Flexible & Multi Functional Air Differential Pressure Transmitter

PAT 010D
PAT 420D

Apr 17

Features

- **Field selectable ranges**
- **Eight different pressure units**
- **Adjustable damping of output signal**
- **Extremely versatile transmitter**
- **Exceptional long term performance**
- **10 different pressure ranges, multi configurable**
- **Available with bi-directional ranges**

Technical Data

Power supply and output	16-30 Vac/dc with 0-10 Vdc (3-wire) for PAT 010D 12-30 Vdc with 4-20 mA (2-wire) for PAT 420D
Power consumption	<1.5W
LCD digital display	LCD size 50 x 22.5 mm Digital height, Value 10 mm, Units 5 mm
Response time	Selectable via DIP switches on pcb 0.5 ,1.0, 2.0 or 4.0 seconds
Protection class	IP54
Size	104 x 90 x 44 mm
Tolerated overpressure	15 Kpa
Operating oemperature	-10 to +60°C
Storage oemperature	-10 to +70°C
Pressure connection ribbed diameter	6.2 mm
Cable gland	PG9 for cables dia. 8 mm max.
Full range	0 to 100 Pa, 0 to 250 Pa, 0 to 500 Pa, 0 to 750 Pa or 0 to 1000 Pa
Bidirectional	-50 to +50 Pa , -125 to 125 Pa, -250 to +250 Pa -375 to +375 Pa or -500 to +500 Pa
Accuracy	±1%
Agency Approvals CE	

Usage

The PAT is designed for static, over, under and differential pressure measurements of air and other gases.

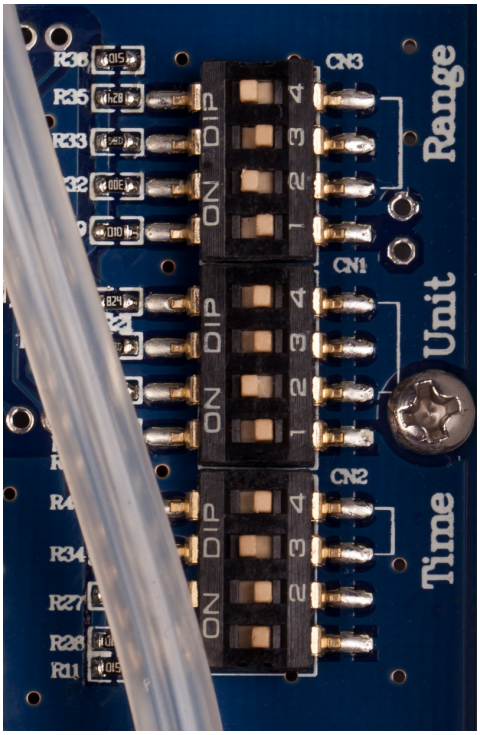
The unit is especially suited for measurement and control applications in air cinditioning applications and environmental monotoring of industries.

It is recommended that for applications where control is involved, a medicum or high accuracy devices be used.

The measurement cell uses an advanced element design to ensure excellent linearity and zero stability.

Ordering Codes

PAT 010D	Air differential pressure transmitter **0-10 Vdc output**
PAT 420D	Air differential pressure transmitter **4-20 mA output**



10 different Pressure Ranges

- 10 pressure ranges
- 5 Full Ranges
- 5 Bidirectional Ranges

8 different Unit Ranges

- Pa
- Mbar
- mmHG
- Kpa
- mm H_2O
- inWG
- daPa
- hPa

4 different Response Times

- 0.5 second
- 1.0 second
- 2.0 seconds
- 4.0 seconds

Setting	Pa	mm h_2O	mbar	inWG	mmHg	daPa	Kpa	hPa
4 ON, 3 OFF, 2 OFF, 1 OFF	0/100	0/10.0	0/1.00	0/0.40	0/0.75	0/10.0	0/0.100	0/1.00
4 OFF, 3 OFF, 2 ON, 1 ON	0/250	0/25.0	0/2.50	0/1.00	0/1.87	0/25.0	0/0.250	0/2.50
4 OFF, 3 ON, 2 OFF, 1 OFF	0/500	0/50.0	0/5.00	0/2.00	0/3.750	0/50.0	0/0.500	0/5.00
4 OFF, 3 ON, 2 ON, 1 OFF	0/750	0/75.0	0/7.50	0/3.00	0/5.62	0/75.0	0/0.750	0/7.50
4 OFF, 3 OFF, 2 OFF, 1 ON	0/1000	0/100.0	0/10.0	0/4.00	0/7.50	0/100.0	0/1.000	0/10.00

Above setting is for full ranges for example 0 to 1000 Pa.
For bidirectional ranges for example -500 to +500 Pa, see setting on next page
The PAT device need to be powered off and powered on after having changed the pressure range DIP-switches.

Setting	Pa	mm h_2O	mbar	inWG	mmHg	daPa	Kpa	hPa
4								
3	-50/ +50	-5.0/ +5.0	-0.50/ +0.50	-0.20/ +0.20	-0.375/ +0.375	-5.0/ +5.0	-0.50/ +0.50	-0.50/ +0.50
2								
1								
4								
3	-125/ +125	-12.5/ +12.5	-1.25/ +1.25	-0.50/ +0.50	-0.935/ +0.935	-12.5/ +12.5	-0.125/ +0.125	-1.25/ +1.25
2								
1								
4								
3	-250/ +250	-25.0/ +25.0	-2.50/ +2.50	1.00/ +1.00	-1.875/ +1.875	-25.0/ +25.0	0-0.250/ +0.250	-2.50/ +2.50
2								
1								
4								
3	-375/ +375	-37.5/ +37.5	-3.75/ +3.75	-1.50/ +1.50	-2.81/ +2.81	-37.5/ +37.5	-0.375/ +0.375	-3.75/ +3.75
2								
1								
4								
3	-500/ +500	-50.0/ +50.0	-5.0/ +5.0	-2.00/ +2.00	-3.75/ +3.75	-50.0/ +50.0	-0.5/ +0.5	-5.00/ +5.00
2								
1								

Above setting is for bidirectional ranges for example -500 Pa to 500 Pa.
For Full Ranges for example 0 to +1000 Pa, see setting on previuos page.
The PAT device need to be powered off and powered on after having changed the pressure range DIP-switches.

Setting the pressure unit via DIP-switches on pcb

Pa	mm H_20	mbar	inWG
4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1

mmHg	daPa	Kpa	hPa
4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1

The PAT device needs to be powered off and powered on after having changed the pressure unit DIP-switches

Setting the response time via DIP-switches on pcb

0.5 sec.	1 sec.	[illegible]ec.	[illegible]ec.
4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1

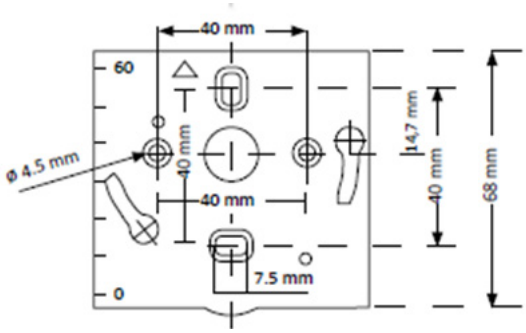
The PAT device needs to be powered off and powered on after having changed the pressure unit DIP-switches

Mounting and Electrical Measurement

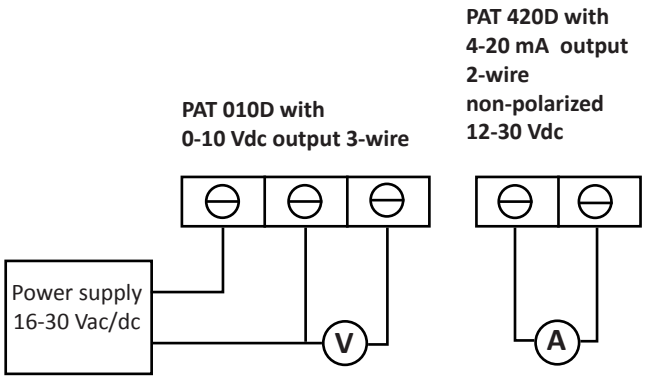
Mounting
To mount the PAT air differential pressure transmitter, mount the ABS plate on the wall.
Insert the PAT air differential pressure transmitter on the fixing plate.

Rotate the housing in clockwise direction until you hear a 'click' which confirms that the PAT air differential pressure transmitter is correctly installed.

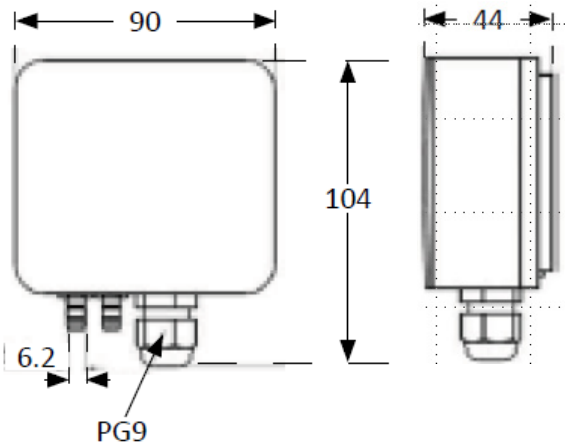
Electrical Measurement
Electrical measurement (+ - OUT) on pcb terminals can be done by removing the grey rubber plug on the back side of the PAT device.

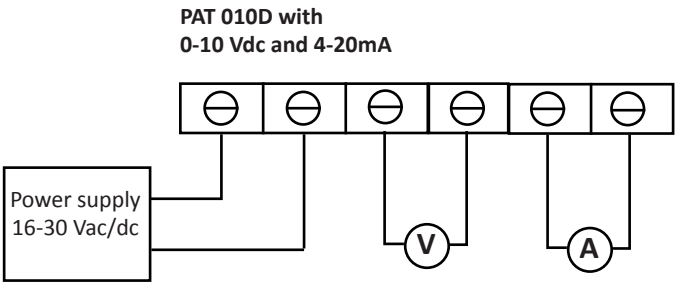


Electrical connection



Dimensions





Common applications

Fan flow indication:
Measure the differential pressure across a variable speed fan to give an idication of performance.

Filter dirty indication:
Measure the differential pressure across a filter to give an indication of filter condition and flag up-coming maintenance requirements.

Static pressure:
Blank off one port to measure static pressure.

Air velocity:
Measure the differential pressure across a pilot tube assembly to determine velocity pressure and hence air velocity.

Pressurised rooms:
Measure the internal and external pressures in pressurised rooms (such as operating theatres and clean rooms) to ensure that pressure gradients are maintained.

Air supply:
Monotoring of air supply to gas-fired boilers.