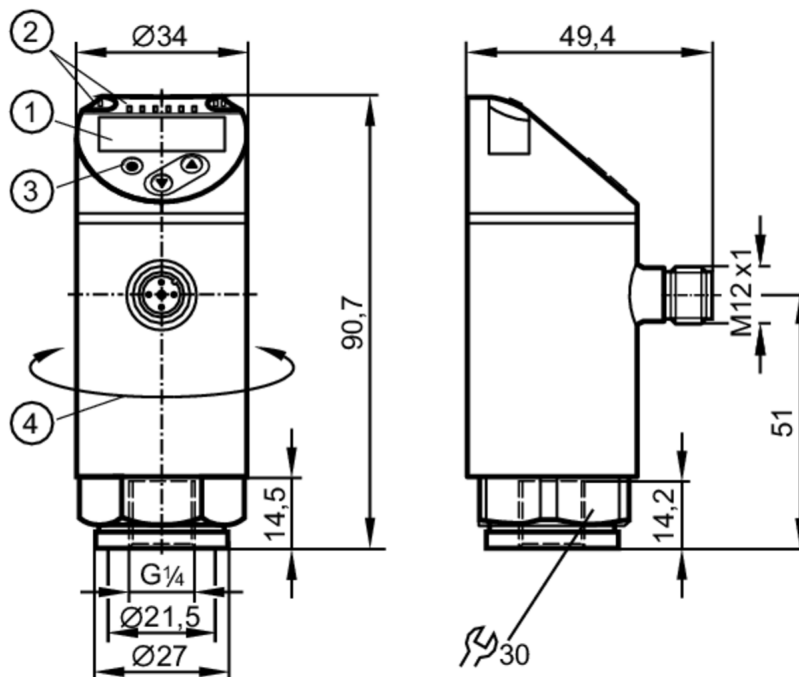




## Pressure sensor with display

PN-016-RER14-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              | -1...16 bar                               | -14.6...232 psi | -0.1...1.6 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 and gases                          |          |          |
| Medium temperature [°C] | -25...80                                   |          |          |
| Min. bursting pressure  | 150 bar                                    | 2200 psi | 15 MPa   |
| Pressure rating         | 85 bar                                     | 1250 psi | 8.5 MPa  |
| Vacuum resistance       | -1000 mbar                                 |          | -0.1 MPa |
| Type of pressure        | relative pressure; vacuum                  |          |          |

### 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-016-RER14-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                                           | -1...16 bar                                                                               | -14.6...232 psi   | -0.1...1.6 MPa     |
| Set point SP                                              | -0.87...16 bar                                                                            | -12.6...232.1 psi | -0.087...1.6 MPa   |
| Reset point rP                                            | -0.95...15.92 bar                                                                         | -13.8...230.9 psi | -0.095...1.592 MPa |
| Min. difference between SP and rP                         | 0.08 bar                                                                                  | 1.2 psi           | 0.008 MPa          |
| In steps of                                               | 0.01 bar                                                                                  | 0.1 psi           | 0.001 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)                                                                      |                   |                    |
| Response times                                            |                                                                                           |                   |                    |
| Response time [ms]                                        | < 3                                                                                       |                   |                    |
| Delay time programmable dS, dr [s]                        | 0...50                                                                                    |                   |                    |
| Damping process value dAP [s]                             | 0...4                                                                                     |                   |                    |



## Pressure sensor with display

PN-016-RER14-QFRKG/US/ IV

| 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                                                                                                              |                     |
| Profiles                          | Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)                               |                     |
| SIO mode                          | yes                                                                                                                      |                     |
| Required master port type         | A; (when pin 2 not connected: B)                                                                                         |                     |
| Process data analogue             | 1                                                                                                                        |                     |
| Process data binary               | 2                                                                                                                        |                     |
| Min. process cycle time [ms]      | 3                                                                                                                        |                     |
| IO-Link resolution pressure [bar] | 0.002                                                                                                                    |                     |
| IO-Link process data (cyclical)   | function                                                                                                                 | bit length          |
|                                   | pressure                                                                                                                 | 16                  |
|                                   | device status                                                                                                            | 4                   |
|                                   | binary switching information                                                                                             | 2                   |
| IO-Link functions (acyclical)     | application specific tag                                                                                                 |                     |
| Supported DeviceIDs               | Type of operation                                                                                                        | DeviceID            |
|                                   | default                                                                                                                  | 1197                |
| Note                              | For further information please see the IODD PDF file under "Downloads"                                                   |                     |
| 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]                      | 249                                                                                                                      |                     |
| UL approval                       | UL Approval no.                                                                                                          | J001                |
|                                   | File number UL                                                                                                           | E174189             |
| Pressure Equipment Directive      | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                    |                     |
| Mechanical data                   |                                                                                                                          |                     |
| Weight [g]                        | 243                                                                                                                      |                     |
| 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); Al2O3 (ceramics); FKM                                                                     |                     |
| Min. pressure cycles              | 100 million                                                                                                              |                     |
| Tightening torque [Nm]            | 25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating)                               |                     |

PN7014



Pressure sensor with display

PN-016-RER14-QFRKG/US/ IV

|                               |                                           |
|-------------------------------|-------------------------------------------|
| Process connection            | threaded connection G 1/4 internal thread |
| Restrictor element integrated | no (can be retrofitted)                   |

Displays / operating elements

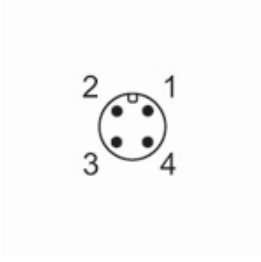
|         |                  |                                         |
|---------|------------------|-----------------------------------------|
| Display | Display unit     | 3 x LED, green (bar, psi, MPa)          |
|         | switching status | 2 x LED, yellow                         |
|         | measured values  | alphanumeric display, red/green 4-digit |

Remarks

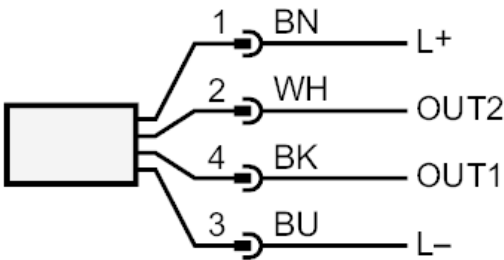
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

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



Connection



- OUT1

switching output
- OUT2

switching output
- IO-Link
- colours to DIN EN 60947-5-2
- Core colours :
- BK =

black
- BN =

brown
- BU =

blue
- WH =

white