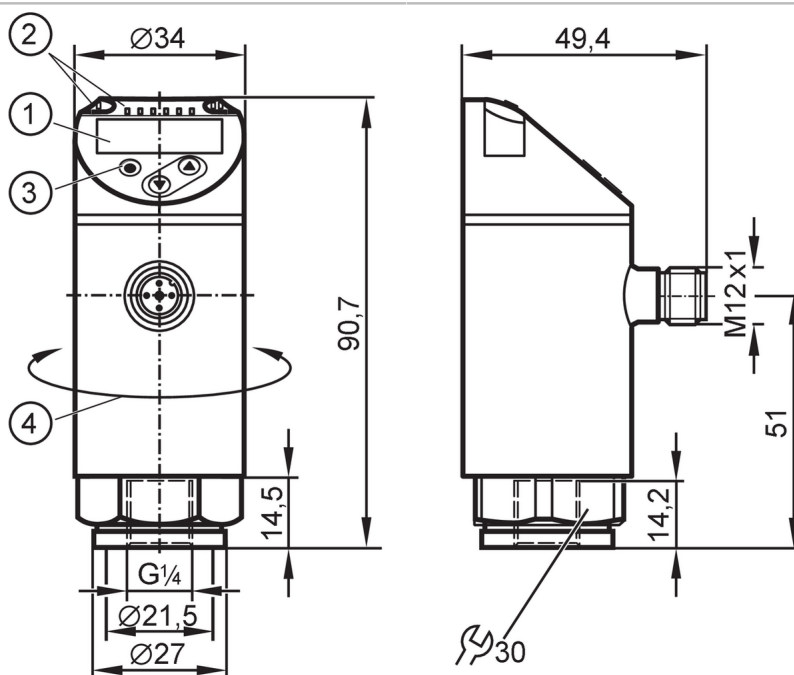


## Pressure sensor with display

PN-100-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

|                              |                                           |              |            |
|------------------------------|-------------------------------------------|--------------|------------|
| Number of inputs and outputs | Number of digital outputs: 2              |              |            |
| Measuring range              | 0...100 bar                               | 0...1450 psi | 0...10 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                      | Liquids                                            |          |        |
| Conditionally suitable for | use in gases at pressures > 25 bar only on request |          |        |
| Medium temperature [°C]    | -25...80                                           |          |        |
| Min. burst pressure        | 650 bar                                            | 9400 psi | 65 MPa |
| Pressure rating            | 300 bar                                            | 4350 psi | 30 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-100-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 / 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...100 bar                                                                               | 0...1450 psi  | 0...10 MPa      |
| Factory setting / CMPT = 2                                |                                                                                           |               |                 |
| Set point SP                                              | 1...100 bar                                                                               | 10...1450 psi | 0.1...10 MPa    |
| Reset point rP                                            | 0.5...99.5 bar                                                                            | 5...1445 psi  | 0.05...9.95 MPa |
| Min. difference between SP and rP                         | 0.5 bar                                                                                   | 10 psi        | 0.05 MPa        |
| In steps of                                               | 0.5 bar                                                                                   | 5 psi         | 0.05 MPa        |
| Status_B High Resolution / CMPT = 3                       |                                                                                           |               |                 |
| Set point SP                                              | 0.8...100 bar                                                                             | 12...1450 psi | 0.08...10 MPa   |
| Reset point rP                                            | 0.3...99.5 bar                                                                            | 5...1443 psi  | 0.03...9.95 MPa |
| Min. difference between SP and rP                         | 0.5 bar                                                                                   | 8 psi         | 0.05 MPa        |
| In steps of                                               | 0.1 bar                                                                                   | 1 psi         | 0.01 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-100-SER14-QFRKG/US/ IV

| 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                                                                                               | 401                          |
|                                     | Status_B High Resolution / CMPT = 3                                                                                      | 599                          |
| Note                                | For further information please see the IODD PDF file under "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         | 0.1 bar                                                                                                                  | 0.01 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         | 0.05 bar                                                                                                                 | 0.005 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                                                                                                             |                              |

# PN7092



## Pressure sensor with display

PN-100-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]                                                                        | 260                                                                                                  |                                         |
| UL approval                                                                         | UL approval no.                                                                                      | J002                                    |
| Pressure Equipment Directive                                                        | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                |                                         |
| Mechanical data                                                                     |                                                                                                      |                                         |
| Weight [g]                                                                          | 272                                                                                                  |                                         |
| Housing                                                                             | cylindrical                                                                                          |                                         |
| Dimensions [mm]                                                                     | Ø 34 / L = 90.7                                                                                      |                                         |
| Materials                                                                           | stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC                                             |                                         |
| Materials (wetted parts)                                                            | stainless steel (316L/1.4404); ceramics; FKM                                                         |                                         |
| Min. pressure cycles                                                                | 100 million                                                                                          |                                         |
| Tightening torque [Nm]                                                              | 25...35; (recommended tightening torque; depends on the lubrication, the seal and the pressure load) |                                         |
| 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                             |                                                                                                      |                                         |
|  |                                                                                                      |                                         |

# PN7092



## Pressure sensor with display

PN-100-SER14-QFRKG/US/ IV

### 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