



## Pressure sensor with display

PE-010-REG14-MFRKG/US/ /E



- 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°
- 5 Sealing



### Product characteristics

|                              |                                                                                 |                 |                 |              |
|------------------------------|---------------------------------------------------------------------------------|-----------------|-----------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1                     |                 |                 |              |
| Measuring range              | -1...10 bar                                                                     | -14.6...145 psi | -100...1000 kPa | -0.1...1 MPa |
| Process connection           | threaded connection G 1/4 external thread internal thread:M5; DIN EN ISO 1179-2 |                 |                 |              |

### 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                                    | 2175 psi | 15 MPa   |
| Pressure rating         | 75 bar                                     | 1087 psi | 7.5 MPa  |
| Vacuum resistance       | -1000 mbar                                 |          | -0.1 MPa |
| Type of pressure        | relative pressure                          |          |          |

### 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                        |  |  |



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|                                                 |                        |                                                                                                          |
|-------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------|
| Power-on delay time                             | [s]                    | 0.3                                                                                                      |
| Integrated watchdog                             |                        | yes                                                                                                      |
| <b>Inputs / outputs</b>                         |                        |                                                                                                          |
| Number of inputs and outputs                    |                        | Number of digital outputs: 2; Number of analogue outputs: 1                                              |
| <b>Outputs</b>                                  |                        |                                                                                                          |
| Total number of outputs                         |                        | 2                                                                                                        |
| Output signal                                   |                        | switching signal; analogue 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]                   | < 500                                                                                                    |
| Number of analogue outputs                      |                        | 1                                                                                                        |
| Analogue current output                         | [mA]                   | 4...20; (scalable 1:5)                                                                                   |
| Max. load                                       | [Ω]                    | 500                                                                                                      |
| Analogue voltage output                         | [V]                    | 0...10; (scalable 1:5)                                                                                   |
| Min. load resistance                            | [Ω]                    | 2000                                                                                                     |
| Short-circuit protection                        |                        | yes                                                                                                      |
| Type of short-circuit protection                |                        | pulsed                                                                                                   |
| Overload protection                             |                        | yes                                                                                                      |
| <b>Measuring/setting range</b>                  |                        |                                                                                                          |
| Measuring range                                 |                        | -1...10 bar    -14.6...145 psi    -100...1000 kPa    -0.1...1 MPa                                        |
| Set point SP                                    |                        | -0.94...10 bar    -13.6...145 psi    -0.094...1 MPa                                                      |
| Reset point rP                                  |                        | -0.98...9.96 bar    -14.2...144.4 psi    -0.098...0.996 MPa                                              |
| Analogue start point                            |                        | -1...8 bar    -14.6...116 psi    -0.1...0.8 MPa                                                          |
| Analogue end point                              |                        | 1...10 bar    14.6...145 psi    0.1...1 MPa                                                              |
| In steps of                                     |                        | 0.02 bar    0.2 psi    0.002 MPa                                                                         |
| <b>Accuracy / deviations</b>                    |                        |                                                                                                          |
| Switch point accuracy                           |                        | < ± 0,4; (Turn down 1:1)                                                                                 |
|                                                 | [% of the span]        |                                                                                                          |
| Repeatability                                   |                        | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                           |
|                                                 | [% of the span]        |                                                                                                          |
| Characteristics deviation                       |                        | < ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting) |
|                                                 | [% of the span]        |                                                                                                          |
| Hysteresis deviation                            |                        | < ± 0,1; (Turn down 1:1)                                                                                 |
|                                                 | [% of the span]        |                                                                                                          |
| Long-term stability                             |                        | < ± 0,05; (Turn down 1:1; per 6 months)                                                                  |
|                                                 | [% of the span]        |                                                                                                          |
| Temperature coefficient zero point              |                        | 0,2; (-25...80 °C)                                                                                       |
|                                                 | [% of the span / 10 K] |                                                                                                          |
| Temperature coefficient span                    |                        | 0,2; (-25...80 °C)                                                                                       |
|                                                 | [% of the span / 10 K] |                                                                                                          |



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|                                         |                                                                                                                                  |                     |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Notes on the accuracy / deviation       | switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%                                                              |                     |
| Response times                          |                                                                                                                                  |                     |
| Response time [ms]                      | < 1.5                                                                                                                            |                     |
| Delay time programmable dS, dr [s]      | 0...50                                                                                                                           |                     |
| Damping process value dAP [s]           | 0...4                                                                                                                            |                     |
| Damping for the analogue output dAA [s] | 0...4                                                                                                                            |                     |
| Max. response time analogue output [ms] | 3                                                                                                                                |                     |
| Software / programming                  |                                                                                                                                  |                     |
| Parameter setting options               | hysteresis / window; normally open / normally closed; switch-on/ switch-off delay; Damping; Display unit; current/voltage output |                     |
| 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 type               | A                                                                                                                                |                     |
| Process data analogue                   | 1                                                                                                                                |                     |
| Process data binary                     | 2                                                                                                                                |                     |
| Min. process cycle time [ms]            | 2.3                                                                                                                              |                     |
| Supported DeviceIDs                     | Type of operation                                                                                                                | DeviceID            |
|                                         | default                                                                                                                          | 463                 |
| 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]                            | 161                                                                                                                              |                     |
| UL approval                             | UL Approval no.                                                                                                                  | J012                |
| Pressure Equipment Directive            | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                            |                     |
| Mechanical data                         |                                                                                                                                  |                     |
| Weight [g]                              | 260.5                                                                                                                            |                     |
| Housing                                 | cylindrical                                                                                                                      |                     |
| Dimensions [mm]                         | Ø 34 / L = 92.7                                                                                                                  |                     |
| Materials                               | stainless steel (316L/1.4404); PBT+PC-GF30; PBT-GF20; PC; EPDM                                                                   |                     |
| Materials (wetted parts)                | stainless steel (316L/1.4404); Al2O3 (99.9%; ceramics); EPDM                                                                     |                     |
| Min. pressure cycles                    | 100 million                                                                                                                      |                     |

PE2594



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|                               |      |                                                                                            |
|-------------------------------|------|--------------------------------------------------------------------------------------------|
| Tightening torque             | [Nm] | 25...35; (recommended tightening torque; depends on lubrication, seal and pressure rating) |
| Process connection            |      | threaded connection G 1/4 external thread internal thread:M5; DIN EN ISO 1179-2            |
| Process connection sealing    |      | EPDM                                                                                       |
| 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

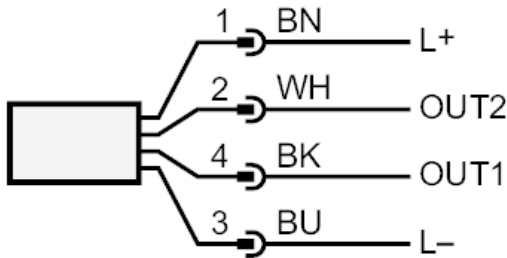
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

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



Connection



|      |                                     |
|------|-------------------------------------|
| OUT1 | switching output or IO-Link         |
| OUT2 | switching output or analogue output |
|      | colours to DIN EN 60947-5-2         |
|      | Core colours :                      |
| BK = | black                               |
| BN = | brown                               |
| BU = | blue                                |
| WH = | white                               |