

# DTK

Differential pressure transmitter for liquids and gases



*DTK is a transmitter for measuring differential pressure in liquids and gases. The method of measurement using a ceramic membrane gives a high level of accuracy and stability over a long period.*

- ✓ Several measuring ranges up to 2500 kPa (25 bar)
- ✓ Output signal 0...10 V DC or 4...20 mA
- ✓ Highly durable in most environments
- ✓ Can withstand overpressure of up to 6 times the measuring range (depending on model)
- ✓ Accuracy <math>< 1.25\%</math> of measuring range
- ✓ Excellent long-term stability and low temperature dependency

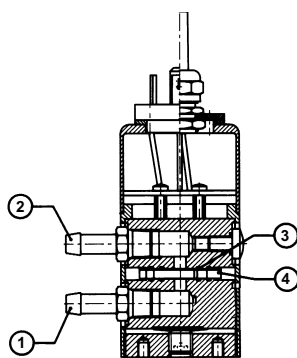
## Function

The transmitter consists of a sensor housing of stainless steel and a ceramic membrane. Resistors in thick film technology are applied to the membrane. As pressure affects the membrane, it results in a change of resistance depending on the bending of the membrane, and this is then converted into a proportional output signal by means of the built-in electronics. The construction, incorporating only one moving part and a direct signal from the membrane, offers a high level of accuracy and a short response time. The properties of the membrane also ensure good stability is maintained over time, as well as a low temperature dependency.

## Component overview

1. P1 Higher pressure/lower vacuum

2. P2 Lower pressure/higher vacuum
3. O-ring seals
4. Ceramic membrane



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DTK

## Technical data

|   |   |
|---|---|
| <b>Supply voltage</b>                         | With output signal of 0...10 V: 24 V AC +/- 15% or 18...33 V DC<br>With output signal of 4...20 mA: 11...33 V DC (two wire) |
| <b>Power consumption</b>                      | 5 mA (0...10 V), 20 mA (4...20 mA)  |
| <b>Load impedance</b>                         | With output signal of 0...10 V: > 10kOhm<br>With output signal of 4...20 mA: <650 Ohm (at 24 V DC)                          |
| <b>Max. system pressure</b>                   | DTK10... DTK600: 25 bar<br>DTK 1000-... DTK1600: 50 bar   |
| <b>(linearity and hysteresis)</b>             | (model with higher accuracy available upon request)   |
| <b>Temperature dependence, zero point</b>     | Max. 0.12 % of measuring range / °C   |
| <b>Temperature dependence, measured value</b> | Max. 0.038 % of measuring range / °C  |
| <b>Ambient- and media temperature</b>         | -15...+85°C   |
| <b>Dynamic response time</b>                  | <5 ms   |
| <b>Pressure connections</b>                   | Pressure connection for 6 mm copper tube  |
| <b>Cable</b>                                  | Three- or two wire cable, 1.5 m   |
| <b>Form of protection</b>                     | IP65  |



This product carries the CE-mark. More information is available at [www.regincontrols.com](http://www.regincontrols.com).

## Material

|                       |                  |
|-----------------------|------------------|
| <b>Sensor housing</b> | Stainless steel  |
| <b>Membrane</b>       | Ceramic material |

## Models

Table 1 Output signal 0...10 V DC

| Article | Range        | Max. overpressure | Accuracy                 |
|---------|--------------|-------------------|--------------------------|
| DTK10   | 0...10 kPa   | 6x                | +/-1,25% fs <sup>1</sup> |
| DTK20   | 0...20 kPa   | 6x                | +/-1,25% fs              |
| DTK40   | 0...40 kPa   | 5x                | +/-1,25% fs              |
| DTK100  | 0...100 kPa  | 5x                | +/-1,25% fs              |
| DTK250  | 0...250 kPa  | 4.8x              | +/-1,25% fs              |
| DTK400  | 0...400 kPa  | 3x                | +/-0,75% fs              |
| DTK600  | 0...600 kPa  | 2x                | +/-0,40% fs              |
| DTK1000 | 0...1000 kPa | 2x                | +/-0,40% fs              |
| DTK1600 | 0...1600 kPa | 2x                | +/-0,40% fs              |

1. fs = fullscale, the complete sensor range

Table 2 Output signal 4...20 mA

| Article   | Range      | Max. overpressure | Accuracy                 |
|-----------|------------|-------------------|--------------------------|
| DTK10-420 | 0...10 kPa | 6x                | +/-1,25% fs <sup>1</sup> |
| DTK20-420 | 0...20 kPa | 6x                | +/-1,25% fs              |

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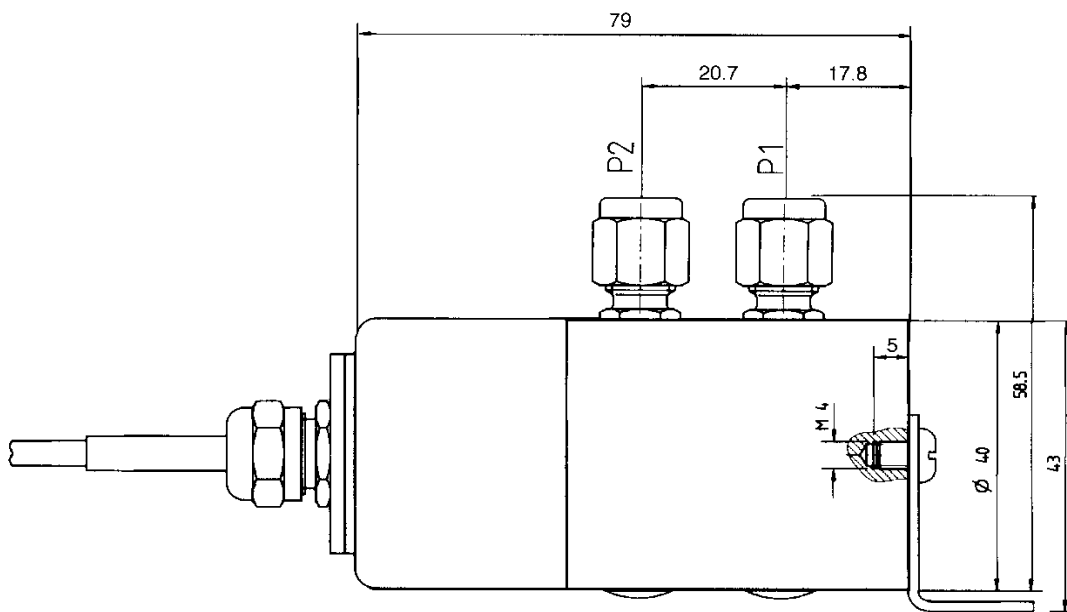
Table 2 Output signal 4...20 mA (continued)

| Article     | Range        | Max. overpressure | Accuracy    |
|-------------|--------------|-------------------|-------------|
| DTK40-420   | 0...40 kPa   | 5x                | +/-1,25% fs |
| DTK100-420  | 0...100 kPa  | 5x                | +/-1,25% fs |
| DTK250-420  | 0...250 kPa  | 4.8x              | +/-1,25% fs |
| DTK400-420  | 0...400 kPa  | 3x                | +/-0,75% fs |
| DTK600-420  | 0...600 kPa  | 2x                | +/-0,40% fs |
| DTK1000-420 | 0...1000 kPa | 2x                | +/-0,40% fs |
| DTK1600-420 | 0...1600 kPa | 2x                | +/-0,40% fs |

1. fs = fullscale, the complete sensor range

Transmitters may also be ordered with an output signal 0...20 mA or 4...20 mA, three wire.

### Dimensions



[mm]

### Wiring

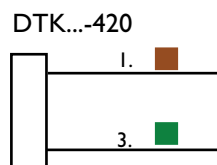
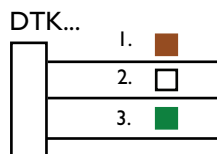


Fig. 1 Top diagram is for DTK... and lower diagram is for DTK...420 (two wire). See table below.

| Model name                  | Wire number | Wire color | Function                              |
|-----------------------------|-------------|------------|---------------------------------------|
| <b>DTK ...</b>              | 1           | Brown      | Supply voltage 24 V AC / 11...33 V DC |
|                             | 2           | White      | System neutral                        |
|                             | 3           | Green      | Output signal 0...10 V                |
|                             |             |            |                                       |
| <b>DTK...420 (two wire)</b> | 1           | Brown      | Supply voltage 11...33 V DC           |
|                             | 3           | Green      | Output signal 4...20 mA               |

## Documentation

All documentation can be downloaded from [www.regincontrols.com](http://www.regincontrols.com).