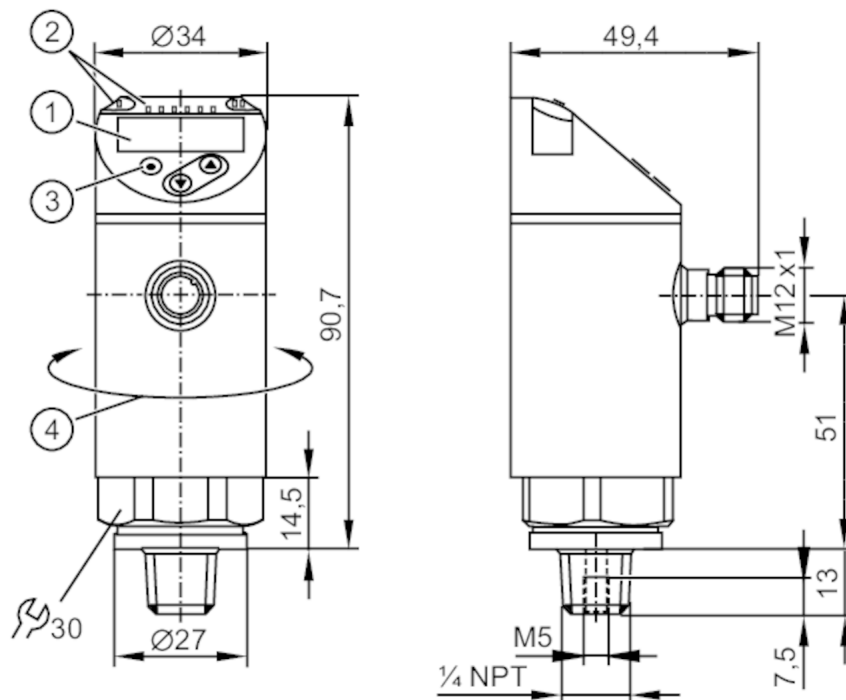


# PN7670



## Pressure sensor with display

PN-400-SEN14-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...400 bar                                  | 0...5800 psi | 0...40 MPa |
| Process connection           | threaded connection 1/4" NPT external thread |              |            |

### 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. bursting pressure                   | 1700 bar                    | 24650 psi | 170 MPa |
| Pressure rating                          | 800 bar                     | 11580 psi | 80 MPa  |
| Type of pressure                         | relative pressure           |           |         |
| MAWP (for applications according to CRN) | 800 bar                     | 11580 psi | 80 MPa  |

### 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-400-SEN14-QFRKG/US/ IV

|                                                 |                        |                                                                                                                 |               |                |
|-------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------|---------------|----------------|
| Power-on delay time                             | [s]                    | 0.3                                                                                                             |               |                |
| Integrated watchdog                             |                        | yes                                                                                                             |               |                |
| Inputs / outputs                                |                        |                                                                                                                 |               |                |
| Number of inputs and outputs                    |                        | Number of digital outputs: 2                                                                                    |               |                |
| Outputs                                         |                        |                                                                                                                 |               |                |
| Total number of outputs                         |                        | 2                                                                                                               |               |                |
| Output signal                                   |                        | switching signal; IO-Link; (configurable)                                                                       |               |                |
| Electrical design                               |                        | PNP/NPN                                                                                                         |               |                |
| Number of digital outputs                       |                        | 2                                                                                                               |               |                |
| Output function                                 |                        | normally open / 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...400 bar                                                                                                     | 0...5800 psi  | 0...40 MPa     |
| Set point SP                                    |                        | 4...400 bar                                                                                                     | 40...5800 psi | 0.4...40 MPa   |
| Reset point rP                                  |                        | 2...398 bar                                                                                                     | 20...5780 psi | 0.2...39.8 MPa |
| In steps of                                     |                        | 2 bar                                                                                                           | 20 psi        | 0.2 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; (-25...80 °C)                                                                                              |               |                |
| Temperature coefficient span                    | [% of the span / 10 K] | 0,2; (-25...80 °C)                                                                                              |               |                |
| Reaction times                                  |                        |                                                                                                                 |               |                |
| Response time                                   | [ms]                   | < 3                                                                                                             |               |                |
| Delay time programmable dS, dr                  | [s]                    | 0...50                                                                                                          |               |                |
| Software / programming                          |                        |                                                                                                                 |               |                |
| Parameter setting options                       |                        | hysteresis / window; normally open / closed; switching logic; switch-on/switch-off delay; Damping; Display unit |               |                |

# PN7670



## Pressure sensor with display

PN-400-SEN14-QFRKG/US/ IV

| Interfaces                    |                                                                                                                   |                                         |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| Communication interface       | IO-Link                                                                                                           |                                         |
| Transmission type             | COM2 (38,4 kBaud)                                                                                                 |                                         |
| IO-Link revision              | 1.1                                                                                                               |                                         |
| SDCI standard                 | IEC 61131-9                                                                                                       |                                         |
| Profiles                      | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                                      |                                         |
| SIO mode                      | yes                                                                                                               |                                         |
| Required master port class    | A                                                                                                                 |                                         |
| Process data analog           | 1                                                                                                                 |                                         |
| Process data binary           | 2                                                                                                                 |                                         |
| Min. process cycle time [ms]  | 2.3                                                                                                               |                                         |
| Supported DeviceIDs           | Type of operation                                                                                                 | DeviceID                                |
|                               | default                                                                                                           | 399                                     |
| Operating conditions          |                                                                                                                   |                                         |
| Ambient temperature [°C]      | -25...80                                                                                                          |                                         |
| Storage temperature [°C]      | -40...100                                                                                                         |                                         |
| Protection                    | IP 65; IP 67                                                                                                      |                                         |
| Tests / approvals             |                                                                                                                   |                                         |
| EMC                           | DIN EN 61000-6-2                                                                                                  |                                         |
|                               | DIN EN 61000-6-3                                                                                                  |                                         |
| Shock resistance              | DIN EN 60068-2-27                                                                                                 | 50 g (11 ms)                            |
| Vibration resistance          | DIN EN 60068-2-6                                                                                                  | 20 g (10...2000 Hz)                     |
| MTTF [years]                  | 214                                                                                                               |                                         |
| UL approval                   | UL approval number                                                                                                | J003                                    |
| Pressure equipment directive  | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                             |                                         |
| Mechanical data               |                                                                                                                   |                                         |
| Weight [g]                    | 239                                                                                                               |                                         |
| Material                      | 1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC                                |                                         |
| Materials (wetted parts)      | 1.4542 (17-4 PH / 630)                                                                                            |                                         |
| Min. pressure cycles          | 100 million                                                                                                       |                                         |
| Tightening torque [Nm]        | 2...3 turns after hand-fastening; recommended tightening torque; Depends on lubrication, seal and pressure rating |                                         |
| Process connection            | threaded connection 1/4" NPT external 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.                                                                                                            |                                         |

# PN7670



## Pressure sensor with display

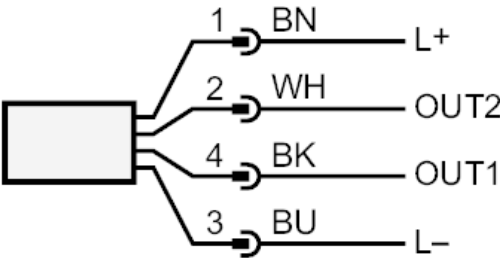
PN-400-SEN14-QFRKG/US/ IV

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



### Connection



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