

PP003E



Pressure switch with ceramic measuring cell

PP-025-RBG14-QFPKG/US/ IV



- 1 ventilation
- 2 Sealing



| 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 external thread internal thread:M5 |             |             |
| Application                     |                                                              |             |             |
| Application                     | for mobile applications                                      |             |             |
| Media                           | liquids and gases                                            |             |             |
| Medium temperature [°C]         | -25...90                                                     |             |             |
| 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]           | 9.6...36 DC; (communication mode: 18...32)                   |             |             |
| Current consumption [mA]        | < 45                                                         |             |             |
| Min. insulation resistance [MΩ] | 100; (500 V DC)                                              |             |             |
| Protection class                | III                                                          |             |             |
| Reverse polarity protection     | yes                                                          |             |             |
| Power-on delay time [s]         | 0.3                                                          |             |             |
| 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)                    |             |             |



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|                                                      |                                                    |
|------------------------------------------------------|----------------------------------------------------|
| Electrical design                                    | PNP                                                |
| 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                                             |
| Overload protection                                  | yes                                                |

### 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  |
|                 |                | OUT1 = Hno     | OUT2 = Hno      |

### 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]                      | < ± 0,1                                                                                   |
| Long-term stability [% of the span]                       | < ± 0,1; (per year)                                                                       |
| 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                                                           |
| Damping process value dAP in steps [s] | 0,003 - 0,006 - 0,010 - 0,017 - 0,060 - 0,125 - 0,250 - 0,500 |

### Interfaces

|                           |                   |
|---------------------------|-------------------|
| Communication interface   | IO-Link           |
| Transmission type         | COM2 (38,4 kBaud) |
| IO-Link revision          | 1.0               |
| Profiles                  | no profile        |
| SIO mode                  | yes               |
| Required master port type | A                 |
| Process data analogue     | 1                 |



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|                               |                                                                                              |                                              |
|-------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------|
| Process data binary           | 2                                                                                            |                                              |
| Min. process cycle time [ms]  | 2.3                                                                                          |                                              |
| Supported DeviceIDs           | Type of operation                                                                            | DeviceID                                     |
|                               | default                                                                                      | 5                                            |
| Operating conditions          |                                                                                              |                                              |
| Ambient temperature [°C]      | -25...85                                                                                     |                                              |
| Storage temperature [°C]      | -40...100                                                                                    |                                              |
| Protection                    | IP 68; (7 days / 1 m water depth / 0.1 bar)                                                  |                                              |
| Tests / approvals             |                                                                                              |                                              |
| EMC                           | immunity                                                                                     | EN 61000-6-2                                 |
|                               | EN 61000-4-2 ESD                                                                             | 4 kV contact discharge / 15 kV air discharge |
|                               | EN 61000-4-3 HF radiated                                                                     | 20 V/m                                       |
|                               | EN 61000-4-4 Burst                                                                           | 4 kV coupling clamp                          |
|                               | EN 61000-4-5 Surge                                                                           | 0,5 kV supply / 1 kV signal for DC units     |
|                               | EN 61000-4-6 HF conducted                                                                    | 10 V                                         |
|                               | immunity                                                                                     | ECE R 10, Rev. 5                             |
|                               | absorber chamber test to ISO 11452-2:                                                        | 80 V/m                                       |
|                               | EN 50155                                                                                     | Klasse T3, C1, S1                            |
| Shock resistance              | DIN IEC 60068-2-27 / DIN IEC 60068-2-29                                                      | 1000 g                                       |
|                               | DIN EN 61373                                                                                 | category 3                                   |
| Vibration resistance          | DIN IEC 68-2-6                                                                               | 20 g (10...2000 Hz)                          |
|                               | DIN EN 60068-2-64                                                                            | 14 g                                         |
|                               | DIN EN 61373                                                                                 | category 2                                   |
| MTTF [years]                  | 310                                                                                          |                                              |
| Pressure Equipment Directive  | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request        |                                              |
| Mechanical data               |                                                                                              |                                              |
| Weight [g]                    | 223.5                                                                                        |                                              |
| Housing                       | cylindrical                                                                                  |                                              |
| Dimensions [mm]               | Ø 30 / L = 79.5                                                                              |                                              |
| Materials                     | stainless steel (304/1.4301); FKM; EPDM/X; PA                                                |                                              |
| Materials (wetted parts)      | stainless steel (303/1.4305); ceramics; FKM                                                  |                                              |
| Min. pressure cycles          | 100 million                                                                                  |                                              |
| Process connection            | threaded connection G 1/4 external thread internal thread:M5                                 |                                              |
| Restrictor element integrated | no (can be retrofitted)                                                                      |                                              |
| Displays / operating elements |                                                                                              |                                              |
| Display                       | operation                                                                                    | 2 x LED, green                               |
|                               | switching status                                                                             | 2 x LED, yellow                              |
| Teach function                | yes                                                                                          |                                              |
| Remarks                       |                                                                                              |                                              |
| Remarks                       | with reference to UL: "limited voltage" with overcurrent protection in accordance with UL508 |                                              |
| Pack quantity                 | 1 pcs.                                                                                       |                                              |

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### Electrical connection

Connector: 1 x M12; coding: A



### Connection



|      |                   |
|------|-------------------|
| OUT1 | switching output  |
| OUT2 | switching output  |
|      | Diagnostic output |