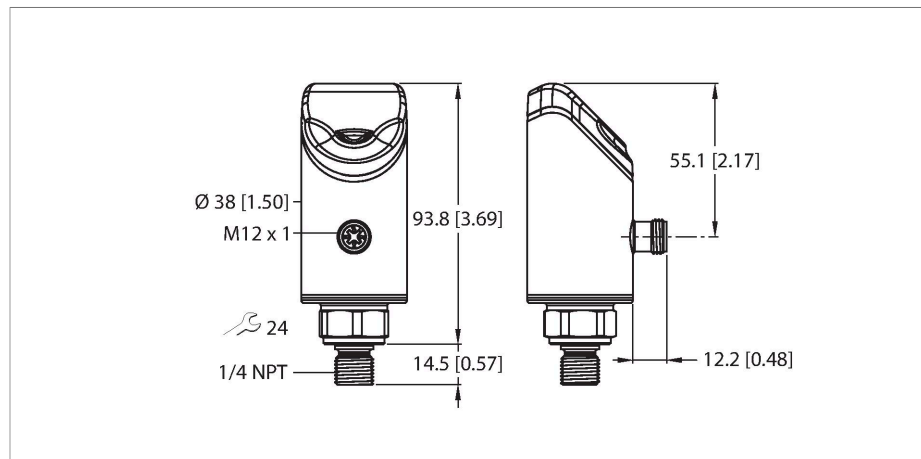


# PS510-100-03-2UPN8-H1141

## Pressure sensor – Relative Pressure: 0...100 Bar



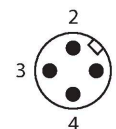
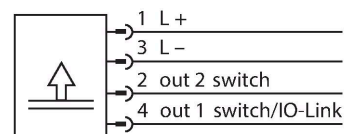
### Technical data

|   |                                    |
|---|------------------------------------|
| Type                                      | PS510-100-03-2UPN8-H1141           |
| Ident. no.                                | 100001718                          |
| Medium temperature                        | -30...+80 °C                       |
| Application area                          | Liquids and gases                  |
| <b>Pressure range</b>                     |                                    |
| Relative pressure bar                     | 0...100 bar rel.                   |
|   | 0...1450.38 psi                    |
|   | 0...10 MPa                         |
| Admissible overpressure                   | ≤ 300 bar                          |
| Burst pressure                            | ≥ 400 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 % of final value BSL        |
| Rated operational current                 | 0.25 A                             |

### Features

- 4-digit, two-colored, 14-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

|  |   |
|--|---|
| Switching frequency                            | ≤ 300 Hz  |
| Switching point distance                       | ≥ 0.5 %   |
| Switch point:                                  | (min. + 0.005 x range) up to 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 % of full scale 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 male thread  |
| Wrench size pressure connection / coupling nut | 24  |
| Max. tightening torque of housing nut          | 35 Nm   |
| Electrical connection                          | Connector, M12 × 1  |
| Protection class                               | IP6K6K / 6K7 / 6K9K   |
| <b>Environmental conditions</b>                |   |
| Ambient temperature                            | -40...+80 °C  |
| Storage temperature                            | -40...+100 °C   |
| Shock resistance                               | 50 g (11 ms) , 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 |

## Technical data

EN 61000-6-2 0.5 kV, 42  $\Omega$   
EN 61326-2-3

| 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  |
| Display functions                           |   |
| 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 span $T_{ks}$       | $\pm 0.1$ % of full scale/10 K                              |
| Temperature coefficient zero point $T_{k0}$ | $\pm 0.1$ % of full scale/10 K                              |
| MTTF  | 110 years acc. to SN 29500 (Ed. 99) 40 °C                   |