

# PN2060



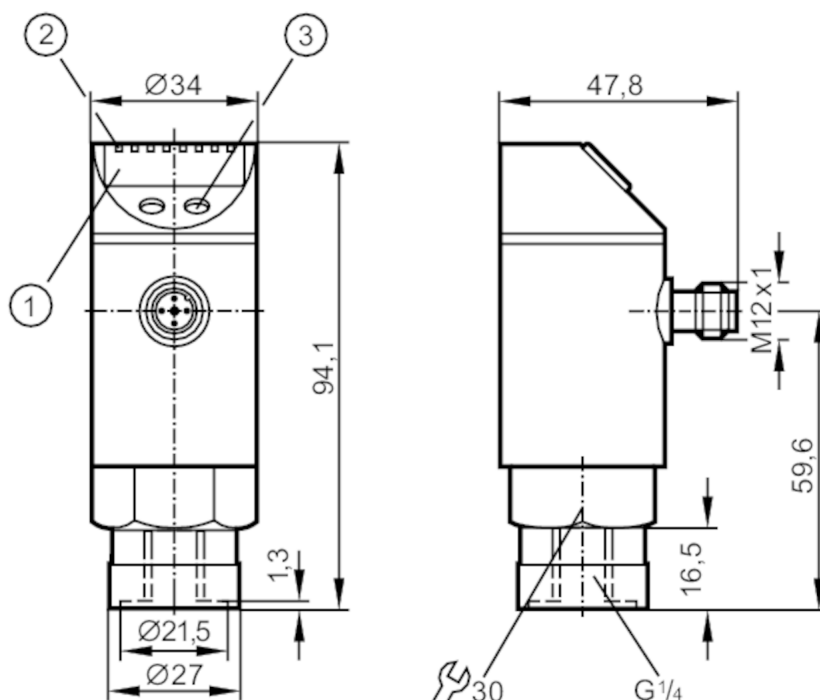
## Pressure sensor with display

PN-600-SBR14-MFRKG/US/ /V

phase-out article

Alternative articles: PN2160

When selecting an alternative article and accessories please note that technical data may differ!



- 1 alphanumeric display 4-digit
- 2 LEDs Display unit / switching status
- 3 programming button



### Product characteristics

|                              |                                                             |              |            |
|------------------------------|-------------------------------------------------------------|--------------|------------|
| Number of inputs and outputs | Number of digital outputs: 2; Number of analogue outputs: 1 |              |            |
| Measuring range              | 0...600 bar                                                 | 0...8700 psi | 0...60 MPa |
| Process connection           | threaded connection G 1/4 internal thread                   |              |            |

### Application

|                            |                                                    |           |         |
|----------------------------|----------------------------------------------------|-----------|---------|
| Special feature            | Gold-plated contacts                               |           |         |
| 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. bursting pressure     | 1200 bar                                           | 17400 psi | 120 MPa |
| Pressure rating            | 800 bar                                            | 11600 psi | 80 MPa  |
| Type of pressure           | relative pressure                                  |           |         |

### Electrical data

|                                 |                            |  |  |
|---------------------------------|----------------------------|--|--|
| Operating voltage [V]           | 18...32 DC; (to SELV/PELV) |  |  |
| Current consumption [mA]        | < 35                       |  |  |
| Min. insulation resistance [MΩ] | 100; (500 V DC)            |  |  |



## Pressure sensor with display

PN-600-SBR14-MFRKG/US/ /V

|                             |     |
|-----------------------------|-----|
| 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 |
|------------------------------|-------------------------------------------------------------|

### 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 1:4)                                     |
| Max. load [Ω]                                        | (U <sub>b</sub> - 10 V) / 20 mA                            |
| Analogue voltage output [V]                          | 0...10; (scalable 1:4)                                     |
| Min. load resistance [Ω]                             | 2000                                                       |
| Short-circuit protection                             | yes                                                        |
| Type of short-circuit protection                     | pulsed                                                     |
| Overload protection                                  | yes                                                        |

### Measuring/setting range

|                      |               |                 |                |
|----------------------|---------------|-----------------|----------------|
| Measuring range      | 0...600 bar   | 0...8700 psi    | 0...60 MPa     |
| Set point SP         | 6...600 bar   | 100...8700 psi  | 0.6...60 MPa   |
| Reset point rP       | 2...596 bar   | 40...8640 psi   | 0.2...59.6 MPa |
| Analogue start point | 0...450 bar   | 0...6520 psi    | 0...45 MPa     |
| Analogue end point   | 150...600 bar | 2120...8700 psi | 15...60 MPa    |
| In steps of          | 2 bar         | 20 psi          | 0.2 MPa        |
| Factory setting      |               | SP1 = 150 bar   | rP1 = 138 bar  |
|                      |               | SP2 = 450 bar   | rP2 = 438 bar  |
|                      |               | ASP = 0 bar     | AEP = 600 bar  |

### Accuracy / deviations

|                                          |                                                                                                          |
|------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Switch point accuracy [X21]              | < ± 0,4; (Turn down 1:1)                                                                                 |
| Repeatability [X21]                      | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                           |
| Characteristics deviation [X21]          | < ± 0,25 (BFSL) / < ± 0,5 (LS); (Turn down 1:1; BFSL = Best Fit Straight Line; LS = limit value setting) |
| Hysteresis deviation [X21]               | < ± 1,0; (Turn down 1:1)                                                                                 |
| Long-term stability [X21]                | < ± 0,1; (Turn down 1:1; per year)                                                                       |
| Temperature coefficient zero point [X22] | < ± 0,2; (0...80 °C)                                                                                     |
| Temperature coefficient span [X22]       | < ± 0,2; (0...80 °C)                                                                                     |



## Pressure sensor with display

PN-600-SBR14-MFRKG/US/ /V

| Response times                      |                                                                                                                                                                                                                 |                     |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Response time                       | [ms]                                                                                                                                                                                                            | < 1.5               |
| Damping process value dAP           | [s]                                                                                                                                                                                                             | 0.01...4            |
| Damping for the analogue output dAA | [s]                                                                                                                                                                                                             | 0.01...4            |
| Max. response time analogue output  | [ms]                                                                                                                                                                                                            | 3                   |
| Software / programming              |                                                                                                                                                                                                                 |                     |
| Parameter setting options           | hysteresis / window; normally open / normally closed; switching logic; current/voltage output; Damping; adaptation of displayed values; display can be rotated and switched off; Display unit; zero point; span |                     |
| 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                                                                                                                                                                                                               |                     |
| Process data binary                 | 2                                                                                                                                                                                                               |                     |
| Min. process cycle time             | [ms]                                                                                                                                                                                                            | 2.3                 |
| Supported DeviceIDs                 | Type of operation                                                                                                                                                                                               | DeviceID            |
|                                     | default                                                                                                                                                                                                         | 75                  |
| Operating conditions                |                                                                                                                                                                                                                 |                     |
| Ambient temperature                 | [°C]                                                                                                                                                                                                            | -25...80            |
| Storage temperature                 | [°C]                                                                                                                                                                                                            | -40...100           |
| Protection                          | IP 67                                                                                                                                                                                                           |                     |
| Tests / approvals                   |                                                                                                                                                                                                                 |                     |
| EMC                                 | EN 61000-4-2 ESD                                                                                                                                                                                                | 4 kV CD / 8 kV AD   |
|                                     | EN 61000-4-3 HF radiated                                                                                                                                                                                        | 10 V/m              |
|                                     | EN 61000-4-4 Burst                                                                                                                                                                                              | 2 kV                |
|                                     | EN 61000-4-5 Surge                                                                                                                                                                                              | 0,5/1 kV            |
|                                     | EN 61000-4-6 HF conducted                                                                                                                                                                                       | 10 V                |
| Shock resistance                    | DIN IEC 68-2-27                                                                                                                                                                                                 | 50 g (11 ms)        |
| Vibration resistance                | DIN IEC 68-2-6                                                                                                                                                                                                  | 20 g (10...2000 Hz) |
| MTTF                                | [ANN]                                                                                                                                                                                                           | 1385                |
| Pressure Equipment Directive        | Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request                                                                                                                           |                     |
| Mechanical data                     |                                                                                                                                                                                                                 |                     |
| Weight                              | [g]                                                                                                                                                                                                             | 272.5               |
| Materials                           | stainless steel (1.4301 / 304); stainless steel (1.4404 / 316L); PC; PBT; PEI; FKM                                                                                                                              |                     |
| Materials (wetted parts)            | stainless steel (1.4305 / 303); ceramics; FKM                                                                                                                                                                   |                     |
| Min. pressure cycles                | 50 million                                                                                                                                                                                                      |                     |
| Process connection                  | threaded connection G 1/4 internal thread                                                                                                                                                                       |                     |
| Restrictor element integrated       | yes                                                                                                                                                                                                             |                     |

PN2060



Pressure sensor with display

PN-600-SBR14-MFRKG/US/ /V

Displays / operating elements

|         |                  |                               |
|---------|------------------|-------------------------------|
| Display | Display unit     | 3 x LED, green                |
|         | switching status | 2 x LED, yellow               |
|         | function display | alphanumeric display, 4-digit |
|         | measured values  | alphanumeric display, 4-digit |

Remarks

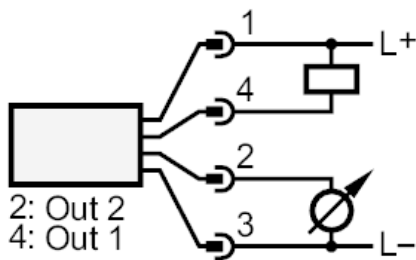
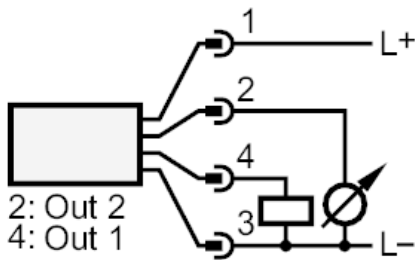
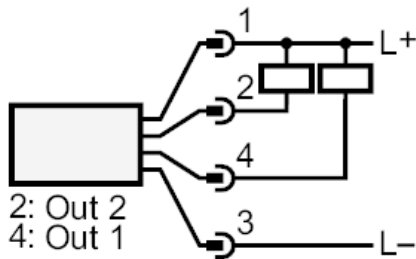
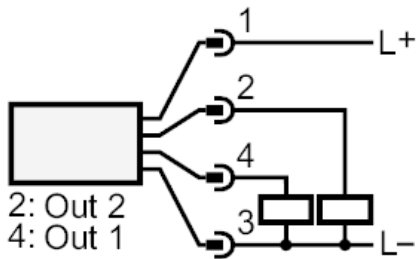
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

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



Connection



|      |                  |
|------|------------------|
| OUT1 | switching output |
|      | IO-Link          |
| OUT2 | switching output |
|      | analogue output  |