Air Differential Pressure Transmitter c/w display and monitor ADP

April.08

ADP

ADPxxxR

Technical Data

Working range	**Measuring range**
15 - 1000Pa	0-250, 0-500 0-750, 0-1000Pa
50 - 5000Pa	0-2000, 0-3000 0-4000, 0-5000Pa
Measurement range	Selectable by button
Accuracy	< ± 1,5% of measuring range
Long-term stability	< ± 0,5% v. EW/a
Working temperature	-10…+40°C
Stocking temperature	-20…+60°C
Humidity	max 75% relative non-condensing
Protection Class	IP54, IP64 with supplement seal
Supply voltage	24Vac at 50/60Hz or 24Vdc, -20/+5%
Burst pressure	15kPa (1000)/75kPa(5000)
Output signal	20 mA maximum Vdc 0(2)-10Vdc, 0,1mA 0(4)-20mA, max load 600ohm Relay contact changeover activated when under power. Contact loading 240Vac 2A 24Vdc 2A
Cable connection	max 2PG M16 with cable clamp screw terminals
Flexible tube connection	5 to 6mm internal diameter
Dimension basic unit	112x58mm OxT
Dimensions	
Rectangular front panel	184x139x20(LxWxH)
Round front panel	145mm

Features

- **Easy to Read LCD display**
- **Display of differential pressure in Pa or display of the degree of filter continamtion in %**
- **Displays the alarm value in Pa**
- **Displays the current measuring range**
- **Red LED flashes when alarm value is exceeded**
- **Programmable alarm value, measuring range and signal range of analogue output**
- **Analogue and digital outputs**

Design Features

The **ADP** consists of a round measurement instrument and a rectangular or round front panel.

The measurement instrument is optimised for mounting in air-handling units and air ducts.

The two connections for pressure measurement are located at the back of the instrument in recesses.

They are labelled with + overpressure and -underpressure

A threaded bushing is provided in the centre of the housing.

The fixing clamp is attached using the threaded bolt and the wing-nut supplied.

The wing-nut is secured against loosening.

On the rear of the housing, 2 cable bushings are provided.

Two M16 x 1.5 threaded connectors are included in the mounting set.

An integrated O-ring provides sealing between the housing and the panel in which it is mounted.

In order to ensure correct mounting, an arrow can be found on the back of the device that must point upwards.

In the front part of the instrument an LCD display can be found, along with a red LED for the indication of alarms and three function buttons.

After the unit has been mounted and any programming done, the front panel can then be clipped onto it.

Three guide-grooves ensure that this is only possible when correctly oriented.

The front panel can be removed by pulling it with both hands or using a screwdriver

Ordering

		Pa
ADP 1000	Pressure transmitter	15-1000Pa
ADP 5000	Pressure transmitter	50-5000Pa
ADP 1000R	Pressure transmitter	15-1000Pa
ADP 5000R	Pressure transmitter	50-5000Pa

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Activation and operation

All electrical connections must be made before applying the supply of power.

To start the installation and programming of the ADP, the 24V supply should be connected.

Take care that the power supply connections are not transposed!

The device is immediately ready for operation:

Display on the LCD.

The setting of the unit's parameters is carried out using the three buttons that are accessible when the front panel is removed.

Below 15 Pa (ADP 1000) or 50 Pa (ADP 5000), low-value suppression LO (= low) is active.

Setting the units displayed (Dimension)

By pressing the bottom button (S1) during normal operation for a short time, the units displayed change from Pa to % and back again.

If, for example, % is chosen, the degree of filter contamination is shown in % of the alarm value defined.

Programming the ADP

While programming, the current values on the display and the analogue output are frozen.

By pressing the lower button (S1) longer, the unit goes into programming mode.

The selected parameter is indicated by a flashing display.

By repeatedly pressing S1 for a short time, the menu items can be cycled through:

Limit (alarm value) - Range (measuring range) - Out (mA)

When the appropriate menu item flashes, the top left (S2) and top right (S3) buttons can be used to adjust the programmed values:

Short press '! single step,

Long press '! increasing change of rate.

The upper limit is entered in Pa.

If the measured value transgresses the limit, the LED flashes and the relay (digital output) drops off (ditto in the case of loss of supply voltage).

The measuring range corresponds to the value in Pa for which the analogue output is 20 mA or 10 V.

Example: set measuring range 250 Pa
at 0 Pa the AO is 0(4)mA or 0(2)V
at 250 Pa the AO is 20mA or 10V

The analogue output is programmed to 0-20 mA corresponding to 0-10V or 4-20mA corresponding to 2-10V.

Save (OK)

If the buttons are not pressed again within 5 seconds, the value currently shown is automatically stored and the display and analogue output are enabled again.

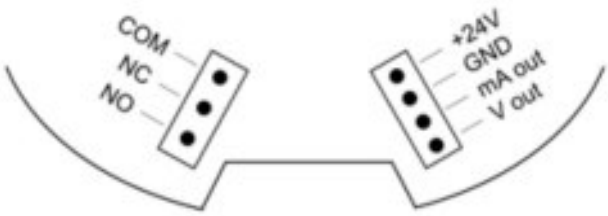
Function

These operating instructions can be found on the back of the instrument's front plate.
The differential pressure to be measured is fed using flexible tubing via the connection nipples to the Piezo-measuring device, electronically interpreted and shown on the LCD display.
The value - correspondingly scaled to the measuring range defined - is also transmitted via the analogue output.
The measured value is checked against the alarm-limit value set and any transgressions are signalled by the alarm relay.

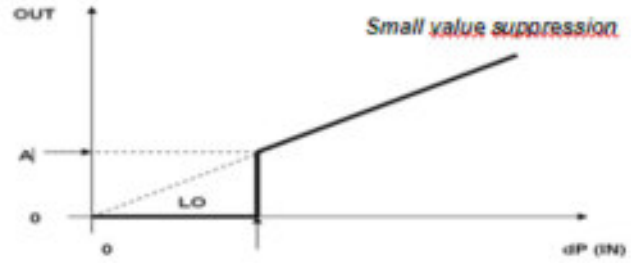
Zero-point correction

Remove device's supply voltage.
Then make the measuring inputs pressure-free (pull off both tubes).
Press and hold button (S1).
Restore device's supply voltage ('!display flashes). Release button S1 ('!pressure displayed: 0 Pa).
Briefly press and immediately release button S1 ('!value is stored).
Extended calibration possibilities on request.

Electrical Connections



If the relay drops off (Limit exceeded or power failure, COM and NC are connected to each other



Typ	LO	RA in Pa	OUT 0-20	OUT 4-20
ADP 1000	≤15 Pa	250 500 750 1000	A(V)= 15Pa / RA[Pa] · 10V A(mA)= 15Pa / RA[Pa] · 20mA	A(V)= 15Pa / RA[Pa] · 8V+2V A(mA)= 15Pa / RA[Pa] · 16mA+4mA
ADP 5000	≤50 Pa	2000 3000 4000 5000	A(V)= 50Pa / RA[Pa] · 10V A(mA)= 50Pa / RA[Pa] · 20mA	A(V)= 50Pa / RA[Pa] · 8V+2V A(mA)= 50Pa / RA[Pa] · 16mA+4mA

LO: Low (low value suppression) RA: Range (measuring range)

Fitting

A 115 mm Ø hole is drilled in the sandwich plate or the control cabinet door and the measurement instrument is slid into the aperture from the front side.
The correct alignment of the instrument is indicated by an upwards-pointing arrow on the rear of instrument.
Using a screwdriver, the threaded bolt is firmly screwed into the threaded bushing; the mounting bracket is placed over it and secured with the wing-nut.
When connecting the pressure tubing, great care should be taken that the correct polarity is adhered to (+ overpressure, - underpressure).
Finally, the front panel can be snapped on