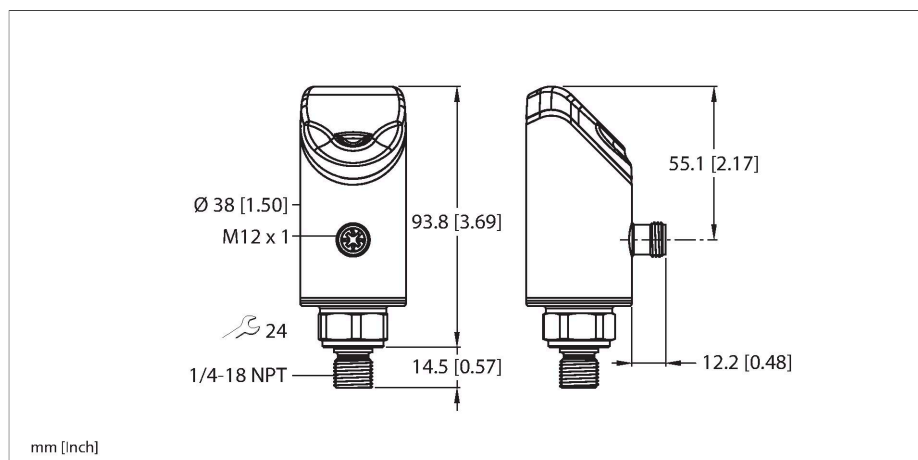


# PS510-16V-03-2UPN8-H1141

## Pressure Sensor – Relative Pressure: -1...16 Bar



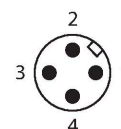
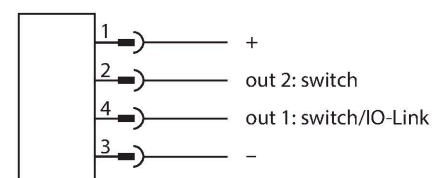
### Technical data

|   |                                    |
|---|------------------------------------|
| Type                                      | PS510-16V-03-2UPN8-H1141           |
| ID  | 100001686                          |
| Medium temperature                        | -30...+80 °C                       |
| Application area                          | Liquids and gases                  |
| <b>Pressure range</b>                     |                                    |
| Pressure type                             | Relative pressure                  |
| Pressure range                            | -1...16 bar                        |
|   | -14.5...232.06 psi                 |
|   | -0.1...1.6 MPa                     |
| Admissible overpressure                   | ≤ 70 bar                           |
| Burst pressure                            | ≥ 140 bar                          |
| Response time                             | ≤ 3 ms                             |
| <b>Electrical data</b>                    |                                    |
| Operating voltage                         | 18...33 VDC                        |
| Short-circuit/reverse polarity protection | yes, cyclic / yes (voltage supply) |
| Capacitive load                           | 100 nF                             |
| Insulation class                          | III                                |
| <b>Outputs</b>                            |                                    |
| Output 1                                  | Switching output or IO-Link mode   |
| Output 2                                  | Switching output                   |
| <b>Switching output</b>                   |                                    |
| 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-colored, 12-segment display, rotatable by 180°
- Housing is rotatable after plugging the process connection
- Metal measuring cell
- 18...33 VDC
- NO/NC contact, PNP/NPN output, IO-Link
- Process connection 1/4" NPT male 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 of process connections guarantee flexible process integration.

## 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.   |
| <b>IO-Link</b>                                 |  |
| IO-Link specification                          | V 1.1  |
| IO-Link port type                              | Class A  |
| Transmission physics                           | corresponds to 3-wire physics (PHY2)   |
| Frame type                                     | 2.2  |
| Transmission rate                              | COM 2/38.4 kbps  |
| Process data width                             | 16 bit   |
| Measured value information                     | 14 bit   |
| Switchpoint information                        | 2 bit  |
| Programming                                    | FDT/DTM  |
| Accuracy                                       | ± 0.25 % FS BSL  |
| Included in the SIDI GSDML                     | Yes  |
| <b>Programming</b>                             |  |
| Programming options                            | Switching/reversing points; PNP/NPN; opener/closer; hysteresis/window mode; damping; pressure unit; printhead memory   |
| <b>Mechanical data</b>                         |  |
| 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 male 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  |
| <b>Environmental conditions</b>                |  |
| Ambient temperature                            | -40...+80 °C   |
| 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 |
| <b>Tests/approvals</b>                         |  |
| Approvals                                      | CE<br>Metrological certification (RUS)   |

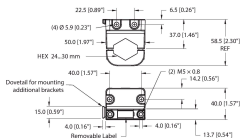
## Technical data

|  |   |
|--|---|
|  | cULus   |
| UL registration number                             | E183243   |
| <b>Reference conditions acc. to IEC 61298-1</b>    |   |
| Temperature  | 15...+25 °C   |
| Atmospheric pressure                               | 860...1030 hPa abs.   |
| Humidity   | 45...75 % rel.  |
| Auxiliary power                                    | 24 VDC  |
| <b>Displays/Operating elements</b>                 |   |
| 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)                   |
| <b>Temperature behaviour</b>                       |   |
| Temperature coefficient range TK <sub>s</sub>      | ± 0.1 % of full scale/10 K                                  |
| Temperature coefficient zero point TK <sub>0</sub> | ± 0.1 % of full scale/10 K                                  |
| MTTF   | 110 years acc. to SN 29500 (Ed. 99) 40 °C                   |

## Accessories

FAM-30-PA66

100018384



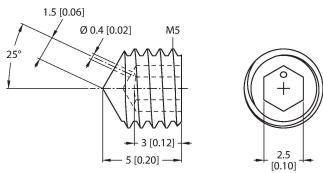
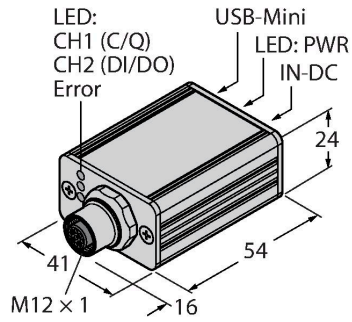
Mounting bracket; variable wrench size 24–30 mm; removable labeling plate 20 × 9 mm

## Accessories

| Dimension drawing  | Type                  | ID      |   |
|--|-----------------------|---------|---|
| <p>Technical drawing of the WKC4.4T-2-RSC4.4T/TXL cable connector. It shows a side view of the angled M12 female connector with dimensions: 26.5, 32, 14, 18.2, 49.5, and L. The connector is labeled with 'ø 15' and 'M12 x 1'.</p> | 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 |
| <p>Technical drawing of the WKC4.4T-2/TXL cable connector. It shows a side view of the angled M12 female connector with dimensions: 26.5, 32, 14, 50, and L. The connector is labeled with 'ø 15' and 'M12 x 1'.</p>                 | 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      |   |
|-------------------|----------------|---------|---|
|                   | USB-2-IOL-0002 | 6825482 | IO-Link Master with integrated USB port |



mm [inch]

PAM-P3

100004416

Damping element, protects the measuring cell from pressure peaks