

PE2591



Pressure sensor with display

PE-250-SEG14-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 analog outputs: 1                       |              |            |
| Measuring range                 | 0...250 bar                                                                     | 0...3625 psi | 0...25 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                                                               |              |            |
| Conditionally suitable for      | use in gases at pressures > 25 bar only on request                              |              |            |
| Medium temperature [°C]         | -25...80                                                                        |              |            |
| Min. burst pressure             | 1000 bar                                                                        | 14500 psi    | 100 MPa    |
| Pressure rating                 | 500 bar                                                                         | 7250 psi     | 50 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                                                                             |              |            |

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|                             |     |
|-----------------------------|-----|
| Reverse polarity protection | yes |
| Power-on delay time [s]     | 0.3 |
| Integrated watchdog         | yes |

### Inputs / outputs

|                              |                                                           |
|------------------------------|-----------------------------------------------------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analog outputs: 1 |
|------------------------------|-----------------------------------------------------------|

### Outputs

|                                                      |                                                          |
|------------------------------------------------------|----------------------------------------------------------|
| Total number of outputs                              | 2                                                        |
| Output signal                                        | switching signal; analog signal; IO-Link; (configurable) |
| Electrical design                                    | PNP/NPN                                                  |
| Number of digital outputs                            | 2                                                        |
| Output function                                      | normally open / closed; (configurable)                   |
| Max. voltage drop switching output DC [V]            | 2                                                        |
| Permanent current rating of switching output DC [mA] | 250                                                      |
| Switching frequency DC [Hz]                          | < 500                                                    |
| Number of analog outputs                             | 1                                                        |
| Analog current output [mA]                           | 4...20; (scalable 1:5)                                   |
| Max. load [Ω]                                        | 500                                                      |
| Analog voltage output [V]                            | 0...10; (scalable 1:5)                                   |
| Min. load resistance [Ω]                             | 2000                                                     |
| Short-circuit protection                             | yes                                                      |
| Type of short-circuit protection                     | yes (non-latching)                                       |
| Overload protection                                  | yes                                                      |

### Measuring/setting range

|                    |               |                |                 |
|--------------------|---------------|----------------|-----------------|
| Measuring range    | 0...250 bar   | 0...3625 psi   | 0...25 MPa      |
| Set point SP       | 1.5...250 bar | 25...3625 psi  | 0.15...25 MPa   |
| Reset point rP     | 0.5...249 bar | 10...3610 psi  | 0.05...24.9 MPa |
| Analog start point | 0...200 bar   | 0...2900 psi   | 0...20 MPa      |
| Analog end point   | 50...250 bar  | 725...3625 psi | 5...25 MPa      |
| In steps of        | 0.5 bar       | 5 psi          | 0.05 MPa        |

### Accuracy / deviations

|                                                           |                                                                                                          |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Switch point accuracy [% of the span]                     | < ± 0,4; (Turn down 1:1)                                                                                 |
| Repeatability [% of the span]                             | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                           |
| Characteristics deviation [% of the span]                 | < ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting) |
| Hysteresis deviation [% of the span]                      | < ± 0,1; (Turn down 1:1)                                                                                 |
| Long-term stability [% of the span]                       | < ± 0,05; (Turn down 1:1; per 6 months)                                                                  |
| Temperature coefficient zero point [% of the span / 10 K] | 0,2; (-25...80 °C)                                                                                       |
| Temperature coefficient span                              | 0,2; (-25...80 °C)                                                                                       |

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|                                   |      |                                                                                                                         |                         |
|-----------------------------------|------|-------------------------------------------------------------------------------------------------------------------------|-------------------------|
| [% of the span / 10 K]            |      |                                                                                                                         |                         |
| Notes on the accuracy / deviation |      | switch point accuracy, linearity error under DNV GL: < ± 1%: < ± 1%                                                     |                         |
| Reaction times                    |      |                                                                                                                         |                         |
| Response time                     | [ms] | < 1.5                                                                                                                   |                         |
| Delay time programmable dS, dr    | [s]  | 0...50                                                                                                                  |                         |
| Damping process value dAP         | [s]  | 0...4                                                                                                                   |                         |
| Damping for the analog output dAA | [s]  | 0...4                                                                                                                   |                         |
| Max. response time analog output  | [ms] | 3                                                                                                                       |                         |
| Software / programming            |      |                                                                                                                         |                         |
| Parameter setting options         |      | hysteresis / window; normally open / 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 - SSP 0                                                                                                    | Generic Profiled Sensor |
|                                   |      | Function                                                                                                                | Device identification   |
|                                   |      | Function                                                                                                                | Process data variable   |
|                                   |      | Function                                                                                                                | Device diagnosis        |
| SIO mode                          |      | yes                                                                                                                     |                         |
| Required master port class        |      | A                                                                                                                       |                         |
| Process data analog               |      | 1                                                                                                                       |                         |
| Process data binary               |      | 2                                                                                                                       |                         |
| Min. process cycle time           |      | [ms] 2.3                                                                                                                |                         |
| Supported DeviceIDs               |      | Type of operation                                                                                                       | DeviceID                |
|                                   |      | default                                                                                                                 | 460                     |
| 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                                                                                                             |                         |
| Pressure equipment directive      |      | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                   |                         |
| Mechanical data                   |      |                                                                                                                         |                         |
| Weight                            |      | [g] 344.5                                                                                                               |                         |
| Housing                           |      | tubular                                                                                                                 |                         |
| Dimensions                        |      | [mm] Ø 34 / L = 92.7                                                                                                    |                         |

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|                               |                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------|
| Material                      | stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC; EPDM                              |
| Materials (wetted parts)      | stainless steel (1.4404 / 316L); EPDM                                                         |
| Min. pressure cycles          | 100 million                                                                                   |
| Tightening torque [Nm]        | 25...35; (recommended tightening torque;<br>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

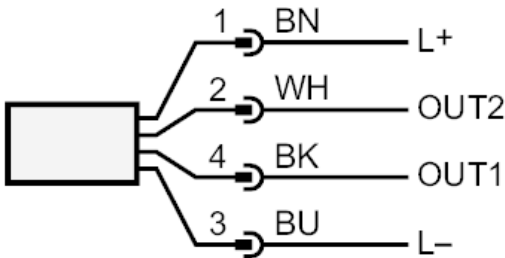
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 4, gold-plated



Connection



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