

Pressure sensors SPAU



Pressure sensors SPAU

Key features

At a glance

Product description

The pressure sensor SPAU is suitable for monitoring compressed air and non-corrosive gases. The variant with display offers the option of reading the pressure and setting values on-site. The pressure value is transmitted to the connected control system as a switching signal, as an analogue signal or via IO-Link.

The pressure sensor without display transmits the pressure value to the connected control system as an analogue signal. Display of the pressure and parameterisation of the sensor are provided centrally, e.g. via a display forming part of a machine control system. The pressure sensor can be parameterised using IO-Link as a tamper-proof pressure switch without display with up to two switching outputs.



Areas of application

- Network monitoring (pressure present)
- Regulator monitoring (pressure in the target area)
- Vacuum (partial suction)
- Air-pressure test (pressure drop over time)
- Object detection (back pressure present)

Product benefits

An assembly concept with short assembly times that is easy to implement in all installation situations. Female/male thread or QuickStar connection – the perfect pneumatic adapter for every application.

Assembly:

- Threaded mounting
- H-rail mounting
- Front panel mounting
- Mounting bracket
- Wall mounting

Electronic components:

- Maximum versatility and reduced warehousing owing to switchable electrical outputs (PNP/NPN/ normally closed/normally open and current/voltage output)

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Key features

Operation

Monitoring and setting of a pressure threshold, a pressure range or a pressure difference using a teach-in function or by entering values.

Variants with display:

- Pressure display, pressure switching outputs and readout of analogue value from an on-site device can be set
- Quick commissioning of the pressure sensor thanks to straightforward menu navigation
- Display colour blue/red as visual feedback about the pressure of the medium
- Min./max. value memory for monitoring compressed air (display of rapid pressure peaks that are not visible to the human eye)
- Adjustable filter attenuates the sensor signal generated by pressure peaks
- Scaling the analogue output to increase the signal dynamics
- Choice of pressure units: bar, MPa, PSI and more
- Offset compensation possible
- ECO function “Switch off display” available
- Optional security code can be freely chosen (4-digit code)
- All settings that have been carried out on one sensor (master) can be transferred (replication) to other, identical sensors (device). This makes it possible to significantly shorten commissioning time

Variants without display:

- Analogue value output and pressure switching outputs proportional to the pressure
- Switching output behaviour can be set on the machine display using IO-Link
- Other functions can be set using IO-Link

Variants with IO-Link:

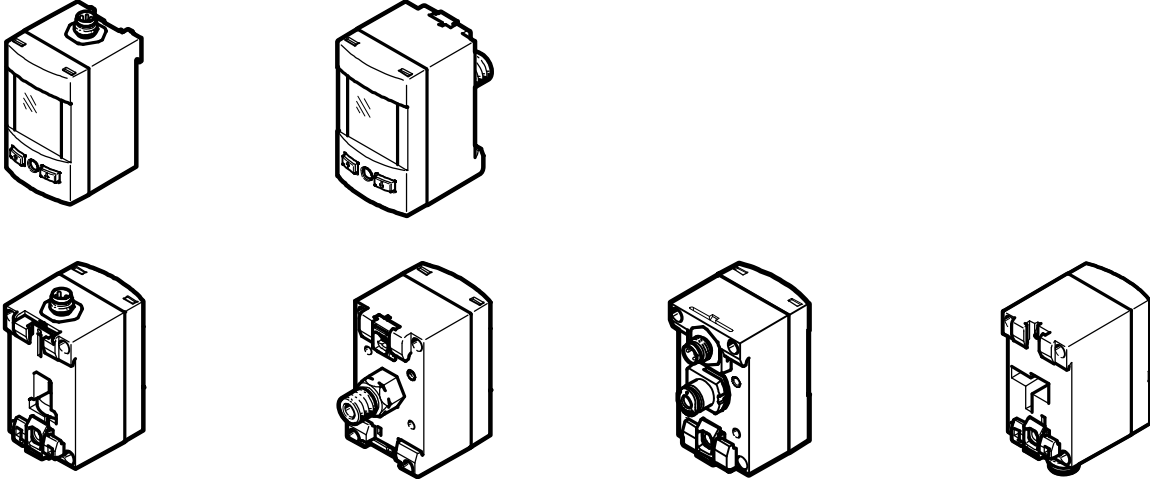
- With and without display
- Serial communication integrated using IO-Link 1.1
- Analogue process value is provided digitally
- The sensor can be parameterised and maintained remotely at control level using an IO-Link master
- Automatic parameterisation following sensor change: no need to repeat parameterisation and sensor settings after changing the sensor

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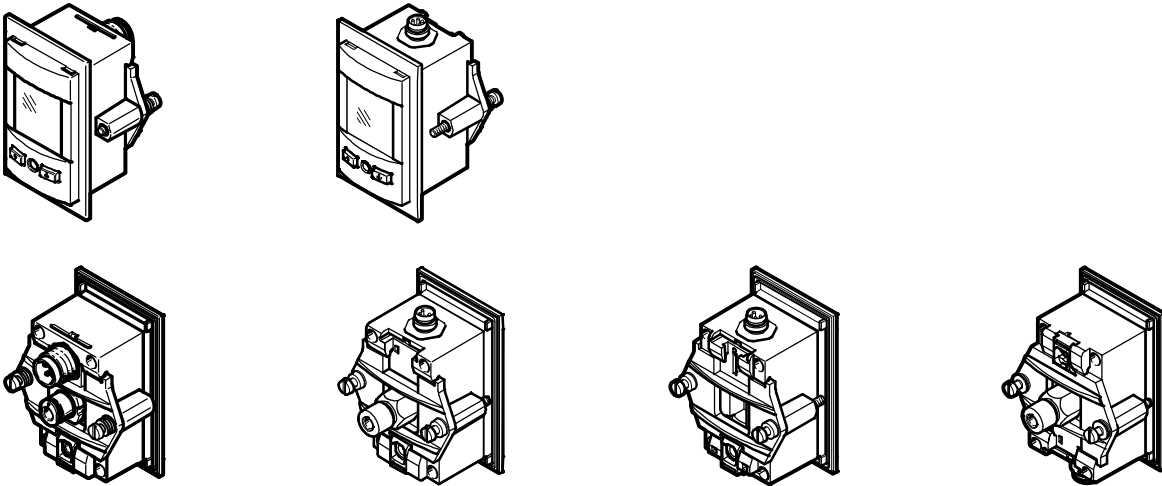
Key features

Device variants

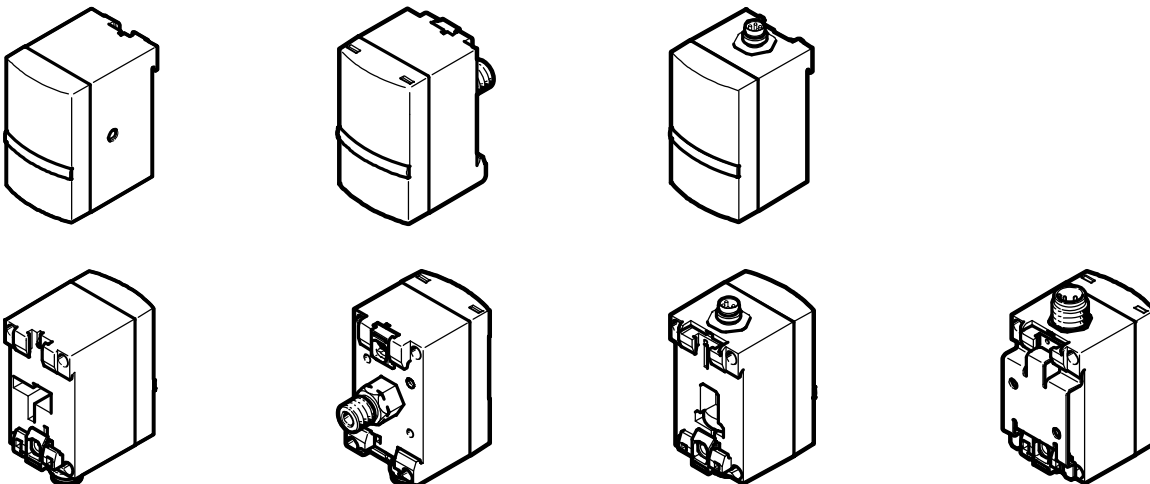
Variants with display



Variants with display for front panel mounting



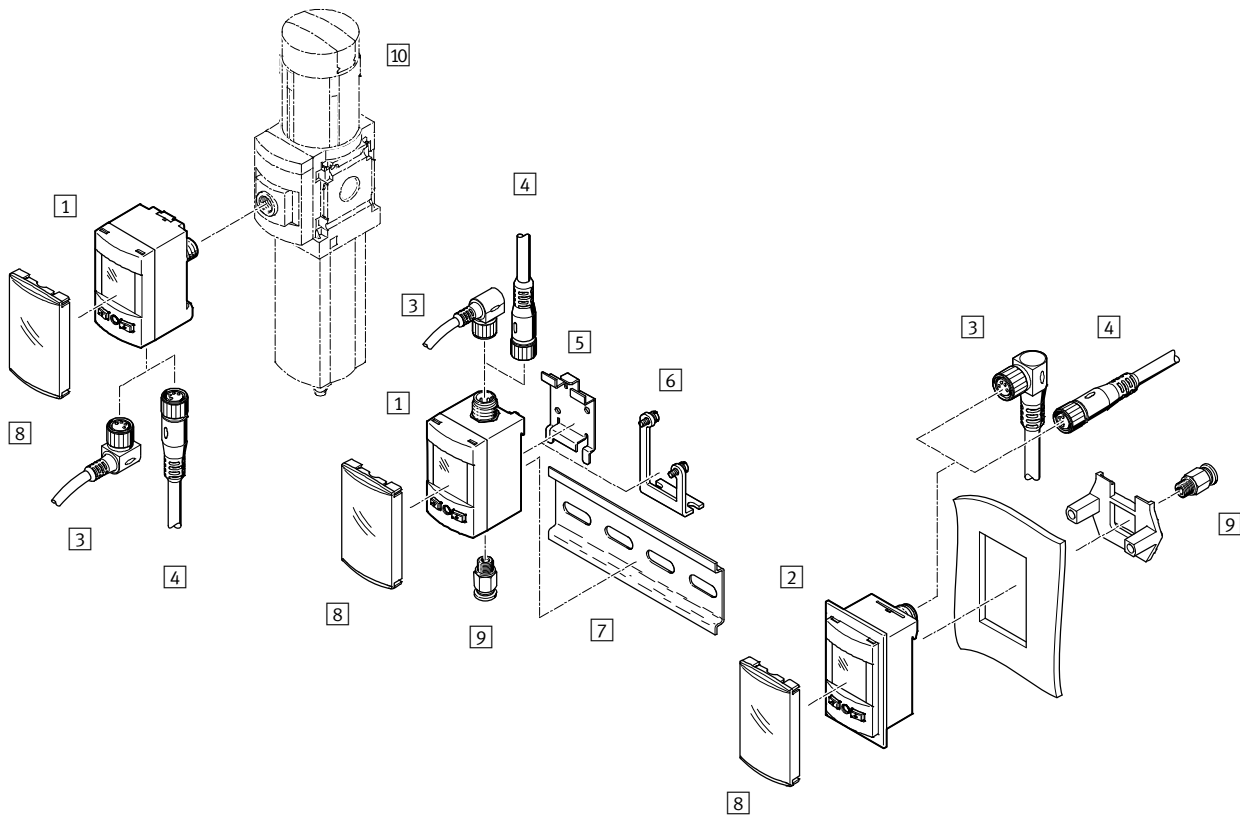
Variants without display



The connections shown are by way of example.

Pressure sensors SPAU

Peripherals overview



| Accessories | → Page/ Internet |
|--|---------------------|
| 1 Pressure sensors SPAU, display variants | 8 |
| 2 Pressure sensors SPAU, display variants for front panel mounting | 8 |
| 3 Connecting cable, angled socket M8x1 | 21 |
| 4 Connecting cable, straight socket M8x1 | 21 |
| 3 Connecting cable, angled socket M12x1 | 21 |
| 4 Connecting cable, straight socket M12x1 | 21 |

| Accessories | → Page/ Internet |
|---------------------------------|---------------------|
| 5 Wall mounting SAMH-PU-W | 19 |
| 6 Mounting bracket SAMH-PU-A | 19 |
| 7 Mounting rail To DIN EN 60715 | nrh |
| 8 Safety guard SACC-PU-G | 20 |
| 9 Pressure supply port | - |
| 10 Service unit | ms4 |

Pressure sensors SPAU

Type codes

SPAU - B2 R - H - Q4 - D -

| Type | |
|------|------------------|
| SPAU | Pressure sensors |

| Pressure measuring range [bar] | |
|--------------------------------|-------------|
| P025 | 0 ... 0.25 |
| P05 | 0 ... 0.5 |
| P1 | 0 ... 1 |
| P2 | 0 ... 2 |
| P6 | 0 ... 6 |
| P10 | 0 ... 10 |
| P12 | 0 ... 12 |
| P16 | 0 ... 16 |
| B2 | -1 ... 1 |
| B11 | -1 ... 10 |
| V025 | 0 ... -0.25 |
| V05 | 0 ... -0.5 |
| V1 | 0 ... -1 |

| Pressure input | |
|----------------|-------------------|
| R | Relative pressure |

| Type of mounting | |
|------------------|----------------------|
| T | Threaded mounting |
| H | H-rail mounting |
| W | Wall mounting |
| A | Mounting bracket |
| F | Front panel mounting |

| Pneumatic connection | |
|----------------------|------------------------|
| G18 | G $\frac{1}{8}$ |
| R14 | R $\frac{1}{4}$ |
| R18 | R $\frac{1}{8}$ |
| N18 | NPT $\frac{1}{8}$ |
| M5 | M5 |
| M7 | M7 |
| Q4 | Push-in connector 4 mm |
| Q6 | Push-in connector 6 mm |
| T532 | Push-in connector 5/32 |

| Thread type | |
|-------------|---------------|
| - | None |
| M | Male thread |
| F | Female thread |

| Outlet direction | |
|------------------|-------------|
| - | At the rear |
| D | Underneath |

Pressure sensors SPAU

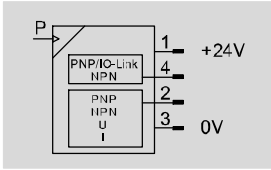
Type codes


| | | | | | | | | | | | |
|------------------------------------|--|---|----|---|---|---|------|--|---|--|---|
| | | - | LK | - | A | + | 2,5S | | G | | T |
| Display | | | | | | | | | | | |
| - | None | | | | | | | | | | |
| L | LCD, backlit | | | | | | | | | | |
| Electrical output 1 | | | | | | | | | | | |
| PNLK | PNP, NPN, IO-Link | | | | | | | | | | |
| LK | IO-Link | | | | | | | | | | |
| Electrical output 2 | | | | | | | | | | | |
| PNVBA | PNP, NPN, 0 ... 10 V, 1 ... 5 V, 4 ... 20 mA | | | | | | | | | | |
| V | 0 ... 10 V | | | | | | | | | | |
| B | 1 ... 5 V | | | | | | | | | | |
| A | 4 ... 20 mA | | | | | | | | | | |
| Electrical connection | | | | | | | | | | | |
| M8 | M8 plug connector | | | | | | | | | | |
| M12 | Plug connector M12, A-coded | | | | | | | | | | |
| Electrical outlet direction | | | | | | | | | | | |
| - | At the rear | | | | | | | | | | |
| D | Underneath | | | | | | | | | | |
| U | Top | | | | | | | | | | |
| Electrical accessories | | | | | | | | | | | |
| - | None | | | | | | | | | | |
| 2,5A | Angled socket, cable 2.5 m | | | | | | | | | | |
| 2,5S | Straight socket, cable 2.5 m | | | | | | | | | | |
| 5A | Angled socket, cable 5 m | | | | | | | | | | |
| 5S | Straight socket, cable 5 m | | | | | | | | | | |
| Protective devices | | | | | | | | | | | |
| - | None | | | | | | | | | | |
| G | Safety guard | | | | | | | | | | |
| Certificate | | | | | | | | | | | |
| - | None | | | | | | | | | | |
| T | Test report | | | | | | | | | | |


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Technical data

Display ... -L



 Voltage
20 ... 30 V DC

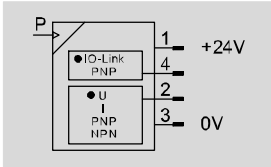
 Pressure measuring range
-1 ... +16 bar

 Temperature range
0 ... +50 °C



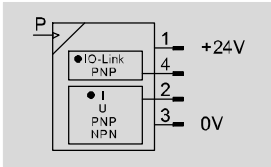
Variant without display

Output preset to voltage ... -LK-V



Variant without display

Output preset to current ... -LK-A



| General technical data | |
|--|---|
| Certification | RCM trademark c UL us listed (OL) |
| CE marking (see declaration of conformity) | To EU EMC Directive |
| Electrical connection | To EN 60947-5-2, 4-pin plug connector, round design |
| Note on materials | RoHS compliant |

| Input signal, measuring element | | | | | | | | | | | | | | |
|---|--|------|-------|------|-----|-------|------|-----|-----|-----|------|------|------|--|
| SPAU | -B2 | -B11 | -V025 | -V05 | -V1 | -P025 | -P05 | -P1 | -P2 | -P6 | -P10 | -P12 | -P16 | |
| Measured variable | Relative pressure | | | | | | | | | | | | | |
| Method of measurement | Piezoresistive pressure sensor with display | | | | | | | | | | | | | |
| Pressure measuring range starting value [bar] | -1 | | | 0 | | | | | | | | | | |
| Pressure measuring range final value [bar] | 1 | 10 | -0.25 | -0.5 | -1 | 0.25 | 0.5 | 1 | 2 | 6 | 10 | 12 | 16 | |
| Overload range [bar] | 5 | 15 | 1 | 2 | 5 | 1 | 2 | 5 | 6 | 15 | 15 | 15 | 20 | |
| Operating medium | Compressed air to ISO 8573-1:2010 [7:4:4] Inert gases | | | | | | | | | | | | | |
| Note on operating/pilot medium | Lubricated operation possible | | | | | | | | | | | | | |
| Temperature of medium [°C] | 0 ... +50 | | | | | | | | | | | | | |
| Ambient temperature [°C] | 0 ... +50 | | | | | | | | | | | | | |

| Signal processing | |
|----------------------|----|
| Resolution ADC [bit] | 12 |

| Output, general | -B2 | -B11 | -V025 | -V05 | -V1 | -P025 | -P05 | -P1 | -P2 | -P6 | -P10 | -P12 | -P16 | |
|---------------------------------|------|------|-------|------|-----|-------|------|-----|-----|-----|------|------|------|--|
| Precision display FS [%] | 1.5 | | | | | | | | | | | | 2 | |
| Repetition accuracy [%] | 0.3 | | | | | | | | | | | | | |
| Temperature coefficient [%FS/K] | 0.05 | | | | | | | | | | | | | |

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Technical data

| Switching output | | |
|----------------------------------|--------------------------------|----------------------|
| | -PNLK | -LK |
| Switching output | 2x PNP or 2x NPN, switchable | 2x PNP ¹⁾ |
| Switching function | Freely programmable | |
| Switching element function | N/C or N/O contact, switchable | |
| Protection against short circuit | Yes | |

1) Second PNP output can only be activated via IO-Link

| Analogue output | | | | | |
|--|------|-------------|----------|----------|---------|
| | | -PNLK-PNVBA | -LK-A | -LK-V | -LK-B |
| Analogue output | [V] | 0 ... 10 | - 1) | 0 ... 10 | - 1) |
| | [V] | 1 ... 5 | - 2) | - 2) | 1 ... 5 |
| | [mA] | 4 ... 20 | 4 ... 20 | - 3) | - 3) |
| Rise time | [ms] | 3 | | | |
| Max. output current | [mA] | 100 | | | |
| | | | | | |
| Max. load resistance of current output | [Ω] | 500 | | | |
| Min. load resistance of voltage output | [kΩ] | 10 | | | |

1) 0 ... 10 V analogue output can only be activated using IO-Link

2) 1 ... 5 V analogue output can only be activated using IO-Link

3) 4 ... 20 mA analogue output can only be activated using IO-Link

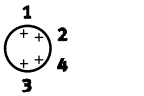
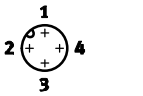
| Output, additional data | |
|----------------------------------|-----|
| Protection against short circuit | Yes |
| Overload protection | Yes |

| IO-Link device to IEC 61131-9 | |
|-------------------------------|---------------------------------|
| Protocol | IO-Link |
| IO-Link | |
| Protocol version | Device V 1.1 |
| Profile | Smart Sensor profile |
| Function classes | Binary data channel (BDC) |
| | Diagnostics |
| | Identification |
| | Process data variable (PDV) |
| | Teach channel |
| Communication mode | COM2 (38.4 kbd) |
| SIO mode support | Yes |
| Port class | A |
| Process data width OUT | 0 bytes |
| Process data width IN | 2 bytes |
| Process data content IN | 14 bit PDV (pressure reading) |
| | 2 bit BDC (pressure monitoring) |
| Minimum cycle time | [ms] 3 |
| Data memory required | [KB] 0.5 |

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Technical data

| Electronics | | |
|---------------------------------------|-----|--------------------------------|
| Operating voltage range DC | [V] | 20 ... 30 |
| Protection against incorrect polarity | | For all electrical connections |

| Pin allocation to EN 60947-5-2 | | | | |
|---|---|-----|-------------|-------------------------------------|
| Plug connector, 4-pin | | | | |
| M8x1 | M12x1 | Pin | Wire colour | Allocation |
|  |  | 1 | Brown | Operating voltage: +24 V DC |
| | | 3 | Blue | Operating voltage 0 V |
| | | 4 | Black | Switching output (C/Q-...) |
| | | 2 | White | Switching output or analogue output |

| Display/operation | | |
|-------------------------------|----------------------|-----------|
| SPAU | -L-PNLK | -LK |
| Display type | Illuminated LCD | LED |
| Displayable units | bar | - |
| | inchH2O | - |
| | inchHg | - |
| | kgf/cm ² | - |
| | kPa | - |
| | mmHg | - |
| | MPa | - |
| Setting options | IO-Link | - |
| | Teach-in | - |
| | Via display and keys | - |
| Protection against tampering | PIN code | - |
| Threshold value setting range | [%] | 0 ... 100 |
| Hysteresis setting range | [%] | 0 ... 90 |

| Immissions/emissions | |
|--|-----------------------------------|
| Degree of protection | IP67, IP65 (front panel mounting) |
| Corrosion resistance class CRC ¹⁾ | 2 |

1) Corrosion resistance class 2 according to Festo standard 940070
 Components subject to moderate corrosion stress. External visible parts with primarily decorative surface requirements which are in direct contact with the surrounding industrial environment or media such as coolants or lubricating agents.

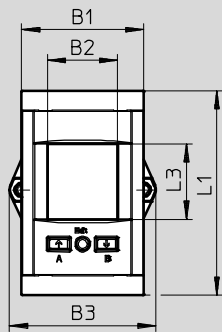
Pressure sensors SPAU

Technical data

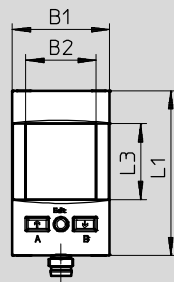
Dimensions

Download CAD data → www.festo.com

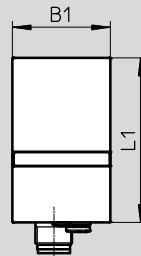
SPAU-...-F-...-L-PNLK-...



SPAU-...-L-PNLK-...



SPAU-...-LK-...



| Type | B1 | B2 | B3 | L1 | L3 |
|---------------------------|----|----|----|----|------|
| SPAU-...-F-...-L-PNLK-... | 40 | 23 | 48 | 67 | 24.8 |
| SPAU-...-L-PNLK-... | 32 | | - | 54 | |
| SPAU-...-LK-... | | - | | | - |

Pressure sensors SPAU

Technical data

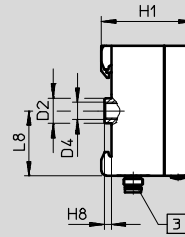
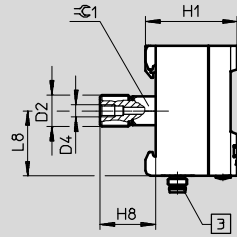
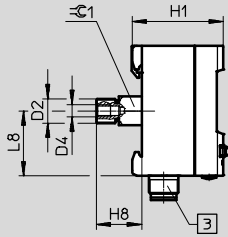
Dimensions – Pressure supply ports

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SPAU-...-G18M-...
 SPAU-...-R18M-...
 SPAU-...-N18M-...
 SPAU-...-M5F-...

SPAU-...-R14M-...

SPAU-...-M7F-...

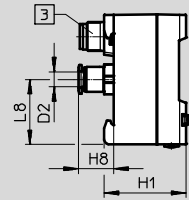
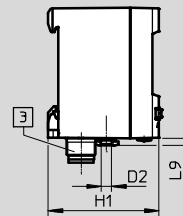
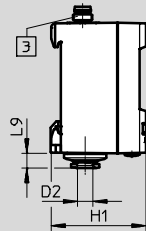
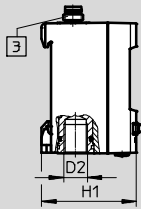
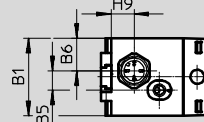
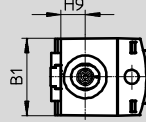
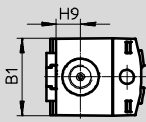



SPAU-...-G18MD-...
 SPAU-...-R18MD-...
 SPAU-...-N18MD-...
 SPAU-...-M7FD-...

SPAU-...-Q4D-...-MxU
 SPAU-...-Q6D-...MxU
 SPAU-...-Q532D-...MxU

SPAU-...-Q4D-...-MxD
 SPAU-...-Q532D-...MxD

SPAU-...-Q4-...-Mx
 SPAU-...-Q532-...Mx



 Pressure supply port
 SPAU-...-M12... M12, 4pin
 SPAU-...-M8... M8, 4pin

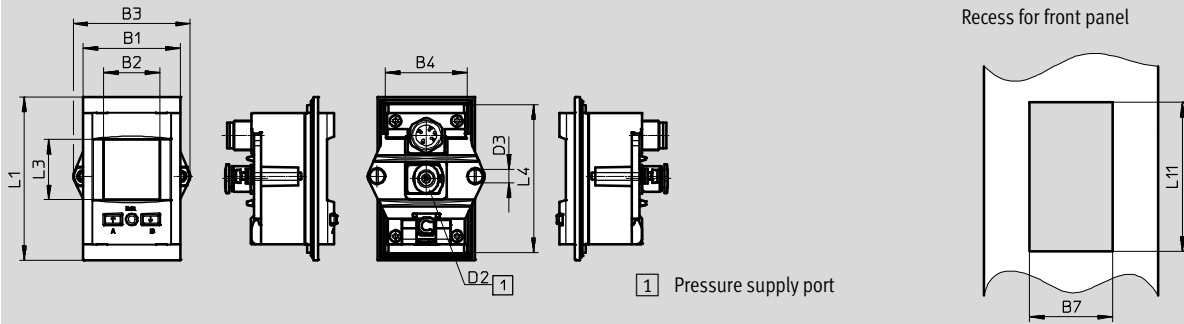
| Type | B1 | B5 | B6 | D2 | Thread length | | Thread engagement | D4 | H1 | H8 | H9 | L8 | L9 | ≙C1 | | | | | | | |
|------------------------|-------|------|----|---------|---------------|--------------|-------------------|----|------|------|-----|----|----|-----|------------|------------|---|---|---|-----|---|
| | | | | | External (M) | Internal (F) | | | | | | | | | | | | | | | |
| SPAU-...-G18M-...-MxD | - | | | G1/8 | 8 | - | Until stop | M5 | 37.9 | 19 | - | 27 | | 12 | | | | | | | |
| SPAU-...-R18M-...-MxD | | | | R1/8 | | | Min. 6,5 | | | | | | | | | | | | | | |
| SPAU-...-N18M-...-MxD | | | | 1/8 NPT | | | Min. 6,9 | | | | | | | | | | | | | | |
| SPAU-...-M5F-...-MxD | | | | M5 | - | 6 | Until stop | | | M7 | | | | | 3 | | | | | | |
| SPAU-...-R14M-...-MxD | | | | R1/4 | 12 | - | Min. 9,7 | | | | | | | | | | | | | | |
| SPAU-...-M7F-...-MxD | | | | M7 | - | - | 8 | | | 8 | | | | | Until stop | | | | | | |
| SPAU-...-G18FD-...-MxU | 32 | - | - | G1/8 | - | 8 | Until stop | - | 39.4 | - | 10 | - | - | - | | | | | | | |
| SPAU-...-R18FD-...-MxU | | | | R1/8 | | | Min. 6,5 | | | | | | | | | | | | | | |
| SPAU-...-N18FD-...-MxU | | | | 1/8 NPT | | | Min. 6,9 | | | | | | | | | | | | | | |
| SPAU-...-M7FD-...-MxU | | | | M7 | - | - | 8 | | | | | | | | 8 | Until stop | | | | | |
| SPAU-...-Q4D-...-MxU | | | | QS4 | - | - | - | | | | | | | | - | - | - | - | - | 6.1 | - |
| SPAU-...-Q6D-...-MxU | | | | QS6 | - | - | - | | | | | | | | - | - | - | - | - | - | - |
| SPAU-...-T532D-...-MxU | T5/32 | - | - | - | - | - | - | - | - | - | - | - | | | | | | | | | |
| SPAU-...-Q4D-...-MxD | 8 | 13.5 | | QS4 | - | - | - | - | 45.9 | - | 9.5 | - | 3 | - | | | | | | | |
| SPAU-...-T532D-...-MxD | | | | T5/32 | | | | | | | | | | | | | | | | | |
| SPAU-...-Q4-...-Mx | - | - | - | QS4 | - | - | - | - | 33.9 | 14.8 | - | 27 | - | - | | | | | | | |
| SPAU-...-Q6-...-Mx | | | | QS6 | | | | | | | | | | | | | | | | | |
| SPAU-...-T532-...-Mx | | | | T5/32 | | | | | | | | | | | | | | | | | |

Pressure sensors SPAU

Technical data

Dimensions – Front panel mounting

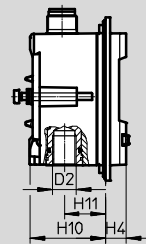
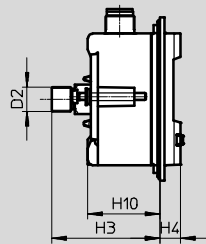
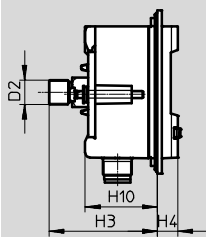
Download CAD data → www.festo.com



SPAU-...-F-...-MxD

SPAU-...-F-...-MxU

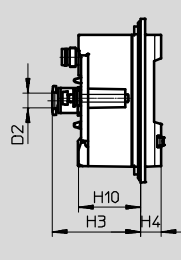
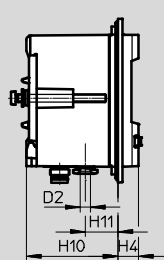
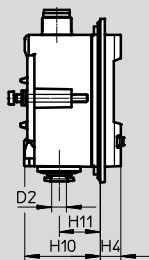
SPAU-...-F-...-FD-...-MxU



SPAU-...-F-Q...-D-...-MxU
SPAU-...-F-T532D-...-MxU

SPAU-...-F-Q4D-...-MxD
SPAU-...-F-T532D-...-MxD







SPAU-...-F-Q...-Mx
SPAU-...-F-T532-...-Mx



| Type | B1 | B2 | B3 | B4 | B7 ±0.3 | D2 | D3 | H3 | H4 | H10 | H11 | L1 | L3 | L4 | L11 ±0.3 | |
|----------------------------|----|----|----|------|------------|-------------------------------|----|------|-----|------|-----|----|------|------|-------------|------|
| SPAU-...-F-...18M-...-MxD | 40 | 23 | 48 | 33.5 | 34 | - | M3 | 44.4 | 8.4 | 29.5 | - | 67 | 24.8 | 60.5 | 61 | |
| SPAU-...-F-R14M-...-MxD | | | | | | R ³ / ₈ | | 48.4 | | | | | | | | |
| SPAU-...-F-M7F-...-MxD | | | | | | M7 | | 28.4 | | | | | | | | |
| SPAU-...-F-M5F-...-MxD | | | | | | M5 | | - | | | | | | | | |
| SPAU-...-F-...18M-...-MxU | | | | | | - | | 44.4 | | | | | | | | |
| SPAU-...-F-R14M-...-MxU | | | | | | R ³ / ₄ | | 48.4 | | | | | | | | |
| SPAU-...-F-M7F-...-MxU | | | | | | M7 | | 28.4 | | | | | | | | |
| SPAU-...-F-M5F-...-MxU | | | | | | M5 | | - | | | | | | | | |
| SPAU-...-F-...18FD-...-MxU | | | | | | - | | - | | | | | | | | |
| SPAU-...-F-M7FD-...-MxU | | | | | | M7 | | - | | | | | | | | |
| SPAU-...-F-Q...D-...-MxU | | | | | | - | | 31 | | | | | | | | 16.9 |
| SPAU-...-F-T532D-...-MxU | | | | | | T5/32 | | - | | | | | | | | - |
| SPAU-...-F-Q4D-...-MxD | | | | | | QS4 | | 37.5 | | | | | | | | 13.4 |
| SPAU-...-F-T532D-...-MxD | | | | | | T5/32 | | - | | | | | | | | - |
| SPAU-...-F-Q...-Mx | | | | | | - | | - | | | | | | | | - |
| SPAU-...-F-T532-...-Mx | | | | | | T5/32 | | 36.1 | | | | | | | | 25.5 |




Pressure sensors SPAU



Technical data

| Ordering data – Display variants | | | | | | | | |
|---|----------------------|----------------------------------|------------------|-----------------------|------------------|----------------|----------------|---|
| | Type of mounting | Pneumatic connection | Outlet direction | Electrical connection | Outlet direction | Product weight | Part No. | Type |
| Pressure measuring range -1 ... +1 | | | | | | | | |
|  | Thread | R1/8 | At the rear | M8x1 | Underneath | 80 | 8001207 | SPAU-B2R-T-R18M-L-PNLK-PNVBA-M8D |
| | | NPT1/8-27 | At the rear | M8x1 | Underneath | 80 | 8001202 | SPAU-P10R-T-N18M-L-PNLK-PNVBA-M8D |
| | | NPT1/8-27 | At the rear | M12x1 | Underneath | 80 | 8001205 | SPAU-P10R-T-N18M-L-PNLK-PNVBA-M12D |
| | H-rail | G1/8 | Underneath | M8x1 | Top | 70 | 8001219 | SPAU-B2R-H-G18FD-L-PNLK-PNVBA-M8U |
| Pressure measuring range 0 ... -1 | | | | | | | | |
|  | H-rail | G1/8 | Underneath | M8x1 | Top | 70 | 8001223 | SPAU-V1R-H-G18FD-L-PNLK-PNVBA-M8U |
| | | QS-4 | Underneath | M8x1 | Underneath | 65 | 8001213 | SPAU-V1R-H-Q4D-L-PNLK-PNVBA-M8D |
| | | QS-5/32 | Underneath | M8x1 | Underneath | 65 | 8001217 | SPAU-V1R-H-T532D-L-PNLK-PNVBA-M8D |
| | | QS-5/32 | Underneath | M12x1 | Underneath | 65 | 8001218 | SPAU-V1R-H-T532D-L-PNLK-PNVBA-M12D |
|  | Wall/surface bracket | G1/8 | Underneath | M8x1 | Top | 70 | 8001235 | SPAU-V1R-W-G18FD-L-PNLK-PNVBA-M8U |
| | | G1/8 | Underneath | M12x1 | Top | 70 | 8001234 | SPAU-V1R-W-G18FD-L-PNLK-PNVBA-M12U |
| | | QS-4 | Underneath | M8x1 | Underneath | 65 | 8001239 | SPAU-V1R-W-Q4D-L-PNLK-PNVBA-M8D |
| | | QS-4 | Underneath | M12x1 | Underneath | 65 | 8001214 | SPAU-V1R-H-Q4D-L-PNLK-PNVBA-M12D |
|  | Front panel mounting | QS-4 | At the rear | M12x1 | At the rear | 70 | 8001227 | SPAU-V1R-F-Q4-L-PNLK-PNVBA-M12 |
| | | QS-6 | At the rear | M12x1 | At the rear | 70 | 8001228 | SPAU-V1R-F-Q6-L-PNLK-PNVBA-M12 |
| | | QS-5/32 | At the rear | M12x1 | At the rear | 70 | 8001229 | SPAU-V1R-F-T532-L-PNLK-PNVBA-M12 |
| | | Pressure measuring range 0 ... 2 | | | | | | |
|  | Wall/surface bracket | G1/8 | Underneath | M8x1 | Top | 70 | 8001232 | SPAU-P2R-W-G18FD-L-PNLK-PNVBA-M8U |
| Pressure measuring range 0 ... 6 | | | | | | | | |
|  | Wall/surface bracket | G1/8 | Underneath | M8x1 | Top | 70 | 8001233 | SPAU-P6R-W-G18FD-L-PNLK-PNVBA-M8U |

Pressure sensors SPAU

Technical data

| Ordering data – Display variants | | | | | | | | |
|---|----------------------|----------------------|------------------|-----------------------|------------------|----------------|----------------------------------|-------------------------------------|
| | Type of mounting | Pneumatic connection | Outlet direction | Electrical connection | Outlet direction | Product weight | Part No. | Type |
| Pressure measuring range 0 ... 10 | | | | | | | | |
|  | Thread | G $\frac{1}{8}$ | At the rear | M8x1 | Underneath | 80 | 8001201 | SPAU-P10R-T-G18M-L-PNLK-PNVBA-M8D |
| | | G $\frac{1}{8}$ | At the rear | M12x1 | Underneath | 80 | 8001204 | SPAU-P10R-T-G18M-L-PNLK-PNVBA-M12D |
| | | R $\frac{1}{8}$ | At the rear | M8x1 | Underneath | 80 | 8001203 | SPAU-P10R-T-R18M-L-PNLK-PNVBA-M8D |
| | | R $\frac{1}{8}$ | At the rear | M12x1 | Underneath | 80 | 8001206 | SPAU-P10R-T-R18M-L-PNLK-PNVBA-M12D |
| | | R $\frac{1}{4}$ | At the rear | M8x1 | Underneath | 80 | 8001209 | SPAU-P10R-T-R14M-L-PNLK-PNVBA-M8D |
| | | R $\frac{1}{4}$ | At the rear | M12x1 | Underneath | 80 | 8001208 | SPAU-P10R-T-R14M-L-PNLK-PNVBA-M12D |
| | H-rail | G $\frac{1}{8}$ | Underneath | M8x1 | Top | 70 | 8001221 | SPAU-P10R-H-G18FD-L-PNLK-PNVBA-M8U |
| | | G $\frac{1}{8}$ | Underneath | M12x1 | Top | 70 | 8001220 | SPAU-P10R-H-G18FD-L-PNLK-PNVBA-M12U |
| | | QS-4 | Underneath | M8x1 | Underneath | 65 | 8001211 | SPAU-P10R-H-Q4D-L-PNLK-PNVBA-M8D |
| | | QS-4 | Underneath | M12x1 | Underneath | 65 | 8001212 | SPAU-P10R-H-Q4D-L-PNLK-PNVBA-M12D |
| | | QS-5/32 | Underneath | M8x1 | Underneath | 65 | 8001215 | SPAU-P10R-H-T532D-L-PNLK-PNVBA-M8D |
| | | QS-5/32 | Underneath | M12x1 | Underneath | 65 | 8001216 | SPAU-P10R-H-T532D-L-PNLK-PNVBA-M12D |
| | Wall/surface bracket | G $\frac{1}{8}$ | Underneath | M8x1 | Top | 70 | 8001231 | SPAU-P10R-W-G18FD-L-PNLK-PNVBA-M8U |
| | | G $\frac{1}{8}$ | Underneath | M12x1 | Top | 70 | 8001230 | SPAU-P10R-W-G18FD-L-PNLK-PNVBA-M12U |
| | | QS-4 | Underneath | M8x1 | Underneath | 70 | 8001236 | SPAU-P10R-W-Q4D-L-PNLK-PNVBA-M12D |
| QS-4 | | Underneath | M12x1 | Underneath | 70 | 8001237 | SPAU-P10R-W-Q4D-L-PNLK-PNVBA-M8D | |
|  | Front panel mounting | QS-4 | At the rear | M12x1 | At the rear | 70 | 8001224 | SPAU-P10R-F-Q4-L-PNLK-PNVBA-M12 |
| | | QS-6 | At the rear | M12x1 | At the rear | 70 | 8001225 | SPAU-P10R-F-Q6-L-PNLK-PNVBA-M12 |
| | | QS-5/32 | At the rear | M12x1 | At the rear | 70 | 8001226 | SPAU-P10R-F-T532-L-PNLK-PNVBA-M12 |
| Pressure measuring range 0 ... 16 | | | | | | | | |
|  | Thread | R $\frac{1}{4}$ | At the rear | M8x1 | Underneath | 80 | 8001210 | SPAU-P16R-T-R14M-L-PNLK-PNVBA-M8D |
| | H-rail | G $\frac{1}{8}$ | Underneath | M12x1 | Top | 70 | 8001222 | SPAU-P16R-H-G18FD-L-PNLK-PNVBA-M12U |

| Ordering data – Variants without display | | | | | | | | |
|---|------------------|----------------------|------------------|-----------------------|-----------------|----------------|----------|----------------------------|
| | Type of mounting | Pneumatic connection | Outlet direction | Electrical connection | Analogue output | Product weight | Part No. | Type |
| Pressure measuring range 0 ... -1 | | | | | | | | |
|  | Thread | G $\frac{1}{8}$ | At the rear | M12x1 | 0 ... 10 V | 80 | 8003347 | SPAU-V1R-T-G18M-LK-V-M12D |
| | | | At the rear | | 4 ... 20 mA | | 8003348 | SPAU-V1R-T-G18M-LK-A-M12D |
| | H-rail | QS-4 | Underneath | | 0 ... 10 V | 65 | 8003351 | SPAU-V1R-H-Q4D-LK-V-M12D |
| | | | Underneath | | 4 ... 20 mA | | 8003352 | SPAU-V1R-H-Q4D-LK-A-M12D |
| Pressure measuring range 0 ... 10 | | | | | | | | |
|  | Thread | G $\frac{1}{8}$ | At the rear | M12x1 | 0 ... 10 V | 80 | 8003345 | SPAU-P10R-T-G18M-LK-V-M12D |
| | | | At the rear | | 4 ... 20 mA | | 8003346 | SPAU-P10R-T-G18M-LK-A-M12D |
| | H-rail | QS-4 | Underneath | | 0 ... 10 V | 65 | 8003349 | SPAU-P10R-H-Q4D-LK-V-M12D |
| | | | Underneath | | 4 ... 20 mA | | 8003350 | SPAU-P10R-H-Q4D-LK-A-M12D |

Pressure sensors SPAU

Ordering data – Modular product system

| M Mandatory data | | | |
|----------------------|----------------------|--|--|
| Module no. | Product type | | Supply port |
| 8001200 | Pressure sensor SPAU | -1 ... 1 bar -1 ... 10 bar 0 ... -0.25 bar 0 ... -0.5 bar 0 ... -1 bar 0 ... 0.25 bar 0 ... 0.5 bar 0 ... 1 bar 0 ... 2 bar 0 ... 6 bar 0 ... 10 bar 0 ... 12 bar 0 ... 16 bar | Relative pressure Threaded mounting Mounting bracket Front panel mounting H-rail mounting Wall mounting |
| Order example | 8001200 | SPAU - P10 | R - H |

| Ordering table | | | | |
|--------------------------|----------------------|-----------------|------|---------------|
| Pressure sensor SPAU | | Condi- tions | Code | Entry code |
| M Module no. | 8001200 | | | |
| Product type | SPAU, U series | SPAU | | SPAU |
| Pressure measuring range | -1 ... 1 bar | -B2 | | |
| | -1 ... 10 bar | -B11 | | |
| | 0 ... -0.25 bar | -V025 | | |
| | 0 ... -0.5 bar | -V05 | | |
| | 0 ... -1 bar | -V1 | | |
| | 0 ... 0.25 bar | -P025 | | |
| | 0 ... 0.5 bar | -P05 | | |
| | 0 ... 1 bar | -P1 | | |
| | 0 ... 2 bar | -P2 | | |
| | 0 ... 6 bar | -P6 | | |
| | 0 ... 10 bar | -P10 | | |
| | 0 ... 12 bar | -P12 | | |
| | 0 ... 16 bar | -P16 | | |
| Supply port | Relative pressure | R | | R |
| Type of mounting | Threaded mounting | -T | | |
| | Mounting bracket | -A | | |
| | Front panel mounting | -F | | |
| | H-rail mounting | -H | | |
| | Wall mounting | -W | | |

Transfer order code

| | | | | | | |
|--|-------------|---|--|----------|---|--|
| | SPAU | - | | R | - | |
|--|-------------|---|--|----------|---|--|

Pressure sensors SPAU

Ordering data – Modular product system

→ **M** Mandatory data

| | | | |
|--|--------------------------------------|---------------------------|----------------------|
| Pneumatic connection | | Outlet direction | |
| Thread type | | Display | |
| G 1/8 M5 M7 NPT 1/8 Push-in connector 4 mm Push-in connector 6 mm R 1/4 R 1/8 Push-in connector 5/32 | None Male thread Female thread | At the rear Underneath | None LCD, backlit |
| G18 | F | D | L |

| Ordering table | | Condi- tions | Code | Entry code |
|-------------------------------|------------------------|-----------------|---------------------|---------------|
| Pressure sensor SPAU | | | | |
| M Pneumatic connection | G 1/8 | -G18 | | |
| | M5 | -M5 | 1 | |
| | M7 | -M7 | | |
| | NPT 1/8 | -N18 | | |
| | Push-in connector 4 mm | -Q4 | 2 | |
| | Push-in connector 6 mm | -Q6 | 2 | |
| | R 1/4 | -R14 | 15 | |
| | R 1/8 | -R18 | | |
| | Push-in connector 5/32 | -T532 | 2 | |
| Thread type | None | | | |
| | Male thread | M | 3 , 4 | |
| | Female thread | F | 3 , 5 | |
| Outlet direction | At the rear | | 6 | |
| | Underneath | D | 7 | |
| Display | Without | | | |
| | LCD, backlit | -L | 8 | |

- 1** Only with mounting type A, F
- 2** Not with mounting type T
Not with pressure measuring range P16
- 3** Mandatory in combination with G1/8, N1/8, R1/8, R1/4, M7, M5
- 4** Not with mounting type W, H
Not with pneumatic connection Q4, Q6, T532, M7, M5
- 5** Not with mounting type A if pneumatic connection G1/8, R1/8, N1/8
- 6** Not with mounting type W, H
Not with thread type F if pneumatic connection G1/8, R1/8, N1/8
- 7** Not with pneumatic connection M5
Not with mounting type A
Not with thread type M
- 8** In combination with mounting type F

Transfer order code

– – – –

Pressure sensors SPAU

Ordering data – Modular product system

→ **M** **Mandatory data**

| | | | | | |
|-------------------------------------|---|---|----------------------------------|--|----------------------|
| Electrical output 1 | | Electrical connection | | Electrical accessories | |
| Electrical output 2 | | Electrical outlet direction | | Protective devices | |
| IO-Link PNP or NPN or IO-Link | 4 ... 20 mA 1 ... 5 V PNP or NPN or 0 ... 10 V or 1 ... 5 V 4 ... 20 mA | M8 plug connector M12 plug connector, A-coded | Top Underneath At the rear | None Angled socket, cable 2.5 m Straight socket, cable 2.5 m Angled socket, cable 5 m Straight socket, cable 5 m | None Safety guard |
| - PNLK | - PNVBA | - M8 | U | + | |

| Ordering table | | Condi- tions | Code | Entry code | |
|----------------|-----------------------------|--|--------|---------------|--|
| SPAU | | | | | |
| M | Electrical output 1 | PNP or NPN or IO-Link | -PNLK | <u>10</u> | |
| | | IO-Link | -LK | <u>9</u> | |
| | Electrical output 2 | PNP or NPN or 0 ... 10 V or 1 ... 5 V or 4 ... 20 mA | -PNVBA | <u>10</u> | |
| | | 0 ... 10 V | -V | <u>9</u> | |
| | | 1 ... 5 V | -B | <u>9</u> | |
| | | 4 ... 20 mA | -A | <u>9</u> | |
| | Electrical connection | M8 plug connector | -M8 | | |
| | | M12 plug connector, A-coded | -M12 | | |
| | Electrical outlet direction | Top | U | <u>13</u> | |
| | | Underneath | D | <u>12</u> | |
| | | At the rear | | <u>11</u> | |
| | Electrical accessories | None | | | |
| | | Angled socket, cable 2.5 m | +2,5A | | |
| | | Straight socket, cable 2.5 m | +2,5S | | |
| | | Angled socket, cable 5 m | +5A | | |
| | | Straight socket, cable 5 m | +5S | | |
| | Protective devices | None | | | |
| | | Safety guard | G | <u>16</u> | |
| | Certificate | None | | | |
| | | Test report | T | | |

- 9 Not with display L
- 10 Not without display
- 11 Only with mounting type A, F
Not with G18, N18, R18, M7, M5
Not with outlet direction D, U
Only with thread type None
- 12 Only with outlet direction D if QS4
or T532 selected
Not with outlet direction at the rear
if QS4, QS6, T532
- 13 Only with outlet direction U if QS4
or T532 selected
Not with outlet direction at the rear
if QS4, QS6, T532
- 15 Only with thread type M
Outlet direction at the rear only
Not with mounting type W/H
Not with electrical outlet direction at the rear
- 16 Only with display L

Transfer order code

- - - +

Pressure sensors SPAU

Accessories – Ordering data

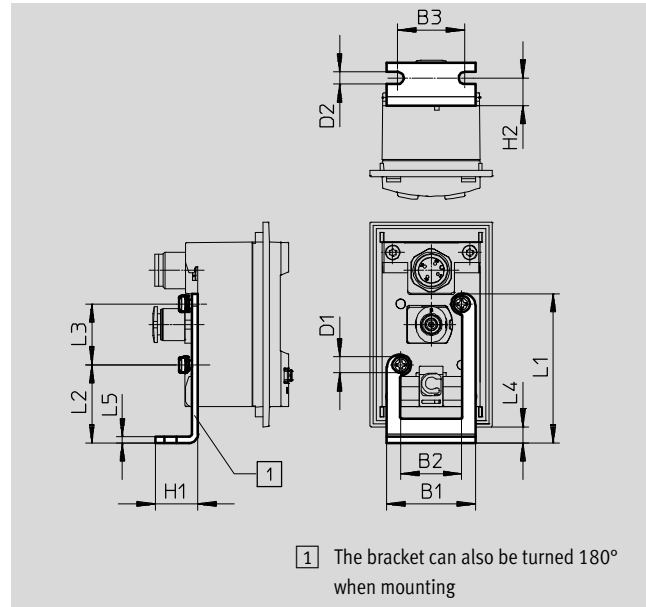
Mounting bracket SAMH-PU-A on even surfaces

Type of mounting: With through-hole and template

Material: High-alloy stainless steel

Note on materials: RoHS compliant

Only for variants with:
Pneumatic connection
Outlet direction at the rear



| Ordering data | | | | | | | | | | | | | | | |
|---------------|----|----|----|------|----|----|----|----|------|----|-----|----|-------------------|----------|-----------|
| Type | B1 | B2 | B3 | D1 | D2 | H1 | H2 | L1 | L2 | L3 | L4 | L5 | CRC ¹⁾ | Part No. | Type |
| SAMH-PU-A | 29 | 20 | 22 | M3x8 | 4 | 14 | 9 | 49 | 25.6 | 20 | 8.6 | 2 | 2 | 8003354 | SAMH-PU-A |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Wall mounting SAMH-PU-W

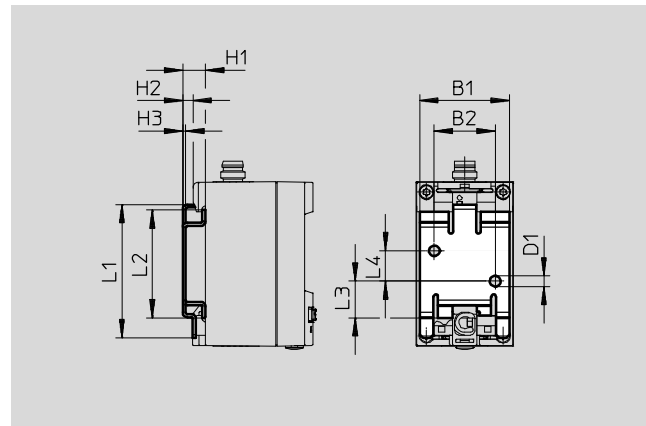
For H-rail mounting

Type of mounting: With through-hole

Material: High-alloy stainless steel

Note on materials: RoHS compliant

Only for variants with:
Pneumatic connection
Outlet direction underneath



| Dimensions and ordering data | | | | | | | | | | | | | | |
|------------------------------|------|----|-----|-----|-----|----|------|------|----|----|-------------------|----------|-----------|--|
| Type | B1 | B2 | D1 | H1 | H2 | H3 | L1 | L2 | L3 | L4 | CRC ¹⁾ | Part No. | Type | |
| SAMH-PU-W | 29.4 | 20 | 3.5 | 7.5 | 3.4 | 1 | 43.8 | 35.4 | 12 | 10 | 2 | 8003355 | SAMH-PU-W | |

1) Corrosion resistance class CRC 2 to Festo standard FN 940070
Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.

Pressure sensors SPAU

Accessories – Ordering data

Safety guard SACC-PU-G

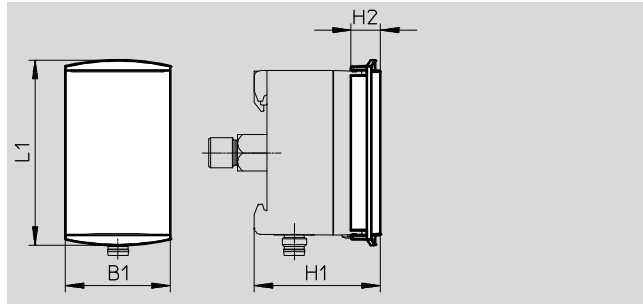
to protect the display and control elements

Material: PA

Note on materials:

RoHS compliant

Only for variants with: Display



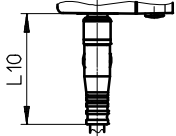

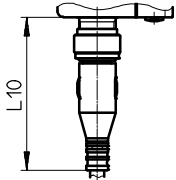
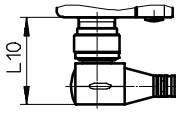
| Dimensions and ordering data | | | | | | | | |
|------------------------------|-------------------------------|------|------|-----|------|-------------------|----------|-----------|
| Type | | B1 | H1 | H2 | L1 | CRC ¹⁾ | Part No. | Type |
| SACC-PU-G | SPAU- ... R-T- ... | 34.5 | 41.6 | 9.6 | 60.8 | 2 | 8003353 | SACC-PU-G |
| | SPAU- ... R-H- ... -D-L- ... | | 49.6 | | | | | |
| | SPAU- ... R-H- ... -FD-L- ... | | 43.6 | | | | | |
| | SPAU- ... R-F- ... | | 37.6 | | | | | |
| | SPAU- ... R-W- ... -D-L- ... | | 43.6 | | | | | |
| | SPAU- ... R-W- ... -FD-L- ... | | 49.6 | | | | | |



1) Corrosion resistance class CRC 2 to Festo standard FN 940070
 Moderate corrosion stress. Indoor applications in which condensation may occur. External visible parts with primarily decorative requirements for the surface and which are in direct contact with the ambient atmosphere typical for industrial applications.



Pressure sensors SPAU

Accessories – Ordering data



| Connecting cables | | | L10 |
|---|-----|-----------------|------|
|   | M8 | Straight socket | 36.3 |
| | | Angled socket | 18.7 |
|   | M12 | Straight socket | 50 |
| | | Angled socket | 28.5 |

| Ordering data | | | | Technical data → Internet: nebu | |
|---|-----------------|------------------|----------|---------------------------------|--|
| | Number of wires | Cable length [m] | Part No. | Type | |
| M8x1, straight socket | | | | | |
|  | 4 | 2.5 | 541342 | NEBU-M8G4-K-2.5-LE4 | |
| | | 5 | 541343 | NEBU-M8G4-K-5-LE4 | |
| M8x1, angled socket | | | | | |
|  | 4 | 2.5 | 541344 | NEBU-M8W4-K-2.5-LE4 | |
| | | 5 | 541345 | NEBU-M8W4-K-5-LE4 | |

| Ordering data | | | | Technical data → Internet: nebu | |
|---|-----------------|------------------|----------|---------------------------------|--|
| | Number of wires | Cable length [m] | Part No. | Type | |
| M12x1, straight socket | | | | | |
|  | 4 | 2.5 | 550326 | NEBU-M12G5-K-2.5-LE4 | |
| | | 5 | 541328 | NEBU-M12G5-K-5-LE4 | |
| M12x1, angled socket | | | | | |
|  | 4 | 2.5 | 550325 | NEBU-M12W5-K-2.5-LE4 | |
| | | 5 | 541329 | NEBU-M12W5-K-5-LE4 | |