

# DIFFERENTIAL PRESSURE TRANSMITTERS

## DPT-R8 Series

Field adjustable, multi-range differential pressure transmitters for air

DPT-R8 series differential pressure transmitters are engineered for building automation in the HVAC/R industry. The most technologically advanced transmitters on the market, measuring static and differential pressure, with field selectable units, range and output, all in a single device.

DPT-R8 series devices include:

- Multiple measurement units, field selectable via jumper, including: Pa, kPa, mbar, inchWC, mmWC, psi.
- 8 field selectable measurement ranges, unidirectional or bi-directional, selectable via jumper, (see Model Summary).
- Proportional output options including: voltage (0–10 V) and current (4–20 mA).

DPT-R8 series device options offer:

- AZ (autozero) function for automatic zero point calibration, eliminating the need for periodic manual autozeroing to ensure long term accuracy
- Backlit display
- Field adjustable span point calibration

The versatility of the DPT-R8 series differential pressure transmitters ensures that the right product for your application is available.



### SIMILAR PRODUCTS

- DPT-2W series differential pressure transmitters with 4–20 mA 2-wire configuration
- DPT-MOD series differential pressure transmitters with Modbus configuration
- DPI series electronic differential pressure switches
- PS series mechanical differential pressure switches
- DPT-FLOW series airflow transmitters

### APPLICATIONS

DPT-R8 series devices are commonly used in HVAC/R systems for:

- fan, blower and filter monitoring
- pressure and flow monitoring
- valve and damper control
- pressure monitoring in cleanrooms

### MODEL SUMMARY

Measurement ranges (Pa) (field selectable via jumper) (For optional units, see Specifications)	DPT250-R8 ±25, ±50, ±100, ±150 Pa 25, 50, 100, 250 Pa	DPT2500-R8 ±100, 100, 250, 500 Pa 1000, 1500, 2000, 2500 Pa	DPT7000-R8 1000, 1500, 2000, 2500 Pa 3000, 4000, 5000, 7000 Pa
Description	Model	Model	Model
Multi-range differential pressure transmitter	DPT250-R8	DPT2500-R8	DPT7000-R8
- with display	DPT250-R8-D	DPT2500-R8-D	DPT7000-R8-D
- with AZ	DPT250-R8-AZ	DPT2500-R8-AZ	DPT7000-R8-AZ
- with AZ & display	DPT250-R8-AZ-D	DPT2500-R8-AZ-D	DPT7000-R8-AZ-D
- with AZ & span point calibration	DPT250-R8-AZ-S		
- with AZ, display and span point calibration	DPT250-R8-AZ-D-S		

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### SPECIFICATIONS

#### Performance

Accuracy (from applied pressure):  
 $\pm 1,5\% + 1\text{ Pa}$   
 (including: general accuracy, temperature drift, linearity, hysteresis, long term stability, and repetition error)  
 Thermal effects:  
 Temperature compensated across the full spectrum of capability.  
 Overpressure:  
 Proof pressure: 25 kPa  
 Burst pressure: 30 kPa  
 Zero point calibration:  
 Automatic autozero or manual pushbutton  
 Response time:  
 4.0 s or 0.8 s, selectable via jumper

#### Technical Specifications

Media compatibility:  
 Dry air or non-aggressive gases  
 Measuring units:  
 Pa, kPa, mbar, inchWC, mmWC, psi, selectable via jumper  
 Measuring element:  
 Piezoresistive  
 Environment:  
 Operating temperature: -10...50 °C  
 Storage temperature: -20...70 °C  
 Humidity: 0 to 95 % rH, non condensing

#### Physical

Dimensions:  
 Case: 90.0 x 95.0 x 36.0 mm  
 Weight:  
 150 g  
 Mounting:  
 2 each 4.3 mm screw holes, one slotted  
 Materials:  
 Case: ABS  
 Lid: PC  
 Protection standard:  
 IP54  
 Display (Optional)  
 2-line display (12 characters/line)  
 Line 1: active measurement  
 Line 2: units  
 Electrical connections:  
 4-screw terminal block  
 Wire: 12–24 AWG (0.2–1.5 mm<sup>2</sup>)  
 Cable entry: M16  
 Pressure fittings:  
 Male  $\varnothing$  5,0 mm and 6,3 mm  
 + High pressure  
 – Low pressure

#### Electrical

Voltage:  
 Circuit: 3-wire (V Out, 24 V, GND)  
 Input: 24 VAC or VDC,  $\pm 10\%$   
 Output: 0–10V  
 Power consumption: <1.0 W  
 Resistance minimum: 1 k $\Omega$   
 Current:  
 Circuit: 3-wire (mA Out, 24 V, GND)  
 Input: 24 VAC or VDC,  $\pm 10\%$   
 Output: 4–20 mA, selectable via jumper  
 Power consumption: <1.2 W  
 Maximum load: 500  $\Omega$

#### Conformance

Meets the requirements for CE marking:  
 EMC Directive 2004/108/EY  
 RoHS Directive 2002/95/EY



### AZ-calibration

AZ-calibration is an autozero function in the form of an automatic zeroing circuit built into the PCB board. The AZ-calibration electronically adjusts the transmitter zero at predetermined time intervals (every 10 minutes). The AZ-calibration eliminates all output signal drift due to thermal, electronic or mechanical effects, as well as the need for technicians to remove high and low pressure tubes when performing initial or periodic transmitter zero point calibration.

The AZ adjustment takes 4 seconds. To avoid conflict with the BAS system, the output and display values will freeze to the latest measured value, after which the device returns to its normal measuring mode.

Transmitters equipped with the AZ-calibration are virtually maintenance free\*.

\*When the AZ-calibration option is not selected, the product is provided with a manual pushbutton autozero. To maintain proper functionality and accuracy of the transmitter, it is recommended that the manual pushbutton autozero point calibration is performed annually, at a minimum.

### How to generate a model?

Example: DPT250-R8-AZ-D-S	Product series						
	DPT	Differential pressure transmitter					
	Highest available measurement range						
	250	0–250Pa					
	2500	0–2500 Pa					
	7000	0–7000 Pa					
	Model type						
	-R8	Multi-range, 3-wire configuration					
	-2W	Multi-range, 2-wire configuration					
	-MOD	Modbus configuration					
Zero point calibration							
-AZ	With autozero calibration						
Standard with pushbutton manual autozero							
Display							
-D	With display						
Without Display							
Span point calibration							
-S	Span point calibration						
Without span point calibration							
Model	DPT	250	-R8	-AZ	-D	-S	