

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 measuring 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 (i.e. gain)



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 air flow 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	Product code	Model	Product code	Model	Product code
Multi-range differential pressure transmitter	DPT250-R8	103.004.014	DPT2500-R8	103.007.023	DPT7000-R8	103.016.003
- with display	DPT250-R8-D	103.004.015	DPT2500-R8-D	103.007.024	DPT7000-R8-D	103.016.004
- with AZ	DPT250-R8-AZ	103.004.016	DPT2500-R8-AZ	103.007.025	DPT7000-R8-AZ	103.016.005
- with AZ & display	DPT250-R8-AZ-D	103.004.017	DPT2500-R8-AZ-D	107.007.026	DPT7000-R8-AZ-D	103.016.006
- with AZ & span point calibration	DPT250-R8-AZ-S	103.004.018				
- with AZ, display and span point calibration	DPT250-R8-AZ-D-S	103.004.019				

DIFFERENTIAL PRESSURE TRANSMITTERS

DPT-R8 SERIES

SPECIFICATIONS

Performance

Accuracy (from applied pressure):

Models 250 and 2500:

Pressure < 125 Pa = 1 % + ±2 Pa

Pressure > 125 Pa = 1 % + ±1 Pa

Model 7000:

Pressure < 125 Pa = 1.5 % + ±2 Pa

Pressure > 125 Pa = 1.5 % + ±1 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:

8.0 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:

MEMS

Environment:

Operating temperature: -10...50 °C,

-40C model: -40...50 °C

Storage temperature: -20...70 °C,

-40C model: -40...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

Duct connectors: ABS

Tubing: PVC

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: 0.2-1.5 mm² (12-24 AWG)

Cable entry: M16

Pressure fittings:

Male ø 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, ±10 %

Output: 0-10V

Power consumption: <1.0 W,

-40C model: <4.0 W when <0 °C

Resistance minimum: 1 kΩ

Current:

Circuit: 3-wire (mA Out, 24 V, GND)

Input: 24 VAC or VDC, ±10 %

Output: 4-20 mA

Power consumption: <1.2 W,

-40C model: <4.2 W when <0 °C

Maximum load: 500 Ω

Minimum load: 20 Ω

Conformance

Meets the requirements for CE marking:

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

WEEE Directive 2012/19/EU

**COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL**
= ISO 9001 = ISO 14001 =



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.

HOW TO GENERATE A MODEL?

Example:	Product series					
DPT250-R8-AZ-D-S	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				
	Zero point calibration					
	-AZ	With autozero calibration				
	Standard with pushbutton manual zero point calibration					
Display						
-D	With display					
Without display						
Span point calibration						
-S	Span point calibration					
Without span point calibration						
Model	DPT	250	-R8	-AZ	-D	-S