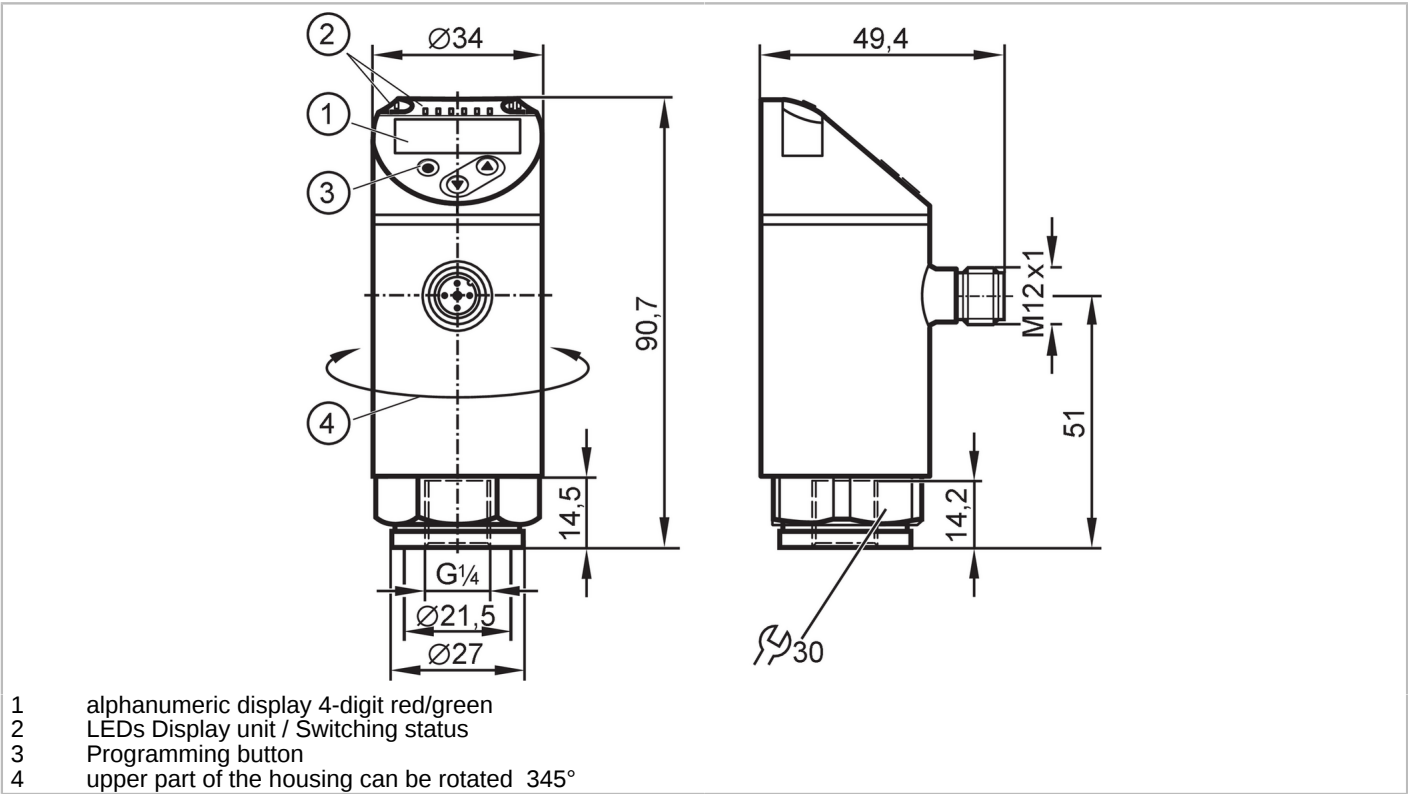


PN7191



Pressure sensor with display

PN-250-SER14-QFRKG/US/ IV



| Product characteristics      |                                                    |                            |            |
|------------------------------|----------------------------------------------------|----------------------------|------------|
| Number of inputs and outputs | Number of digital outputs: 2                       |                            |            |
| Measuring range              | 0...250 bar                                        | 0...3625 psi               | 0...25 MPa |
| Process connection           | threaded connection G 1/4 Internal thread          |                            |            |
| Application                  |                                                    |                            |            |
| Special feature              | gold-plated contacts                               |                            |            |
| Measuring element            | ceramic-capacitive pressure measuring cell         |                            |            |
| Application                  | for industrial applications                        |                            |            |
| Media                        | use in gases at pressures > 25 bar only on request |                            |            |
| Conditionally suitable for   | use in gases at pressures > 25 bar only on request |                            |            |
| Medium temperature           | -25...80                                           |                            |            |
| Min. burst pressure          | 1000 bar                                           | 14500 psi                  | 100 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-QFRKG/US/ IV

|                                                           |                                                                                           |               |                |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------|---------------|----------------|
| 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 / 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                                                                                     |               |                |
| Short-circuit protection                                  | yes                                                                                       |               |                |
| Type of short-circuit protection                          | yes (non-latching)                                                                        |               |                |
| Overload protection                                       | yes                                                                                       |               |                |
| Measuring/setting range                                   |                                                                                           |               |                |
| Measuring range                                           | 0...250 bar                                                                               | 0...3625 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...3620 psi | 0.1...24.9 MPa |
| Min. difference between SP and rP                         | 1 bar                                                                                     | 20 psi        | 0.1 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...3628 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 [% of the span]                       | < ± 0,05; (per 6 months)                                                                  |               |                |
| 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)                                                                      |               |                |



## Pressure sensor with display

PN-250-SER14-QFRKG/US/ IV

| Reaction times                      |                                                                                                                 |                              |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|
| Response time                       | [ms]                                                                                                            | < 3                          |
| Delay time programmable dS, dr      | [s]                                                                                                             | 0...50                       |
| Damping process value dAP           | [s]                                                                                                             | 0...4                        |
| Software / programming              |                                                                                                                 |                              |
| Parameter setting options           | hysteresis / window; normally open / 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 class          | A; (when pin 2 not connected: B)                                                                                |                              |
| Supported DeviceIDs                 | Type of operation                                                                                               | DeviceID                     |
|                                     | Factory setting / CMPT = 2                                                                                      | 400                          |
|                                     | Status_B High Resolution / CMPT = 3                                                                             | 598                          |
| 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                                                                                    | 2                            |
| 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                     |
| 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                                                                                                    |                              |

# PN7191



## Pressure sensor with display

PN-250-SER14-QFRKG/US/ IV

| 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]                                                                               | 256                                                                                           |
| UL approval                                                                         | UL approval number                                                                    | J039                                                                                          |
| Pressure equipment directive                                                        | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |                                                                                               |
| Mechanical data                                                                     |                                                                                       |                                                                                               |
| Weight                                                                              | [g]                                                                                   | 278.1                                                                                         |
| Housing                                                                             |                                                                                       | tubular                                                                                       |
| Dimensions                                                                          | [mm]                                                                                  | Ø 34 / L = 90.7                                                                               |
| Material                                                                            |                                                                                       | stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC                                    |
| Materials (wetted parts)                                                            |                                                                                       | stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM                                        |
| 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                                                     |
| 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; coding: A; Contacts: 4, gold-plated                             |                                                                                       |                                                                                               |
|  |                                                                                       |                                                                                               |

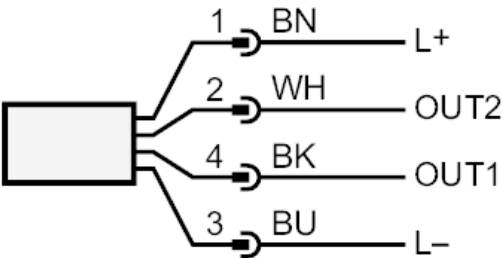
# PN7191



## Pressure sensor with display

PN-250-SER14-QFRKG/US/ IV

### Connection



|      |                            |
|------|----------------------------|
| OUT1 | Switching output           |
|      | IO-Link                    |
| OUT2 | Switching output           |
|      | Colors to DIN EN 60947-5-2 |
|      | Core colors :              |
| BK = | black                      |
| BN = | brown                      |
| BU = | blue                       |
| WH = | white                      |