90 % Degree of protection LABS (PWIS) conformity VDMA24364-B1/B2-L Suitability for the production of Li-ion batteries With accessories Any With accessories Any With accessories With accessories With accessories Any Wit	Electrical connection 1, connection technology	M12x1 A-coded as per EN 61076-2-101
In not rotatable Compatible with screw lock rotatable Material of plug housing Mounting Mounting position Any Pneumatic connection Product weight Housing material Materials in contact with the media Materials with accessories Exception are printed circuit boards, cables, electrical connectors and coils	Electrical connection 1, number of pins/wires	4
Mounting position Any Pneumatic connection QS-6 Product weight Brown at Phareinforced Materials in contact with the media Materials in contact with a contact with the media Materials in contact with in media Materials with more than 1% by mass of copper are excluded from use. Exception are printed circuit boards, cables, electrical connectors and coils	Electrical connection 1, type of mounting	not rotatable
Mounting position  Any Pneumatic connection  QS-6 Product weight  Housing material  PA-reinforced  Materials in contact with the media  Stainless steel NBR PA-reinforced  Display type  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in Protection against tampering  Setting range threshold value  Setting range hysteresis  Degree of protection  Degree of protection  Corrosion resistance class (CRC)  LABS (PWIS) conformity  Metals with more than 1% by mass of copper are excluded from use. Exception are printed circuit boards, cables, electrical connectors and coils	Material of plug housing	Brass, nickel-plated
Pneumatic connection  QS-6  Product weight  Housing material  PA-reinforced  Materials in contact with the media  Stainless steel NBR PA-reinforced  Display type  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  Setting range threshold value  Setting range hysteresis  Degree of protection  Corrosion resistance class (CRC)  LABS (PWIS) conformity  Metals with more than 1% by mass of copper are excluded from use. Exception are printed circuit boards, cables, electrical connectors and coils	Type of mounting	With accessories
Product weight Housing material PA-reinforced Materials in contact with the media Stainless steel NBR PA-reinforced Display type LED display Ready status indication LED green Switching status indication LED yellow Setting options IO-Link® Teach-in Protection against tampering IO-Link® Setting range threshold value O %100 % Setting range hysteresis O %90 % Degree of protection IP65 Corrosion resistance class (CRC) 2 - Moderate corrosion stress LABS (PWIS) conformity WDMA24364-B1/B2-L Suitability for the production of Li-ion batteries Metals with more than 1% by mass of copper are excluded from use. Exception are printed circuit boards, cables, electrical connectors and coils	Mounting position	Any
Housing material  Materials in contact with the media  Stainless steel NBR PA-reinforced  Display type  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  0 %100 %  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. Exception are printed circuit boards, cables, electrical connectors and coils	Pneumatic connection	QS-6
Materials in contact with the media  Stainless steel NBR PA-reinforced  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  O %100 %  Setting range hysteresis  O %90 %  Degree of protection  LP65  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. Exception are printed circuit boards, cables, electrical connectors and coils	Product weight	30 g
NBR PA-reinforced  Display type  LED display  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  O %100 %  Setting range hysteresis  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. Exception are printed circuit boards, cables, electrical connectors and coils	Housing material	PA-reinforced
Display type  Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  O %100 %  Setting range hysteresis  O %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. Exception are printed circuit boards, cables, electrical connectors and coils	Materials in contact with the media	NBR
Ready status indication  LED green  Switching status indication  LED yellow  Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  O %100 %  Setting range hysteresis  O %90 %  Degree of protection  IP65  Corrosion resistance class (CRC)  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. Exception are printed circuit boards, cables, electrical connectors and coils	Display type	
Switching status indication  LED yellow  IO-Link® Teach-in  Protection against tampering  IO-Link® Setting range threshold value  O %100 %  Setting range hysteresis  O %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. Exception are printed circuit boards, cables, electrical connectors and coils		
Setting options  IO-Link® Teach-in  Protection against tampering  IO-Link®  Setting range threshold value  O %100 %  Setting range hysteresis  O %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. Exception are printed circuit boards, cables, electrical connectors and coils		<u> </u>
Setting range threshold value  0 %100 %  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. Exception are printed circuit boards, cables, electrical connectors and coils	Setting options	IO-Link®
Setting range threshold value  0 %100 %  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. Exception are printed circuit boards, cables, electrical connectors and coils	Protection against tampering	IO-Link®
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. Exception are printed circuit boards, cables, electrical connectors and coils	Setting range threshold value	
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.  Exception are printed circuit boards, cables, electrical connectors and coils	Setting range hysteresis	0 %90 %
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.  Exception are printed circuit boards, cables, electrical connectors and coils	Degree of protection	IP65
Suitability for the production of Li-ion batteries  Metals with more than 1% by mass of copper are excluded from use.  Exception are printed circuit boards, cables, electrical connectors and coils	Corrosion resistance class (CRC)	2 - Moderate corrosion stress
Exception are printed circuit boards, cables, electrical connectors and coils	LABS (PWIS) conformity	VDMA24364-B1/B2-L
Cleanroom class Class 4 according to ISO 14644-1	Suitability for the production of Li-ion batteries	Exception are printed circuit boards, cables, electrical connectors and
	Cleanroom class	Class 4 according to ISO 14644-1