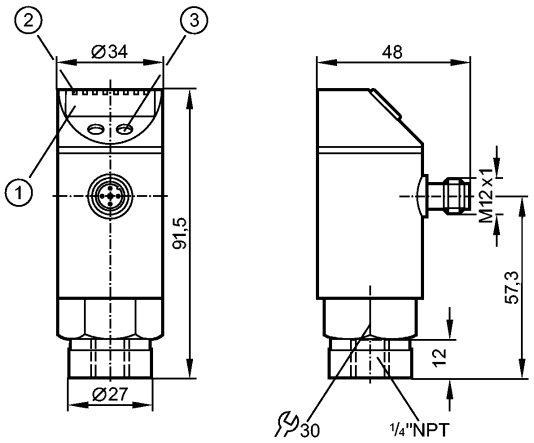
# PN7209

PN-1-1BRBN14-QFRKG/US/ /

**Pressure sensors**

**New generation available: PN7299**




1: 4-digit alphanumeric display
2: LEDs (display unit / switching status)
3: Programming button

| | | | |
|---|---|---|---|
| **Product characteristics** | | | |
| Electronic pressure monitor | | | |
| Quick disconnect | | | |
| Function programmable | | | |
| Process connection: ¼" NPT | | | |
| 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output or diagnostic output | | | |
| 4-digit alphanumeric display | | | |
| Measuring range: -14.5...14.5 psi / -1000...1000 mbar | | | |
| **Application** | | | |
| Application | | Type of pressure: relative pressure<br>Liquids and gases | |
| Pressure rating | | 290 psi | 20000 mbar |
| Bursting pressure min. | | 725 psi | 50000 mbar |
| Medium temperature | [°C] | -25...80 | |
| **Electrical data** | | | |
| Electrical design | | DC PNP/NPN | |
| Operating voltage | [V] | 18...36 DC [1]) | |
| Current consumption | [mA] | < 50 | |
| Insulation resistance | [MΩ] | > 100 (500 V DC) | |
| Protection class | | III | |
| Reverse polarity protection | | yes | |
| Overvoltage protection | [V] | up to 40 V | |
| **Outputs** | | | |
| Output | | 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output or diagnostic output | |
| Output function | | 2 x normally open / closed programmable or 1 x normally open / closed programmable<br>+ 1 x normally closed (diagnostic function) | |

| | | | |
|---|---|---|---|
| Current rating | [mA] | 250 | |
| Voltage drop | [V] | < 2 | |
| Short-circuit protection | | yes (non-latching) | |
| Switching frequency | [Hz] | ≤ 170 | |
| **Measuring / setting range** | | | |
| Display unit | | mbar, kPa, psi, inHg | |
| Measuring range | | -14.5...14.5 psi | -1000...1000 mbar |
| Setting range | | | |
| Set point, SP | | -14.0...14.4 psi | -970...1000 mbar |
| Reset point, rP | | -14.2...14.2 psi | -980...990 mbar |
| in steps of | | 0.2 psi | 10 mbar |
| Factory setting | | SP1 = -7.2 psi; rP1 = -7.8 psi<br>SP2 = 7.2 psi; rP2 = 6.8 psi | |
| **Accuracy / deviations** | | | |
| Accuracy / deviations<br>(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 -20...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 | |
| Delay time programmable dS, dr | [s] | 0; 0.2...50 | |
| Integrated watchdog | | yes | |
| **Software / programming** | | | |
| Programming options | | hysteresis / window function; N.O. / N.C; diagnostic function; output polarity; on delay, off delay; damping; display unit | |
| **Interfaces** | | | |
| IO-Link Device | | | |
| Transfer type | | COM2 (38.4 kBaud) | |
| IO-Link revision | | 1.1 | |
| IO-Link Device ID | | 333 d / 00 01 4D h | |
| Profiles | | no profile | |
| 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] | -20...80 (UB < 32 V) / -20...60 (UB > 32 V) | |
| Storage temperature | [°C] | -40...100 | |
| Protection | | IP 65 | |

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**Pressure sensors**

## Tests / approvals

| | | |
|---|---|---|
| EMC | EN 61000-6-2<br>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] | 219 | |

## Mechanical data

| | |
|---|---|
| Process connection | ¼" NPT |
| Materials (wetted parts) | stainless steel (303S22); ceramics; FPM |
| Housing materials | stainless steel (304S15); stainless steel 316L / 1.4404; PC; PBT; PEI; FPM; PTFE |
| Switching cycles min. | 100 million |
| Weight [kg] | 0.263 |

## Displays / operating elements

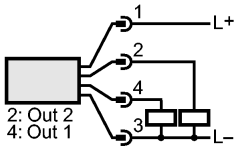
| | | |
|---|---|---|
| Display | Display unit | 4 x LED green |
| | Switching status | 2 x LED yellow |
| | Function display | 4-digit alphanumeric display |
| | Measured values | 4-digit alphanumeric display |

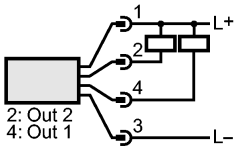
## Electrical connection

| | |
|---|---|
| Connection | M12 connector; gold-plated contacts |

**Wiring**

Programming of the output function
----------OUT1----------
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
----------OUT2----------
Hno = hysteresis / normally open
Hnc = hysteresis / normally closed
Fno = window function / normally open
Fnc = window function / normally closed
dESI = diagnostic function (normally closed)


## 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 |
| Pack quantity [piece] | 1 |