

PN2160



Pressure sensor with display

PN-600-SER14-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: 2; Number of analog outputs: 1 | | |
| Measuring range | 0...600 bar | 0...8700 psi | 0...60 MPa |
| Process connection | threaded connection G 1/4 Internal thread | | |

Application

| | | | |
|--------------------------|-----------------------------|-----------|---------|
| System | gold-plated contacts | | |
| Measuring element | metallic thin film cell | | |
| Application | for industrial applications | | |
| Media | liquids and gases | | |
| Medium temperature [°C] | -25...80 | | |
| Min. bursting pressure | 2500 bar | 36250 psi | 250 MPa |
| Pressure rating | 800 bar | 11580 psi | 80 Mpa |
| Vacuum resistance [mbar] | -1000 | | |
| Type of pressure | relative pressure | | |

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| 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 | |
| Inputs / outputs | | | |
| Number of inputs and outputs | | Number of digital outputs: 2; Number of analog outputs: 1 | |
| Outputs | | | |
| Total number of outputs | | 2 | |
| Output signal | | switching signal; analog 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 | |
| Permanent current rating of switching output DC | [mA] | 250 | |
| Switching frequency DC | [Hz] | < 500 | |
| Number of analog outputs | | 1 | |
| Analog current output | [mA] | 4...20; (scalable 1:5) | |
| Max. load | [Ω] | 500 | |
| Analog voltage output | [V] | 0...10; (scalable 1:5) | |
| 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...600 bar | 0...8700 psi |
| Analog start point | | 0...480 bar | 0...6960 psi |
| Analog end point | | 120...600 bar | 1740...8700 psi |
| Factory setting / CMPT = 2 | | | |
| Set point SP | | 4...600 bar | 60...8700 psi |
| Reset point rP | | 1...597 bar | 20...8660 psi |
| Min. difference between SP and rP | | 3 bar | 40 psi |
| In steps of | | 1 bar | 20 psi |
| Status_B High Resolution / CMPT = 3 | | | |
| Set point SP | | 4...600 bar | 55...8702 psi |
| Reset point rP | | 1...597 bar | 19...8666 psi |
| Min. difference between SP and rP | | 3 bar | 37 psi |
| In steps of | | 1 bar | 1 psi |



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| Accuracy / deviations | | |
|--|--|----------|
| Notes on the accuracy / deviation | switch point accuracy, linearity error under DNV GL: $\lt; \pm 1\%$ | |
| Switch point accuracy [% of the span] | $\lt; \pm 0,4$; (Turn down 1:1) | |
| Repeatability [% of the span] | $\lt; \pm 0,1$; (with temperature fluctuations $\lt; 10\text{ K}$; Turn down 1:1) | |
| Characteristics deviation [% of the span] | $\lt; \pm 0,25$ (BFSL) / $\lt; \pm 0,5$ (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting) | |
| Hysteresis deviation [% of the span] | $\lt; \pm 0,1$; (Turn down 1:1) | |
| Long-term stability [% of the span] | $\lt; \pm 0,05$; (Turn down 1:1; per 6 months) | |
| Temperature coefficient zero point [% of the span / 10 K] | 0,2; (-25...80 °C) | |
| Temperature coefficient span [% of the span / 10 K] | 0,2; (-25...80 °C) | |
| Reaction times | | |
| Response time [ms] | $\lt; 1.5$ | |
| 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; (wenn PIN 2 nicht verbunden: B) | |
| Supported DeviceIDs | Type of operation | DeviceID |
| | Factory setting / CMPT = 2 | 458 |
| | Status_B High Resolution / CMPT = 3 | 637 |
| Note | For further information please see the IODD PDF file at "Downloads" | |

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| 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 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] | 0.2 | |
| 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 | |
| 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] | 129 | |
| UL approval | UL approval number | J014 |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |
| Mechanical data | | |
| Weight [g] | 233.5 | |
| Material | 1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC | |
| Materials (wetted parts) | 1.4542 (17-4 PH / 630) | |
| Min. pressure cycles | 100 million | |
| Tightening torque [Nm] | 30...50; (recommended tightening torque; Depends on lubrication, seal and pressure rating) | |
| Process connection | threaded connection G 1/4 Internal 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. | |

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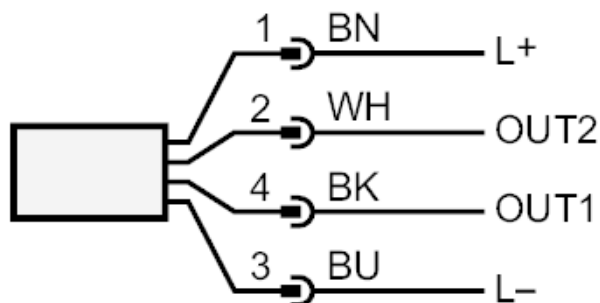
PN-600-SER14-MFRKG/US/ IV

Electrical connection

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



Connection



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