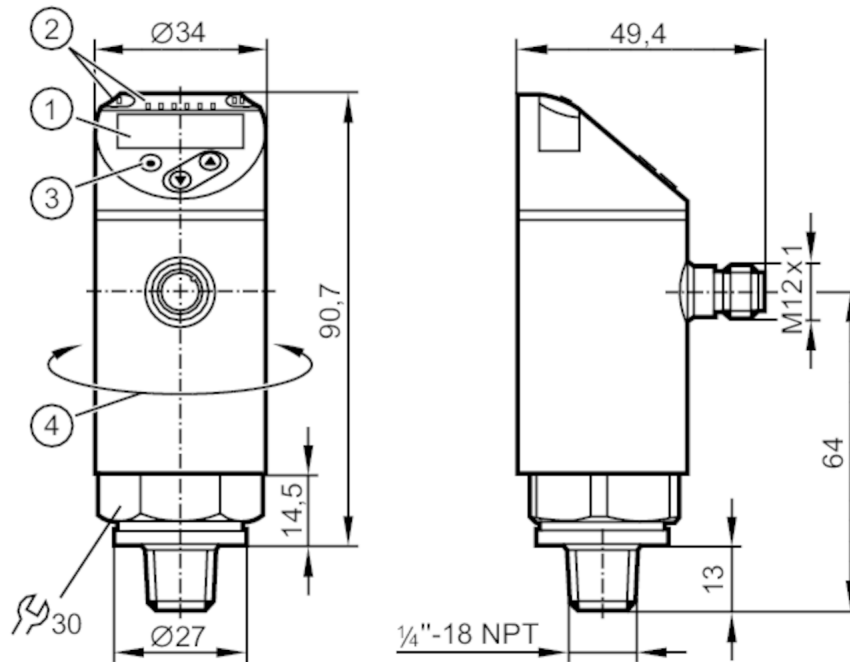


PN7694



Pressure sensor with display

PN-010-REN14-QFRKG/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

| | | | | |
|--------------------|---|-----------------|-----------------|--------------|
| Output signal | switching signal; IO-Link; (configurable) | | | |
| Measuring range | -1...10 bar | -14.5...145 psi | -100...1000 kPa | -0.1...1 MPa |
| Process connection | threaded connection 1/4 NPT external thread | | | |

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 | | |
| Pressure rating | 75 bar | 1087 psi | 7.5 MPa |
| Min. bursting pressure | 150 bar | 2175 psi | 15 MPa |
| Type of pressure | relative pressure; vacuum | | |
| MAWP (for applications according to CRN) | 50 bar | 725 psi | 5 MPa |

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| Electrical data | | | | | |
|---|-----------------|---|-----------------|--------------------|--------------|
| Operating voltage | [V] | 18...30 DC; (according to EN 50178 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 | | | |
| Integrated watchdog | | yes | | | |
| Inputs / outputs | | | | | |
| Number of inputs and outputs | | Number of digital outputs: 2 | | | |
| Outputs | | | | | |
| Total number of outputs | | 2 | | | |
| Output signal | | switching signal; IO-Link; (configurable) | | | |
| Electrical design | | PNP/NPN | | | |
| Number of digital outputs | | 2 | | | |
| 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 | | | |
| Short-circuit protection | | yes | | | |
| Type of short-circuit protection | | yes (non-latching) | | | |
| Overload protection | | yes | | | |
| Measuring/setting range | | | | | |
| Measuring range | | -1...10 bar | -14.5...145 psi | -100...1000 kPa | -0.1...1 MPa |
| Factory setting / CMPT = 2 | | | | | |
| Set point SP | | 0.01...2.49 bar | 0.2...36 psi | 1...249 MPa | |
| Reset point rP | | -0.95...9.95 bar | -14...144.5 psi | -0.095...0.995 MPa | |
| Min. difference between SP and rP | | 0.05 bar | 1 psi | 0.005 MPa | |
| In steps of | | 0.05 bar | 0.5 psi | 0.005 MPa | |
| Status_B High Resolution / CMPT = 3 | | | | | |
| Set point SP | | -0.92...10 bar | -13.3...145 psi | -0.092...1 MPa | |
| Reset point rP | | -0.97...9.95 bar | -14...144.3 psi | -0.097...9.995 MPa | |
| Min. difference between SP and rP | | 0.05 bar | 0.8 psi | 0.005 MPa | |
| In steps of | | 0.01 bar | 0.1 psi | 0.001 MPa | |
| Accuracy / deviations | | | | | |
| Switch point accuracy | | < ± 0,5 | | | |
| | [% of the span] | | | | |
| Repeatability | | < ± 0,1; (with temperature fluctuations < 10 K) | | | |
| | [% of the span] | | | | |
| Characteristics deviation | | < ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting) | | | |
| | [% of the span] | | | | |
| Hysteresis deviation | | < ± 0,25 | | | |

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| | | |
|------------------------------------|------------------------|--------------------------|
| | [% of the span] | |
| Long-term stability | [% of the span] | < ± 0,05; (per 6 months) |
| 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 |

Software / programming

| | |
|---------------------------|---|
| Parameter setting options | hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit |
|---------------------------|---|

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; (when pin 2 not connected: B) | |
| Supported DeviceIDs | Type of operation | DeviceID |
| | Factory setting / CMPT = 2 | 454 d / 00 01 c6 h |
| | Status_B High Resolution / CMPT = 3 | 632 d / 00 02 78 h |
| 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] | 0.01 |
| IO-Link resolution pressure | [MPa] | 0.001 |
| IO-Link process data (cyclical) | Function | bit length |
| | pressure | 14 |
| | binary switching information | 2 |
| 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] | 0.005 |
| IO-Link resolution pressure | [MPa] | 0.0005 |
| IO-Link process data (cyclical) | Function | bit length |
| | pressure | 16 |
| | device status | 4 |
| | binary switching information | 2 |
| IO-Link functions (acyclical) | application specific tag | |

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| 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] | 260 |
| UL approval | UL approval number | J001 |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |
| Mechanical data | | |
| Weight | [g] | 243.5 |
| Material | stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC | |
| Materials (wetted parts) | stainless steel (1.4404 / 316L); ceramics; FKM | |
| Min. pressure cycles | 100 million | |
| Process connection | threaded connection 1/4 NPT external thread | |
| Restrictor element integrated | no (can be retrofitted) | |
| Displays / operating elements | | |
| Display | Display unit | 3 x LED, green (bar, psi, MPa) |
| | Switching status | 2 x LED, yellow |
| | Measured values | alphanumeric display, red/green 4-digit |
| Remarks | | |
| Pack quantity | 1 pcs. | |
| Electrical connection | | |
| Connector: 1 x M12; Contacts: gold-plated | | |
|  | | |

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Connection



| | |
|------|--|
| OUT1 | Switching output IO-Link |
| OUT2 | Switching output Colours to DIN EN 60947-5-2 Core colors : |
| BK = | black |
| BN = | brown |
| BU = | blue |
| WH = | white |