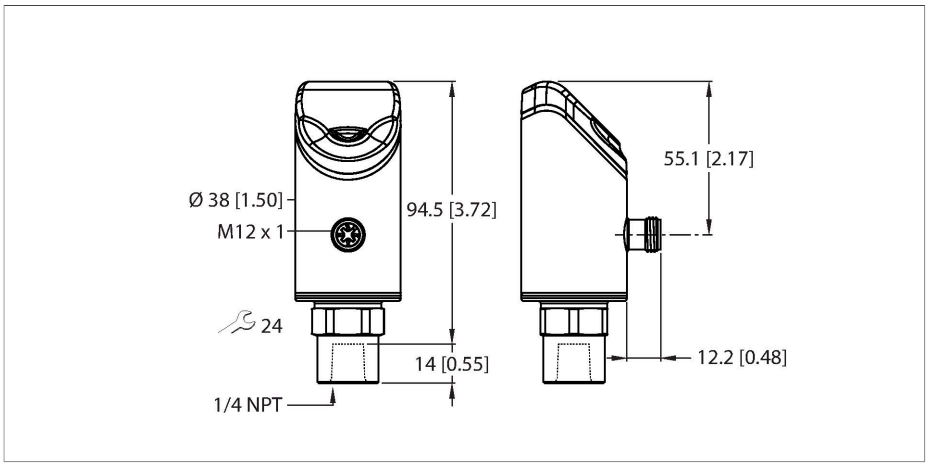
# PS510-25V-02-LI2UPN8-H1141
# Pressure Sensor – Relative Pressure: -1…25 Bar





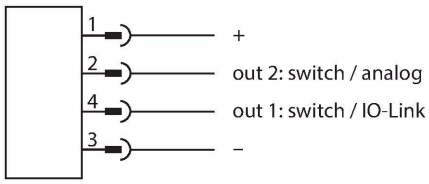

## Technical data

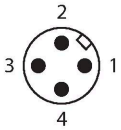
| | |
|---|---|
| Type | PS510-25V-02-LI2UPN8-H1141 |
| ID | 100001549 |
| Medium temperature | -30…+80 °C |
| Application area | Liquids and gases |
| **Pressure range** | |
| Pressure type | Relative pressure |
| Pressure range | -1…25 bar |
| | -14.5…362.59 psi |
| | -0.1…2.5 MPa |
| Admissible overpressure | ≤ 140 bar |
| Burst pressure | ≥ 280 bar |
| Response time | ≤ 3 ms |
| **Electrical data** | |
| Operating voltage $U_B$ | 18…33 VDC |
| Short-circuit/reverse polarity protection | yes, cyclic / yes (voltage supply) |
| Capacitive load | 100 nF |
| Insulation class | III |
| **Outputs** | |
| Output 1 | Switching output or IO-Link mode |
| Output 2 | Analog or switching output |
| **Switching output** | |
| Communication protocol | IO-Link |
| Output function | NO/NC, PNP/NPN |
| Accuracy | ± 0.25 % FS BSL |
| Rated operational current | 0.25 A |
| Switching frequency | ≤ 300 Hz |
| Switching point distance | ≥ 0.5 % |

## Features

- 4-digit, 2-color (red/green), 12-segment display, rotatable by 180°
- Housing is rotatable after mounting the process connection
- Metal measuring cell
- Pressure range -1…25 bar relative
- 18…33 VDC
- NO/NC contact, PNP/NPN output, analog output (current/voltage), IO-Link
- Process connection 1/4 inch NPT-18 female thread
- Connector device, M12 × 1

## Wiring diagram




## Functional principle

The pressure sensors from the P510 product series operate with fully welded metal measuring cells. As a result of the pressure acting on the metal substrate, a signal that is proportional to the pressure is generated and processed electronically. The processed signal is available either as a switching or an analog output with an accuracy of 0.25% of full scale. The rotatable sensor body and a variety

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## Technical data

| | |
|---|---|
| Switch point: | (Min. + 0.005 × range)…100 % of full scale |
| Release point(s) | min. up to (SP - 0.005 × range) |
| Switching cycles | ≥ 100 mil. |
| **Analog output** | |
| Current output | 4…20 mA |
| High level signal current | 20.5 mA |
| Low level signal current | 3.8 mA |
| Load resistance current output | ≤ 0.5 kΩ |
| Voltage output | 0…10 V |
| Load resistance voltage output | ≥ 8 kΩ |
| Accuracy LHR | ± 0.25 % FS BSL |
| **IO-Link** | |
| IO-Link specification | V 1.1 |
| IO-Link port type | Class A |
| Transmission physics | corresponds to 3-wire physics (PHY2) |
| Transmission rate | COM 2/38.4 kbps |
| Process data width | 16 bit |
| Measured value information | 14 bit |
| Switching point information | 2 bit |
| Frame type | 2.2 |
| Programming | FDT/DTM |
| Accuracy | ± 0.25 % FS BSL |
| Included in the SIDI GSDML | Yes |
| **Programming** | |
| Programming options | start/end value analog output; switch/release points; PNP/NPN; NO/NC contact; hysteresis/window function; damping; pressure unit; peak pressure memory |
| **Mechanical data** | |
| Housing material | Stainless-steel/Plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV |
| Materials (contact with media) | Stainless steel 1.4404 (AISI 316L)/1.4542 (AISI 630) |
| Process connection | 1/4" NPT-18 female thread |
| Wrench size pressure connection / coupling nut | 24 |
| Max. tightening torque of housing nut | 35 Nm |
| Electrical connection | Connector, M12 × 1 |
| Protection class | IP66<br>IP67<br>IP69K |
| **Environmental conditions** | |
| Ambient temperature | -40…+80 °C |

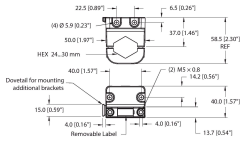
of process connections guarantee flexible process integration.

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## Technical data

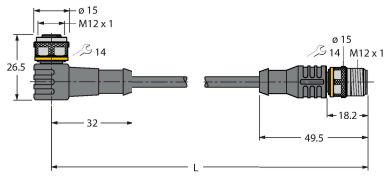
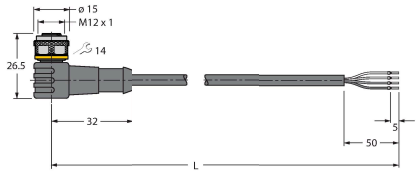
| | |
|---|---|
| Storage temperature | -40…+80 °C |
| Shock resistance | 50 g (11 ms) DIN EN 60068-2-27 |
| EMV | EN 61000-4-2 ESD:4 kV CD / 8 kV AD<br>EN 61000-4-3 HF radiated: 15 V/m<br>EN 61000-4-4 Burst: 2 kV<br>EN 61000-4-6 HF cable bound: 10 V<br>EN 61000-6-2 0.5 kV, 42 Ω<br>EN 61326-2-3 |
| **Tests/approvals** | |
| Approvals | CE<br>Metrological certification (RUS)<br>cULus |
| UL registration number | E183243 |
| **Reference conditions acc. to IEC 61298-1** | |
| Temperature | 15…+25 °C |
| Atmospheric pressure | 860…1030 hPa abs. |
| Humidity | 45…75 % rel. |
| Auxiliary power | 24 VDC |
| **Displays/Operating elements** | |
| Display | 4-digit 12-segment display, rotatable by 180°, red or green |
| Switching state | 2 × LEDs, Yellow |
| Unit display | 5 x LEDs green (bar, psi, kPa, MPa, misc) |
| **Temperature behaviour** | |
| Temperature coefficient range $TK_s$ | ± 0.1 % of full scale/10 K |
| Temperature coefficient zero point $TK_0$ | ± 0.1 % of full scale/10 K |
| MTTF | 100 years acc. to SN 29500 (Ed. 99) 40 °C |

## Accessories

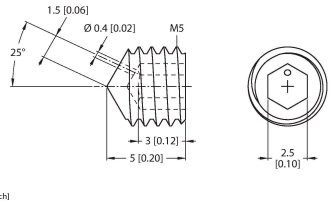
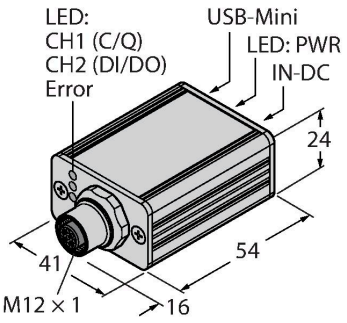
| | |
|---|---|
| FAM-30-PA66 | 100018384 |
|  | Mounting bracket; variable wrench size 24–30 mm; removable labeling plate 20 × 9 mm |

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## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | WKC4.4T-2-RSC4.4T/TXL | 6625640 | Extension cable, M12 female connector, angled, 4-pin to M12 male connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval |
|  | WKC4.4T-2/TXL | 6625515 | Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval |

## Accessories

| Dimension drawing | Type | ID | |
|---|---|---|---|
|  | PAM-P3 | 100004416 | Damping element, protects the measuring cell from pressure peaks |
|  | USB-2-IOL-0002 | 6825482 | IO-Link Master with integrated USB port |

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