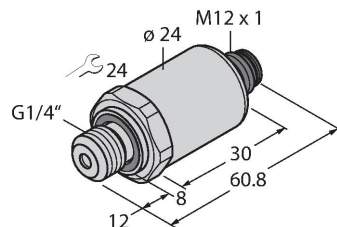


# PT40R-2004-IOL-H1141/X

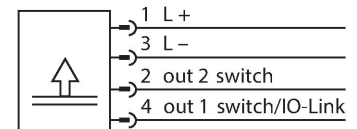
## Pressure Transmitter – IO-Link with Two Switching Outputs



### Features

- Fully welded metal measuring cell
- Pressure range 0...40 bar rel.
- Pressure peak orifice
- 18...33 V DC
- NO/NC contact, 2 × PNP/NPN outputs, IO-Link
- Process connection G1/4" male thread (back sealing) according to DIN EN ISO 1179-2 with FPM profile sealing ring
- Connector device, M12 × 1

### Wiring diagram



### Technical data

|                                           |                                        |
|-------------------------------------------|----------------------------------------|
| Type                                      | PT40R-2004-IOL-H1141/X                 |
| ID                                        | 100022262                              |
| Pressure type                             | Relative pressure                      |
| Pressure range                            | 0...40 bar                             |
|                                           | 0...580.15 psi                         |
|                                           | 0...4 MPa                              |
| Admissible overpressure                   | ≤ 120 bar                              |
| Burst pressure                            | ≥ 240 bar                              |
| Response time                             | < 2 ms, typ. 1 ms                      |
| Long-term stability                       | 0.25 % FS, according to IEC EN 60770-1 |
| <b>Power supply</b>                       |                                        |
| Operating voltage $U_B$                   | 18...33 VDC                            |
|                                           | In IO-Link mode                        |
|                                           | 9...33 VDC                             |
|                                           | In SIO mode                            |
| Short-circuit/reverse polarity protection | yes / yes                              |
| Protection class                          | IP67                                   |
| Insulation class                          | III                                    |
| Insulation voltage                        | 750 VDC                                |
| <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                         |
| Switching current                         | ≤ 100 mA                               |

### Functional principle

The pressure sensors in the PT...-2000 product series operate with a fully welded metal measuring cell in various pressure ranges of up to -1...1000 bar in 2-, 3- or even 4-wire technology. Depending on the sensor variant, the processed signal is available as an analog output signal (4...20 mA, 0...10 V, 0...5 V, 1...6 V, ratiometric) or as a digital IO-Link process parameter. The IO-Link sensor variants also have two independently configurable switching outputs. In addition to the standard variants, there are special sensors for uses such as ATEX areas or for oxygen applications. A wide range of process connections and electrical connections offer a high degree of flexibility in a wide range of applications.

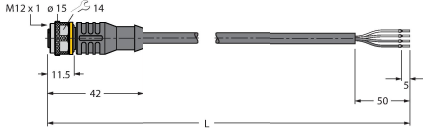
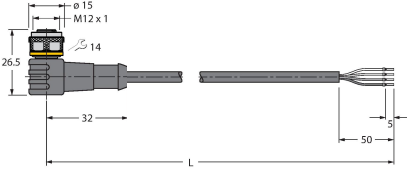
## Technical data

|                                                |                                                                                                                                     |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Switching frequency                            | ≤ 100 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.                                                                                                                          |
| Switch point SP1                               | Factory setting: 50 % of measuring range end value                                                                                  |
| Release point rP1                              | Factory setting: 25 % of measuring range end value                                                                                  |
| Switching point SP2                            | Factory setting: 60 % of measuring range end value                                                                                  |
| Release point rP2                              | Factory setting: 30 % of measuring range end value                                                                                  |
| Resolution                                     | <± 0.1 % FS                                                                                                                         |
| Accuracy LHR                                   | ±0.3 % FS (typical; max. ±0.5 % FS)                                                                                                 |
| <b>IO-Link</b>                                 |                                                                                                                                     |
| IO-Link specification                          | V 1.1                                                                                                                               |
| Programming                                    | FDT/DTM                                                                                                                             |
| Transmission physics                           | corresponds to 3-wire physics (PHY2)                                                                                                |
| Transmission rate                              | COM 2/38.4 kbps                                                                                                                     |
| Frame type                                     | 2.2                                                                                                                                 |
| <b>Temperature behaviour</b>                   |                                                                                                                                     |
| Medium temperature                             | -40...+135 °C                                                                                                                       |
| Temperature coefficient                        | ± 0.2 % of full scale/10 K                                                                                                          |
| <b>Environmental conditions</b>                |                                                                                                                                     |
| Ambient temperature                            | -30...+85 °C                                                                                                                        |
| Storage temperature                            | -50...+100 °C                                                                                                                       |
| Vibration resistance                           | 20 g, 15...2000 Hz, 15...25 Hz with amplitude ± 15 mm, 1 octave/minute in all 3 directions, 50 continuous loads, acc. to IEC 68-2-6 |
| Shock resistance                               | 100 g, 11 ms, half sinusoidal curve, all 6 directions, free fall from 1 m onto concrete (6x) acc. to IEC 68-2-27                    |
| <b>Mechanical data</b>                         |                                                                                                                                     |
| Housing material                               | Stainless-steel/Plastic, 1.4404 (AISI 316L)/polyarylamide 50 % GF UL 94 V-0                                                         |
| Pressure connection material                   | Stainless steel 1.4404 (AISI 316L)                                                                                                  |
| Material pressure transducer                   | Stainless steel 1.4016 (AISI 430)                                                                                                   |
| Process connection                             | G1/4" male thread (back sealing) according to DIN EN ISO 1179-2 with FPM profile sealing ring                                       |
| Wrench size pressure connection / coupling nut | 24                                                                                                                                  |
| Electrical connection                          | Connector, M12 × 1                                                                                                                  |

Technical data

|                                          |                                                                                                                                                |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Max. tightening torque of housing nut    | 20 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                                                                                                                                         |
| Programming options                      | Offset; filter; switching points; hysteresis/filter function, NC/NO; min./max. pressure values, pressure peak counter; operating hours counter |
| Tests/approvals                          |                                                                                                                                                |
| Approvals                                | cULus                                                                                                                                          |
| UL registration number                   | E302799                                                                                                                                        |
| MTTF                                     | 1200 years acc. to SN 29500 (Ed. 99) 40 °C                                                                                                     |
| Included in delivery                     | FKM special profile seal (1x)                                                                                                                  |

Accessories

| Dimension drawing                                                                   | Type               | ID      |                                                                                                                                 |
|-------------------------------------------------------------------------------------|--------------------|---------|---------------------------------------------------------------------------------------------------------------------------------|
|  | RKC4.4T-P7X2-2/TXL | 6626795 | Connection cable, M12 female connector, straight, 4-pin, 2 LEDs, cable length: 2 m, jacket material: PUR, black; cULus approval |
|  | WKC4.4T-P7X2-2/TXL | 6626173 | Connection cable, M12 female connector, angled, 4-pin, 2 LEDs, cable length: 2 m, jacket material: PUR, black; cULus approval   |
|  | RKC4.4T-2/TXL      | 6625503 | Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval         |
|  | WKC4.4T-2/TXL      | 6625515 | Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PUR, black; cULus approval           |

| Dimension drawing                                                                 | Type          | ID      |                                                                                                                         |
|-----------------------------------------------------------------------------------|---------------|---------|-------------------------------------------------------------------------------------------------------------------------|
|  | WKC4.4T-2/TEL | 6625025 | Connection cable, M12 female connector, angled, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval   |
|  | RKC4.4T-2/TEL | 6625013 | Connection cable, M12 female connector, straight, 4-pin, cable length: 2 m, jacket material: PVC, black; cULus approval |

Accessories

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