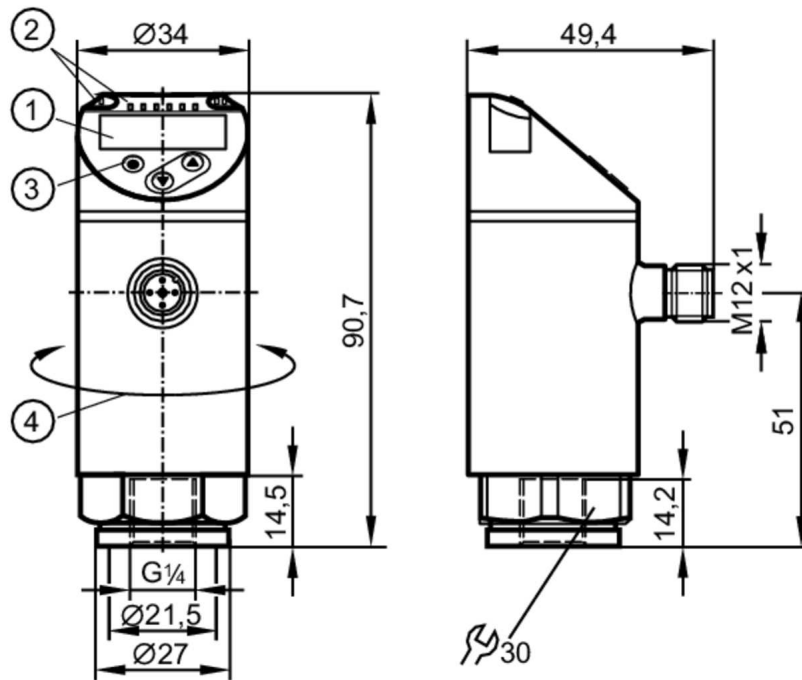


PN3093



Pressure sensor with display

PN-025-RER14-MFRKG/US/ IV



- 1 alphanumeric display 4-digit red/green
- 2 LEDs Display unit / Switching status
- 3 Programming button
- 4 upper part of the housing can be rotated 345°



Product characteristics

| | | | |
|------------------------------|---|-------------|-------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1 | | |
| Measuring range | 0...25 bar | 0...362 psi | 0...2.5 MPa |
| Process connection | threaded connection G 1/4 Internal thread M6 I | | |

Application

| | | | |
|--------------------------|--|----------|--------|
| System | gold-plated contacts | | |
| Measuring element | ceramic-capacitive pressure measuring cell | | |
| Application | for industrial applications | | |
| Media | liquids and gases | | |
| Medium temperature [°C] | -25...80 | | |
| Min. bursting pressure | 350 bar | 5075 psi | 35 MPa |
| Pressure rating | 150 bar | 2175 psi | 15 MPa |
| Vacuum resistance [mbar] | -1000 | | |
| Type of pressure | relative pressure | | |

Electrical data

| | | | |
|---------------------------------|----------------------------|--|--|
| Operating voltage [V] | 18...30 DC; (to SELV/PELV) | | |
| Current consumption [mA] | < 35 | | |
| Min. insulation resistance [MΩ] | 100; (500 V DC) | | |
| Protection class | III | | |
| Reverse polarity protection | yes | | |
| Power-on delay time [s] | 0.3 | | |

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Pressure sensor with display

PN-025-RER14-MFRKG/US/ IV

| | |
|---------------------|-----|
| Integrated watchdog | yes |
|---------------------|-----|

Inputs / outputs

| | |
|------------------------------|---|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1 |
|------------------------------|---|

Outputs

| | |
|--|--|
| Total number of outputs | 2 |
| Output signal | switching signal; analog signal; IO-Link; (configurable) |
| Electrical design | PNP |
| Number of digital outputs | 1 |
| Output function | normally open / closed; (configurable) |
| Max. voltage drop switching output DC [V] | 2.5 |
| Permanent current rating of switching output DC [mA] | 150; (200 (...60 °C) 250 (...40 °C)) |
| Switching frequency DC [Hz] | < 170 |
| Number of analog outputs | 1 |
| Analog current output [mA] | 4...20 |
| Max. load [Ω] | 500 |
| Analog voltage output [V] | 0...10 |
| Min. load resistance [Ω] | 2000 |
| Short-circuit protection | yes |
| Type of short-circuit protection | yes (non-latching) |
| Overload protection | yes |

Measuring/setting range

| | | | |
|-----------------|------------|-------------|-------------|
| Measuring range | 0...25 bar | 0...362 psi | 0...2.5 MPa |
|-----------------|------------|-------------|-------------|

Factory setting / CMPT = 2

| | | | |
|-----------------------------------|----------------|-------------|-----------------|
| Set point SP | 0.2...25 bar | 4...362 psi | 0.02...2.5 MPa |
| Reset point rP | 0.1...24.9 bar | 2...360 psi | 0.01...2.49 MPa |
| Min. difference between SP and rP | 0.2 bar | 2 psi | 0.02 MPa |
| In steps of | 0.1 bar | 2 psi | 0.01 MPa |

Status_B High Resolution / CMPT = 3

| | | | |
|-----------------------------------|----------------|-------------|-----------------|
| Set point SP | 0.2...25 bar | 3...363 psi | 0.02...2.5 MPa |
| Reset point rP | 0.1...24.9 bar | 1...361 psi | 0.01...2.49 MPa |
| Min. difference between SP and rP | 0.2 bar | 2 psi | 0.02 MPa |
| In steps of | 0.1 bar | 1 psi | 0.01 MPa |

Accuracy / deviations

| | |
|---|---|
| Switch point accuracy [% of the span] | < ± 0,5 |
| Repeatability [% of the span] | < ± 0,1; (with temperature fluctuations < 10 K) |
| Characteristics deviation [% of the span] | < ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting) |
| Hysteresis deviation [% of the span] | < ± 0,25 |
| Long-term stability | < ± 0,05; (per 6 months) |

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| | | |
|------------------------------------|------------------------|-----------------------|
| | [% of the span] | |
| Temperature coefficient zero point | [% of the span / 10 K] | < ± 0,2; (-0...80 °C) |
| Temperature coefficient span | [% of the span / 10 K] | < ± 0,2; (-0...80 °C) |

Reaction times

| | | |
|-----------------------------------|------|--------|
| Response time | [ms] | < 3 |
| Delay time programmable dS, dr | [s] | 0...50 |
| Damping process value dAP | [s] | 0...4 |
| Damping for the analog output dAA | [s] | 0...4 |
| Max. response time analog output | [ms] | 3 |

Software / programming

| | |
|---------------------------|---|
| Parameter setting options | hysteresis / window; normally open / closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output |
|---------------------------|---|

Interfaces

| Communication interface | IO-Link | | | | | | |
|-------------------------------------|--|-------------------|----------|----------------------------|-----|-------------------------------------|-----|
| Transmission type | COM2 (38,4 kBaud) | | | | | | |
| IO-Link revision | 1.1 | | | | | | |
| SDCI standard | IEC 61131-9 | | | | | | |
| SIO mode | yes | | | | | | |
| Required master port class | A | | | | | | |
| Process data analog | 1 | | | | | | |
| Process data binary | 1 | | | | | | |
| Supported DeviceIDs | <table border="1"> <thead> <tr> <th>Type of operation</th> <th>DeviceID</th> </tr> </thead> <tbody> <tr> <td>Factory setting / CMPT = 2</td> <td>430</td> </tr> <tr> <td>Status_B High Resolution / CMPT = 3</td> <td>609</td> </tr> </tbody> </table> | Type of operation | DeviceID | Factory setting / CMPT = 2 | 430 | Status_B High Resolution / CMPT = 3 | 609 |
| Type of operation | DeviceID | | | | | | |
| Factory setting / CMPT = 2 | 430 | | | | | | |
| Status_B High Resolution / CMPT = 3 | 609 | | | | | | |
| Note | For further information please see the IODD PDF file at "Downloads" | | | | | | |

Factory setting / CMPT = 2

| Profiles | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis | | | | | | |
|---------------------------------|---|----------|------------|----------|----|------------------------------|---|
| Min. process cycle time | [ms] 2.3 | | | | | | |
| IO-Link resolution pressure | [bar] 0.1 | | | | | | |
| IO-Link resolution pressure | [MPa] 0.01 | | | | | | |
| IO-Link process data (cyclical) | <table border="1"> <thead> <tr> <th>Function</th> <th>bit length</th> </tr> </thead> <tbody> <tr> <td>pressure</td> <td>14</td> </tr> <tr> <td>binary switching information</td> <td>1</td> </tr> </tbody> </table> | Function | bit length | pressure | 14 | binary switching information | 1 |
| Function | bit length | | | | | | |
| pressure | 14 | | | | | | |
| binary switching information | 1 | | | | | | |
| IO-Link functions (acyclical) | application specific tag | | | | | | |

Status_B High Resolution / CMPT = 3

| | |
|-----------------------------|--|
| Profiles | Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000) |
| Min. process cycle time | [ms] 3 |
| IO-Link resolution pressure | [bar] 0.01 |
| IO-Link resolution pressure | [MPa] 0.001 |

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| IO-Link process data (cyclical) | Function | bit length |
|---------------------------------|------------------------------|------------|
| | pressure | 16 |
| | device status | 4 |
| | binary switching information | 1 |
| IO-Link functions (acyclical) | application specific tag | |

Operating conditions

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

Tests / approvals

| | | |
|------------------------------|---|---------------------|
| EMC | DIN EN 61000-6-2 | |
| | 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] | 226 |
| UL approval | UL approval number | J004 |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |

Mechanical data

| | | |
|-------------------------------|--|--|
| Weight | [g] | 235 |
| Material | stainless steel (1.4404 / 316L) stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC | |
| Materials (wetted parts) | stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM | |
| Min. pressure cycles | 100 million | |
| Tightening torque | [Nm] | 25...35; (recommended tightening torque; Depends on lubrication, seal and pressure rating) |
| Process connection | threaded connection G 1/4 Internal thread M6 I | |
| Restrictor element integrated | no (can be retrofitted) | |

Displays / operating elements

| | | |
|---------|------------------|---|
| Display | Display unit | 3 x LED, green (bar, psi, MPa) |
| | Switching status | 1 x LED, yellow |
| | Measured values | alphanumeric display, red/green 4-digit |

Remarks

| | |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



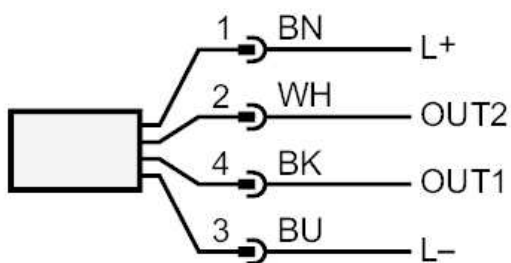
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Connection



| | |
|------|------------------|
| OUT1 | Switching output |
| | IO-Link |
| OUT2 | analog output |
| | Core colors : |
| BK = | black |
| BN = | brown |
| BU = | blue |
| WH = | white |