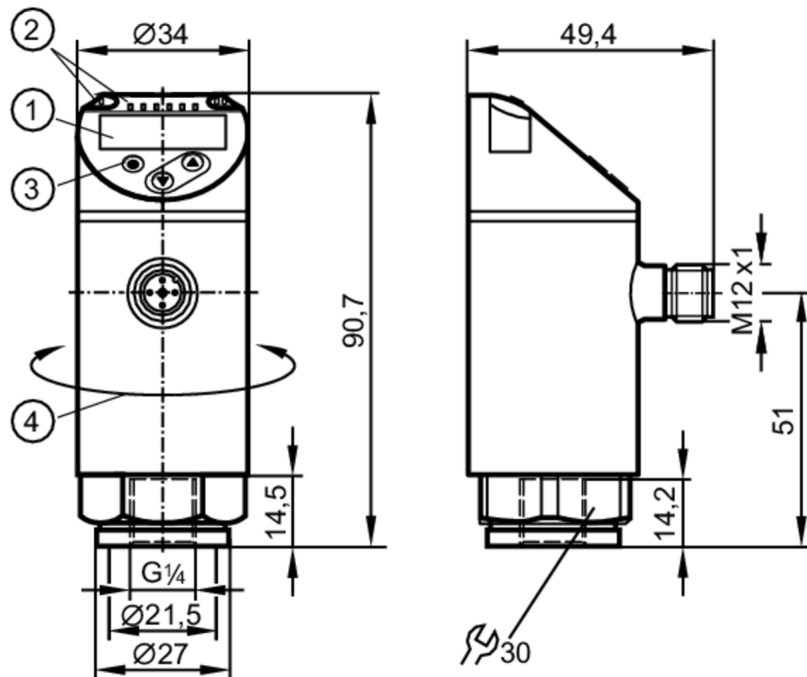




## Pressure sensor with display

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 [MPa]        | 0...10                                    |
| 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. bursting pressure [MPa] | 65                                                 |
| Pressure rating [MPa]        | 30                                                 |
| 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                        |



## Pressure sensor with display

PN-100-SER14-QFRKG/US/ IV

|                                                 |                        |                                                                                           |
|-------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------|
| Power-on delay time                             | [s]                    | 0.3                                                                                       |
| Integrated watchdog                             |                        | yes                                                                                       |
| <b>Inputs / outputs</b>                         |                        |                                                                                           |
| Number of inputs and outputs                    |                        | Number of digital outputs: 2                                                              |
| <b>Outputs</b>                                  |                        |                                                                                           |
| 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                                                                                       |
| <b>Measuring/setting range</b>                  |                        |                                                                                           |
| Measuring range                                 | [MPa]                  | 0...10                                                                                    |
| <b>Factory setting / CMPT = 2</b>               |                        |                                                                                           |
| Set point SP                                    | [MPa]                  | 0.1...10                                                                                  |
| Reset point rP                                  | [MPa]                  | 0.05...9.95                                                                               |
| Min. difference between SP and rP               | [MPa]                  | 0.05                                                                                      |
| In steps of                                     | [MPa]                  | 0.05                                                                                      |
| <b>Status_B High Resolution / CMPT = 3</b>      |                        |                                                                                           |
| Set point SP                                    | [MPa]                  | 0.08...10                                                                                 |
| Reset point rP                                  | [MPa]                  | 0.03...9.95                                                                               |
| Min. difference between SP and rP               | [MPa]                  | 0.05                                                                                      |
| In steps of                                     | [MPa]                  | 0.01                                                                                      |
| <b>Accuracy / deviations</b>                    |                        |                                                                                           |
| 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)                                                                     |



## Pressure sensor with display

PN-100-SER14-QFRKG/US/ IV

|                                                        |                                                                                                                          |            |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------|
| Temperature coefficient span<br>[% of the span / 10 K] | < ± 0,2; (-0...80 °C)                                                                                                    |            |
| Response times                                         |                                                                                                                          |            |
| 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)                                                                                         |            |
| Supported DeviceIDs                                    | Type of operation                                                                                                        | DeviceID   |
|                                                        | Factory setting / CMPT = 2                                                                                               | 437        |
|                                                        | Status_B High Resolution / CMPT = 3                                                                                      | 622        |
| Note                                                   | For further information please see the IODD PDF file under "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                            | [MPa]                                                                                                                    | 0.01       |
| IO-Link resolution pressure                            | [MPa]                                                                                                                    | 0.01       |
| IO-Link process data<br>(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<br>(0x000A), Identification and Diagnosis (0x4000)                            |            |
| Min. process cycle time                                | [ms]                                                                                                                     | 3          |
| IO-Link resolution pressure                            | [MPa]                                                                                                                    | 0.005      |
| IO-Link resolution pressure                            | [MPa]                                                                                                                    | 0.005      |
| IO-Link process data<br>(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                                                                                                             |            |

# PN7032



## 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]                                                                                   | 263.5                                                                                      |
| 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 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 (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: gold-plated                                           |                                                                                       |                                                                                            |
| <div></div> |                                                                                       |                                                                                            |

# PN7032



## 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