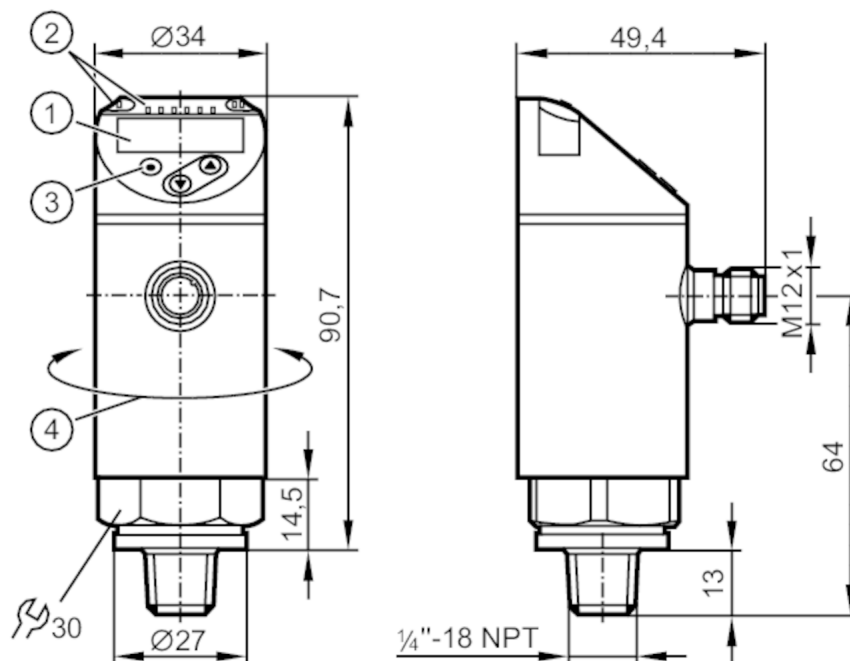


# PN2670



## Pressure sensor with display

PN-400-SEN14-MFRKG/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°



### Application

|                                          |                             |          |         |
|------------------------------------------|-----------------------------|----------|---------|
| Measuring element                        | metallic thin film cell     |          |         |
| Application                              | for industrial applications |          |         |
| Media                                    | liquids and gases           |          |         |
| Medium temperature [°C]                  | -25...80                    |          |         |
| Pressure rating                          | 11580 psi                   | 800 bar  | 80 MPa  |
| Min. bursting pressure                   | 24650 psi                   | 1700 bar | 170 MPa |
| Vacuum resistance [mbar]                 | -1000                       |          |         |
| Type of pressure                         | relative pressure           |          |         |
| MAWP (for applications according to CRN) | 11580 psi                   | 800 bar  | 80 MPa  |

### Electrical data

|                                 |                                               |  |  |
|---------------------------------|-----------------------------------------------|--|--|
| Operating voltage [V]           | 18...30 DC; (according to EN 50178 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                                           |  |  |

### Inputs / outputs

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



## Pressure sensor with display

PN-400-SEN14-MFRKG/US/ /V

| Outputs                                                   |                                                                                                          |               |                 |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------|-----------------|
| 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                                                                                                      |               |                 |
| Measuring/setting range                                   |                                                                                                          |               |                 |
| Measuring range                                           | 0...5800 psi                                                                                             | 0...400 bar   | 0...40 MPa      |
| Set point SP                                              | 40...5800 psi                                                                                            | 2.5...400 bar | 0.25...40 MPa   |
| Reset point rP                                            | 10...5780 psi                                                                                            | 1...398.5 bar | 0.1...39.85 MPa |
| Analogue start point                                      | 0...4640 psi                                                                                             | 0...320 bar   | 0...32 MPa      |
| Analogue end point                                        | 1160...5800 psi                                                                                          | 80...400 bar  | 8...40 MPa      |
| In steps of                                               | 10 psi                                                                                                   | 0.5 bar       | 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 [% of the span / 10 K]       | 0,2; (-25...80 °C)                                                                                       |               |                 |



## Pressure sensor with display

PN-400-SEN14-MFRKG/US/ /V

| Response times                       |                                                                                                                                  |                                                          |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Response time                        | [ms]                                                                                                                             | < 1.5                                                    |
| Delay time programmable dS, dr       | [s]                                                                                                                              | 0...50                                                   |
| Damping for the switching output 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                                                                                                                             |                                                          |
| IO-Link revision                     | 1.1                                                                                                                              |                                                          |
| SDCI standard                        | IEC 61131-9                                                                                                                      |                                                          |
| IO-Link device ID                    | 469 d / 00 01 d5 h                                                                                                               |                                                          |
| 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                                                      |
| 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]                                                                                                                          | 129                                                      |
| UL approval                          | UL Approval no.                                                                                                                  | J014                                                     |
| Pressure Equipment Directive         | Sound Engineering Practice; can be used for group 2 fluids; group 1 fluids on request                                            |                                                          |
| Mechanical data                      |                                                                                                                                  |                                                          |
| Weight                               | [g]                                                                                                                              | 242                                                      |
| Materials                            | 1.4542 (17-4 PH / 630); stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC                                               |                                                          |
| Materials (wetted parts)             | 1.4542 (17-4 PH / 630)                                                                                                           |                                                          |
| Min. pressure cycles                 | 100 million                                                                                                                      |                                                          |
| Tightening torque                    | [Nm]                                                                                                                             | > 50; (depends on lubrication, seal and pressure rating) |
| Process connection                   | threaded connection 1/4 NPT external thread                                                                                      |                                                          |
| Restrictor element integrated        | no (can be retrofitted)                                                                                                          |                                                          |

PN2670



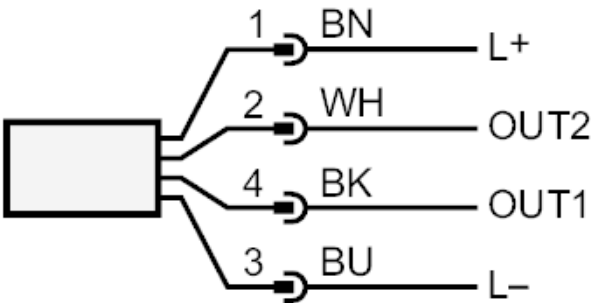
Pressure sensor with display

PN-400-SEN14-MFRKG/US/ /V

| 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; Contacts: gold-plated |                  |                                         |



Connection



|                |                  |
|----------------|------------------|
| OUT1           | switching output |
| OUT2           | switching output |
|                | analogue output  |
| Core colours : |                  |
| BK =           | black            |
| BN =           | brown            |
| BU =           | blue             |
| WH =           | white            |