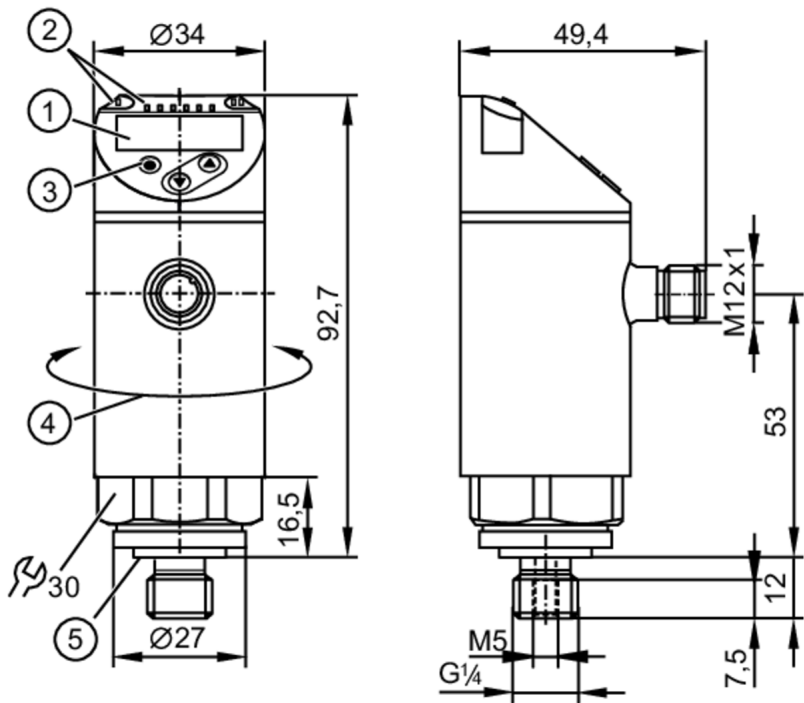


PN3529



Pressure sensor with display

PN-0-1BREG14-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°
- 5 sealing



Product characteristics

|                              |                                                                                   |                |               |                |              |
|------------------------------|-----------------------------------------------------------------------------------|----------------|---------------|----------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1                         |                |               |                |              |
| Measuring range              | -1...0 bar                                                                        | -1000...0 mbar | -14.5...0 psi | -29.5...0 inHg | -100...0 kPa |
| Process connection           | threaded connection G 1/4 external thread (DIN EN ISO 1179-2); Internal thread:M5 |                |               |                |              |

Application

|                          |                                            |         |           |          |
|--------------------------|--------------------------------------------|---------|-----------|----------|
| System                   | 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   | 50000 mbar                                 | 725 psi | 1450 inHg | 5000 kPa |
| Pressure rating          | 20000 mbar                                 | 290 psi | 590 inHg  | 2000 kPa |
| Vacuum resistance [mbar] | -1000                                      |         |           |          |
| Type of pressure         | relative pressure; vacuum                  |         |           |          |

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                        |



## Pressure sensor with display

PN-0-1BREG14-MFRKG/US/ IV

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

## Inputs / outputs

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

## Outputs

|                                                 |                                                          |
|-------------------------------------------------|----------------------------------------------------------|
| Total number of outputs                         | 2                                                        |
| Output signal                                   | switching signal; analog signal; IO-Link; (configurable) |
| Electrical design                               | PNP                                                      |
| Number of digital outputs                       | 1                                                        |
| Output function                                 | normally open / closed; (configurable)                   |
| Max. voltage drop switching output DC           | [V]<br>2.5                                               |
| Permanent current rating of switching output DC | [mA]<br>150; (200 (...60 °C) 250 (...40 °C))             |
| Switching frequency DC                          | [Hz]<br>< 170                                            |
| Number of analog outputs                        | 1                                                        |
| Analog current output                           | [mA]<br>4...20                                           |
| Max. load                                       | [Ω]<br>500                                               |
| Analog voltage output                           | [V]<br>0...10                                            |
| Min. load resistance                            | [Ω]<br>2000                                              |
| Short-circuit protection                        | yes                                                      |
| Type of short-circuit protection                | yes (non-latching)                                       |
| Overload protection                             | yes                                                      |

## Measuring/setting range

|                 |            |                |               |                |              |
|-----------------|------------|----------------|---------------|----------------|--------------|
| Measuring range | -1...0 bar | -1000...0 mbar | -14.5...0 psi | -29.5...0 inHg | -100...0 kPa |
|-----------------|------------|----------------|---------------|----------------|--------------|

## Factory setting / CMPT = 2

|                                   |                |                    |                   |                  |
|-----------------------------------|----------------|--------------------|-------------------|------------------|
| Set point SP                      | -990...0 mbar  | -14.4...0 psi      | -29.3...0 inHg    | -99...0 kPa      |
| Reset point rP                    | -995...-5 mbar | -14.45...-0.05 psi | -29.4...-0.1 inHg | -99.5...-0.5 kPa |
| Min. difference between SP and rP | 5 mbar         | 0.1 psi            | 0.2 inHg          | 0.5 kPa          |
| In steps of                       | 5 mbar         | 0.05 psi           | 0.1 inHg          | 0.5 kPa          |

## Status\_B High Resolution / CMPT = 3

|                                   |                |                    |                   |                  |
|-----------------------------------|----------------|--------------------|-------------------|------------------|
| Set point SP                      | -992...0 mbar  | -14.38...0 psi     | -29.3...0 inHg    | -99.2...0 kPa    |
| Reset point rP                    | -997...-5 mbar | -14.45...-0.07 psi | -29.4...-0.1 inHg | -99.7...-0.5 kPa |
| Min. difference between SP and rP | 5 mbar         | 0.08 psi           | 0.2 inHg          | 0.5 kPa          |
| In steps of                       | 1 mbar         | 0.01 psi           | 0.1 inHg          | 0.1 kPa          |

## 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                                                                                  |



## Pressure sensor with display

PN-0-1BREG14-MFRKG/US/ /V

|                                                              |                                                                                                                         |            |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|------------|
| Long-term stability<br>[% of the span]                       | < ± 0,05; (per 6 months)                                                                                                |            |
| Temperature coefficient zero point<br>[% of the span / 10 K] | < ± 0,2; (-0...80 °C)                                                                                                   |            |
| Temperature coefficient span<br>[% of the span / 10 K]       | < ± 0,2; (-0...80 °C)                                                                                                   |            |
| Reaction times                                               |                                                                                                                         |            |
| Response time [ms]                                           | < 3                                                                                                                     |            |
| 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                                                                                                             |            |
| SIO mode                                                     | yes                                                                                                                     |            |
| Required master port class                                   | A                                                                                                                       |            |
| Process data analog                                          | 1                                                                                                                       |            |
| Process data binary                                          | 1                                                                                                                       |            |
| Supported DeviceIDs                                          | Type of operation                                                                                                       | DeviceID   |
|                                                              | Factory setting / CMPT = 2                                                                                              | 434        |
|                                                              | Status_B High Resolution / CMPT = 3                                                                                     | 619        |
| 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 [mbar]                           | 1                                                                                                                       |            |
| IO-Link resolution pressure [MPa]                            | 0.001                                                                                                                   |            |
| IO-Link process data (cyclical)                              | Function                                                                                                                | bit length |
|                                                              | pressure                                                                                                                | 14         |
|                                                              | binary switching information                                                                                            | 1          |
| IO-Link functions (acyclical)                                | application specific tag                                                                                                |            |
| Status_B High Resolution / CMPT = 3                          |                                                                                                                         |            |
| Profiles                                                     | Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)                                                |            |
| Min. process cycle time [ms]                                 | 3                                                                                                                       |            |
| IO-Link resolution pressure [mbar]                           | 0.5                                                                                                                     |            |
| IO-Link resolution pressure [MPa]                            | 0.0005                                                                                                                  |            |

PN3529



Pressure sensor with display

PN-0-1BREG14-MFRKG/US/ IV

|                                    |                              |                   |
|------------------------------------|------------------------------|-------------------|
| IO-Link process data<br>(cyclical) | <b>Function</b>              | <b>bit length</b> |
|                                    | pressure                     | 16                |
|                                    | device status                | 4                 |
|                                    | binary switching information | 1                 |
| IO-Link functions (acyclical)      | application specific tag     |                   |

|                             |      |              |
|-----------------------------|------|--------------|
| <b>Operating conditions</b> |      |              |
| Ambient temperature         | [°C] | -25...80     |
| Storage temperature         | [°C] | -40...100    |
| Protection                  |      | IP 65; IP 67 |

|                              |                                                                                       |                     |
|------------------------------|---------------------------------------------------------------------------------------|---------------------|
| <b>Tests / approvals</b>     |                                                                                       |                     |
| 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]                                                                               | 226                 |
| UL approval                  | UL approval number                                                                    | J004                |
| Pressure equipment directive | sound engineering practice; can be used for group 2 fluids; group 1 fluids on request |                     |

|                               |                                                                                   |                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| <b>Mechanical data</b>        |                                                                                   |                                                                                               |
| Weight                        | [g]                                                                               | 259.5                                                                                         |
| Material                      | stainless steel (1.4404 / 316L); PBT+PC-GF30; PBT-GF20; PC                        |                                                                                               |
| Materials (wetted parts)      | stainless steel (1.4404 / 316L); Al2O3 (ceramics); FKM                            |                                                                                               |
| 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 (DIN EN ISO 1179-2); Internal thread:M5 |                                                                                               |
| Process connection sealing    | FKM (DIN EN ISO 1179-2)                                                           |                                                                                               |
| Restrictor element integrated | no (can be retrofitted)                                                           |                                                                                               |

|                                      |                  |                                         |
|--------------------------------------|------------------|-----------------------------------------|
| <b>Displays / operating elements</b> |                  |                                         |
| Display                              | Display unit     | 4 x LED, green (mbar, psi, kPa, inHg)   |
|                                      | Switching status | 1 x LED, yellow                         |
|                                      | Measured values  | alphanumeric display, red/green 4-digit |

|                |        |  |
|----------------|--------|--|
| <b>Remarks</b> |        |  |
| Pack quantity  | 1 pcs. |  |

|                              |  |  |
|------------------------------|--|--|
| <b>Electrical connection</b> |  |  |
|------------------------------|--|--|

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



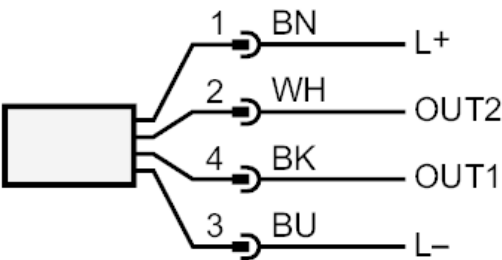
# PN3529



## Pressure sensor with display

PN-0-1BREG14-MFRKG/US/      /V

### Connection



|      |                  |
|------|------------------|
| OUT1 | Switching output |
|      | IO-Link          |
| OUT2 | analog output    |
|      | Core colors :    |
| BK = | black            |
| BN = | brown            |
| BU = | blue             |
| WH = | white            |