AX-ADPT-8

Multi Range Air Differential Pressure Transmitter

Product Overview

The AX-ADPT-8 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.

Features

- Cost-Effective Solution
- Multiple ranges in a single unit
- Proportional output 0-10V, 2-10V, 4-20mA
- Unidirectional or Bi-Directional selectable via jumper (see order codes)

Product Specifications

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
	7K0:	Pressure < 125Pa = 1.5% + ±2Pa
		Pressure > 125Pa = 1.5% + ±1Pa
Overpressure:	Proof:	25kPa
	Burst:	30kPa
Pressure Connection:		5mm and 6.3mm ABS connectors
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
Weight & Dimensions:		90x95x36mm, 150g
Certification:		EMC, RoHS2, 2011/65/EU, WEEE
Country of Origin:		Finland

Order Codes

AX-ADPT250-8	±25Pa, ±50Pa, ±100Pa, ±150Pa, 0-25/50/100/250Pa volt and current output, uni or bi-directional
AX-ADPT2K5-8	±100Pa, 0-100/250/500/1000/1500/2000/2500Pa, volt and current output, uni or bi-directional
AX-ADPT7K0-8	0-1000/1500/2000/2500/3000/4000/5000/7000Pa, volt and current output, uni-directional
-AZ	Add AZ suffix to include AutoZero feature
-D	Add D suffix to include Display
-AZ-D	Add AZ-D suffix to include AutoZero and Display

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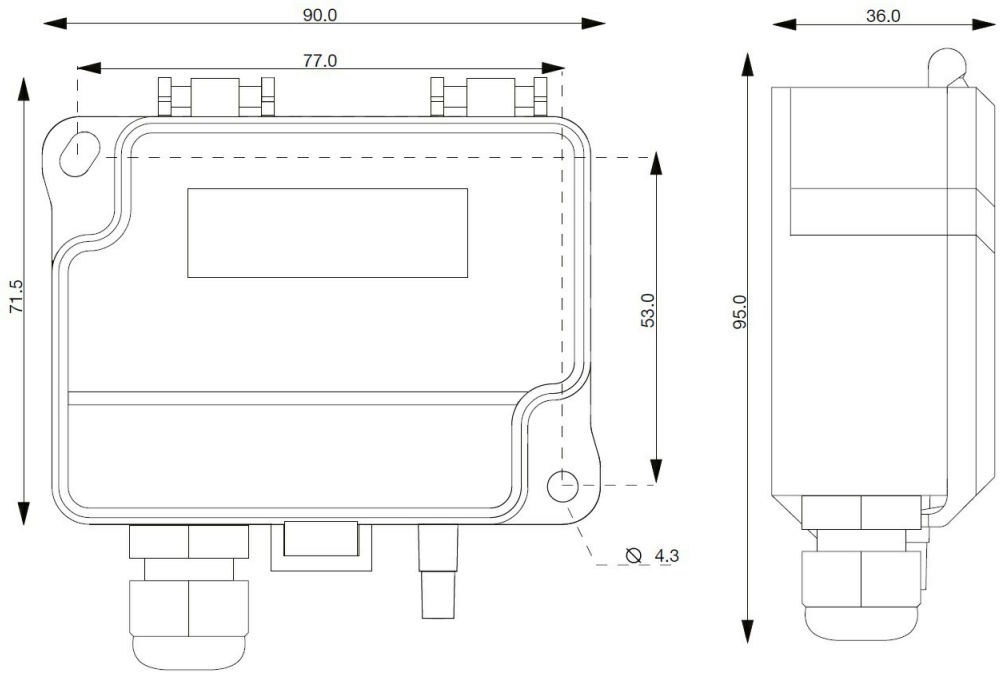
Installation

The unit should be installed by a suitably qualified technician in accordance with prevailing regulations and any guidelines for the equipment to which it is to be connected. This unit is not suitable for use with Mains Voltage.

The unit has two fixing lugs moulded into the base for use with screws up to 4mm in diameter. When fixing the switch, care should be taken not to stress the unit. The switch is designed to be mounted on a vertical plane with the gland and pressure connections at the bottom of the unit.

Dimensions

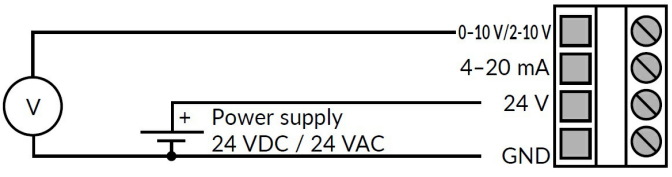


Connections

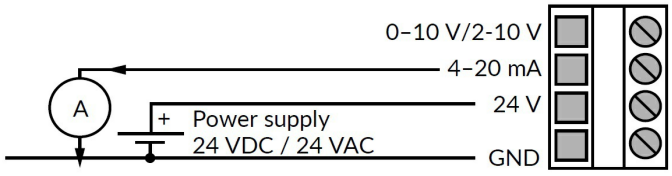
Pressure:
Pressure connections are made by pushing 5-6.3mm PVC tube over the pressure pipes beside the cable gland. Connect the high pressure side to the inlet pipe marked +.

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.

3-Wire 0-10V and 0-5V connection



3-Wire 4-20mA connection



When using current output, ensure jumper J6 is open circuit

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.

Model AX-ADPT250-8

	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	-150–150
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

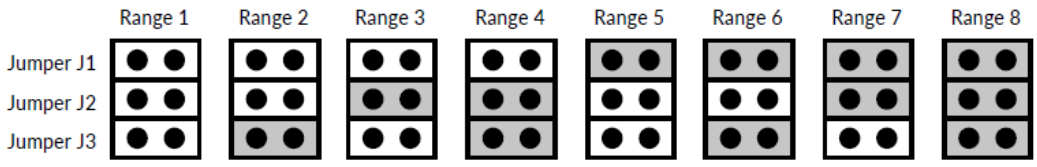
Model AX-ADPT2K5-8

	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

Model AX-ADPT7K0-8

	Range 1	Range 2	Range 3	Range 4	Range 5	Range 6	Range 7	Range 8
Pa	0–1000	0–1500	0–2000	0–2500	0–3000	0–4000	0–5000	0–7000
kPa	0–1.00	0–1.50	0–2.0	0–2.50	0–3.00	0–4.00	0–5.00	0–7.00
mbar	0–10.0	0–15.0	0–20.0	0–25.0	0–30.0	0–40.0	0–50.0	0–70.0
inchWC	0–4.01	0–6.02	0–8.03	0–10.3	0–12.04	0–16.05	0–20.07	0–28.09
mmWC	0–102.0	0–153.0	0–203.9	0–254.9	0–305.9	0–407.9	0–509.9	0–713.8
psi	0–0.1450	0–0.2176	0–0.2901	0–0.3626	0–0.4351	0–0.5802	0–0.7252	0–1.0153

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



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

To calibrate the zero point manually, first disconnect both pressure tubes from the unit. Hold the zero button until the LED turns on and the display reads “zeroing” (models with display). The zeroing will proceed automatically in 4 seconds and the LED will flash once. Zeroing is complete when the display reads 0.
Reinstall the pressure tubes, ensuring the High pressure side 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.

Datasheet Contents

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