



## Flush pressure sensor

PM-2,5BREZ01-E-ZVG/US



- 1 clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)  
the seal for the Triclamp process connection must have an inner diameter of at least 22 mm



### Product characteristics

|                              |                                                             |                  |                   |                 |
|------------------------------|-------------------------------------------------------------|------------------|-------------------|-----------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analogue outputs: 1 |                  |                   |                 |
| Measuring range              | -0.125...2.5 bar                                            | -125...2500 mbar | -1.82...36.26 psi | -12.5...250 kPa |
| Process connection           | Clamp DN25...DN40 (1...1.5") DIN 32676 (ISO 2852)           |                  |                   |                 |

### Application

|                                                |                                                                                                 |         |          |
|------------------------------------------------|-------------------------------------------------------------------------------------------------|---------|----------|
| Special feature                                | Gold-plated contacts                                                                            |         |          |
| Measuring element                              | ceramic-capacitive pressure measuring cell                                                      |         |          |
| Temperature monitoring                         | no                                                                                              |         |          |
| Application                                    | flush mountable for the food and beverage industry                                              |         |          |
| Media                                          | viscous media and liquids with suspended particles; liquids and gases                           |         |          |
| Medium temperature [°C]                        | -25...150                                                                                       |         |          |
| Min. bursting pressure                         | 50000 mbar                                                                                      | 725 psi | 5000 kPa |
| Pressure rating                                | 20000 mbar                                                                                      | 290 psi | 2000 kPa |
| Note on pressure rating                        | take into account the pressure resistance of the bracket and the seal used for clamp connection |         |          |
| Vacuum resistance [mbar]                       | -1000                                                                                           |         |          |
| Type of pressure                               | relative pressure; vacuum                                                                       |         |          |
| No dead space                                  | yes                                                                                             |         |          |
| MAWP (for applications according to CRN) [bar] | 20                                                                                              |         |          |



## Flush pressure sensor

PM-2,5BREV01-E-ZVG/US

| Electrical data                    |                        |                                                                                                    |                  |                                      |
|------------------------------------|------------------------|----------------------------------------------------------------------------------------------------|------------------|--------------------------------------|
| Operating voltage                  | [V]                    | 18...30 DC                                                                                         |                  |                                      |
| Min. insulation resistance         | [MΩ]                   | 100; (500 V DC)                                                                                    |                  |                                      |
| Protection class                   |                        | III                                                                                                |                  |                                      |
| Reverse polarity protection        |                        | yes                                                                                                |                  |                                      |
| Integrated watchdog                |                        | yes                                                                                                |                  |                                      |
| 2-wire                             |                        |                                                                                                    |                  |                                      |
| Current consumption                | [mA]                   | 3.5...21.5                                                                                         |                  |                                      |
| Power-on delay time                | [s]                    | 1                                                                                                  |                  |                                      |
| 3-wire                             |                        |                                                                                                    |                  |                                      |
| Current consumption                | [mA]                   | < 45                                                                                               |                  |                                      |
| Power-on delay time                | [s]                    | 0.5                                                                                                |                  |                                      |
| Inputs / outputs                   |                        |                                                                                                    |                  |                                      |
| Number of inputs and outputs       |                        | Number of digital outputs: 1; Number of analogue outputs: 1                                        |                  |                                      |
| Outputs                            |                        |                                                                                                    |                  |                                      |
| Total number of outputs            |                        | 2                                                                                                  |                  |                                      |
| Output signal                      |                        | analogue signal; IO-Link; (configurable)                                                           |                  |                                      |
| Number of digital outputs          |                        | 1; (IO-Link)                                                                                       |                  |                                      |
| Number of analogue outputs         |                        | 1                                                                                                  |                  |                                      |
| Analogue current output            | [mA]                   | 4...20; (scalable)                                                                                 |                  |                                      |
| Max. load                          | [Ω]                    | 700; (Ub = 24 V; (Ub - 9 V) / 21.5 mA)                                                             |                  |                                      |
| Short-circuit proof                |                        | yes                                                                                                |                  |                                      |
| Overload protection                |                        | yes                                                                                                |                  |                                      |
| Measuring/setting range            |                        |                                                                                                    |                  |                                      |
| Measuring range                    |                        | -0.125...2.5 bar                                                                                   | -125...2500 mbar | -1.82...36.26 psi    -12.5...250 kPa |
| Analogue start point               |                        | -125...2000 mbar                                                                                   | -1.82...29 psi   | -12.5...200 kPa                      |
| Analogue end point                 |                        | 375...2500 mbar                                                                                    | 5.44...36.26 psi | -37.5...250 kPa                      |
| In steps of                        |                        | 1 mbar                                                                                             | 0.02 psi         | 0.1 kPa                              |
| Factory setting                    |                        | ASP = 0.0 mbar                                                                                     | AEP = 2500 mbar  |                                      |
| Accuracy / deviations              |                        |                                                                                                    |                  |                                      |
| Repeatability                      | [% of the span]        | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                     |                  |                                      |
| Characteristics deviation          | [% of the span]        | < ± 0,2; (linearity incl. hysteresis and repeatability, limit value setting to DIN EN IEC 62828-1) |                  |                                      |
| Linearity deviation                | [% of the span]        | < ± 0,15; (Turn down 1:1)                                                                          |                  |                                      |
| Hysteresis deviation               | [% of the span]        | < ± 0,15; (Turn down 1:1)                                                                          |                  |                                      |
| Long-term stability                | [% of the span]        | < ± 0,1; (Turn down 1:1; per year)                                                                 |                  |                                      |
| Temperature coefficient zero point | [% of the span / 10 K] | < ± 0,05                                                                                           |                  |                                      |
| Temperature coefficient span       | [% of the span / 10 K] | < ± 0,15                                                                                           |                  |                                      |



## Flush pressure sensor

PM-2,5BREV01-E-ZVG/US

| Total deviation over temperature range  | <table> <tr> <th>Temperature range</th><th>total deviation</th></tr> <tr> <td>-25...15 °C</td><td>Characteristics deviation <math>\pm 0,05</math> % of the span / 10 K</td></tr> <tr> <td>15...80 °C</td><td>Characteristics deviation</td></tr> <tr> <td>80...150 °C</td><td>Characteristics deviation <math>\pm 0,1</math> % of the span / 10 K</td></tr> </table> | Temperature range | total deviation | -25...15 °C      | Characteristics deviation $\pm 0,05$ % of the span / 10 K | 15...80 °C    | Characteristics deviation | 80...150 °C | Characteristics deviation $\pm 0,1$ % of the span / 10 K |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------|------------------|-----------------------------------------------------------|---------------|---------------------------|-------------|----------------------------------------------------------|
| Temperature range                       | total deviation                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| -25...15 °C                             | Characteristics deviation $\pm 0,05$ % of the span / 10 K                                                                                                                                                                                                                                                                                                            |                   |                 |                  |                                                           |               |                           |             |                                                          |
| 15...80 °C                              | Characteristics deviation                                                                                                                                                                                                                                                                                                                                            |                   |                 |                  |                                                           |               |                           |             |                                                          |
| 80...150 °C                             | Characteristics deviation $\pm 0,1$ % of the span / 10 K                                                                                                                                                                                                                                                                                                             |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Notes on the accuracy / deviation       | for further details see section Diagrams and graphs                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| <b>Response times</b>                   |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Damping for the analogue output dAA [s] | 0...4                                                                                                                                                                                                                                                                                                                                                                |                   |                 |                  |                                                           |               |                           |             |                                                          |
| 2-wire                                  |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Step response time analogue output [ms] | 30                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                  |                                                           |               |                           |             |                                                          |
| 3-wire                                  |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Step response time analogue output [ms] | 7                                                                                                                                                                                                                                                                                                                                                                    |                   |                 |                  |                                                           |               |                           |             |                                                          |
| <b>Interfaces</b>                       |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Communication interface                 | IO-Link                                                                                                                                                                                                                                                                                                                                                              |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Transmission type                       | COM2 (38,4 kBaud)                                                                                                                                                                                                                                                                                                                                                    |                   |                 |                  |                                                           |               |                           |             |                                                          |
| IO-Link revision                        | 1.1                                                                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| SDCI standard                           | IEC 61131-9                                                                                                                                                                                                                                                                                                                                                          |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Profiles                                | Digital Measuring Sensor (0x000A), Identification and Diagnosis (0x4000)                                                                                                                                                                                                                                                                                             |                   |                 |                  |                                                           |               |                           |             |                                                          |
| SIO mode                                | no                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Required master port type               | A                                                                                                                                                                                                                                                                                                                                                                    |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Process data analogue                   | 3                                                                                                                                                                                                                                                                                                                                                                    |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Min. process cycle time [ms]            | 3.2                                                                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| IO-Link resolution pressure [mbar]      | 0.5                                                                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| IO-Link process data (cyclical)         | <table> <tr> <th>function</th><th>bit length</th></tr> <tr> <td>pressure</td><td>16</td></tr> <tr> <td>device status</td><td>4</td></tr> </table>                                                                                                                                                                                                                    | function          | bit length      | pressure         | 16                                                        | device status | 4                         |             |                                                          |
| function                                | bit length                                                                                                                                                                                                                                                                                                                                                           |                   |                 |                  |                                                           |               |                           |             |                                                          |
| pressure                                | 16                                                                                                                                                                                                                                                                                                                                                                   |                   |                 |                  |                                                           |               |                           |             |                                                          |
| device status                           | 4                                                                                                                                                                                                                                                                                                                                                                    |                   |                 |                  |                                                           |               |                           |             |                                                          |
| IO-Link functions (acyclical)           | application specific tag; internal temperature                                                                                                                                                                                                                                                                                                                       |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Supported DeviceIDs                     | <table> <tr> <th>Type of operation</th><th>DeviceID</th></tr> <tr> <td>default</td><td>665</td></tr> </table>                                                                                                                                                                                                                                                        | Type of operation | DeviceID        | default          | 665                                                       |               |                           |             |                                                          |
| Type of operation                       | DeviceID                                                                                                                                                                                                                                                                                                                                                             |                   |                 |                  |                                                           |               |                           |             |                                                          |
| default                                 | 665                                                                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| <b>Operating conditions</b>             |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Ambient temperature [°C]                | -25...80                                                                                                                                                                                                                                                                                                                                                             |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Storage temperature [°C]                | -40...100                                                                                                                                                                                                                                                                                                                                                            |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Protection                              | IP 67; IP 68; IP 69K                                                                                                                                                                                                                                                                                                                                                 |                   |                 |                  |                                                           |               |                           |             |                                                          |
| <b>Tests / approvals</b>                |                                                                                                                                                                                                                                                                                                                                                                      |                   |                 |                  |                                                           |               |                           |             |                                                          |
| EMC                                     | <table> <tr> <td>DIN EN 61000-6-2</td><td></td></tr> <tr> <td>DIN EN 61000-6-3</td><td></td></tr> </table>                                                                                                                                                                                                                                                           | DIN EN 61000-6-2  |                 | DIN EN 61000-6-3 |                                                           |               |                           |             |                                                          |
| 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]                            | 323                                                                                                                                                                                                                                                                                                                                                                  |                   |                 |                  |                                                           |               |                           |             |                                                          |
| Note on approval                        | factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a>                                                                                                                                                                                                                                            |                   |                 |                  |                                                           |               |                           |             |                                                          |
| UL approval                             | <table> <tr> <td>UL Approval no.</td><td>J055</td></tr> <tr> <td>File number UL</td><td>E174189</td></tr> </table>                                                                                                                                                                                                                                                   | UL Approval no.   | J055            | File number UL   | E174189                                                   |               |                           |             |                                                          |
| UL Approval no.                         | J055                                                                                                                                                                                                                                                                                                                                                                 |                   |                 |                  |                                                           |               |                           |             |                                                          |
| File number UL                          | E174189                                                                                                                                                                                                                                                                                                                                                              |                   |                 |                  |                                                           |               |                           |             |                                                          |

# PM1106



## Flush pressure sensor

PM-2,5BREZ01-E-ZVG/US

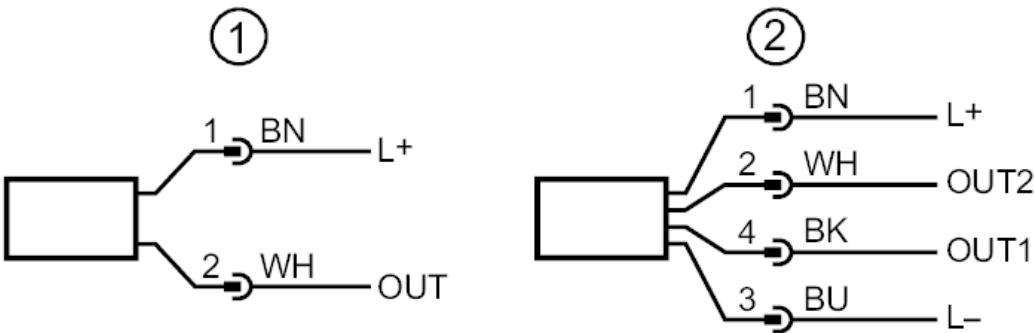
| Mechanical data          |      |                                                                                                           |
|--------------------------|------|-----------------------------------------------------------------------------------------------------------|
| Weight                   | [g]  | 391.9                                                                                                     |
| Housing                  |      | cylindrical                                                                                               |
| Dimensions               | [mm] | Ø 30.2 / L = 111.4                                                                                        |
| Materials                |      | stainless steel (316L/1.4404); PBT                                                                        |
| Materials (wetted parts) |      | ceramics (99.9 % Al2O3); stainless steel (316L/1.4435);<br>surface characteristics: Ra < 0,4 / Rz 4; PTFE |
| Min. pressure cycles     |      | 100 million                                                                                               |
| Process connection       |      | Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)                                                         |
| Remarks                  |      |                                                                                                           |
| Pack quantity            |      | 1 pcs.                                                                                                    |

### Electrical connection

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



### Connection



- 1
- 2
- connection for 2-wire operation ( analogue )  
connection for 3-wire operation ( analogue / IO-Link )  
OUT1 : IO-Link  
OUT2 : analogue output



## Flush pressure sensor

PM-2,5BREZ01-E-ZVG/US

### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation