

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

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):

±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:

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

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: 12–24 AWG (0.2–1.5 mm²)

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

Resistance minimum: 1 kΩ

Current:

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

Input: 24 VAC or VDC, ±10 %

Output: 4–20 mA, selectable via jumper

Power consumption: <1.2 W

Maximum load: 500 Ω

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.

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 | | | |
| | | -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 |