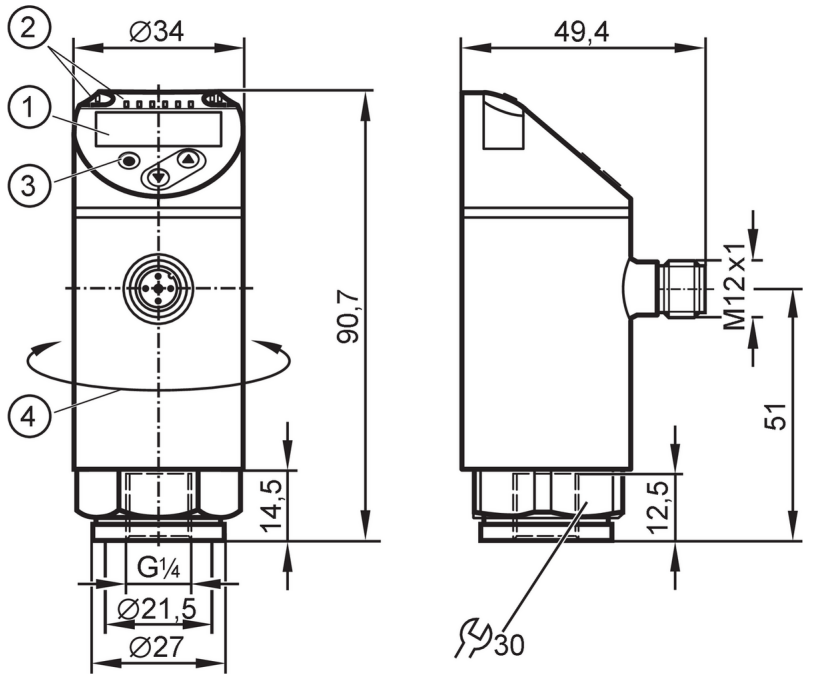
# PN3129

## Pressure sensor with display

PN-0-1BRER14-MFRKG/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: 1; Number of analogue outputs: 1 | | | | |
| Measuring range | -1...0 bar | -1000...0 mbar | -14.5...0 psi | -29.5...0 inHg | -100...0 kPa |
| Process connection | threaded connection G 1/4 internal thread M6 I | | | | |
| **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. burst pressure | 50000 mbar | 725 psi | 1450 inHg | 5000 kPa | |
| Pressure rating | 20000 mbar | 290 psi | 590 inHg | 2000 kPa | |
| Vacuum resistance | -1000 mbar | | -0.1 MPa | | |
| Type of pressure | relative pressure; vacuum | | | | |
| **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 | | | | |
| Integrated watchdog | yes | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| **Inputs / outputs** | | | | | |
| Number of inputs and outputs | Number of digital outputs: 1; Number of analogue outputs: 1 | | | | |
| **Outputs** | | | | | |
| Total number of outputs | 2 | | | | |
| Output signal | switching signal; analogue signal; IO-Link; (configurable) | | | | |
| Electrical design | PNP | | | | |
| Number of digital outputs | 1 | | | | |
| 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 | | | | |
| Number of analogue outputs | 1 | | | | |
| Analogue current output [mA] | 4...20 | | | | |
| Max. load [Ω] | 500 | | | | |
| Analogue voltage output [V] | 0...10 | | | | |
| Min. load resistance [Ω] | 2000 | | | | |
| Short-circuit protection | yes | | | | |
| Type of short-circuit protection | pulsed | | | | |
| Overload protection | yes | | | | |
| **Measuring/setting range** | | | | | |
| Measuring range | -1...0 bar | -1000...0 mbar | -14.5...0 psi | -29.5...0 inHg | -100...0 kPa |
| Factory setting / CMPT = 2 | | | | | |
| Set point SP | -990...0 mbar | -14.4...0 psi | -29.3...0 inHg | -99...0 kPa | |
| Reset point rP | -995...-5 mbar | -14.45...-0.05 psi | -29.4...-0.1 inHg | -99.5...-0.5 kPa | |
| Min. difference between SP and rP | 5 mbar | 0.1 psi | 0.2 inHg | 0.5 kPa | |
| In steps of | 5 mbar | 0.05 psi | 0.1 inHg | 0.5 kPa | |
| Status_B High Resolution / CMPT = 3 | | | | | |
| Set point SP | -992...0 mbar | -14.38...0 psi | -29.3...0 inHg | -99.2...0 kPa | |
| Reset point rP | -997...-5 mbar | -14.45...-0.07 psi | -29.4...-0.1 inHg | -99.7...-0.5 kPa | |
| Min. difference between SP and rP | 5 mbar | 0.08 psi | 0.2 inHg | 0.5 kPa | |
| In steps of | 1 mbar | 0.01 psi | 0.1 inHg | 0.1 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) | | | | |

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| | | |
|---|---|---|
| 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) |
| **Response times** | | |
| Response time [ms] | | < 3 |
| Delay time programmable dS, dr [s] | | 0...50 |
| Damping process value dAP [s] | | 0...4 |
| Damping for the analogue output dAA [s] | | 0...4 |
| Max. response time analogue output [ms] | | 3 |
| **Software / programming** | | |
| Parameter setting options | | hysteresis / window; normally open / normally 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 type | | A |
| Process data analogue | | 1 |
| Process data binary | | 1 |
| Supported DeviceIDs | **Type of operation** | **DeviceID** |
| | Factory setting / CMPT = 2 | 434 |
| | Status_B High Resolution / CMPT = 3 | 619 |
| Note | | For further information please see the IODD PDF file under "Downloads" |
| Factory setting / CMPT = 2 | | |
| Profiles | Smart Sensor - SSP 0 | Generic Profiled Sensor |
| | Function | Device identification |
| | Function | Process data variable |
| | Function | 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 | 1 |
| IO-Link functions (acyclical) | | application specific tag |
| Status_B High Resolution / CMPT = 3 | | |
| Profiles | Smart Sensor - SSP 3.1 | Measuring Sensor |
| | Common - I&D | Identification and Diagnosis |
| Min. process cycle time [ms] | | 3 |
| IO-Link resolution pressure | 0.5 mbar | 0.0005 MPa |

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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 no. | J004 |
| Pressure Equipment Directive | | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |
| **Mechanical data** | | | |
| Weight | [g] | 234.5 | |
| 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); Al2O3 (ceramics); FKM | |
| Min. pressure cycles | | 100 million | |
| Tightening torque | [Nm] | 25...35; (recommended tightening torque; depends on the lubrication, the seal and the pressure load) | |
| Process connection | | threaded connection G 1/4 internal thread M6 I | |
| Restrictor element integrated | | no (can be retrofitted) | |
| **Displays / operating elements** | | | |
| Display | | Display unit | 4 x LED, green (mbar, psi, kPa, inHg) |
| | | 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: 4, gold-plated

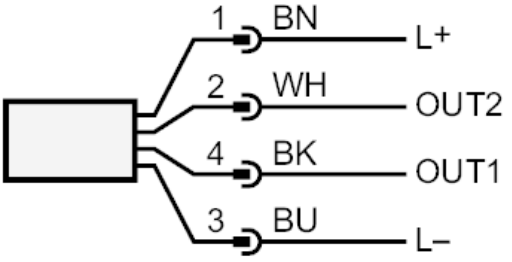


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### Connection




| | |
|---|---|
| OUT1 | switching output<br>IO-Link |
| OUT2 | analogue output |
| | Core colours : |
| BK = | black |
| BN = | brown |
| BU = | blue |
| WH = | white |