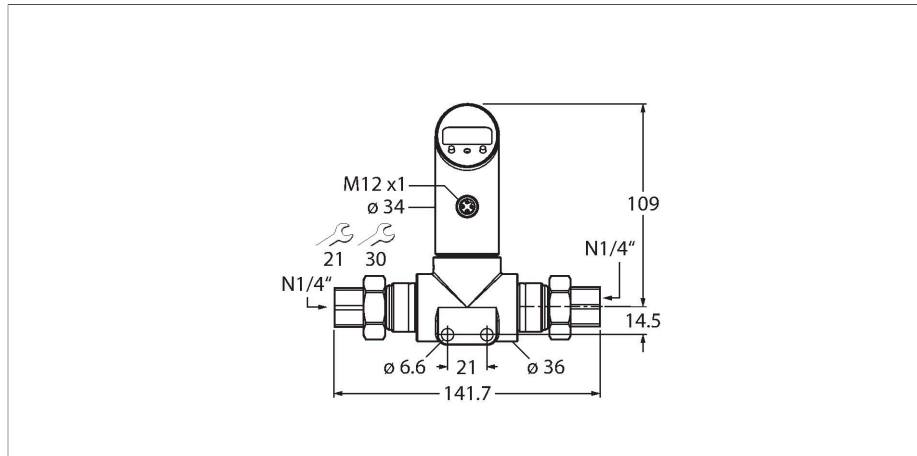


PS040D-502T-LI2UPN8X-H1141

Differential Pressure Sensor – With current output and PNP/NPN Transistor Switching Output

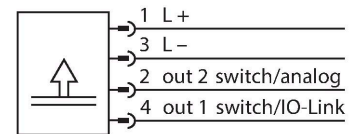
Output 2 Programmable as Switching Output



Features

- 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 diff.

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).

Technical data

| | |
|---|----------------------------------|
| Type | PS040D-502T-LI2UPN8X-H1141 |
| ID | 6834104 |
| Medium temperature | -40...+85 °C |
| Pressure range | |
| Pressure type | Differential Pressure |
| Pressure range | 0...40 bar |
| | 0...580.15 psi |
| | 0...4 MPa |
| Admissible overpressure | ≤ 200 bar |
| Burst pressure | ≥ 200 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 |

Technical data

| Switching output | |
|--|--|
| Communication protocol | IO-Link |
| Output function | NO/NC, PNP/NPN |
| Accuracy | ± 1 % 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 |
| Load | ≤ 0.5 kΩ |
| Accuracy LHR | ± 1 % 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 function; damping; pressure unit; peak pressure memory |
| Mechanical data | |
| Housing material | Stainless-steel/Plastic, 1.4305 (AISI 303) |
| Process connection | 1/4" NPT-18 female thread |
| 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 | 21/ 30 |
| Max. tightening torque of housing nut | 35 Nm |
| Electrical connection | Connector, M12 × 1 |
| Protection class | IP67 IP69K |
| Environmental conditions | |
| Ambient temperature | -40...+80 °C |
| Storage temperature | -40...+80 °C |
| Shock resistance | 50 g (11 ms) acc. to IEC 60068-2-27 |
| Vibration resistance | 20 g (9...2000 Hz), according to IEC 60068-2-6 |
| 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: 1 kV, 42 Ohm
EN 61000-4-6 HF Cable-bound: 10 V

| Tests/approvals | |
|--|--|
| 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°, with switch-off function |
| Switching state | 2 × LEDs, Yellow |
| Unit display | 5 x LEDs green (bar, psi, kPa, MPa, misc) |
| Temperature behaviour | |
| Temperature coefficient range TK _s | ± 0.3 % of full scale/10 K |
| Temperature coefficient zero point TK ₀ | ± 0.3 % of full scale/10 K |
| MTTF | 439 years |
| Technical data | |
| Type | PS040D-502T-LI2UPN8X-H1141 |
| ID | 6834104 |
| Pressure range | |
| Pressure type | Differential Pressure |
| Pressure range | 0...40 bar |
| | 0...580.15 psi |
| | 0...4 MPa |
| Admissible overpressure | ≤ 200 bar |
| Burst pressure | ≥ 200 bar |
| Response time | < 3 ms |
| Power supply | |
| Operating voltage | 18...30 VDC |
| Current consumption | ≤ 50 mA |
| Voltage drop at I ₀ | ≤ 2.5 V |
| Protective measure | SELV; PELV according to EN 50178 |
| Short-circuit/reverse polarity protection | yes / yes |
| Protection type and class | IP67 IP69K / III |
| Outputs | |
| Output 1 | Switching output or IO-Link mode |

Technical data

| | |
|--|--|
| Output 2 | Analog or switching output |
| Switching output | |
| Communication protocol | IO-Link |
| Output function | NO/NC, PNP/NPN |
| Accuracy | ± 1 % 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 |
| Load | ≤ 0.5 kΩ |
| Accuracy LHR | ± 1 % FS BSL |
| Included in the SIDI GSDML | Yes |
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| Medium temperature | -40...+85 °C |
| Temperature coefficient zero point TK ₀ | ± 0.3 % of full scale/10 K |
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| Ambient temperature | -40...+80 °C |
| Storage temperature | -40...+80 °C |
| Vibration resistance | 20 g (9...2000 Hz), according to IEC 60068-2-6 |
| Shock resistance | 50 g (11 ms) acc. to IEC 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 61000-4-5 Surge: 1 kV, 42 Ohm EN 61000-4-6 HF Cable-bound: 10 V |
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| Housing material | Stainless-steel/Plastic, 1.4305 (AISI 303) |
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| Sealing material | FPM spez. |
| Process connection | 1/4" NPT-18 female thread |
| Wrench size pressure connection / coupling nut | 21/ 30 |

Technical data

| | |
|---|--|
| 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°, with switch-off function |
| 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 function; damping; pressure unit; peak pressure memory |
| Tests/approvals | |
| MTTF | 439 years |