

PN7160



Pressure sensor with display

PN-600-SER14-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 | 0...600 bar | 0...8700 psi | 0...60 MPa |
| Process connection | threaded connection G 1/4 internal thread | | |

Application

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

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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 / 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 | | 0...600 bar | 0...8700 psi 0...60 MPa |
| Factory setting / CMPT = 2 | | | |
| Set point SP | | 4...600 bar | 40...8700 psi 0.4...60 MPa |
| Reset point rP | | 2...598 bar | 20...8680 psi 0.2...59.8 MPa |
| Min. difference between SP and rP | | 2 bar | 40 psi 0.2 MPa |
| In steps of | | 2 bar | 20 psi 0.2 MPa |
| Status_B High Resolution / CMPT = 3 | | | |
| Set point SP | | 3...600 bar | 47...8702 psi 0.3...60 MPa |
| Reset point rP | | 2...599 bar | 26...8681 psi 0.2...59.9 MPa |
| Min. difference between SP and rP | | 2 bar | 21 psi 0.2 MPa |
| In steps of | | 1 bar | 1 psi 0.1 MPa |
| 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 | | < ± 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; (-25...80 °C) |
| Temperature coefficient span | [% of the span / 10 K] | 0,2; (-25...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) | |
| Process data analogue | 1 | |
| Process data binary | 2 | |
| Supported DeviceIDs | Type of operation | DeviceID |
| | Factory setting / CMPT = 2 | 398 d / 00 01 8e h |
| | Status_B High Resolution / CMPT = 3 | 596 d / 00 02 54 h |
| | PN7060 | 315 d / 00 01 3b 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] | 1 |
| IO-Link resolution pressure | [MPa] | 0.1 |
| IO-Link functions (cyclical) | function | bit length |
| | pressure | 14 |
| | binary switching information | 2 |
| IO-Link functions (acyclical) | application specific tag | |

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| 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 resolution pressure [MPa] | 0.02 | |
| IO-Link functions (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] | 214 | |
| UL approval | UL Approval no. | J003 |
| Pressure Equipment Directive | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request | |
| Mechanical data | | |
| Weight [g] | 229.5 | |
| Materials | 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] | 25...35; (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. | |
| Electrical connection | | |
| Connector: 1 x M12; Contacts: gold-plated | | |

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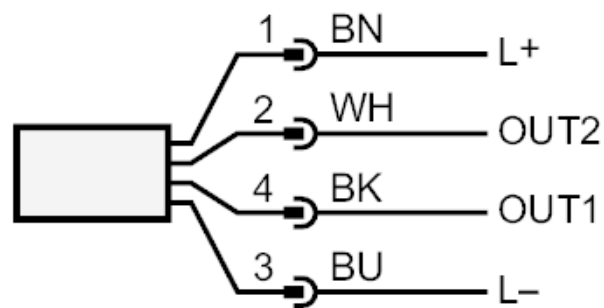


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Connection



OUT1 switching output

IO-Link

OUT2 switching output

colours to DIN EN 60947-5-2

Core colours :

BK = black

BN = brown

BU = blue

WH = white