

# PN7003



## Pressure sensor with display

PN-025-RBR14-QFRKG/US/ IV

phase-out article

Alternative articles: PN7093

When selecting an alternative article and accessories please note that technical data may differ!



- 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              | 0...25 bar                                | 0...363 psi | 0...2.5 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] | -25...80                    |          |        |
| Min. bursting pressure  | 350 bar                     | 5075 psi | 35 MPa |
| Pressure rating         | 150 bar                     | 2175 psi | 15 MPa |
| Type of pressure        | relative pressure           |          |        |

### Electrical data

|                                 |                            |  |  |
|---------------------------------|----------------------------|--|--|
| Operating voltage [V]           | 18...36 DC; (to SELV/PELV) |  |  |
| Current consumption [mA]        | < 35                       |  |  |
| Min. insulation resistance [MΩ] | 100; (500 V DC)            |  |  |
| Protection class                | III                        |  |  |



## Pressure sensor with display

PN-025-RBR14-QFRKG/US/ /V

|                                                           |                                                                                           |                |                 |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------|-----------------|
| Reverse polarity protection                               | yes                                                                                       |                |                 |
| Overvoltage protection                                    | yes; (< 40 V)                                                                             |                |                 |
| 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 / 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                                           | 0...25 bar                                                                                | 0...363 psi    | 0...2.5 MPa     |
| Set point SP                                              | 0.2...25 bar                                                                              | 4...362 psi    | 0.02...2.5 MPa  |
| Reset point rP                                            | 0.1...24.9 bar                                                                            | 2...360 psi    | 0.01...2.49 MPa |
| In steps of                                               | 0.1 bar                                                                                   | 2 psi          | 0.01 MPa        |
| Factory setting                                           |                                                                                           | SP1 = 6.3 bar  | rP1 = 5.8 bar   |
|                                                           |                                                                                           | SP2 = 18.8 bar | rP2 = 18.3 bar  |
| 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; (-20...80 °C)                                                                        |                |                 |
| Temperature coefficient span [% of the span / 10 K]       | 0,2; (-20...80 °C)                                                                        |                |                 |
| Response times                                            |                                                                                           |                |                 |
| Delay time programmable dS, dr [s]                        | 0; 0,2...50                                                                               |                |                 |



## Pressure sensor with display

PN-025-RBR14-QFRKG/US/ /V

| 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)                                                                                                                             |                               |
| 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           | Type of operation                                                                                                                             | DeviceID                      |
|                               | default                                                                                                                                       | 310                           |
| Operating conditions          |                                                                                                                                               |                               |
| Ambient temperature [°C]      | -20...80                                                                                                                                      |                               |
| Storage temperature [°C]      | -40...100                                                                                                                                     |                               |
| Protection                    | IP 65                                                                                                                                         |                               |
| Tests / approvals             |                                                                                                                                               |                               |
| 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]                  | 219                                                                                                                                           |                               |
| Pressure Equipment Directive  | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                                         |                               |
| Mechanical data               |                                                                                                                                               |                               |
| Weight [g]                    | 261.5                                                                                                                                         |                               |
| Materials                     | stainless steel (304/1.4301); stainless steel (316L/1.4404); PC; PBT; PEI; FKM; 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.                                                                                                                                        |                               |

# PN7003

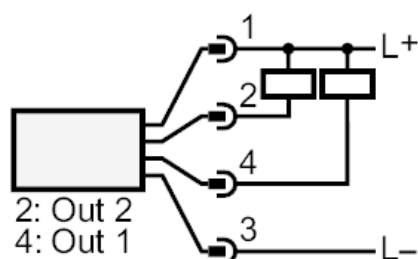


## Pressure sensor with display

PN-025-RBR14-QFRKG/US/ /V

### Electrical connection

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



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