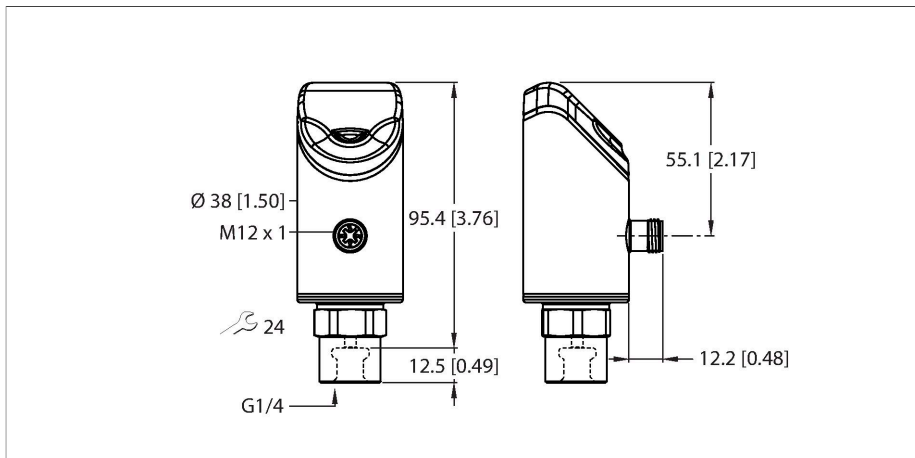


# PS510-100-01-2UPN8-H1141/X

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



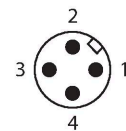
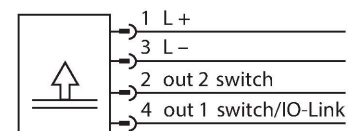
### Technical data

Type	PS510-100-01-2UPN8-H1141/X
ID	100001721
Medium temperature	-30...+80 °C
<b>Pressure range</b>	
Pressure type	Relative pressure
Pressure range	0...100 bar
	0...1450.38 psi
	0...10 MPa
Admissible overpressure	≤ 300 bar
Burst pressure	≥ 400 bar
Response time	≤ 3 ms
Operating voltage	18...33 VDC
Short-circuit/reverse polarity protection	yes, cyclic / yes (voltage supply)
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 %
Switch point:	(Min. + 0.005 × range)...100 % of full scale
Release point(s)	min. up to (SP - 0.005 × range)

### Features

- 4-digit, 2-colored, 12-segment display, rotatable by 180°
- Housing is rotatable after plugging the process connection
- Metal measuring cell
- Peak pressure aperture
- 18...33 VDC
- NO/NC contact, PNP/NPN output, IO-Link
- Process connection G1/4" female thread
- Plug-in 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 cycles	≥ 100 mil.
<b>IO-Link</b>	
IO-Link specification	V 1.1
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
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV
Process connection	G 1/4" 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 IP67 IP69K
Ambient temperature	-40...+80 °C
Storage temperature	-40...+100 °C
Shock resistance	50 g (11 ms) , DIN EN 60068-2-27
EMV	EN 61000-4-2 ESD:4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 15 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF cable bound: 10 V EN 61000-6-2 0.5 kV, 42 Ω EN 61326-2-3
<b>Tests/approvals</b>	
Approvals	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

## Technical data

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 span $T_{KS}$	± 0.1 % of full scale/10 K
Temperature coefficient zero point $T_{K0}$	± 0.1 % of full scale/10 K
MTTF	110 years acc. to SN 29500 (Ed. 99) 40 °C

## Technical data

Type	PS510-100-01-2UPN8-H1141/X
ID	100001721
<b>Pressure range</b>	
Pressure type	Relative pressure
Pressure range	0...100 bar
	0...1450.38 psi
	0...10 MPa
Admissible overpressure	≤ 300 bar
Burst pressure	≥ 400 bar
Response time	≤ 3 ms
Operating voltage	18...33 VDC
Voltage drop at $I_o$	≤ 2 V
Short-circuit/reverse polarity protection	yes, cyclic / yes (voltage supply)
Protection type and class	IP66 IP67 IP69K / 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 %
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

## Technical data

Programming	FDT/DTM
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
Switchpoint information	2 bit
Frame type	2.2
Accuracy	± 0.25 % FS BSL
Included in the SIDI GSDML	Yes
<b>Temperature behaviour</b>	
Medium temperature	-30...+80 °C
Temperature coefficient zero point Tk0	± 0.1 % of full scale/10 K
Temperature coefficient span T <sub>ks</sub>	± 0.1 % of full scale/10 K
Ambient temperature	-40...+80 °C
Storage temperature	-40...+100 °C
Shock resistance	50 g (11 ms) , DIN EN 60068-2-27
EMV	EN 61000-4-2 ESD:4 kV CD / 8 kV AD EN 61000-4-3 HF radiated: 15 V/m EN 61000-4-4 Burst: 2 kV EN 61000-4-6 HF cable bound: 10 V EN 61000-6-2 0.5 kV, 42 Ω EN 61326-2-3
Housing material	Stainless-steel/Plastic, 1.4404 (AISI 316L)/Grilamid TR90 UV
Process connection	G 1/4" female thread
Wrench size pressure connection / coupling nut	24
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	35 Nm
<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
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>Programming</b>	
Programming options	Switching/reversing points; PNP/NPN; opener/closer; hysteresis/window mode; damping; pressure unit; printhead memory

## Technical data

Tests/approvals	
Approvals	cULus
UL registration number	E183243
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

Technical drawing details: 22.5 (0.89"), 6.5 (0.26"), 46 (1.81"), 50.0 (1.97"), HEX 24\_30 mm, 37.0 (1.46"), 58.5 (2.30") REF, 40.0 (1.57"), 14.2 (0.56"), 40.0 (1.57"), 15.0 (0.59"), 4.0 (0.16"), 4.0 (0.16"), 13.7 (0.54").

## Accessories

Dimension drawing	Type	ID	
	WKC4.4T-2-RSC4.4T/TXL	6625640	Extension cable, M12 female, angled, 4-pin to M12 male, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>
	WKC4.4T-2/TXL	6625515	Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>

## Accessories

Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port