

## Product Information

# Differential Pressure Transmitter EDP1



- **4..20 mA two-wire differential pressure transducer**
- **Ideally suited to wet/wet applications**
- **Can also be used at high differential pressures**
- **High chemical resistance thanks to top-quality materials**
- **Compact design**

## Characteristics

The differential pressure transmitter EDP1 is intended for the measurement of differential pressures in liquids and gases. It consists of a differential pressure sensor cell as a sensor, and of an integrated transformer.

The differential pressure measuring cell has two separate ceramic pressure sensors with a measuring bridge applied by thick film technology. The bridge signal of each sensor is temperature-compensated. The integrated microcontroller measures the signals from the two sensors, and calculates the pressure difference. This is output as a 4..20 mA signal (two-wire).

The ceramic sensors are available in various pressure ranges. This limits the maximum pressure applied to each connection. The differential pressure, which should correspond to an output signal of 20 mA, can be freely selected within this range, but should not be less than 10 % of the metering range of the single cells, so that a sufficient resolution and accuracy are ensured.

The microcontroller also permits customer-specific characteristic curves and output signals, e.g. measurement of positive and negative pressure differences (available on request).

The medium comes into contact exclusively with top-quality materials such as  $Al_2O_3$  -ceramic, stainless steel, FKM seals.

## Technical data

|                                            |                                                                                                                                       |                    |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| <b>Sensor</b>                              | ceramic cell with measuring bridge in thick film technology                                                                           |                    |
| <b>Process connection</b>                  | 2 x female thread G 1/8                                                                                                               |                    |
| <b>Metering ranges of the single cells</b> | (pressure relative to environment of the single cell) in bar                                                                          |                    |
|                                            | Range                                                                                                                                 | Burst pressure     |
|                                            | 0.. 1                                                                                                                                 | 4                  |
|                                            | 0.. 2                                                                                                                                 | 6                  |
|                                            | 0.. 5                                                                                                                                 | 15                 |
|                                            | 0.. 10                                                                                                                                | 40                 |
|                                            | 0.. 20                                                                                                                                | 60                 |
|                                            | 0.. 50                                                                                                                                | 150                |
|                                            | 0..100                                                                                                                                | 280                |
| <b>Differential pressure range</b>         | when ordering please state:<br>minimum: 10 % of the metering range of the single cells<br>maximum: Metering range of the single cells |                    |
| <b>Measurement accuracy</b>                | ±1 % of full scale value;<br>plus. 0.05 %/K at < 0 °C and > 60 °C                                                                     |                    |
| <b>Repeatability</b>                       | ±0.5 % of full scale value                                                                                                            |                    |
| <b>Pressure resistance</b>                 | corresponds to metering range                                                                                                         |                    |
| <b>Dynamics</b>                            | measuring cycle 50 ms                                                                                                                 |                    |
| <b>Media temperature</b>                   | -20..+70 °C                                                                                                                           |                    |
| <b>Ambient temperature</b>                 | -20..+70 °C                                                                                                                           |                    |
| <b>Storage temperature</b>                 | -20..+80 °C                                                                                                                           |                    |
| <b>Media</b>                               | fluids and gases                                                                                                                      |                    |
| <b>Materials medium-contact</b>            | Connection                                                                                                                            | 1.4571             |
|                                            | Ceramic cell                                                                                                                          | $Al_2O_3$          |
|                                            | Seal                                                                                                                                  | FKM                |
| <b>Materials, non-medium-contact</b>       | Housing                                                                                                                               | Al anodised 1.4305 |
|                                            | Plug                                                                                                                                  | PA6.6              |
|                                            | Contacts                                                                                                                              | gold-plated        |
| <b>Supply voltage</b>                      | 10..30 V DC                                                                                                                           |                    |
| <b>Analog output</b>                       | 4..20 mA two-wire                                                                                                                     |                    |
| <b>Load</b>                                | max. 800 Ohm at 24 V<br>(100 Ohm at 10 V,<br>1,1 kOhm at 30 V,<br>linear at operating voltage)                                        |                    |
| <b>Electrical connection</b>               | for round plug connector M12x1, 4-pole                                                                                                |                    |
| <b>Reversal polarity protected</b>         | yes                                                                                                                                   |                    |
| <b>Protection class</b>                    | IP 67                                                                                                                                 |                    |
| <b>Weight</b>                              | approx. 0.5 kg                                                                                                                        |                    |
| <b>Conformity</b>                          | CE                                                                                                                                    |                    |

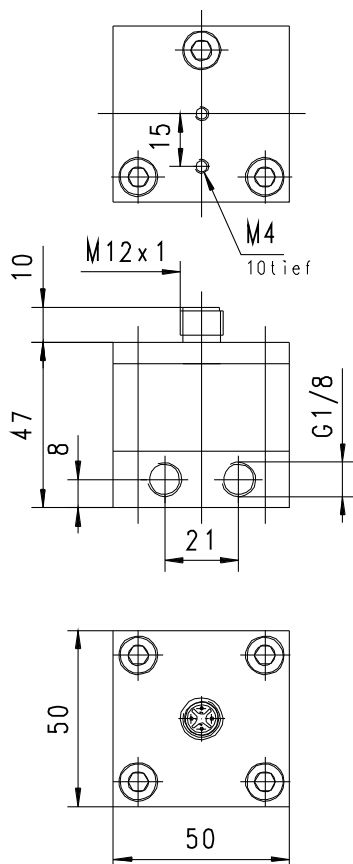
## Wiring

|        |   |       |               |
|--------|---|-------|---------------|
| Sensor | 1 | brown | +10..30 V DC  |
|        | 2 | white | signal output |

Before the electrical installation, it must be ensured that the supply voltage complies with the data sheet.  
It is recommended to use shielded wiring.

## Product Information

### Dimensions



### Ordering code

EDP1 - 1. 2. 3. 4. 5. 6.

| 1. Range of the single cell    |                                                                                 |
|--------------------------------|---------------------------------------------------------------------------------|
| 001                            | 0.. 1 bar                                                                       |
| 002                            | 0.. 2 bar                                                                       |
| 005                            | 0.. 5 bar                                                                       |
| 010                            | 0.. 10 bar                                                                      |
| 020                            | 0.. 20 bar                                                                      |
| 050                            | 0.. 50 bar                                                                      |
| 100                            | 0..100 bar                                                                      |
| 2. Pressure type               |                                                                                 |
| R                              | relative pressure                                                               |
| 3. Differential pressure range |                                                                                 |
| 0001<br>...<br>1000            | example 0055 = 5.5 bar (min. 10 %, max. 100 % of the range of the single cells) |
| 4. Connection material         |                                                                                 |
| K                              | stainless steel 1.4571                                                          |
| 5. Connection size             |                                                                                 |
| 004                            | female thread G 1/8                                                             |
| 6. Electronic connection       |                                                                                 |
| S                              | for round plug connector M12x1, 4-pole                                          |

### Accessories

- Round plug connector/cable
- converter / counter OMNI-TA
- Device configurator ECI-1

## Handling and operation

### Installation

Connect the pipework to P1 and P2. When sealing off, ensure that it is carried out cleanly.

The standard version is designed for P1 > P2. However, if the connections are reversed, no damage occurs.

When cleaning the pressure cells from the media side, the bolts of the part with the media connections are to be loosened (The electronics remain closed in this case). Cleaning should be carried out very carefully, using a cotton tips.

