

PN7072



Pressure sensor with display

PN-100-SER14-QFRKG/US/ IV



- 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°



| Product characteristics         |                                           |              |            |
|---------------------------------|-------------------------------------------|--------------|------------|
| Number of inputs and outputs    | Number of digital outputs: 2              |              |            |
| Measuring range                 | 0...100 bar                               | 0...1450 psi | 0...10 MPa |
| Process connection              | threaded connection G 1/4 Internal thread |              |            |
| Application                     |                                           |              |            |
| System                          | gold-plated contacts                      |              |            |
| Measuring element               | metallic thin film cell                   |              |            |
| Application                     | for industrial applications               |              |            |
| Media                           | liquids and gases                         |              |            |
| Medium temperature [°C]         | -25...80                                  |              |            |
| Min. bursting pressure          | 1000 bar                                  | 14500 psi    | 100 MPa    |
| Pressure rating                 | 300 bar                                   | 4350 psi     | 30 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                                       |              |            |
| 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 / closed; (configurable)                                                    |                                 |
| Max. voltage drop switching output DC [V]                 |  | 2.5                                                                                       |                                 |
| Permanent current rating of switching output DC [mA]      |  | 150; (200 (...60 °C) 250 (...40 °C))                                                      |                                 |
| Switching frequency DC [Hz]                               |  | < 170                                                                                     |                                 |
| Short-circuit protection                                  |  | yes                                                                                       |                                 |
| Type of short-circuit protection                          |  | yes (non-latching)                                                                        |                                 |
| Overload protection                                       |  | yes                                                                                       |                                 |
| Measuring/setting range                                   |  |                                                                                           |                                 |
| Measuring range                                           |  | 0...100 bar                                                                               | 0...1450 psi<br>0...10 MPa      |
| Factory setting / CMPT = 2                                |  |                                                                                           |                                 |
| Set point SP                                              |  | 1...100 bar                                                                               | 10...1450 psi<br>0.1...10 MPa   |
| Reset point rP                                            |  | 0.5...99.5 bar                                                                            | 5...1445 psi<br>0.05...9.95 MPa |
| Min. difference between SP and rP                         |  | 0.5 bar                                                                                   | 10 psi<br>0.05 MPa              |
| In steps of                                               |  | 0.5 bar                                                                                   | 5 psi<br>0.05 MPa               |
| Status_B High Resolution / CMPT = 3                       |  |                                                                                           |                                 |
| Set point SP                                              |  | 0.8...100 bar                                                                             | 12...1450 psi<br>0.08...10 MPa  |
| Reset point rP                                            |  | 0.3...99.5 bar                                                                            | 5...1443 psi<br>0.03...9.95 MPa |
| Min. difference between SP and rP                         |  | 0.5 bar                                                                                   | 8 psi<br>0.05 MPa               |
| In steps of                                               |  | 0.1 bar                                                                                   | 1 psi<br>0.01 MPa               |
| 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; (-25...80 °C)                                                                        |                                 |
| Temperature coefficient span [% of the span / 10 K]       |  | 0,2; (-25...80 °C)                                                                        |                                 |



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| Reaction times                      |                                                                                                                 |                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------|
| Response time                       | [ms]                                                                                                            | < 3                 |
| Delay time programmable dS, dr      | [s]                                                                                                             | 0...50              |
| Software / programming              |                                                                                                                 |                     |
| Parameter setting options           | hysteresis / window; normally open / closed; 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                                                                                                     |                     |
| SIO mode                            | yes                                                                                                             |                     |
| Required master port class          | A; (when pin 2 not connected: B)                                                                                |                     |
| Supported DeviceIDs                 | Type of operation                                                                                               | DeviceID            |
|                                     | Factory setting / CMPT = 2                                                                                      | 401                 |
|                                     | Status_B High Resolution / CMPT = 3                                                                             | 599                 |
| Note                                | For further information please see the IODD PDF file at "Downloads"                                             |                     |
| Factory setting / CMPT = 2          |                                                                                                                 |                     |
| Profiles                            | Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis                                    |                     |
| Min. process cycle time             | [ms]                                                                                                            | 2.3                 |
| IO-Link resolution pressure         | 0.1 bar                                                                                                         | 0.01 MPa            |
| IO-Link process data (cyclical)     | Function                                                                                                        | bit length          |
|                                     | pressure                                                                                                        | 14                  |
|                                     | binary switching information                                                                                    | 2                   |
| IO-Link functions (acyclical)       | application specific tag                                                                                        |                     |
| Status_B High Resolution / CMPT = 3 |                                                                                                                 |                     |
| Profiles                            | Smart Sensor ED2: Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)                      |                     |
| Min. process cycle time             | [ms]                                                                                                            | 3                   |
| IO-Link resolution pressure         | 0.05 bar                                                                                                        | 0.005 MPa           |
| IO-Link process data (cyclical)     | Function                                                                                                        | bit length          |
|                                     | pressure                                                                                                        | 16                  |
|                                     | device status                                                                                                   | 4                   |
|                                     | binary switching information                                                                                    | 2                   |
| IO-Link functions (acyclical)       | application specific tag                                                                                        |                     |
| 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]                                                                                                         | 214                 |

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|                              |                                                                                       |      |
|------------------------------|---------------------------------------------------------------------------------------|------|
| UL approval                  | UL approval number                                                                    | J002 |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |      |

| Mechanical data               |      |                                                                                                  |
|-------------------------------|------|--------------------------------------------------------------------------------------------------|
| Weight                        | [g]  | 227.5                                                                                            |
| Housing                       |      | tubular                                                                                          |
| Dimensions                    | [mm] | Ø 34 / L = 90.7                                                                                  |
| Material                      |      | stainless steel (630/1.4542/17-4 PH); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC |
| Materials (wetted parts)      |      | stainless steel (630/1.4542/17-4 PH)                                                             |
| Min. pressure cycles          |      | 100 million                                                                                      |
| Tightening torque             | [Nm] | 25...35; (recommended tightening torque; Depends on lubrication, seal and pressure rating)       |
| 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 (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



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### Connection



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