

DPT53-1003 / DPT103D-1003D

3-WIRE DIFFERENTIAL PRESSURE TRANSMITTERS CURRENT OUTPUT

SPECIFICATION DATA & MOUNTING INSTRUCTIONS



DPT53-1003

GENERAL

The differential pressure transmitters of the DPT series are used for measuring differential pressure, positive pressure, and vacuum. The transmitters are suitable for:

- air-conditioning,
- building automation,
- environmental protection,
- valve and flap control,
- filter and blower monitoring,
- fluid and level monitoring, and
- control of air flows.

NOTE: Because these sensors do not fulfill FDA requirements, it is not permitted to employ them in critical pharmaceutical applications under continuous FDA supervision.

Models

order no.	pressure range		overload capacity	bursting pressure
	1	2		
DPT53	-50...0...+50 Pa ¹⁾	n.a.	20 kPa	40 kPa
DPT113	-100...0...+100 Pa ¹⁾	n.a.	20 kPa	40 kPa
DPT103/103D	0...100 Pa ¹⁾	0...250 Pa	20 kPa	40 kPa
DPT253/253D	0...250 Pa ¹⁾	0...500 Pa	20 kPa	40 kPa
DPT503/503D	0...500 Pa ¹⁾	0...1 kPa	20 kPa	40 kPa
DPT1003/1003D	0...1 kPa ²⁾	0...2.5 kPa	40 kPa	70 kPa

¹⁾ ≤ ± 5% of FS; ²⁾ ≤ ± 2.5% of FS

FEATURES

- Monitoring gaseous, non-aggressive media
- Piezo-resistive pressure transducer
- Up to 40 kPa overload capacity
- Models with display (DPT103D-1003D)
- Rugged design; protection class IP54
- Easy installation and wiring connection
- Measurement range adjustable by jumper
- Response time adjustable by jumper

SPECIFICATION

Supply voltage	18...24...30 Vac; 50/60 Hz or 16...24...32 Vdc
Output signal	4...20 mA, three-wire
Maximum load	≤ 500 Ω *
Pressure medium	Air and non-aggressive gases
Working temperature	0...50 °C
Linearity and hysteresis error	≤ ± 1.0% of FS
Temperature error at 0...50°C	≤ ± 1.0% of FS ¹⁾ ≤ ± 5.0% of FS ²⁾ ≤ ± 2.5% of FS
Storage temperature	-10...+70 °C
Humidity	0...95% rh, non-condensing
Long-term stability, typical	
DPT53...503	≤ ± 2.5% of FS per year
DPT1003	≤ ± 1.5% of FS per year
Repetition accuracy	≤ ± 0.2% of FS
Position dependence	≤ ± 0.02% of FS per g
Response time	1 s (switchable to 100 ms)
Process connection	6 mm hose pipe
Electrical connection	Screw terminal block for wire up to 1.5 mm ²
Housing material	ABS and POM
Cable entry	M20x1.5 (polyamide)
Protection class	IP54 as per EN60529
EMV	EN60770, EN61326
Weight	approx. 130 g

*Device is calibrated under a resistive load of 100 Ω.
Maximum load of 500 Ω requires AC/DC power supply ≥ 24 V

FUNCTION

The DPT53-1003 / 103D-1003D Three-Wire Differential Pressure Transmitters are equipped with an integrated piezo-resistive pressure transducer designed so that the pressure to be measured is applied to a thin membrane made of mono-silicon, thus deflecting it. The semiconductor resistors on the membrane detect this mechanical deflection and generate an electrical output signal. The arrangement of the resistors simultaneously compensates for the temperature response. The signal of the pressure transducer is converted into the output signal by high-gain operation amplifiers.

The electrical output signal changes within the specified error limits in proportion to the applied pressure.

NOTE: All DPT53-1003 / 103D-1003D Three-Wire Differential Pressure Transmitters are factory pre-set to a response time of 1 second.

NOTE: All DPT53-1003 / 103D-1003D Three-Wire Differential Pressure Transmitters (except for +/- models) are factory pre-set to pressure range 1.

ACCESSORIES

DPSK* Duct Kit, incl. 2 m of silicone hose and two joining pipes

DPSL DPSJ with screws*. Mounting brackets L-shaped

* included in delivery of single package

WIRING

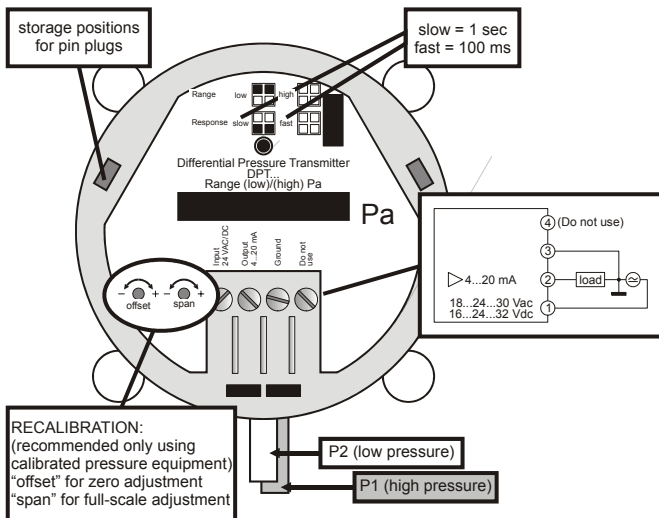


Fig. 1. Wiring details

MOUNTING

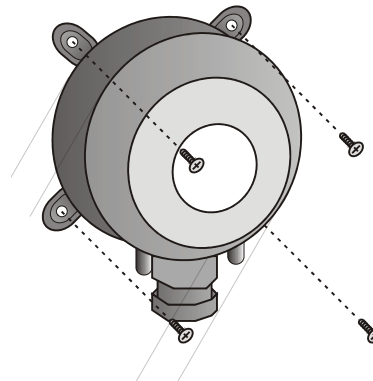


Fig. 2. Mounting

DIMENSIONS

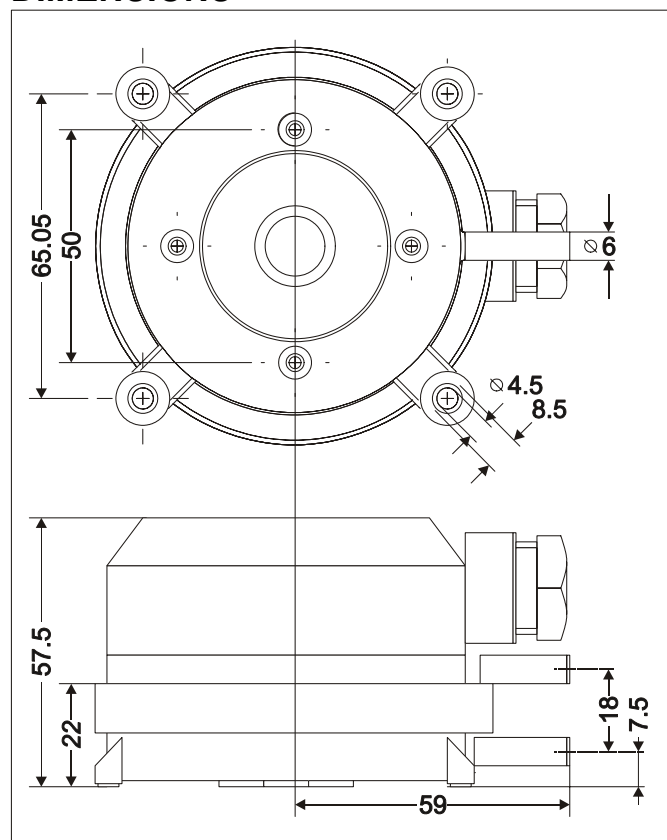


Fig. 3. Dimensions (in mm)

Honeywell

Automation and Control Solutions

Honeywell GmbH
 Böblinger Straße 17
 D-71101 Schönaich
 Phone: (49) 7031 63701
 Fax: (49) 7031 637493
<http://europe.hbc.honeywell.com>

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