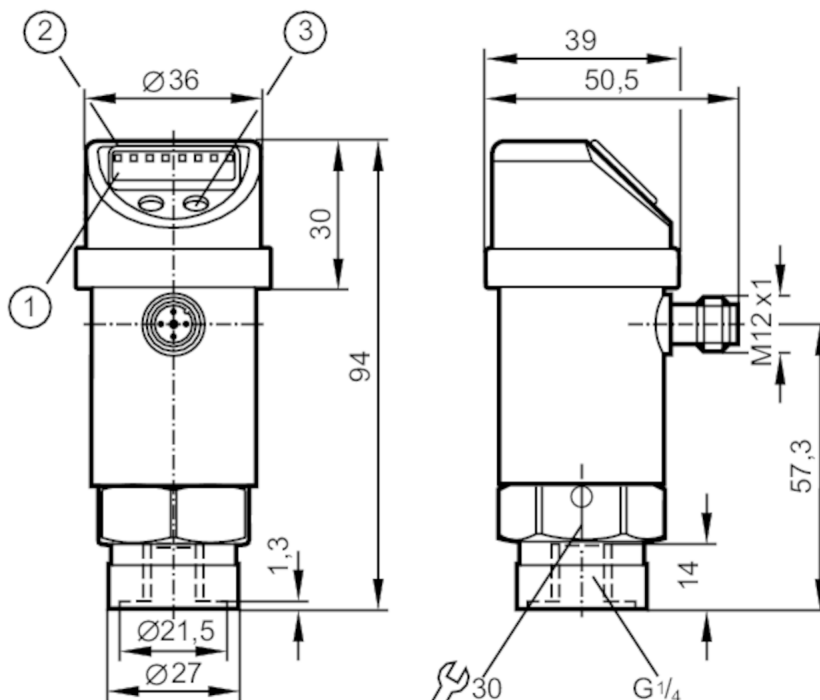


# PN014A



## Pressure sensor with display

PN-010-RBR14-QFPKG/US/3D /V



- 1 alphanumeric display 4-digit
- 2 LEDs Display unit / switching status
- 3 programming button



### Product characteristics

|                              |                                           |                 |                 |              |
|------------------------------|-------------------------------------------|-----------------|-----------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2              |                 |                 |              |
| Measuring range              | -1...10 bar                               | -14.5...145 psi | -100...1000 kPa | -0.1...1 MPa |
| Process connection           | threaded connection G 1/4 internal thread |                 |                 |              |

### Application

|                         |                             |          |         |
|-------------------------|-----------------------------|----------|---------|
| Special feature         | Gold-plated contacts        |          |         |
| Application             | for industrial applications |          |         |
| Media                   | liquids and gases           |          |         |
| Medium temperature [°C] | -20...60                    |          |         |
| Min. bursting pressure  | 150 bar                     | 2175 psi | 15 MPa  |
| Pressure rating         | 75 bar                      | 1087 psi | 7.5 MPa |
| Type of pressure        | relative pressure; vacuum   |          |         |

### Electrical data

|                             |                            |  |  |
|-----------------------------|----------------------------|--|--|
| Operating voltage [V]       | 18...36 DC; (to SELV/PELV) |  |  |
| Current consumption [mA]    | < 50                       |  |  |
| Protection class            | III                        |  |  |
| Reverse polarity protection | yes                        |  |  |
| Overvoltage protection      | yes; (< 40 V)              |  |  |
| Power-on delay time [s]     | 0.3                        |  |  |
| Integrated watchdog         | yes                        |  |  |

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| 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                                                                                                                                             |                 |                                 |
| Permanent current rating of switching output DC              | [mA] | 250                                                                                                                                           |                 |                                 |
| Switching frequency DC                                       | [Hz] | < 170                                                                                                                                         |                 |                                 |
| Short-circuit protection                                     |      | yes                                                                                                                                           |                 |                                 |
| Type of short-circuit protection                             |      | pulsed                                                                                                                                        |                 |                                 |
| Measuring/setting range                                      |      |                                                                                                                                               |                 |                                 |
| Measuring range                                              |      | -1...10 bar                                                                                                                                   | -14.5...145 psi | -100...1000 kPa    -0.1...1 MPa |
| Set point SP                                                 |      | -0.9...10 bar                                                                                                                                 | -12...145 psi   | -0.09...1 MPa                   |
| Reset point rP                                               |      | -0.95...9.95 bar                                                                                                                              | -13...144 psi   | -0.095...0.995 MPa              |
| In steps of                                                  |      | 0.05 bar                                                                                                                                      | 1 psi           | 0.005 MPa                       |
| Factory setting                                              |      | SP1 = 2.50 bar                                                                                                                                | rP1 = 2.30 bar  |                                 |
|                                                              |      | SP2 = 7.50 bar                                                                                                                                | rP2 = 7.30 bar  |                                 |
| Accuracy / deviations                                        |      |                                                                                                                                               |                 |                                 |
| Switch point accuracy<br>[% of the span]                     |      | < ± 0,5                                                                                                                                       |                 |                                 |
| Repeatability<br>[% of the span]                             |      | < ± 0,1; (with temperature fluctuations < 10 K)                                                                                               |                 |                                 |
| Characteristics deviation<br>[% of the span]                 |      | < ± 0,25 (BFSL) / < ± 0,5 (LS); (BFSL = Best Fit Straight Line; LS = limit value setting)                                                     |                 |                                 |
| Hysteresis deviation<br>[% of the span]                      |      | < ± 0,25                                                                                                                                      |                 |                                 |
| Long-term stability<br>[% of the span]                       |      | < ± 0,05; (per 6 months)                                                                                                                      |                 |                                 |
| Temperature coefficient zero point<br>[% of the span / 10 K] |      | 0,2; (0...60 °C)                                                                                                                              |                 |                                 |
| Temperature coefficient span<br>[% of the span / 10 K]       |      | 0,2; (0...60 °C)                                                                                                                              |                 |                                 |
| Response times                                               |      |                                                                                                                                               |                 |                                 |
| Delay time programmable dS, dr                               |      | 0; 0,2...50                                                                                                                                   |                 |                                 |
| Software / programming                                       |      |                                                                                                                                               |                 |                                 |
| Parameter setting options                                    |      | hysteresis / window; normally open / normally closed; diagnostic function; switching logic; switch-on/switch-off delay; Damping; Display unit |                 |                                 |
| Interfaces                                                   |      |                                                                                                                                               |                 |                                 |
| Communication interface                                      |      | IO-Link                                                                                                                                       |                 |                                 |
| Transmission type                                            |      | COM2 (38,4 kBaud)                                                                                                                             |                 |                                 |

# PN014A



## Pressure sensor with display

PN-010-RBR14-QFPKG/US/3D /V

| IO-Link revision             | 1.1                                                                                                           |                   |          |         |     |
|------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------|----------|---------|-----|
| SDCI standard                | IEC 61131-9 CDV                                                                                               |                   |          |         |     |
| Profiles                     | no profile                                                                                                    |                   |          |         |     |
| SIO mode                     | yes                                                                                                           |                   |          |         |     |
| Required master port type    | A                                                                                                             |                   |          |         |     |
| Process data analogue        | 1                                                                                                             |                   |          |         |     |
| Process data binary          | 2                                                                                                             |                   |          |         |     |
| Min. process cycle time [ms] | 2.3                                                                                                           |                   |          |         |     |
| Supported DeviceIDs          | <table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>311</td></tr> </table> | Type of operation | DeviceID | default | 311 |
| Type of operation            | DeviceID                                                                                                      |                   |          |         |     |
| default                      | 311                                                                                                           |                   |          |         |     |

| Operating conditions     |           |
|--------------------------|-----------|
| Ambient temperature [°C] | -20...60  |
| Storage temperature [°C] | -40...100 |
| Protection               | IP 65     |

| Tests / approvals            |                                                                                       |
|------------------------------|---------------------------------------------------------------------------------------|
| ATEX marking                 | Ex II 3D Ex tc IIIC T80°C Dc X                                                        |
| EMC                          | EN 61000-4-2 ESD 4 kV CD / 8 kV AD                                                    |
|                              | EN 61000-4-3 HF radiated 10 V/m                                                       |
|                              | EN 61000-4-4 Burst 2 kV                                                               |
|                              | EN 61000-4-5 Surge 0,5/1 kV                                                           |
|                              | EN 61000-4-6 HF conducted 10 V                                                        |
| Shock resistance             | DIN IEC 68-2-27 50 g (11 ms)                                                          |
| Vibration resistance         | DIN IEC 68-2-6 20 g (10...2000 Hz)                                                    |
| MTTF [years]                 | 194                                                                                   |
| Pressure Equipment Directive | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |

| Mechanical data               |                                                                                         |
|-------------------------------|-----------------------------------------------------------------------------------------|
| Weight [g]                    | 304                                                                                     |
| Materials                     | stainless steel (304/1.4301); stainless steel (316L/1.4404); PC; PEI; FKM; EPDM/X; PTFE |
| Materials (wetted parts)      | stainless steel (303/1.4305); ceramics; FKM                                             |
| Min. pressure cycles          | 100 million                                                                             |
| 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                    |
|                               | switching status 2 x LED, yellow               |
|                               | function display alphanumeric display, 4-digit |
|                               | measured values alphanumeric display, 4-digit  |

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

# PN014A

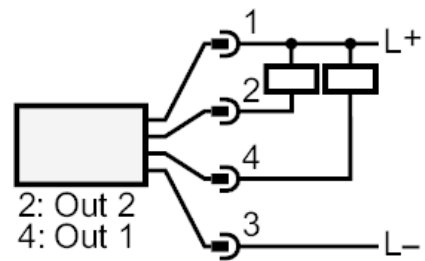
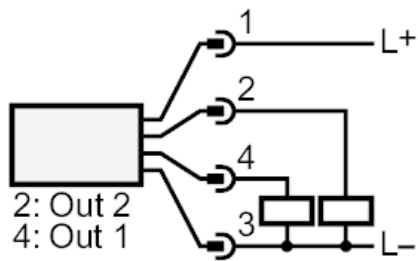


## Pressure sensor with display

PN-010-RBR14-QFPKG/US/3D /V

### Electrical connection

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



|      |                                       |
|------|---------------------------------------|
| OUT1 | switching output<br>IO-Link           |
| OUT2 | switching output<br>Diagnostic output |