

PM1506



Flush pressure sensor

PM-2,5-REA12-A-ZVG/US



- 1 Gasket FKM (for sealing on the back - not pressure resistant) / removable
- 2 pre-mounted PEEK sealing ring (removable) / metallic sealing area
- 3 groove for sealing ring DIN EN ISO 1179-2



| Product characteristics      |                                                                       |                   |                 |
|------------------------------|-----------------------------------------------------------------------|-------------------|-----------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analog outputs: 1             |                   |                 |
| Measuring range              | -125...2500 mbar                                                      | -1.82...36.26 psi | -12.5...250 kPa |
| Process connection           | threaded connection G 1/2 external thread sealing cone                |                   |                 |
| Application                  |                                                                       |                   |                 |
| System                       | gold-plated contacts                                                  |                   |                 |
| Measuring element            | ceramic-capacitive pressure measuring cell                            |                   |                 |
| Temperature monitoring       | yes                                                                   |                   |                 |
| Application                  | flush mountable for the food and beverage industry                    |                   |                 |
| Media                        | viscous media and liquids with suspended particles; liquids and gases |                   |                 |
| Conditionally suitable for   | use in gases at pressures > 25 bar only on request                    |                   |                 |
| Medium temperature [°C]      | -25...150                                                             |                   |                 |
| Min. bursting pressure       | 50000 mbar                                                            | 725 psi           | 5000 kPa        |
| Pressure rating              | 30000 mbar                                                            | 435 psi           | 3000 kPa        |
| Vacuum resistance [mbar]     | -1000                                                                 |                   |                 |
| Type of pressure             | relative pressure; vacuum                                             |                   |                 |
| No dead space                | yes                                                                   |                   |                 |

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|                                          |                                                           |                                                                                                    |                 |
|------------------------------------------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------|
| MAWP (for applications according to CRN) | [bar]                                                     | 3                                                                                                  |                 |
| 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 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; 1:5)                                                                            |                 |
| Max. load                                | [Ω]                                                       | 700; (U <sub>b</sub> = 24 V; (U <sub>b</sub> - 9 V) / 21.5 mA)                                     |                 |
| Short-circuit proof                      | yes                                                       |                                                                                                    |                 |
| Overload protection                      | yes                                                       |                                                                                                    |                 |
| Measuring/setting range                  |                                                           |                                                                                                    |                 |
| Measuring range                          | -125...2500 mbar                                          | -1.82...36.26 psi                                                                                  | -12.5...250 kPa |
| Analog start point                       | -125...2000 mbar                                          | -1.82...29 psi                                                                                     | -12.5...200 kPa |
| Analog 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 bar                                             | AEP = 2500 mbar                                                                                    |                 |
| Temperature monitoring                   |                                                           |                                                                                                    |                 |
| Measuring range                          | -25...150 °C                                              |                                                                                                    | -13...302 °F    |
| Accuracy / deviations                    |                                                           |                                                                                                    |                 |
| Repeatability                            | [% of the span]                                           | < ± 0,1; (with temperature fluctuations < 10 K; Turn down 1:1)                                     |                 |
| Characteristics deviation                | [% of the span]                                           | < ± 0,5; (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)                                                                 |                 |

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|                                        |                                                                                            |                                                                |                                                       |
|----------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|
| Total deviation over temperature range | Temperature range                                                                          |                                                                | total deviation                                       |
|                                        | -25...15 °C                                                                                |                                                                | Characteristics deviation ± 0,05 % of the span / 10 K |
|                                        | 15...80 °C                                                                                 |                                                                | Characteristics deviation                             |
|                                        | 80...150 °C                                                                                |                                                                | Characteristics deviation ± 0,1 % of the span / 10 K  |
| Notes on the accuracy / deviation      | for further details see section Diagrams and graphs                                        |                                                                |                                                       |
| Temperature monitoring                 |                                                                                            |                                                                |                                                       |
| Accuracy                               | [K]                                                                                        | ± 2.5 K + (0.045 x (ambient temperature - medium temperature)) |                                                       |
| Repeatability                          | [K]                                                                                        | ± 0,2                                                          |                                                       |
| Resolution                             | [K]                                                                                        | 0.2                                                            |                                                       |
| 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                                                              |                                                       |
| Temperature monitoring                 |                                                                                            |                                                                |                                                       |
| Dynamic response T05 / T09             | [s]                                                                                        | < 10 / < 25; (DIN EN 60751 water; > 0,9 m/s)                   |                                                       |
| Interfaces                             |                                                                                            |                                                                |                                                       |
| Communication interface                | IO-Link                                                                                    |                                                                |                                                       |
| Transmission type                      | COM2 (38,4 kBaud)                                                                          |                                                                |                                                       |
| IO-Link revision                       | 1.1                                                                                        |                                                                |                                                       |
| SDCI standard                          | IEC 61131-9                                                                                |                                                                |                                                       |
| Profiles                               | Smart Sensor ED2: Identification and Diagnosis (0x4000), Measurement Data Channel (0x800A) |                                                                |                                                       |
| SIO mode                               | no                                                                                         |                                                                |                                                       |
| Required master port class             | A; (when pin 2 not connected: B)                                                           |                                                                |                                                       |
| Min. process cycle time                | [ms]                                                                                       | 4.5                                                            |                                                       |
| IO-Link resolution pressure            | [mbar]                                                                                     | 0.5                                                            |                                                       |
| IO-Link resolution temperature         | [K]                                                                                        | 0.2                                                            |                                                       |
| IO-Link process data (cyclical)        | Function                                                                                   | bit length                                                     |                                                       |
|                                        | pressure                                                                                   | 16                                                             |                                                       |
|                                        | temperature                                                                                | 16                                                             |                                                       |
|                                        | device status                                                                              | 4                                                              |                                                       |
| IO-Link functions (acyclical)          | application specific tag; internal temperature                                             |                                                                |                                                       |
| Supported DeviceIDs                    | Type of operation                                                                          | DeviceID                                                       |                                                       |
|                                        | default                                                                                    | 1024                                                           |                                                       |
| Operating conditions                   |                                                                                            |                                                                |                                                       |
| Ambient temperature                    | [°C]                                                                                       | -25...80                                                       |                                                       |
| Storage temperature                    | [°C]                                                                                       | -40...100                                                      |                                                       |
| Protection                             | IP 67; IP 68; IP 69K                                                                       |                                                                |                                                       |

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| Tests / approvals    |                    |                     |
|----------------------|--------------------|---------------------|
| EMC                  | DIN EN 61326-1     |                     |
| 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]         |                    | 322                 |
| UL approval          | UL approval number | J024                |
|                      | File number UL     | E174189             |

| Mechanical data          |  |                                                                                                                   |
|--------------------------|--|-------------------------------------------------------------------------------------------------------------------|
| Weight [g]               |  | 306.2                                                                                                             |
| Housing                  |  | tubular                                                                                                           |
| Dimensions [mm]          |  | Ø 30.2 / L = 129.3                                                                                                |
| Material                 |  | stainless steel (1.4404 / 316L); PTFE; FKM                                                                        |
| Materials (wetted parts) |  | ceramics (99.9 % Al2O3); stainless steel (1.4435 / 316L);<br>surface characteristics: Ra < 0,4 / Rz 4; PEEK; PTFE |
| Min. pressure cycles     |  | 100 million                                                                                                       |
| Tightening torque [Nm]   |  | 20                                                                                                                |
| Process connection       |  | threaded connection G 1/2 external thread sealing cone                                                            |

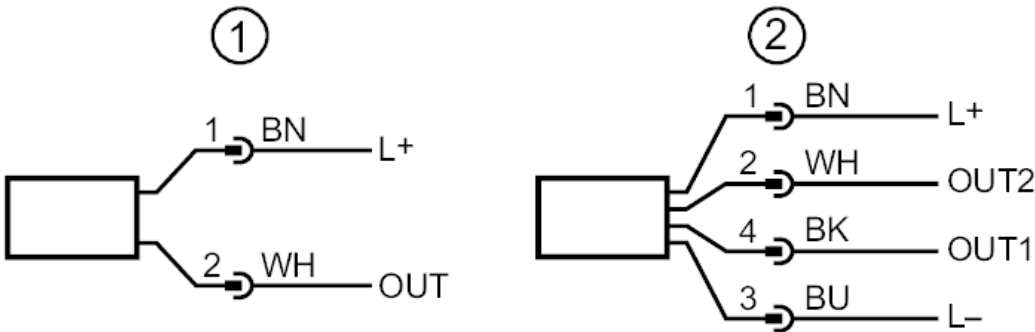
| Remarks       |        |
|---------------|--------|
| Pack quantity | 1 pcs. |

Electrical connection

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



Connection



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

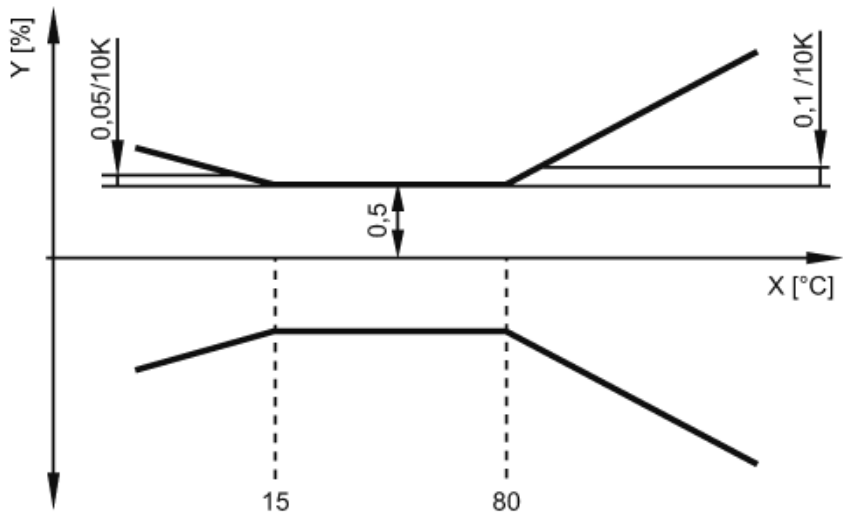
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### Diagrams and graphs



X temperature  
Y total deviation