

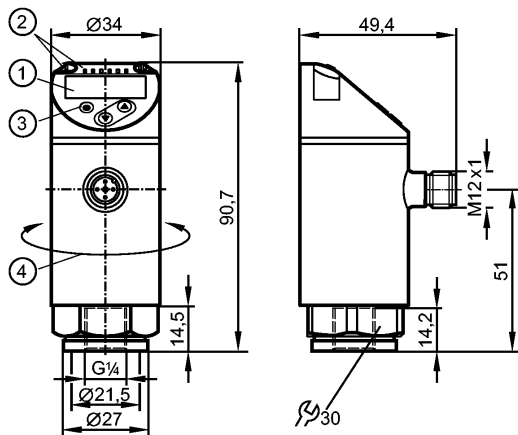


PN7096

PN-2.5-RER14-QFRKG/US/ IV



Pressure sensors



- 1: 4-digit alphanumeric display / alternating indication of red and green
- 2: LEDs (display unit / switching status)
- 3: Programming button
- 4: Upper part of the housing can be rotated by 345°



Product characteristics

|                                                                        |
|------------------------------------------------------------------------|
| Electronic pressure monitor                                            |
| M12 connector                                                          |
| Function programmable                                                  |
| Measuring element: ceramic-capacitive pressure measuring cell          |
| Process connection: G 1/4 I                                            |
| 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output        |
| 4-digit alphanumeric display / alternating indication of red and green |
| Measuring range: 0...2.5 bar / 0...36.2 psi / 0...250 kPa              |

Application

|                         |                                                                                                                                         |         |          |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------|----------|
| Application             | Type of pressure: relative pressure<br>Group 2 fluids according to the Pressure Equipment Directive (PED),<br>group 1 fluids on request |         |          |
| Pressure rating         | 20 bar                                                                                                                                  | 290 psi | 2000 kPa |
| Bursting pressure min.  | 50 bar                                                                                                                                  | 725 psi | 5000 kPa |
| Medium temperature [°C] | -25...80                                                                                                                                |         |          |

Electrical data

|                             |                  |  |  |
|-----------------------------|------------------|--|--|
| Electrical design           | DC PNP/NPN       |  |  |
| Operating voltage [V]       | 18...30 DC 1)    |  |  |
| Current consumption [mA]    | < 35             |  |  |
| Insulation resistance [MΩ]  | > 100 (500 V DC) |  |  |
| Protection class            | III              |  |  |
| Reverse polarity protection | yes              |  |  |

Outputs

|                     |                                                                 |  |  |
|---------------------|-----------------------------------------------------------------|--|--|
| Output              | 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output |  |  |
| Output function     | 2 x normally open / closed programmable                         |  |  |
| Current rating [mA] | 150; 200 (...60 °C); 250 (...40 °C)                             |  |  |



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|                          |      |        |
|--------------------------|------|--------|
| Voltage drop             | [V]  | < 2.5  |
| Short-circuit protection |      | pulsed |
| Overload protection      |      | yes    |
| Switching frequency      | [Hz] | ≤ 170  |

| Measuring / setting range |                 |                |             |
|---------------------------|-----------------|----------------|-------------|
| Measuring range           | 0...2.5 bar     | 0...36.2 psi   | 0...250 kPa |
| Setting range             |                 |                |             |
| Set point, SP             | 0.02...2.5 bar  | 0.4...36.2 psi | 2...250 kPa |
| Reset point, rP           | 0.01...2.49 bar | 0.2...36 psi   | 1...249 kPa |
| in steps of               | 0.01 bar        | 0.2 psi        | 1 kPa       |

| Accuracy / deviations                                                                              |                                |
|----------------------------------------------------------------------------------------------------|--------------------------------|
| Accuracy / deviations (in % of the span)                                                           |                                |
| Switch point accuracy                                                                              | < ± 0.5                        |
| Characteristics deviation *)                                                                       | < ± 0.25 (BFSL) / < ± 0.5 (LS) |
| Hysteresis                                                                                         | < ± 0.25                       |
| Repeatability **)                                                                                  | < ± 0.1                        |
| Long-term stability ***)                                                                           | < ± 0.05                       |
| Temperature coefficients (TEMPCO) in the temperature range -25...80° C (in % of the span per 10 K) |                                |
| Greatest TEMPCO of the zero point                                                                  | 0.2                            |
| Greatest TEMPCO of the span                                                                        | 0.2                            |

| Reaction times                      |            |
|-------------------------------------|------------|
| Power-on delay time                 | [s] < 0.3  |
| Min. response time switching output | [ms] < 3   |
| Delay time programmable dS, dr      | [s] 0...50 |
| Integrated watchdog                 | yes        |

| Software / programming |                                                                                                    |
|------------------------|----------------------------------------------------------------------------------------------------|
| Programming options    | hysteresis / window function; NO / NC; output polarity; on delay, off delay; damping; display unit |

| Interfaces                 |                                                                              |
|----------------------------|------------------------------------------------------------------------------|
| IO-Link device             |                                                                              |
| Transfer type              | COM2 (38.4 kBaud)                                                            |
| IO-Link revision           | 1.1                                                                          |
| SDCI standard              | IEC 61131-9                                                                  |
| IO-Link device ID          | 404 d / 00 01 94 h                                                           |
| Profiles                   | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis |
| SIO mode                   | yes                                                                          |
| Required master port class | A                                                                            |
| Process data analogue      | 1                                                                            |
| Process data binary        | 2                                                                            |
| Min. process cycle time    | [ms] 2.3                                                                     |

| Environment         |                |
|---------------------|----------------|
| Ambient temperature | [°C] -25...80  |
| Storage temperature | [°C] -40...100 |
| Protection          | IP 65 / IP 67  |

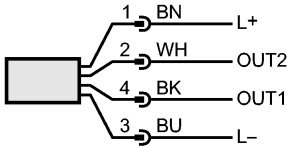


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Pressure sensors

| Tests / approvals                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                |                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Pressure equipment directive                                                                                                                                                                                                                                                                                                                             | Sound engineering practice                                                                                                                                                                                                     |                     |
| EMC                                                                                                                                                                                                                                                                                                                                                      | DIN EN 61000-6-2<br>DIN EN 61000-6-3                                                                                                                                                                                           |                     |
| Shock resistance                                                                                                                                                                                                                                                                                                                                         | DIN EN 60068-2-27                                                                                                                                                                                                              | 50 g (11 ms)        |
| Vibration resistance                                                                                                                                                                                                                                                                                                                                     | DIN EN 60068-2-6                                                                                                                                                                                                               | 20 g (10...2000 Hz) |
| MTTF [Years]                                                                                                                                                                                                                                                                                                                                             | 224.01                                                                                                                                                                                                                         |                     |
| UL approval number                                                                                                                                                                                                                                                                                                                                       | J001                                                                                                                                                                                                                           |                     |
| Mechanical data                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                |                     |
| Process connection                                                                                                                                                                                                                                                                                                                                       | G ¼ I                                                                                                                                                                                                                          |                     |
| Materials (wetted parts)                                                                                                                                                                                                                                                                                                                                 | 1.4404; ceramics; FKM                                                                                                                                                                                                          |                     |
| Housing materials                                                                                                                                                                                                                                                                                                                                        | 1.4404; PBT+PC-GF 30; PBT-GF 20; PC                                                                                                                                                                                            |                     |
| Switching cycles min.                                                                                                                                                                                                                                                                                                                                    | 100 million                                                                                                                                                                                                                    |                     |
| Tightening torque [Nm]                                                                                                                                                                                                                                                                                                                                   | 25...35 (recommended tightening torque <sup>2</sup> )                                                                                                                                                                          |                     |
| Weight [kg]                                                                                                                                                                                                                                                                                                                                              | 0.235                                                                                                                                                                                                                          |                     |
| Displays / operating elements                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                |                     |
| Display                                                                                                                                                                                                                                                                                                                                                  | Display unit     3 x LED green (bar, psi, kPa)<br>Switching status   2 x LED yellow<br>4-digit alphanumeric display / alternating indication<br>Measured values of red and green                                               |                     |
| Electrical connection                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                |                     |
| Connection                                                                                                                                                                                                                                                                                                                                               | M12 connector; Gold-plated contacts                                                                                                                                                                                            |                     |
| <div><div><div><b>Wiring</b></div><div>Core colours</div><div>BK    black</div><div>BN    brown</div><div>BU    blue</div><div>WH    white</div></div><div></div><div></div></div> |                                                                                                                                                                                                                                |                     |
| OUT1: switching output or IO-Link<br>OUT2: switching output<br>Colours to DIN EN 60947-5-2                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                |                     |
| Remarks                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                |                     |
| Remarks                                                                                                                                                                                                                                                                                                                                                  | ¹) to EN50178, SELV, PELV<br>*) BFSL = Best Fit Straight Line / LS = Limit Value Setting<br>**) with temperature fluctuations < 10 K<br>***) in% of the span / 6 months<br>²) Depends on lubrication, seal and pressure rating |                     |
| Pack quantity [piece]                                                                                                                                                                                                                                                                                                                                    | 1                                                                                                                                                                                                                              |                     |