

UNIVERSAL AIR FLOW METER – DPT FLOW U

Measures air flow and velocity



Model summary and technical data

Each device is individually temperature compensated.

The calculation based on Universal formula: $V = k * \sqrt{\Delta P(Pa)}$, the unit is given in menu

DPT Flow - D for display -AZ for autozero	P range	Scalable Air flow range or Air velocity range	Accuracy for pressure **) over operation temp. -5...+50°C	Long term stability typical 1 year without – AZ –AZ	
				≤ ± 1 Pa	≤ ± 24 Pa *)
DPT Flow-U-7000 (-D, -AZ)	0...7000 Pa	0-1...50 m3/s 0-4000 ... 200000 m3/h	± 7Pa + ± 1,5% from reading	≤ ± 1 Pa	≤ ± 24 Pa *)
DPT Flow-U-5000 (-D, -AZ)	0...5000 Pa	0-2000 ... 100000 cfm 0-1000 ... 50000 l/s	± 7Pa + ± 1,5% from reading	≤ ± 1 Pa	≤ ± 24 Pa *)
DPT Flow-U-2000 (-D, -AZ)	0...2000 Pa	0-10...100 m/s 0-2000...20000 f/min	± 5Pa + ± 1,5% from reading	≤ ± 1 Pa	≤ ± 8 Pa *)
DPT Flow-U-1000 (-D, -AZ)	0...1000 Pa		± 5Pa + ± 1,5% from reading	≤ ± 1 Pa	≤ ± 8 Pa *)

**) including: general accuracy, temperature drift, linearity, hysteresis and repetition error

*) - AZ model recommended

Display

Alphanumeric display with MENU user interface

The display can be ordered separately for installation purposes.

Bursting pressure

30 kPa

Suitable media

Air and non-aggressive gases

Measuring element

Piezoresistive

MENU selections and initialization instructions for installation

If buttons are not pressed within 20 seconds the device returns to the normal measuring mode.

Press select >2 seconds



1. Press Select > 2 seconds to start the menu.

2. Select K-value range, either

0.001...1.00 or
1.00...2000

3. Set the right k-value for the formula

$$V = k * \sqrt{\Delta P(Pa)}$$

for examples:

Air Velocity: k-value depends on pitot tube coefficient , general K=1.29.

Air Flow : k-value depends on pitot tube coefficient and duct size or the Fan type if measured over fan.

4. Set the unit for the formula $V = k * \sqrt{\Delta P(Pa)}$

Flow volume: m3/s, m3/h, cfm, l/s

Velocity: m/s or f/min

5. Set Display and V output unit

Flow volume: m3/s, m3/h, cfm, l/s

Velocity: m/s, feet/min

(Pa value is always shown on display first row)

6. Output scale, scalable

m3/s → 10V = 0,025 ... 50 m3/s

m3/h → 10V = 100 ... 200 000 m3/h

cfm → 10V = 50 ... 100000 cfm

l/s → 10V = 25 ... 50000 l/s

m/s → 10V = 10 ... 100 m/s

f/min → 10V = 2000 ... 20000 f/min

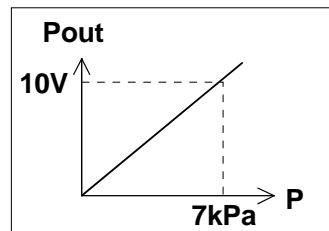
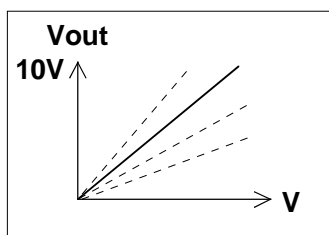
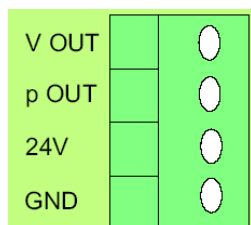
7. Stepless response time selection.

1s...20s.

8. Press end and the device returns to the normal measuring mode

Electrical interface

Supply voltage	24 VAC or VDC \pm 10%
Power consumption	< 1.0 W
Output signal	Vout 0...10 VDC, Load R minimum 1k Ω Pout 0...10 VDC, Load R minimum 1k Ω



Materials

Housing	ABS
Cover	ABS
Pressure connections	ABS
Duct connectors	ABS
Tubing	PVC, soft

Connections

Electrical connections	4 screw terminals, max 1.5 mm ²
Cable entry	M16
Pressure connections	Male \varnothing 5,0 mm and 6,3 mm

Weight

150 grams

Dimensions

90,0 x 71,5 x 36,0 mm

General ambient conditions

Temperature range	
Operation	-5...+50°C
Storage	-20...+70°C
Ambient humidity	0 to 95% RH

Safety

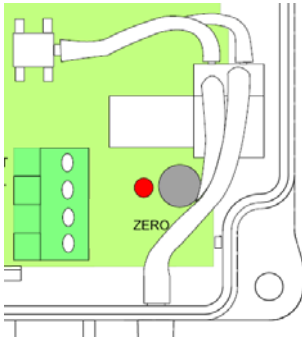
Protection standard	IP54
---------------------	------

Conformance

Meets the requirements for CE marking:

EMC directive 2004/108/EEC
RoHS Directive 2002/95/EEC

Auto zero element



Auto zero element makes the DPT FLOW meter maintenance free. Element automatically adjusts the transmitters zero point from time to time, this eliminates the zero point long term drift of the piezoresistive sensing element.

During zero point adjustment the output and display values will freeze to the latest measured value. The automatic zero point adjustment takes 4 seconds. Zero point adjustment is carried out every 10 minutes normally and during warm up the time is shorter a few times.

If the device is not equipped with autozero element, it is recommended to carry out the zero point adjustment every 12 mounts. Supply voltage must be connected one hour before the zero-point adjustment is carried out.

- 1) Loose both tubes from the pressure inlets + and –
- 2) Push zero button until the red led turns ON.
- 3) Wait until LED turns off and then install tubes again to the pressure inlets

Dimensions

