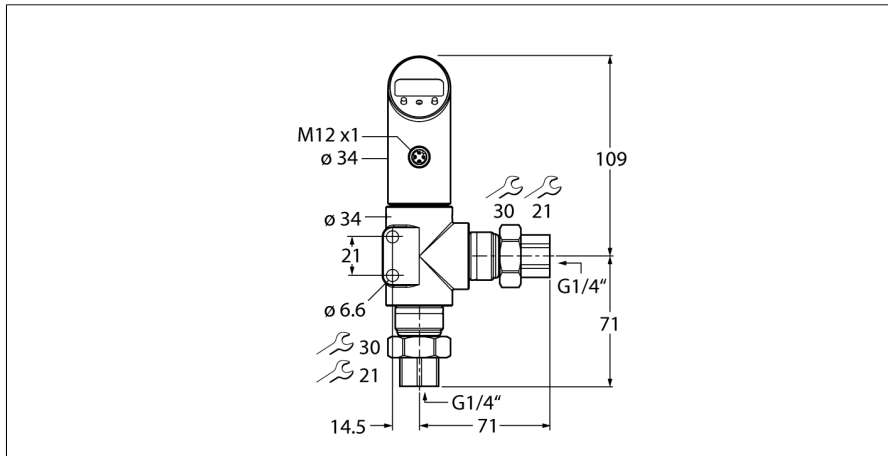


# Differential Pressure Sensor

## With current output and PNP/NPN transistor switching output

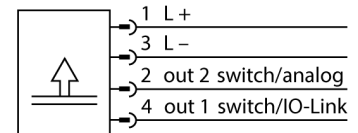
### Output 2 programmable as switching output

#### PS040D-501L-LI2UPN8X -H1141



- Pressure monitoring in harsh industrial environments
- Housing is rotatable after plugging the process connection
- Reading of adjusted values without tool
- High-side switch
- Recessed pushbutton, keylock and password for secure programming
- Permanent indication of pressure (bar, psi, kPa, MPa, misc)
- Peak pressure memory
- Pressure range 0...40 bar difference

#### Wiring Diagram



#### Functional principle

The PSD differential pressure sensors have two pressure connections with ceramic measuring cells to detect different pressures, from which the difference is formed. As a result of the pressure acting on the measuring cells, a signal that is proportional to the pressure is generated and electronically processed internally. Depending on the sensor variant, either switching or analog signals are available. All PSD variants have IO-Link.

The PSD sensors operate in various positive pressure ranges up to a differential of 250 bar. The connection with higher pressure can be configured via the menu (High-Site-Switch).

<b>Type designation</b>	PS040D-501L-LI2UPN8X -H1141
Ident-No.	6834125
<b>Pressure range</b>	
Relative pressure	0...40 bar rel. 0...580.151psi 0...4MPa
Admissible overpressure	≤ 200 bar
Burst pressure	≥ 200 bar
Response time	< 3 ms
<b>Power supply</b>	
Operating voltage	18...30 VDC
Current consumption	≤ 50 mA
Voltage drop at $I_L$	≤ 2 V
Protective measure	SELV; PELV according to EN 50178
Short-circuit/reverse polarity protection	yes/ yes
Protection type and class	IP67/IP69K/ III
<b>Outputs</b>	
Output 1	Switching output or IO-Link mode
Output 2	analog or switching output
<b>Switching output</b>	
Output function	NO/NC, PNP/NPN
Accuracy switching output	± 1 % v. E. BSL
Rated operational current	0.2 A
Switching frequency	≤ 180 Hz
Switching point distance	≥ 0.5 %
Switch point:	(min. + 0.005 × range) up to 100% of full scale
Release point(s)	min. up to (SP - 0.005 × range)
Switching cycles	≥ 100 mil.
<b>Analog output</b>	
Current output	4...20 mA
Operating range	4...20/0...20 mA (3-wire)
Load	≤ 0.5 kΩ
Accuracy LHR analog output	± 1 % FS BSL
<b>Temperature behaviour</b>	
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

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**Ambient conditions**

Ambient temperature	-40...+80 °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) , according to IEC 61508
EMC	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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**Housing**

Housing material	Stainless-steel/Plastic, V2A (1.4305)
Pressure connection material	Stainless steel A2 1.4305 (AISI 303)
Pressure transducer material	Ceramics Al <sub>2</sub> O <sub>3</sub>
Sealing material	FPM spez.
Process connection	G $\frac{1}{4}$ " female thread
Wrench size pressure connection / coupling nut	21/ 30
Electrical connection	Connector, M12 × 1
Max. tightening torque housing nut	35 Nm

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**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

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**Display**

	4-digit 7-segment display, rotatable by 180°, disengageable
Switching state	2 × LEDs Yellow
Programming options	start/end value analog output; switch/release points; PNP/NPN; NO/NC contact; hysteresis/window function; damping; pressure unit; peak pressure memory
Unit display	5 x LEDs green (bar, psi, kPa, MPa, misc)