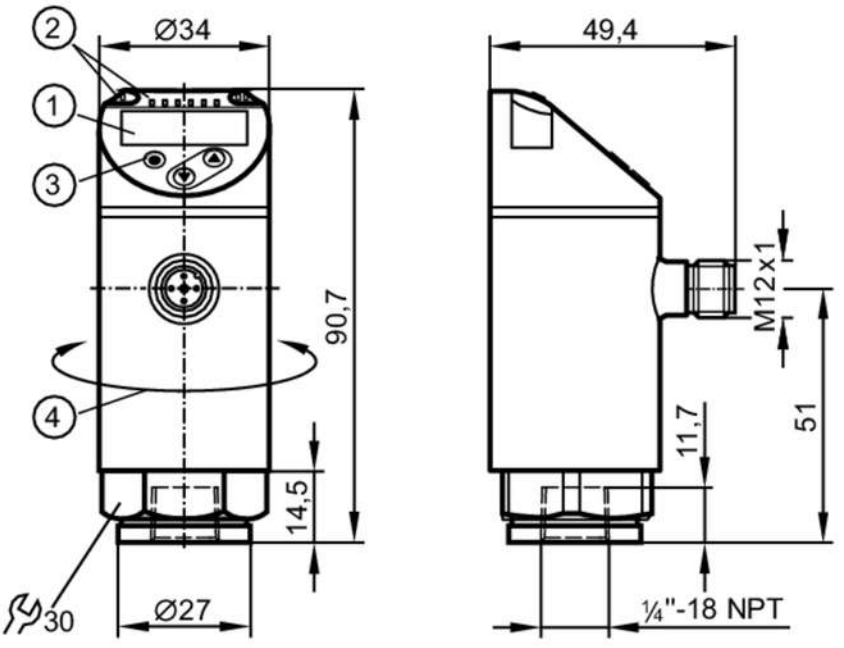
# PN7299

## Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V




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: 2 | | | | |
| Measuring range | -1...1 bar | -1000...1000 mbar | -14.5...14.5 psi | -29.4...29.4 inHg | -100...100 kPa |
| Process connection | threaded connection 1/4" NPT internal thread | | | | |
| **Application** | | | | | |
| Special feature | 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 | 30000 mbar | 450 psi | 880 inHg | 3000 kPa | |
| Pressure rating | 10000 mbar | 145 psi | 290 inHg | 1000 kPa | |
| Type of pressure | relative pressure; vacuum | | | | |
| MAWP (for applications according to CRN) | 20 bar | 20000 mbar | 290 psi | 590.59 inHg | 2000 kPa |
| **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 | | | | |

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| | | |
|---|---|---|
| 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 / normally closed; (parameterisable) |
| 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 | | pulsed |
| Overload protection | | yes |

| **Measuring/setting range** | | | | | |
|---|---|---|---|---|---|
| Measuring range | -1...1 bar | -1000...1000 mbar | -14.5...14.5 psi | -29.4...29.4 inHg | -100...100 kPa |
| Factory setting / CMPT = 2 | | | | | |
| Set point SP | -980...1000 mbar | -14.3...14.5 psi | -29...29.6 inHg | -98...100 kPa | |
| Reset point rP | -990...990 mbar | -14.4...14.4 psi | -29.4...29.2 inHg | -99...99 kPa | |
| Min. difference between SP and rP | 10 mbar | 0.2 psi | 0.4 inHg | 1 kPa | |
| In steps of | 10 mbar | 0.1 psi | 0.2 inHg | 1 kPa | |
| Status_B High Resolution / CMPT = 3 | | | | | |
| Set point SP | -983...1000 mbar | -14.3...14.5 psi | -29...29.5 inHg | -98...100 kPa | |
| Reset point rP | -993...990 mbar | -14.4...14.4 psi | -29.3...29.2 inHg | -99...99 kPa | |
| Min. difference between SP and rP | 10 mbar | 0.2 psi | 0.3 inHg | 1 kPa | |
| In steps of | 1 mbar | 0.1 psi | 0.1 inHg | 1 kPa | |

| **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 | [% of the span] | < ± 0,05; (per 6 months) |
| Temperature coefficient zero point | | < ± 0,2; (-0...80 °C) |

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## Pressure sensor with display

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| | | | |
|---|---|---|---|
| [% of the span / 10 K] | | | |
| Temperature coefficient span [% of the span / 10 K] | < ± 0,2; (-0...80 °C) | | |
| **Response times** | | | |
| Response time [ms] | < 3 | | |
| Delay time programmable dS, dr [s] | 0...50 | | |
| **Software / programming** | | | |
| Parameter setting options | hysteresis / window; normally open / normally 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 type | A; (when pin 2 not connected: B) | | |
| Supported DeviceIDs | **Type of operation** | **DeviceID** | |
| | Factory setting / CMPT = 2 | 457 | |
| | Status_B High Resolution / CMPT = 3 | 636 | |
| Note | For further information please see the IODD PDF file under "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 | 1 mbar | 0.001 MPa | |
| 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 | 1 mbar | 0.001 MPa | |
| IO-Link process data (cyclical) | **function** | **bit length** | |
| | pressure | 16 | |
| | device status | 4 | |
| | binary switching information | 2 | |
| 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 | | |

# PN7299

## Pressure sensor with display

PN-1-1BREN14-QFRKG/US/ /V

| | | | |
|---|---|---|---|
| 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 no. | J001 |
| Pressure Equipment Directive | | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |

### Mechanical data

| | | | |
|---|---|---|---|
| Weight | [g] | 221.5 | |
| Housing | | cylindrical | |
| Dimensions | [mm] | Ø 34 / L = 90.7 | |
| Materials | | stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC | |
| Materials (wetted parts) | | stainless steel (316L/1.4404); ceramics; FKM | |
| Min. pressure cycles | | 100 million | |
| Tightening torque | [Nm] | 2...3 turns after hand-fastening; recommended tightening torque; depends on lubrication, seal and pressure rating | |
| Process connection | | threaded connection 1/4" NPT internal thread | |
| Restrictor element integrated | | no (can be retrofitted) | |

### Displays / operating elements

| | | | |
|---|---|---|---|
| Display | | Display unit | 4 x LED, green (bar, psi, kPa, inHg) |
| | | 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; coding: A; Contacts: gold-plated

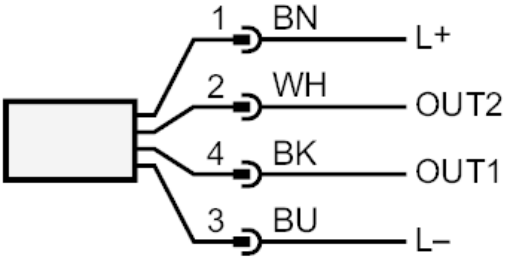


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## Pressure sensor with display

**PN-1-1BREN14-QFRKG/US/ /V**

## Connection




| | |
|---|---|
| OUT1 | switching output<br>IO-Link |
| OUT2 | switching output |
| | colours to DIN EN 60947-5-2 |
| | Core colours : |
| BK = | black |
| BN = | brown |
| BU = | blue |
| WH = | white |