

DPT53-1003 / DPT53D-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: These sensors are not suitable for use in installations under periodic inspection by the U.S. Food and Drug Administration.

Models

order no.	pressure range		overload capacity	burst pressure
	1 ¹⁾	2		
DPT53/53D	-50...0...+50 Pa ²⁾	n.a.	20 kPa	40 kPa
DPT113/113D	-100...0...+100 Pa ²⁾	n.a.	20 kPa	40 kPa
DPT553/553D	-500...0...+500 Pa ²⁾	n.a.	20 kPa	40 kPa
DPT1103/1103D	-1 kPa...0...+1 kPa ³⁾	n.a.	40 kPa	70 kPa
DPT103/103D	0...100 Pa ²⁾	0...250 Pa ²⁾	20 kPa	40 kPa
DPT253/253D	0...250 Pa ²⁾	0...500 Pa ²⁾	20 kPa	40 kPa
DPT503/503D	0...500 Pa ²⁾	0...1 kPa ²⁾	20 kPa	40 kPa
DPT1003/1003D	0...1 kPa ³⁾	0...2.5 kPa ³⁾	40 kPa	70 kPa

¹⁾ default setting
²⁾ temperature error at 0...50 °C ≤ ± 5% of full scale (FS)
³⁾ temperature error at 0...50 °C ≤ ± 2.5% of full scale (FS)

FEATURES

- Monitoring gaseous, non-aggressive media
- Piezo-resistive pressure transducer
- Up to 40 kPa overload capacity
- Models with display (DPT53D-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, non-aggressive gases
Working temperature	0...50 °C
Linearity and hysteresis error	≤ ± 1.0% of FS
Temperature error at 0...50 °C	See "Models"
Storage temperature	-10...+70 °C
Humidity	0...95% rh, non-condensing
Long-term stability, typical	
DPT53...503 / 53D...503D	≤ ± 2.5% of FS per year
DPT1003 / 1003D	≤ ± 1.5% of FS per year
Repetition accuracy	≤ ± 0.2% of FS
Position dependence	≤ ± 0.02% of FS
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

FUNCTION

The DPT53-1003 / 53D-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 4...20 mA 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 / 53D-1003D Three-Wire Differential Pressure Transmitters are factory pre-set to a response time of 1 second (switchable to 100 ms).

ACCESSORIES

DPSK: Included in delivery. Duct Kit, incl. 2 m of silicone hose and two joining pipes

DPSL: Ordered separately. L-shaped mounting brackets with screws.

WIRING

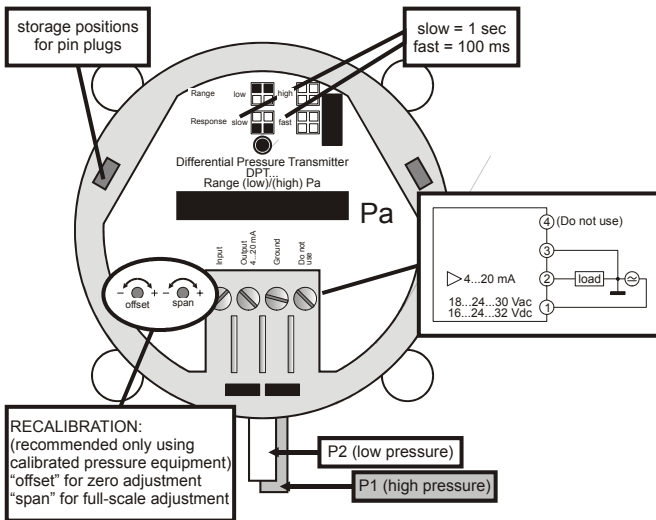


Fig. 1. Wiring details

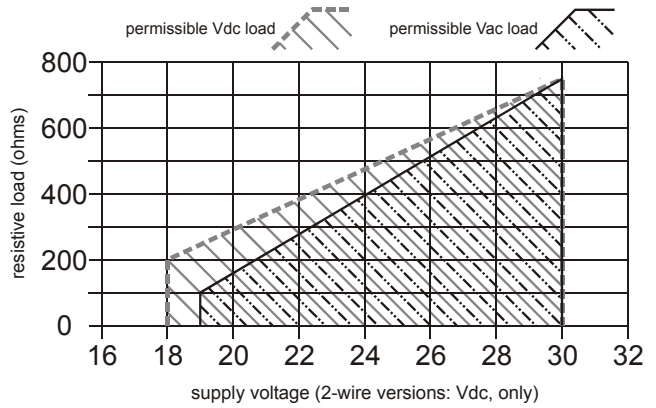


Fig. 2. Permissible load vs. supply voltage

MOUNTING

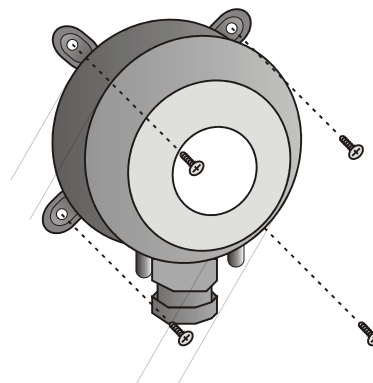


Fig. 3. Mounting

DIMENSIONS

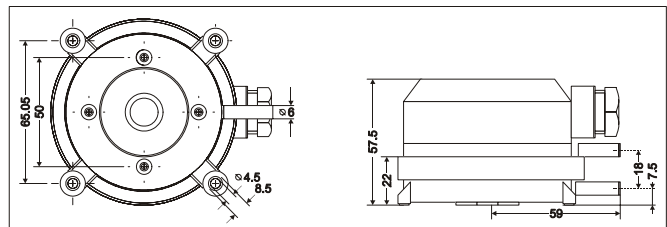


Fig. 4. Dimensions (in mm)

Honeywell

FEMA

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