# DIFFERENTIAL PRESSURE TRANSMITTERS DPT-R8 SERIES

**Field adjustable, multi-range differential pressure transmitters for air**

5 YEAR WARRANTY

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 / 2-10 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)**<br>(field selectable via jumper)<br>(For optional units, see Specifications) | **DPT250-R8**<br>±25, ±50, ±100, ±150 Pa<br>25, 50, 100, 250 Pa | | **DPT2500-R8**<br>±100, 100, 250, 500 Pa<br>1000, 1500, 2000, 2500 Pa | | **DPT7000-R8**<br>1000, 1500, 2000, 2500 Pa<br>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 | 103.007.026 | 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 | | | | |
| - with -40C cold resistant | | | DPT2500-R8-40C | 103.007.069 | DPT7000-R8-40C | 103.016.072 |
| - with -40C cold resistant and display | | | DPT2500-R8-D-40C | 103.007.104 | DPT7000-R8-D-40C | 103.016.070 |

# 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, linearity, hysteresis, long term stability, and repetition error)
**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, no flow-through
**Environment:**
Operating temperature: -20...50 °C,
-40C model: -40...50 °C
Models with autozero calibration: -5...50 °C
Temperature compensated range 0...50 °C
Storage temperature: -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: 0–10 V / 2-10 V
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: | UKCA: |
|---|---|---|
| EMC: | 2014/30/EU | S.I. 2016/1091 |
| RoHS: | 2011/65/EU | S.I. 2012/3032 |
| WEEE: | 2012/19/EU | S.I. 2013/3113 |

COMPANY WITH MANAGEMENT SYSTEM CERTIFIED BY DNV
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 |
| | | | | | | | Cold resistance |
| | | | | | | | -40C -40 °C cold resistant (not available with autozero calibration) |
| | | | | | | | Without -40 °C cold resistance |
| Model | DPT | 250 | -R8 | -AZ | -D | -S | -40C |