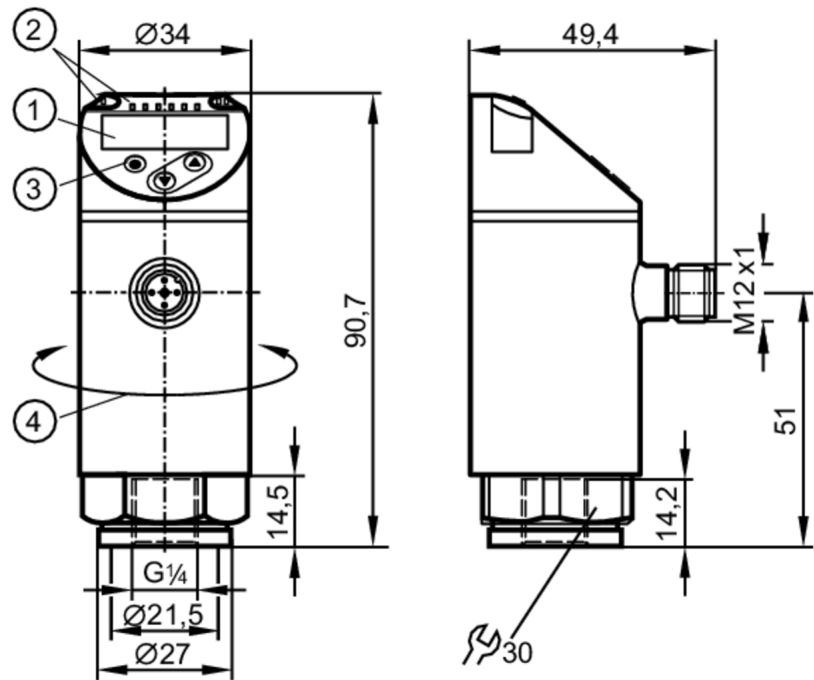


PN3071



Pressure sensor with display

PN-250-SER14-MFRKG/US/ I/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 analog outputs: 1 |              |            |
| Measuring range              | 0...250 bar                                               | 0...3620 psi | 0...25 MPa |
| Process connection           | threaded connection G 1/4 Internal thread M6 I            |              |            |

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. burst pressure     | 1200 bar                    | 17400 psi | 120 MPa  |
| Pressure rating         | 500 bar                     | 7250 psi  | 50 MPa   |
| Vacuum resistance       | -1000 mbar                  |           | -0.1 MPa |
| Type of pressure        | relative pressure           |           |          |

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                      |  |  |



## Pressure sensor with display

PN-250-SER14-MFRKG/US/ /V

|                                                      |                                                                                           |               |                |
|------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------|----------------|
| Integrated watchdog                                  | yes                                                                                       |               |                |
| Inputs / outputs                                     |                                                                                           |               |                |
| Number of inputs and outputs                         | Number of digital outputs: 1; Number of analog outputs: 1                                 |               |                |
| Outputs                                              |                                                                                           |               |                |
| Total number of outputs                              | 2                                                                                         |               |                |
| Output signal                                        | switching signal; analog signal; IO-Link; (configurable)                                  |               |                |
| Electrical design                                    | PNP                                                                                       |               |                |
| Number of digital outputs                            | 1                                                                                         |               |                |
| Output function                                      | normally open / closed; (configurable)                                                    |               |                |
| 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 analog outputs                             | 1                                                                                         |               |                |
| Analog current output [mA]                           | 4...20                                                                                    |               |                |
| Max. load [Ω]                                        | 500                                                                                       |               |                |
| Analog voltage output [V]                            | 0...10                                                                                    |               |                |
| 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...250 bar                                                                               | 0...3620 psi  | 0...25 MPa     |
| Factory setting / CMPT = 2                           |                                                                                           |               |                |
| Set point SP                                         | 2...250 bar                                                                               | 40...3620 psi | 0.2...25 MPa   |
| Reset point rP                                       | 1...249 bar                                                                               | 20...3600 psi | 0.1...24.9 MPa |
| Min. difference between SP and rP                    | 2 bar                                                                                     | 20 psi        | 0.2 MPa        |
| In steps of                                          | 1 bar                                                                                     | 20 psi        | 0.1 MPa        |
| Status_B High Resolution / CMPT = 3                  |                                                                                           |               |                |
| Set point SP                                         | 2...250 bar                                                                               | 30...3626 psi | 0.2...25 MPa   |
| Reset point rP                                       | 1...249 bar                                                                               | 12...3608 psi | 0.1...24.9 MPa |
| Min. difference between SP and rP                    | 2 bar                                                                                     | 19 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 [% of the span]                 | < ± 0,25                                                                                  |               |                |
| Long-term stability                                  | < ± 0,05; (per 6 months)                                                                  |               |                |



## Pressure sensor with display

PN-250-SER14-MFRKG/US/ /V

|                                     |                                                                                                                         |                              |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------------------------|
| [% of the span]                     |                                                                                                                         |                              |
| Temperature coefficient zero point  |                                                                                                                         | 0,2; (-25...80 °C)           |
| [% of the span / 10 K]              |                                                                                                                         |                              |
| Temperature coefficient span        |                                                                                                                         | 0,2; (-25...80 °C)           |
| [% of the span / 10 K]              |                                                                                                                         |                              |
| Reaction times                      |                                                                                                                         |                              |
| Response time                       | [ms]                                                                                                                    | < 3                          |
| 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                                                                                                                       |                              |
| Process data analog                 | 1                                                                                                                       |                              |
| Process data binary                 | 1                                                                                                                       |                              |
| Supported DeviceIDs                 | Type of operation                                                                                                       | DeviceID                     |
|                                     | Factory setting / CMPT = 2                                                                                              | 428                          |
|                                     | Status_B High Resolution / CMPT = 3                                                                                     | 607                          |
| Note                                | For further information please see the IODD PDF file at "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 bar                                                                                                                   | 0.1 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         | 0.1 bar                                                                                                                 | 0.01 MPa                     |

# PN3071



## Pressure sensor with display

PN-250-SER14-MFRKG/US/ /V

| IO-Link process data<br>(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]                                                                               | 190                 |
| UL approval                  | UL approval number                                                                    | J006                |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |                     |

### Mechanical data

|                               |      |                                                                                                                                     |
|-------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------|
| Weight                        | [g]  | 231                                                                                                                                 |
| Housing                       |      | tubular                                                                                                                             |
| Dimensions                    | [mm] | Ø 34 / L = 90.7                                                                                                                     |
| Material                      |      | stainless steel (630/1.4542/17-4 PH); stainless steel (1.4404 / 316L)<br>stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC |
| Materials (wetted parts)      |      | stainless steel (630/1.4542/17-4 PH)                                                                                                |
| Min. pressure cycles          |      | 100 million                                                                                                                         |
| Tightening torque             | [Nm] | 25...35; (recommended tightening torque;<br>Depends on lubrication, seal and pressure rating)                                       |
| Process connection            |      | threaded connection G 1/4 Internal thread M6 I                                                                                      |
| Restrictor element integrated |      | no (can be retrofitted)                                                                                                             |

### Displays / operating elements

|         |                  |                                         |
|---------|------------------|-----------------------------------------|
| Display | Display unit     | 3 x LED, green (bar, psi, MPa)          |
|         | 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: gold-plated



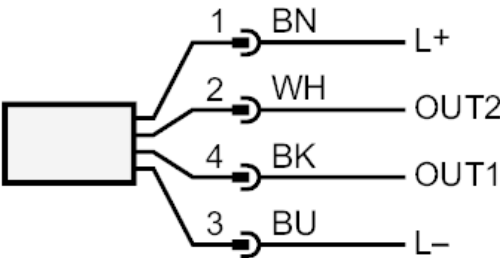
# PN3071



## Pressure sensor with display

PN-250-SER14-MFRKG/US/ /V

### Connection



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