Air Differential Pressure Transmitters
Multirange/Autozero
PT-ADPX-***

Description:

The AP-ADPX Series Multirange Air Differential Pressure Transmitters are designed for precision and versatility in building automation systems within the HVAC/R industry.

These advanced transmitters measure both static and differential pressure and offer field-selectable units, pressure ranges, and output options all in a single compact device.

Features:

- Selectable units: inWC, mmWC, Pa, and mbar easily set via jumper
- Proportional outputs: 0–10 V, 2–10 V, or 4–20 mA options
- Adjustable ranges: 8 unidirectional or bi-directional pressure ranges, jumper-selectable.
- Autozero variant is available

Technical Specification:

Power Supply:	24Vac or 24Vdc, ±10%
Output...	
Voltage:	0-10V or 2-10V, min. resistance 1kΩ
Current:	4-20mA, min. load 20Ω, max. load 500Ω
Accuracy…	
250 and 2K5:	Pressure < 125Pa = 1% + ±2Pa Pressure > 125Pa = 1% + ±1Pa
Overpressure:	25kPa
Pressure Connection:	5mm
Electrical Connection:	Screw terminals suitable for cables 0.2-1.5mm²
Response Time:	8 seconds or 0.8 seconds
Zero Point Calibration:	Automatic autozero or manual pushbutton
Compatible Media:	Dry air or non-aggressive gases
Display (optional):	2-line display, 12 characters/line
Measuring Units:	Pa, kPa, mbar, inchWC, mmWC, psi - selectable via jumper
Protection Standard:	IP54
Ambient Temp. Range:	-20°C to 50°C
Dimensions:	90 x 95 x 36mm
Certification:	EMC, RoHS2, 2011/65/EU, WEEE
Country of Origin:	Finland

Order Codes:

PT-ADPX-250	Air Diff Press Tx ±25/50/100/150, 0-25 50 100 250 Pa
PT-ADPX-2K5	Air Diff Press Tx ±100 100 250 500 1K 1K5 2K 2K5 Pa

Connections:

Pressure:
Pressure connections are made by pushing PVC tube over the pressure pipes beside the cable gland. Connect the high pressure side to the inlet pipe marked +.

Electrical:
The sensor should be wired as per the appropriate diagram below. The terminal block is a rising clamp type for ease of wiring.
Shielded cable is recommended for loop setup. Ground the shield at the power supply end only.

Setting the Measurement Units:

To change the measurement unit on the display, install a jumper to both pins of J5. Press the Zero button to cycle through the unit on the display. To store the desired unit, remove the jumper from J5 whilst the unit is visible on the display.

Setting the Measurement Range:

To set the measurement range, refer to the chart below using the model number of the device and the measurement unit selected previously. Find the desired pressure range and determine the range number in the header.

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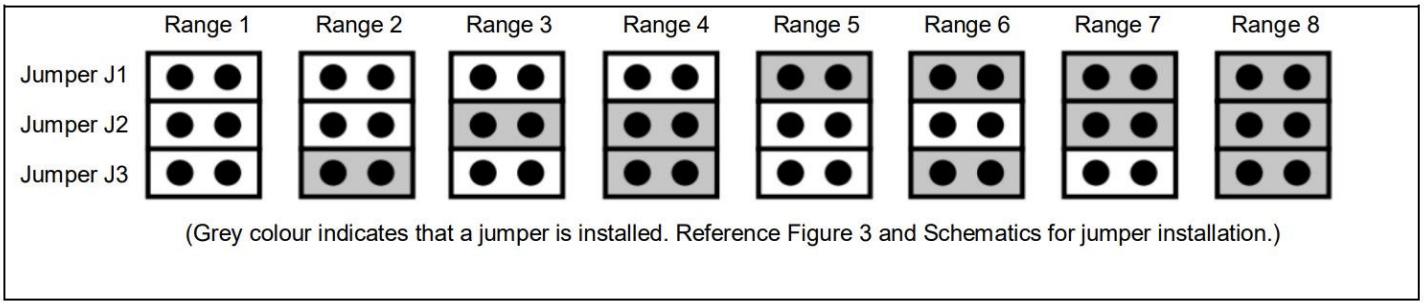
PT-ADPX-250

	Range 1	Range 2	Range 3	Range 4	Range 5	Range 6	Range 7	Range 8
Pa	0—25	0—50	0—100	0—250	-25—25	-50—50	-100—100	-50—150
kPa	0—0.025	0—0.05	0—0.1	0—0.25	-0.025—0.025	-0.05—0.05	-0.1—0.1	-0.15—0.15
mbar	0—0.25	0—0.50	0—1.00	0—2.50	-0.25—0.25	-0.50—0.50	-1.0—1.00	-1.50—1.50
inchWC	0—0.10	0—0.20	0—0.40	0—1.00	-0.10—0.10	-0.20—0.20	-0.40—0.40	-0.60—0.60
mmWC	0—2.6	0—5.1	0—10.2	0—25.5	-2.6—2.6	-5.1—5.1	-10.2—10.2	-15.3—15.3
psi	0—0.0036	0—0.0073	0—0.0145	0—0.0363	-0.0036—0.0036	-0.0073—0.0073	-0.0145—0.0145	-0.0218—0.0218

PT-ADPX-2K5

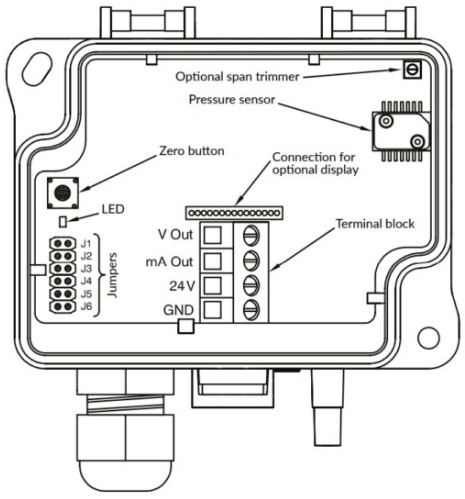
	Range 1	Range 2	Range 3	Range 4	Range 5	Range 6	Range 7	Range 8
Pa	-100—100	0—100	0—250	0—500	0—1000	0—1500	0—2000	0—2500
kPa	-0.10—0.10	0—0.10	0—0.25	0—0.50	0—1.00	0—1.50	0—2.00	0—2.50
mbar	-1.00—1.00	0—1.00	0—2.50	0—5.00	0—10.0	0—15.0	0—20.0	0—25.0
inchWC	-0.40—0.40	0—0.40	0—1.00	0—2.01	0—4.01	0—6.02	0—8.03	0—10.03
mmWC	-10.2—10.2	0—10.2	0—25.5	0—51.0	0—102.0	0—153.0	0—203.9	0—254.9
psi	-0.0145—0.0145	0—0.0145	0—0.0363	0—0.0725	0—0.1450	0—0.2176	0—0.2901	0—0.3626

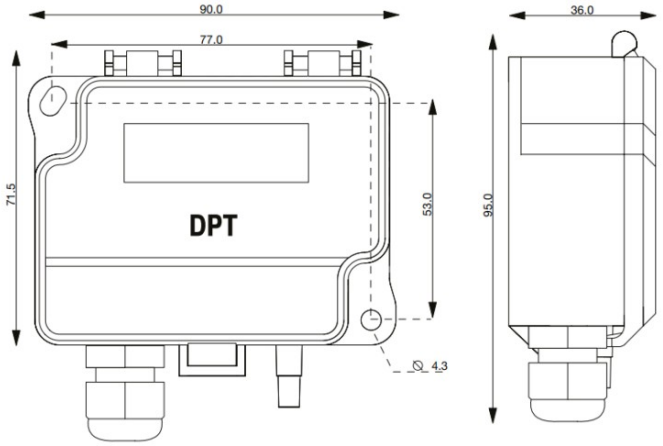
Using the range number, set jumpers J1, J2 and J3 according to the jumper chart below.



(Grey colour indicates that a jumper is installed. Reference Figure 3 and Schematics for jumper installation.)

Dimensions:





For CE compliance, a properly grounded shielding cable is required.

1) Unscrew the strain relief and route the cable(s).
2) Connect the wires as shown in figure 2a and 2b.
3) Tighten the strain relief.

Figure 2a - Wiring diagram voltage output

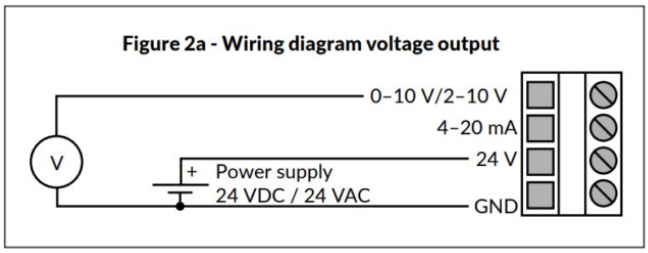
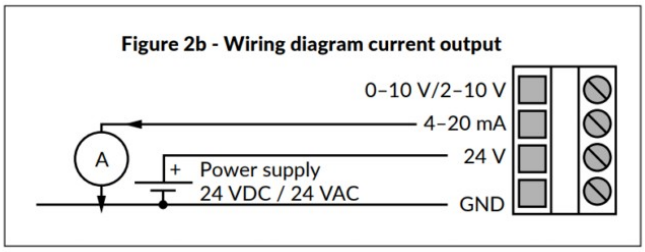


Figure 2b - Wiring diagram current output



Setting the Response:

Time The response time affects how fast the transmitter reacts to changes in the system. It is the time taken for the device to reach 63% of the measured value. To smooth out unstable pressure fluctuations in airflow applications, select a longer response time. For 8 second response time, install jumper on J4. For 0.8 second response time, remove jumper from J4.

Setting Output for 2-10V:

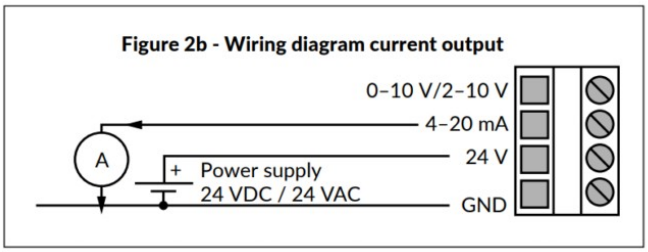
In some applications it is critical to know immediately if a wire is broken or if the device is damaged. In these situations, a 2-10V output is recommended. Install a jumper on J6 for 2-10V output. Remove jumper from J6 for 0-10V output. When using 4-20mA output, J6 must be left open circuit.

Zero Point Calibration:

In order to zero the device, two options are available:

1) Manual pushbutton zero point calibration
2) Autozero calibration

Figure 2b - Wiring diagram current output



goes to the + port and the Low pressure goes to the - port.

If the device includes the optional Autozero feature (-AZ models), no action is required. The Autozero calibration electronically adjusts the transmitter zero at predetermined time intervals. The automatic calibration eliminates all output signal drift due to any thermal, electronic or mechanical effects, as well as the need for removing input tubes as required for manual calibration.

The Autozero adjustment takes 4 seconds, after which the device returns to its normal measuring mode. During the 4 second adjustment period, the output and display values will freeze to the latest measured value.