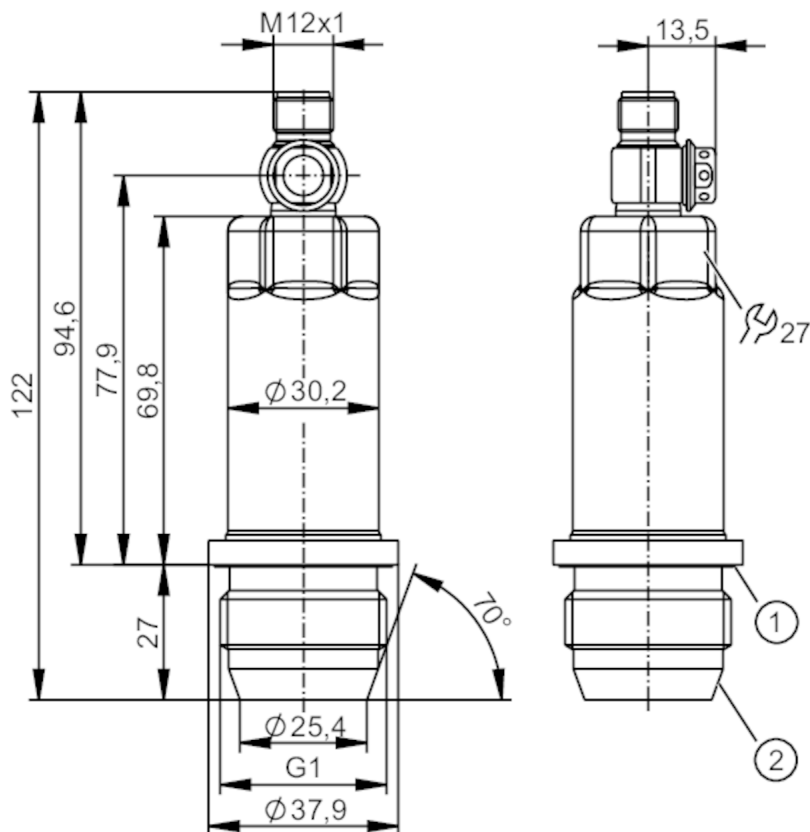


# PM1618

## Flush pressure transmitter

PM-,40BREA01-E-ZVG/US



- 1 groove with sealing ring (DIN EN ISO 1179-2)  
2 G1 sealing cone external thread



EC 1935/2004 EHEDG Tested

FCM



Reg31

UK

CA

### Product characteristics

|                              |                                                           |                |                  |             |
|------------------------------|-----------------------------------------------------------|----------------|------------------|-------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1 |                |                  |             |
| Measuring range              | -0.05...0.4 bar                                           | -50...400 mbar | -0.725...5.8 psi | -5...40 kPa |
| Process connection           | threaded connection G 1 external thread sealing cone      |                |                  |             |

### Application

|                          |                                                                       |         |          |
|--------------------------|-----------------------------------------------------------------------|---------|----------|
| System                   | 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   | 30000 mbar                                                            | 435 psi | 3000 kPa |
| Pressure rating          | 8000 mbar                                                             | 116 psi | 800 kPa  |
| Vacuum resistance [mbar] | -1000                                                                 |         |          |
| Type of pressure         | relative pressure                                                     |         |          |
| No dead space            | yes                                                                   |         |          |

### Electrical data

|                       |            |
|-----------------------|------------|
| Operating voltage [V] | 18...30 DC |
|-----------------------|------------|



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|                                        |                 |                                                                                                       |                    |                                                       |             |
|----------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------|-------------|
| Min. insulation resistance             | [MΩ]            | 100; (500 V DC)                                                                                       |                    |                                                       |             |
| Protection class                       |                 | III                                                                                                   |                    |                                                       |             |
| Reverse polarity protection            |                 | yes                                                                                                   |                    |                                                       |             |
| Measuring principle                    |                 | hydrostatic                                                                                           |                    |                                                       |             |
| 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 analog outputs: 1                                             |                    |                                                       |             |
| Outputs                                |                 |                                                                                                       |                    |                                                       |             |
| Total number of outputs                |                 | 2                                                                                                     |                    |                                                       |             |
| Output signal                          |                 | analog signal; IO-Link; (configurable)                                                                |                    |                                                       |             |
| Number of digital outputs              |                 | 1; (IO-Link)                                                                                          |                    |                                                       |             |
| Number of analog outputs               |                 | 1                                                                                                     |                    |                                                       |             |
| Analog 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                        |                 | -0.05...0.4 bar                                                                                       | -50...400 mbar     | -0.725...5.8 psi                                      | -5...40 kPa |
| Analog start point                     |                 | -50...320 mbar                                                                                        | -0.725...4.641 psi |                                                       | -5...32 kPa |
| Analog end point                       |                 | 30...400 mbar                                                                                         | 0.435...5.802 psi  |                                                       | 3...40 kPa  |
| In steps of                            |                 | 0.1 mbar                                                                                              | 0.001 psi          |                                                       | 0.01 kPa    |
| Factory setting                        |                 | ASP = 0.0 bar                                                                                         | AEP = 400 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 (DIN EN 61298-2); (incl. zero point and span error, non-linearity, hysteresis; Turn down 1:1) |                    |                                                       |             |
| 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)                                                                    |                    |                                                       |             |
| Total deviation over temperature range |                 | Temperature range                                                                                     |                    | total deviation                                       |             |
|                                        |                 | -25...15 °C                                                                                           |                    | Characteristics deviation ± 0,1 % of the span / 10 K  |             |
|                                        |                 | 15...80 °C                                                                                            |                    | Characteristics deviation                             |             |
|                                        |                 | 80...150 °C                                                                                           |                    | Characteristics deviation ± 0,15 % of the span / 10 K |             |
| Notes on the accuracy / deviation      |                 | for further details see section Diagrams and graphs                                                   |                    |                                                       |             |



## Flush pressure transmitter

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| Reaction times                    |                                                                                                          |                     |
|-----------------------------------|----------------------------------------------------------------------------------------------------------|---------------------|
| Damping for the analog output dAA | [s]                                                                                                      | 0...4               |
| 2-wire                            |                                                                                                          |                     |
| Step response time analog output  | [ms]                                                                                                     | 30                  |
| 3-wire                            |                                                                                                          |                     |
| Step response time analog output  | [ms]                                                                                                     | 7                   |
| Interfaces                        |                                                                                                          |                     |
| 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 class        | A                                                                                                        |                     |
| Process data analog               | 3                                                                                                        |                     |
| Min. process cycle time           | [ms]                                                                                                     | 3.2                 |
| IO-Link resolution pressure       | [mbar]                                                                                                   | 0.1                 |
| IO-Link process data (cyclical)   | Function                                                                                                 | bit length          |
|                                   | pressure                                                                                                 | 16                  |
|                                   | device status                                                                                            | 4                   |
| IO-Link functions (acyclical)     | application specific tag; internal temperature                                                           |                     |
| Supported DeviceIDs               | Type of operation                                                                                        | DeviceID            |
|                                   | default                                                                                                  | 1410                |
| Operating conditions              |                                                                                                          |                     |
| Ambient temperature               | [°C]                                                                                                     | -25...80            |
| Storage temperature               | [°C]                                                                                                     | -40...100           |
| Protection                        | IP 67; IP 68; IP 69K                                                                                     |                     |
| Tests / approvals                 |                                                                                                          |                     |
| EMC                               | DIN EN 61000-6-2                                                                                         |                     |
|                                   | DIN EN 61000-6-3                                                                                         |                     |
| Shock resistance                  | DIN EN 60068-2-27                                                                                        | 50 g (11 ms)        |
| Vibration resistance              | DIN EN 60068-2-6                                                                                         | 20 g (10...2000 Hz) |
| MTTF                              | [years]                                                                                                  | 364                 |
| Mechanical data                   |                                                                                                          |                     |
| Weight                            | [g]                                                                                                      | 336.8               |
| Material                          | stainless steel (1.4404 / 316L); PBT                                                                     |                     |
| Materials (wetted parts)          | ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L); surface characteristics: Ra < 0,4 / Rz 4; PTFE |                     |
| Min. pressure cycles              | 100 million                                                                                              |                     |
| Tightening torque                 | [Nm]                                                                                                     | 20                  |
| Process connection                | threaded connection G 1 external thread sealing cone                                                     |                     |

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Flush pressure transmitter

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Displays / operating elements

|              |                             |
|--------------|-----------------------------|
| Display unit | mbar; psi; kPa; mmWS; inH2O |
|--------------|-----------------------------|

Remarks

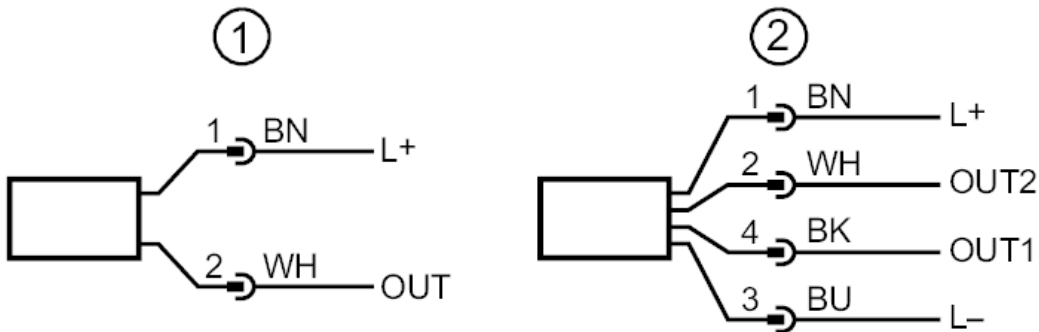
|               |        |
|---------------|--------|
| Pack quantity | 1 pcs. |
|---------------|--------|

Electrical connection

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



Connection



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

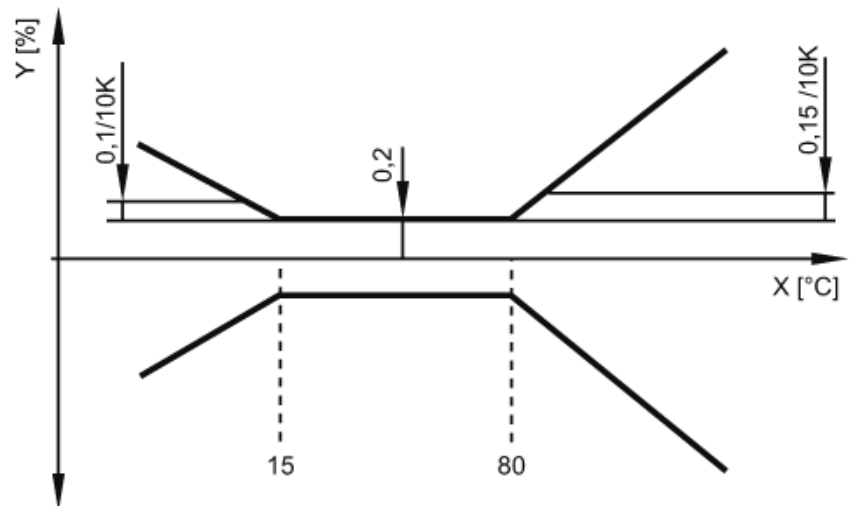


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### Diagrams and graphs

ambient temperature influence on the accuracy



X temperature  
Y total deviation