

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.

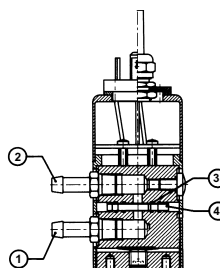
- ✓ Several measuring ranges up to 2500 kPa (25 bar)
- ✓ Output signal 0...10 V DC or 4...20 mA
- ✓ Highly durable in most environments
- ✓ Can withstand overpressure of up to 6 times the measuring range (depending on model)
- ✓ Accuracy <1.25% of measuring range
- ✓ Excellent long-term stability and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



Technical data

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



This product carries the CE-mark. More information is available at www.regincontrols.com.

Material

Sensor housing	Stainless steel
Membrane	Ceramic material

Models

Table 1 Output signal 0...10 V DC

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

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

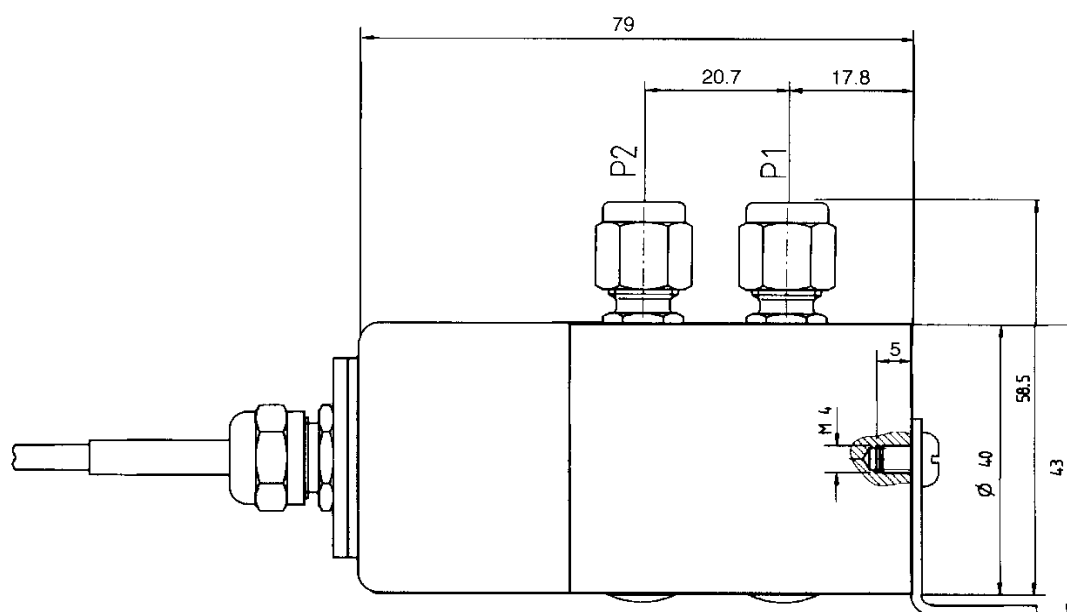
1. fs = fullscale, the complete sensor range

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

Accessories

Article	Description
DTK-BRACKET	Bracket for mounting 90° angle
DTK-NIPPEL	Nipple for connection of 6 mm copper pipe, 1/8" 27NPT
DTK-R	Copper pipe for DTK, D= 6mm, L=300mm

Dimensions



[mm]

Wiring

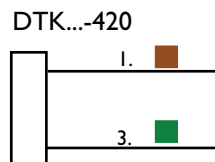
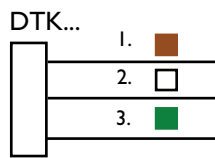


Fig. 1 Top diagram is for DTK... and lower diagram is for DTK...420 (two wire). See table below.

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