

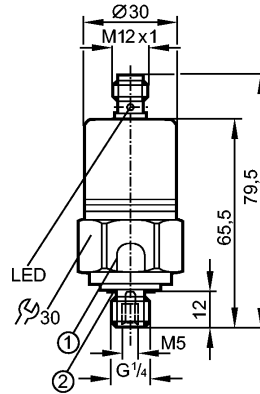


# PP000E

PP-400-SBG14-QFPKG/US/ /V



Pressure sensors



1: Pressure relief mechanism  
No mechanical force must be exerted on the pressure relief mechanism.  
2: sealing FPM / DIN 3869-14



### Product characteristics

|  |
|--|
| Electronic pressure sensor   |
| Quick disconnect   |
| Adjustment of the switch point by teach function                                     |
| E1 type approval   |
| Process connection: G 1/4 A / M5 I   |
| 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output or diagnostic output |
| Measuring range: 0...400 bar / 0...5800 psi / 0...40 MPa                             |

### Application

|                         |   |           |         |
|-------------------------|---|-----------|---------|
| Application             | Type of pressure: relative pressure<br>Liquids and gases<br>Use in gases at pressures > 25 bar only after contacting the manufacturer ifm |           |         |
| Pressure rating         | 600 bar   | 8700 psi  | 60 MPa  |
| Bursting pressure min.  | 1000 bar  | 14500 psi | 100 MPa |
| Medium temperature [°C] | -25...90  |           |         |

### Electrical data

|                             |                           |  |  |
|-----------------------------|---------------------------|--|--|
| Electrical design           | DC PNP                    |  |  |
| Operating voltage [V]       | 9.6...36 DC <sup>1)</sup> |  |  |
| Current consumption [mA]    | < 45                      |  |  |
| Insulation resistance [MΩ]  | > 100 (500 V DC)          |  |  |
| Protection class            | III                       |  |  |
| Reverse polarity protection | yes                       |  |  |

### Outputs

|                          |   |  |  |
|--------------------------|---|--|--|
| Output                   | 2 outputs<br>OUT1 = switching output<br>OUT2 = switching output or diagnostic output  |  |  |
| Output function          | 2 x normally open / closed programmable or 1 x normally open / closed programmable<br>+ 1 x normally closed (diagnostic function) |  |  |
| Current rating [mA]      | 2 x 250   |  |  |
| Voltage drop [V]         | < 2   |  |  |
| Short-circuit protection | yes (non-latching)  |  |  |



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|                          |     |
|--------------------------|-----|
| Overload protection      | yes |
| Switching frequency [Hz] | 170 |

| Measuring / setting range |   |               |                |
|---------------------------|---|---------------|----------------|
| Measuring range           | 0...400 bar   | 0...5800 psi  | 0...40 MPa     |
| Setting range             |   |               |                |
| Set point, SP             | 4...400 bar   | 60...5790 psi | 0.4...40.0 MPa |
| Reset point, rP           | 2...398 bar   | 30...5760 psi | 0.2...39.8 MPa |
| in steps of               | 2 bar   | 30 psi        | 0.2 MPa        |
| Factory setting           | SP1 = 100 bar; rP1 = 92 bar<br>SP2 = 300 bar; rP2 = 292 bar<br>OUT1 = Hno; OUT2 = Hno |               |                |

| Accuracy / deviations  |                                |
|--|--------------------------------|
| Accuracy / deviations (in % of the span)   |                                |
| Switch point accuracy  | < ± 0.5                        |
| Characteristics deviation *)   | < ± 0.25 (BFSL) / < ± 0.5 (LS) |
| Hysteresis   | < ± 0.1                        |
| Repeatability **)  | < ± 0.1                        |
| Long-term stability ***)   | < ± 0.1                        |
| Temperature coefficients (TEMPCO) in the temperature range 0...80° C (in % of the span per 10 K) |                                |
| Greatest TEMPCO of the zero point  | 0.2                            |
| Greatest TEMPCO of the span  | 0.2                            |

| Reaction times                             |   |
|--|---|
| Power-on delay time [s]                    | 0.3   |
| Min. response time switching output [ms]   | 3   |
| Damping for the switching output (dAP) [s] | 0.003 - 0.006 - 0.010 - 0.017 - 0.060 - 0.125 - 0.250 - 0.500 |

| Interfaces                   |                   |
|------------------------------|-------------------|
| IO-Link Device               |                   |
| Transfer type                | COM2 (38.4 kBaud) |
| IO-Link revision             | 1.0               |
| IO-Link Device ID            | 2 d / 00 00 02 h  |
| Profiles                     | no profile        |
| SIO mode                     | yes               |
| Required master port class   | A                 |
| Process data analogue        | 1                 |
| Process data binary          | 2                 |
| Min. process cycle time [ms] | 2.3               |

| Environment              |                      |
|--------------------------|----------------------|
| Ambient temperature [°C] | -25...85             |
| Storage temperature [°C] | -40...100            |
| Protection               | IP 68 ****) / IP 69K |

| Tests / approvals |                           |   |
|-------------------|---------------------------|---|
| EMC               | noise immunity            | according to EN 61000-6-2<br>4 kV contact discharge / 15 kV air discharge |
|                   | EN 61000-4-2 ESD:         | 20 V/m  |
|                   | EN 61000-4-3 HF radiated: |   |



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|                      |  |  |
|----------------------|--|--|
|                      | EN 61000-4-4 Burst:                      | 4 kV coupling clamp<br>0.5 kV supply / 1 kV signal for DC units      |
|                      | EN 61000-4-5 Surge:                      | 10 V   |
|                      | EN 61000-4-6 HF conducted:               | according to the automotive directive 95/54/EC / 04/104EC / 05/83/EC |
|                      | noise immunity                           |  |
|                      | Absorber chamber test to ISO 11452-2:    | 80 V/m   |
|                      | EN 50155:                                | class T3, C1, S1   |
| Shock resistance     | DIN IEC 60068-2-27 / DIN IEC 60068-2-29: | 1000 g   |
|                      | DIN EN 61373:                            | Category 3   |
| Vibration resistance | DIN IEC 68-2-6:                          | 20 g (10...2000 Hz)  |
|                      | DIN EN 60068-2-64                        | 14 g   |
|                      | DIN EN 61373:                            | Category 2   |
| MTTF                 | [Years]                                  | 310  |

### Mechanical data

|                          |  |
|--------------------------|--|
| Process connection       | G ¼ A / M5 I   |
| Materials (wetted parts) | stainless steel (303S22); ceramics; FPM (Viton)                |
| Housing materials        | stainless steel (304S15); FPM (Viton); EPDM/X (Santoprene); PA |
| Switching cycles min.    | 100 million  |
| Weight                   | [kg] 0.232   |

### Displays / operating elements

|         |  |
|---------|--|
| Display | Power 2 x LED green<br>Switching status 2 x LED yellow |
|---------|--|

### Electrical connection

|            |               |
|------------|---------------|
| Connection | M12 connector |
|------------|---------------|

### Wiring

-----OUT1/Teach/Data-----  
data channel for bidirectional communication  
in addition:  
switching signal for pressure limit value or input for teach signal  
-----OUT2-----  
switching signal for pressure limit value or diagnostic signal

### Remarks

|         |   |
|---------|---|
| Remarks | 1) supply voltage for communication mode: 18...32 V DC<br>*) BFSL = Best Fit Straight Line / LS = Limit Value Setting<br>**) with temperature fluctuations < 10 K<br>***) in % of the span per year<br>****) 7 days / 1 m water depth / 0.1 bar |
|---------|---|

|               |           |
|---------------|-----------|
| Pack quantity | [piece] 1 |
|---------------|-----------|