DPT-R8 differential pressure transmitter

The DPT-R8 differential pressure transmitters measure static and differential pressure. They provide eight pressure measurement ranges per model, and support six measurement units for the display. These transmitters are easy to commission with jumpers only, making them a great choice for many pressure monitoring applications.

The DPT-R8 transmitter has one voltage output and one current output. The voltage output is scalable (0...10 V / 2...10 V). The current output is not scalable.

The following options are available:

- Display (-D models)
- Automatic zeroing (-AZ models)
- Span point adjustment (-S models)
- Cold resistance up to -40 °C (-40C models)

The optional display (-D models) shows the pressure measurement value and the measurement unit.

The -AZ models adjust the zero point automatically and do not require manual zeroing.

The -S models have a span point adjustment function for cleanroom applications and other high-accuracy applications that require annual calibration of differential pressure transmitters.

The -40C models are designed for very cold environments up to -40 °C. A heating element warms the transmitter in subzero temperatures.

You can commission the transmitter by selecting the measurement range, response time and voltage output scaling with jumpers. You can also select the measurement unit for the display with a jumper in -D models.

The DPT-R8 differential pressure transmitters are typically used in building automation systems for:

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

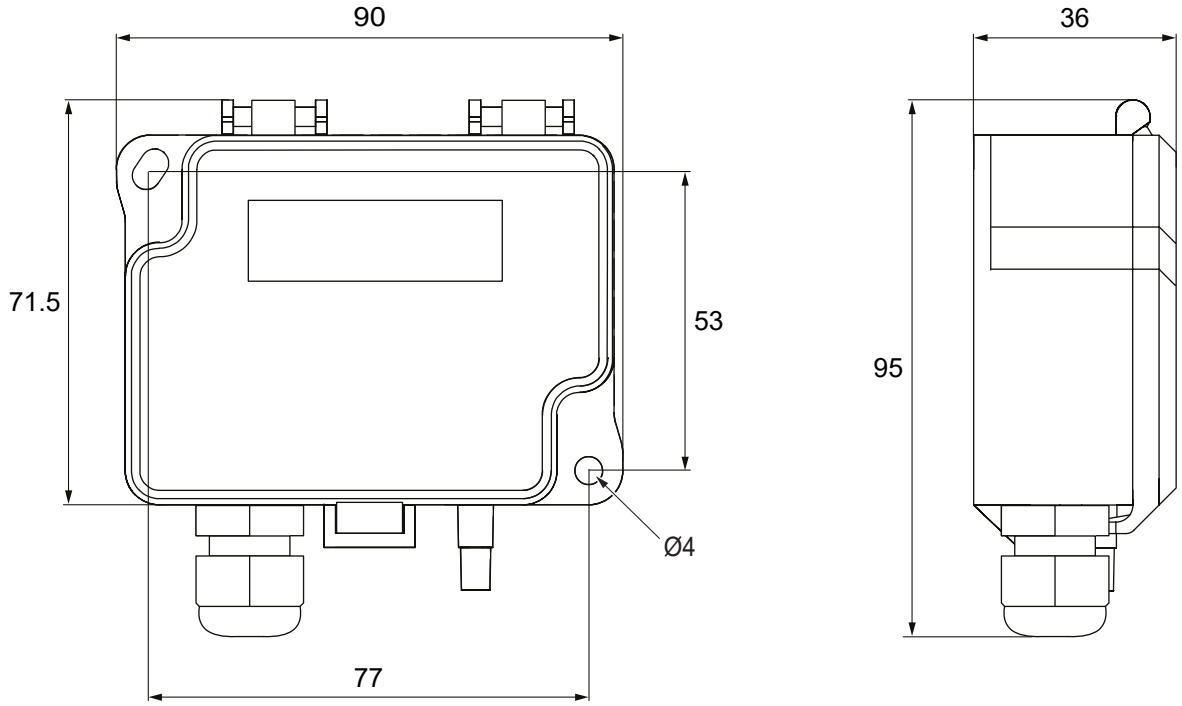
Technical specifications

Property	Value
Power supply	24 Vac/dc ± 10 %
Power consumption	< 1.2 W
-40C models	< 4.2 W (< 0 °C)
Pressure measurement	* factory setting
Range	
-250 models	-150...+150 / -100...+100 / -50...+50 / -25...+25 / 0...25 / 0...50 / 0...100 / *0...250 Pa
-2500 models	-100...+100 / 0...100 / 0...250 / 0...500/ 0...1000 / 0...1500 / 0...2000 / *0...2500 Pa
-7000 models	0...1000 / 0...1500 / 0...2000 / 0...2500 / 0...3000 / 0...4000 / 0...5000 / *0...7000 Pa
Accuracy	including: general accuracy, linearity, hysteresis, and repetition error
-250 and -2500 models	≤ 125 Pa: ±1 % + ±2 Pa from reading (when the read value is between -125 and +125 Pa) > 125 Pa: ±1 % + ±1 Pa from reading
-7000 models	≤ 125 Pa: ±1.5 % + ±2 Pa from reading (when the read value is between -125 and +125 Pa) > 125 Pa: ±1.5 % + ±1 Pa from reading
Temperature compensation	Measurement is temperature compensated when ambient temperature is 0...50 °C.
Response time (T_{63})	*0.8 s / 8.0 s (typical, 63 % of the change)
Long-term stability	
-250 and -2500 models	typ. ±4 Pa / year
-7000 models	typ. ±12 Pa / year
Overpressure	
Proof pressure	25 kPa
Burst pressure	30 kPa
Measuring element	MEMS, no flow-through
Measurement units	*Pa
-D models	*Pa, kPa, mbar, inchWC, mmWC, psi
Zeroing	manually by pushbutton or automatic zeroing (-AZ models)
Pressure fittings	
Type	male
Size	stem reducer fitting suitable for Ø5.0 mm and Ø6.3 mm hoses
Material	ABS plastic
Analogue outputs	The device has 1 voltage output and 1 current output.
Voltage output	* factory setting
Range	*0...10 V / 2...10 V, load > 1 kΩ

Property	Value
Accuracy	accuracy after a 30-minute warm-up time: ±0.025 V at 25 °C
Current output	
Range	4...20 mA, load 20...500 Ω
Accuracy	accuracy after a 30-minute warm-up time: typically ±0.04 mA at 25 °C, load 100 Ω max. ±0.1 mA at 25 °C, load 20...500 Ω
Display (-D models)	2-line display, 46.0 x 14.5 mm. Shows measured pressure value and measurement unit.
Wiring terminals	
Type	tilted screw terminals
Wire	0.2...1.5 mm^2 (24...16 AWG)
Tightening torque	0.4 Nm
Appliance class (IEC 60664-1)	III
Operating conditions	
Ambient temperature	-20...50 °C
-AZ models	-5...50 °C
-40C models	-40...50 °C
Storage temperature	-40...70 °C
Ambient humidity	0...95 %rH (non-condensing)
Compatible media	dry air or non-aggressive gases
Housing	
Protection class	IP54, cable downwards
Cable gland	M16
Materials	ABS and PC plastic (housing), silicone (tubing)
Mounting	2 x Ø4 mm screw holes, one slotted
Dimensions (w x h x d)	90 x 95 x 36 mm
Weight	150 g
Warranty	5 years
CE UKCA	Refer to the EU Declaration of Conformity or the UK Declaration of Conformity for compliance information. You can find the declarations on this product's page at www.produal.com.
Company certificates	
Quality management	ISO 9001
Environmental management	ISO 14001

Dimensions

All dimensions are in millimeters (mm).



Wiring

WARNING: Device wiring and commissioning can only be carried out by qualified professionals. Always make the device wirings in de-energised electricity network.

WARNING: This product is appliance class III product according to IEC 60664-1. The product may only be connected to SELV (separated extra low voltage) electricity network.

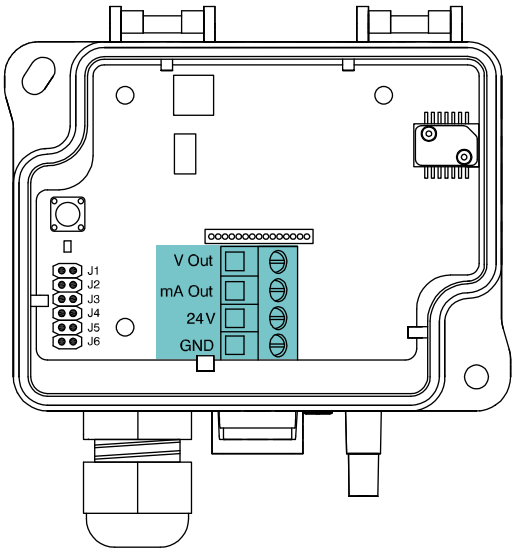
CAUTION: Use single stranded wires or use wire end sleeves if multi stranded wires are used.

Important: For CE and UKCA compliance, a properly grounded shielding cable is required.

1. Open the cover.
2. Unscrew the strain relief on the cable gland.
3. Route the cable through the strain relief and the cable gland.

4. Connect the wires to the terminal block according to the table below.

   Connect the signal wire to voltage output or current output according to system requirements.



V Out	Voltage output: 0...10 V / 2...10 V, load > 1 kΩ
mA Out	Current output: 4...20 mA, load 20...500 Ω
24 V	24 Vac/dc power supply
GND	0 V

The nominal tightening torque for wiring terminal screws is 0.4 Nm.

Important: Do not use excessive force when you tighten the wiring terminal screws.

5. Tighten the strain relief.

Ordering information

Model	Product number	Model	Product number	Model	Product number
DPT250-R8	103.004.014	DPT2500-R8	103.007.023	DPT7000-R8	103.016.003
DPT250-R8-D	103.004.015	DPT2500-R8-D	103.007.024	DPT7000-R8-D	103.016.004
DPT250-R8-AZ	103.004.016	DPT2500-R8-AZ	103.007.025	DPT7000-R8-AZ	103.016.005
DPT250-R8-AZ-D	103.004.017	DPT2500-R8-AZ-D	103.007.026	DPT7000-R8-AZ-D	103.016.006
DPT250-R8-AZ-S[1)]	103.004.018	DPT2500-R8-40C[2)]	103.007.069	DPT7000-R8-40C[2)]	103.016.072
DPT250-R8-AZ-D-S[1)]	103.004.019	DPT2500-R8-D-40C[2)]	103.007.104	DPT7000-R8-D-40C[2)]	103.016.070

AZ = Automatic zeroing, **D** = Display, **S** = Span point adjustment, **40C** = Cold resistance up to -40 °C

[1)] Span point adjustment is intended for low differential pressure ranges and is only available with automatic zeroing.

[2)] Automatic zeroing is not available for -40C models.