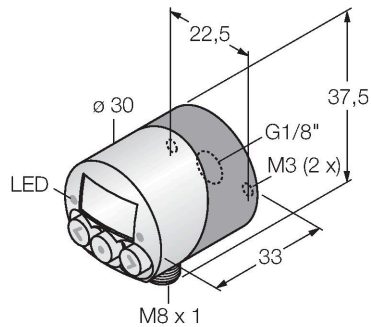


# PK012R-N12AL-2UP8X-V1141

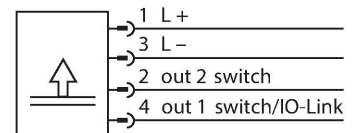
## Pressure Sensor – IO-Link with 2 PNP Transistor Switching Outputs



### Features

- Compact design
- For pressure and vacuum monitoring
- Display rotatable by 360°
- Excellent EMC properties
- 2 × PNP outputs, IO-Link
- Pressure range 0...12 bar rel.

### Wiring diagram



### Technical data

|                                           |                                        |
|-------------------------------------------|----------------------------------------|
| Type                                      | PK012R-N12AL-2UP8X-V1141               |
| ID                                        | 100042115                              |
| Medium temperature                        | 0...+60 °C                             |
| <b>Pressure range</b>                     |                                        |
| Pressure type                             | Relative pressure                      |
| Pressure range                            | 0...12 bar                             |
|                                           | 0...174.05 psi                         |
|                                           | 0...1.2 MPa                            |
| Admissible overpressure                   | ≤ 15 bar                               |
| Response time                             | < 2.8 ms                               |
| <b>Power supply</b>                       |                                        |
| Operating voltage                         | 10.8...30 VDC                          |
| Short-circuit/reverse polarity protection | yes / yes                              |
| <b>Outputs</b>                            |                                        |
| Output 1                                  | Switching output or IO-Link mode       |
| Output 2                                  | Switching output                       |
| <b>Switching output</b>                   |                                        |
| Output function                           | NO/NC, PNP                             |
| Accuracy                                  | ± 2 % FS BSL                           |
| Rated operational current                 | 0.25 A                                 |
| Switching frequency                       | ≤ 200 Hz                               |
| Switch point:                             | 0...100 %                              |
| <b>IO-Link</b>                            |                                        |
| IO-Link specification                     | V 1.1                                  |
| Transmission physics                      | Complies with 3-wire technology (PHY2) |
| Frame type                                | 2.2                                    |

### Functional principle

The pressure sensors of the PK product series operate using a silicon measuring cell. As a result of the pressure acting on the silicon, a signal that is proportional to the pressure is generated and processed electronically. The processed signal is available as a switching output or as digital process parameters. The sensors are intended only for use in non-aggressive gas and compressed-air applications. In the case of lubricated compressed air, it is recommended that the pressure connection points downward.

## Technical data

|                                                |                                                                                                                                               |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Transmission rate                              | COM 2/38.4 kbps                                                                                                                               |
| Programming                                    | FDT/DTM                                                                                                                                       |
| Programming options                            | Switching/release points; NC/NO; hysteresis/window mode; switch-on/switch-off delay; pressure unit; diagnostic mode                           |
| Housing material                               | Aluminium, Al/PVC                                                                                                                             |
| Process connection                             | G 1/8" female thread                                                                                                                          |
| Pressure transducer material                   | Silicon                                                                                                                                       |
| Wrench size pressure connection / coupling nut | SW 14                                                                                                                                         |
| Electrical connection                          | Connector, M8 × 1                                                                                                                             |
| Protection class                               | IP65                                                                                                                                          |
| Ambient temperature                            | -10...+60 °C                                                                                                                                  |
| Storage temperature                            | -20...+85 °C                                                                                                                                  |
| Shock resistance                               | 10 g (11 ms) , acc. to IEC 68-2-27                                                                                                            |
| Vibration resistance                           | 10 to 55 Hz, 1.5 mm, XYZ 2 h                                                                                                                  |
| EMV                                            | Emitted interference acc. to EN 61000<br>EN 61000-6-4*<br>Intrinsically safe acc. to EN 61000-6-2*<br>* shielded connection cable recommended |

### 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

|                 |                                              |
|-----------------|----------------------------------------------|
| Display         | 3-digit 7-segment display, rotatable by 360° |
| Switching state | 2 × LEDs, Yellow/Yellow                      |

### Temperature behaviour

|      |                                           |
|------|-------------------------------------------|
| MTTF | 319 years acc. to SN 29500 (Ed. 99) 40 °C |
|------|-------------------------------------------|

## Technical data

|                         |                          |
|-------------------------|--------------------------|
| Type                    | PK012R-N12AL-2UP8X-V1141 |
| ID                      | 100042115                |
| Pressure range          |                          |
| Pressure type           | Relative pressure        |
| Pressure range          | 0...12 bar               |
|                         | 0...174.05 psi           |
|                         | 0...1.2 MPa              |
| Admissible overpressure | ≤ 15 bar                 |
| Response time           | < 2.8 ms                 |

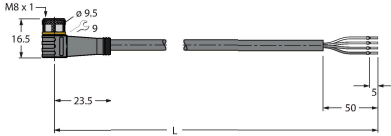
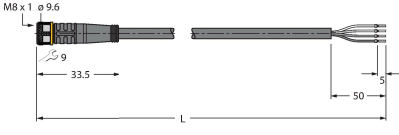
## Technical data

|                                                     |                                                                                                                                                    |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power supply</b>                                 |                                                                                                                                                    |
| Operating voltage                                   | 10.8...30 VDC                                                                                                                                      |
| Short-circuit/reverse polarity protection           | yes / yes                                                                                                                                          |
| Protection type and class                           | IP65                                                                                                                                               |
| <b>Outputs</b>                                      |                                                                                                                                                    |
| Output 1                                            | Switching output or IO-Link mode                                                                                                                   |
| Output 2                                            | Switching output                                                                                                                                   |
| <b>Switching output</b>                             |                                                                                                                                                    |
| Output function                                     | NO/NC, PNP                                                                                                                                         |
| Accuracy                                            | ± 2 % FS BSL                                                                                                                                       |
| Rated operational current                           | 0.25 A                                                                                                                                             |
| Switching frequency                                 | ≤ 200 Hz                                                                                                                                           |
| Switch point:                                       | 0...100 %                                                                                                                                          |
| <b>IO-Link</b>                                      |                                                                                                                                                    |
| IO-Link specification                               | V 1.1                                                                                                                                              |
| Programming                                         | FDT/DTM                                                                                                                                            |
| Transmission physics                                | Complies with 3-wire technology (PHY2)                                                                                                             |
| Transmission rate                                   | COM 2/38.4 kbps                                                                                                                                    |
| Frame type                                          | 2.2                                                                                                                                                |
| <b>Temperature behaviour</b>                        |                                                                                                                                                    |
| Medium temperature                                  | 0...+60 °C                                                                                                                                         |
| Temperature coefficient                             | ± 0.2 % of full scale/10 K                                                                                                                         |
| <b>Ambient conditions</b>                           |                                                                                                                                                    |
| Ambient temperature                                 | -10...+60 °C                                                                                                                                       |
| Storage temperature                                 | -20...+85 °C                                                                                                                                       |
| Vibration resistance                                | 10 to 55 Hz, 1.5 mm, XYZ 2 h                                                                                                                       |
| Shock resistance                                    | 10 g (11 ms) , acc. to IEC 68-2-27                                                                                                                 |
| EMV                                                 | Emitted interference acc. to EN 61000<br>EN 61000-6-4*<br>Intrinsically safe acc. to EN 61000-6-2*<br>* shielded connection cable recommend-<br>ed |
| <b>Mechanical data</b>                              |                                                                                                                                                    |
| Housing material                                    | Aluminium, Al/PVC                                                                                                                                  |
| Pressure transducer material                        | Silicon                                                                                                                                            |
| Process connection                                  | G 1/8" female thread                                                                                                                               |
| Wrench size pressure connection / cou-<br>pling nut | SW 14                                                                                                                                              |
| Electrical connection                               | Connector, M8 × 1                                                                                                                                  |
| <b>Reference conditions acc. to IEC<br/>61298-1</b> |                                                                                                                                                    |
| Temperature                                         | 15...+25 °C                                                                                                                                        |
| Atmospheric pressure                                | 860...1060 hPa abs.                                                                                                                                |

Technical data

|                     |                                                                                                                     |
|---------------------|---------------------------------------------------------------------------------------------------------------------|
| Humidity            | 45...75 % rel.                                                                                                      |
| Auxiliary power     | 24 VDC                                                                                                              |
| Display             |                                                                                                                     |
| Display             | 3-digit 7-segment display, rotatable by 360°                                                                        |
| Switching state     | 2 × LEDs, Yellow/Yellow                                                                                             |
| Programming options | Switching/release points; NC/NO; hysteresis/window mode; switch-on/switch-off delay; pressure unit; diagnostic mode |
| MTTF                | 319 years acc. to SN 29500 (Ed. 99) 40 °C                                                                           |

Accessories

| Dimension drawing                                                                   | Type        | ID      |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   | PKW4M-2/TXL | 6625559 | Connection cable, female M8, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>   |
|  | PKG4M-2/TXL | 6625553 | Connection cable, female M8, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a> |
|  | PKW4M-2/TEL | 6625067 | Connection cable, female M8, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a>   |
|  | PKG4M-2/TEL | 6625061 | Connection cable, female M8, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see <a href="http://www.turck.com">www.turck.com</a> |