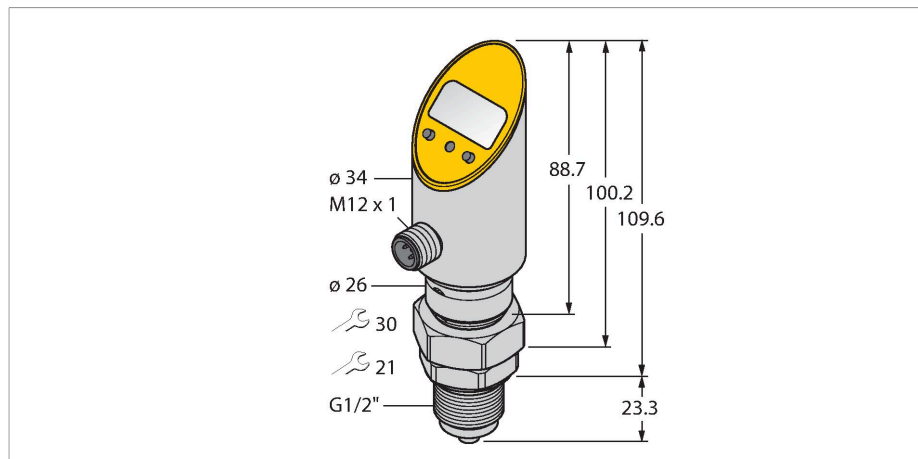


PS016V-508-LI2UPN8X-H1141/3GD

Pressure Transmitter (Rotatable) – With Analog Output and PNP/NPN Transistor Switching Output

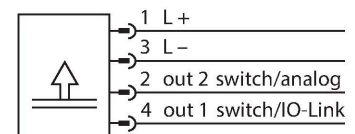
Output 2 Reprogrammable as Switching Output



Features

- Housing is rotatable after plugging the process connection
- Reading of adjusted values without tool
- Recessed pushbutton and keylock for secure programming
- Permanent indication of pressure (bar, psi, kPa, MPa, misc)
- Peak pressure memory
- Pressure range -1...16 bar rel.
- ATEX category II 3 G, Ex zone 2
- ATEX category II 3 D, Ex zone 22

Wiring diagram



Technical data

Type	PS016V-508-LI2UPN8X-H1141/3GD
ID	6834055
Medium temperature	-40...+85 °C
Pressure range	
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	≥ 70 bar
Response time	< 3 ms
Power supply	
Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes
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	± 0.5 % FS BSL

Functional principle

The pressure sensors in the PS product series operate with ceramic measuring cells. As a result of the pressure acting on the ceramic 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 signal, depending on the sensor type used. Maximum flexibility thanks to a rigid or rotatable sensor body, a variety of thread types, front-flush or dead-space-free pressure membranes and an accuracy of 0.5 % of full scale guarantee a safe connection to the process.

Technical data

Rated operational current	0.2 A
Switching frequency	≤ 180 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 x range)
Switching cycles	≥ 100 mil.
Analog output	
Current output	4...20 mA
Voltage output	0...10 V
Load	≤ 0.5 kΩ
Accuracy LHR	± 0.5 % FS BSL
IO-Link	
IO-Link specification	V 1.0
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	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
Programming options	start/end value analog output; switch/release points; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory
Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
Process connection	G 1/2" male thread DIN 3852-E (manometer)
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Pressure transducer material	Ceramic Al ₂ O ₃
Sealing material	FPM spez.
Wrench size pressure connection / coupling nut	27/ 30
Max. tightening torque of housing nut	35 Nm
Electrical connection	Connector, M12 × 1
Protection class	IP67 IP69K
Ambient temperature	-40...+70 °C
Storage temperature	-40...+80 °C
Shock resistance	50 g (11 ms) , acc. to IEC 68-2-27
Vibration resistance	20 g (9...2000 Hz), according to IEC 68-2-6

Technical data

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 61000-4-5 Surge: 1000 V, 42 Ohm EN 61000-4-6 HF cable bound: 10 V
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Tests/approvals	
UL registration number	E183243
Reference conditions acc. to IEC 61298-1	
Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC
Display	4-digit 7-segment display, rotatable by 180°, disengageable
Switching state	2 × LEDs, Yellow
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)
Temperature behaviour	
Temperature coefficient span T_{KS}	± 0.15 % of full scale/10 K
Temperature coefficient zero point T_{k0}	± 0.15 % of full scale/10 K
MTTF	439 years acc. to SN 29500 (Ed. 99) 40 °C
	SC-M12/3GD

Technical data

Type	PS016V-508-LI2UPN8X-H1141/3GD
ID	6834055
Pressure range	
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	≥ 70 bar
Response time	< 3 ms
Power supply	
Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Voltage drop at I_o	≤ 2 V
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes / yes
Protection type and class	IP67 IP69K / III

Technical data

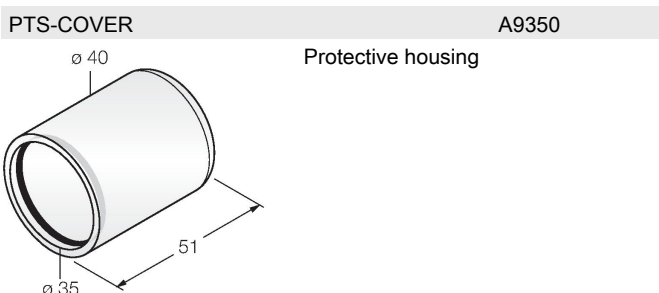
Outputs	
Output 1	Switching output or IO-Link mode
Output 2	Analog or switching output
Switching output	
Communication protocol	IO-Link
Output function	NO/NC, PNP/NPN
Accuracy	± 0.5 % FS BSL
Rated operational current	0.2 A
Switching frequency	≤ 180 Hz
Switching point distance	≥ 0.5 %
Switch point:	(Min. + 0.005 × range)...100 % of full scale
Release point(s)	min up to (SP - 0.005 x range)
Switching cycles	≥ 100 mil.
Analog output	
Current output	4...20 mA
Voltage output	0...10 V
Load	≤ 0.5 kΩ
Accuracy LHR	± 0.5 % FS BSL
IO-Link	
IO-Link specification	V 1.0
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	± 0.5 % FS BSL
Included in the SIDI GSDML	Yes
Temperature behaviour	
Medium temperature	-40...+85 °C
Temperature coefficient zero point T _{k0}	± 0.15 % of full scale/10 K
Temperature coefficient span T _{ks}	± 0.15 % of full scale/10 K
Ambient conditions	
Ambient temperature	-40...+70 °C
Storage temperature	-40...+80 °C
Vibration resistance	20 g (9...2000 Hz), according to IEC 68-2-6
Shock resistance	50 g (11 ms) , acc. to IEC 68-2-27
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

Technical data

EN 61000-4-5 Surge: 1000 V, 42 Ohm
EN 61000-4-6 HF cable bound: 10 V

Mechanical data	
Housing material	Stainless-steel/Plastic, 1.4305 (AISI 303)
Pressure connection material	Stainless steel 1.4305 (AISI 303)
Pressure transducer material	Ceramic Al ₂ O ₃
Sealing material	FPM spez.
Process connection	G 1/2" male thread DIN 3852-E (manometer)
Wrench size pressure connection / coupling nut	27/ 30
Electrical connection	Connector, M12 × 1
Max. tightening torque of housing nut	35 Nm
Reference conditions acc. to IEC 61298-1	
Temperature	15...+25 °C
Atmospheric pressure	860...1060 hPa abs.
Humidity	45...75 % rel.
Auxiliary power	24 VDC
Display	4-digit 7-segment display, rotatable by 180°, disengageable
Switching state	2 × LEDs, Yellow
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)
Programming options	start/end value analog output; switch/release points; PNP/NPN; NO/NC contact; hysteresis/window mode; damping; pressure unit; peak pressure memory
Tests/approvals	
Approvals	cULus
UL registration number	E183243
MTTF	439 years acc. to SN 29500 (Ed. 99) 40 °C
Included in delivery	SC-M12/3GD

Accessories

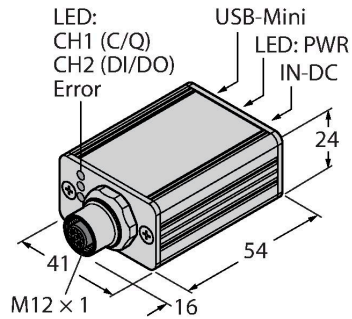


Accessories

Dimension drawing	Type	ID	
	WKC4.4T-2/TEL	6625025	Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	RKC4.4T-2/TEL	6625013	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	RKC4.4T-2/TXL	6625503	Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com
	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 www.turck.com
	RKC4.4T-P7X2-10/TXL	6626184	Connection cable, female M12, angled, 4-pin, cable length: 10m, sheath material: PUR, black; cULus approval; other cable lengths and qualities available, see www.turck.com

Accessories

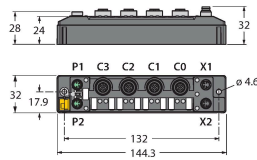
Dimension drawing	Type	ID	
	USB-2-IOL-0002	6825482	IO-Link Master with integrated USB port



TBEN-S2-4IOL

6814024

Compact multiprotocol I/O module, 4 IO-Link Master 1.1 Class A, 4 universal PNP digital channels 0.5 A



Instructions for use

Intended use

This device fulfills the directive 2014/34/EC and is suited for use in explosion hazardous areas acc. to EN60079-0:2012, EN60079-15:2010 and EN60079-31:2009. In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.

For use in explosion hazardous areas conform to classification

II 3 G and II 3 D (Group II, Category 3 G, electrical equipment for gaseous atmospheres and category 3 D, electrical equipment for dust atmospheres).

Marking (see device or technical data sheet)

Ⓔ II 3 G Ex nA IIC T5 Gc acc. to EN 60079-0:2012 and EN 60079-15:2010 and Ⓔ II 3 D Ex tc IIIC T90°C Dc acc. to EN 60079-0:2012 and EN 60079-31:2009

Local admissible ambient temperature

0...+60 °C

Installation/Commissioning

These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.

Installation and mounting instructions

Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device. The devices must be protected against strong magnetic fields. The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet. In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.

Special conditions for safe operation

Do not disconnect the plug-in connection or cable under voltage. Please attach a warning label permanently in an appropriate fashion in close proximity to the plug-in connection with the following inscription: Nicht unter Spannung trennen / Do not separate when energized. The device must be protected against mechanical damage caused by energy > 4 Joule and harmful UV rays. The IP protection rating of the connectors is given only in combination with a suitable O-ring. Load voltage and operating voltage of this equipment must be supplied from power supplies with safe isolation (IEC 60 364/UL508), to ensure that the rated voltage of the equipment (24 VDC +20% = 28.8 VDC) is never exceeded by more than 40%.

Service/Maintenance

Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.