

# AIR FLOW AND VELOCITY TRANSMITTERS

## DPT-FLOW

Multifunctional air flow transmitters for building automation systems



The DPT-Flow series air flow transmitters are engineered for building automation in the HVAC/R industry. The most technologically advanced transmitters on the market, measuring volume flow, velocity, and static and differential pressure. The DPT-Flow series devices can be connected directly to the pressure measurement points in a centrifugal fan, providing accurate flow measurement of the fan. The smart user interface enables easy selection of settings according to the selected fan or in-duct measurement probe.

### DPT-Flow series devices include:

- Two field selectable functions:
  - o Measure and monitor in-duct volume flow, velocity or differential pressure
  - o Measure and monitor air flow across centrifugal fans
- Multiple field selectable measurement units:
  - o Volume flow: m<sup>3</sup>/s, m<sup>3</sup>/h, cfm, l/s
  - o Velocity: m/s, ft/min
  - o Pressure: Pa, inWC, mmWC, kPa, mbar, psi
- Unique proportional output options:
  - o Volume flow or velocity: voltage (0–10 V) or current (4–20 mA)
  - o Pressure: voltage (0–10 V) or current (4–20 mA)



### DPT-Flow series device options offer:

- AZ (autozero) function for automatic zero point calibration, eliminating the need for periodic manual autozeroing to ensure long term accuracy

## SIMILAR PRODUCTS

- AVT series air velocity transmitters
- DPT-R8 series 8-range differential pressure transmitters
- DPT-MOD series differential pressure transmitters with Modbus configuration

## APPLICATIONS

DPT-Flow series devices are commonly used in HVAC/R systems for:

- air flow monitoring across centrifugal fans and blowers
- in-duct air flow monitoring
- VAV applications

## MODEL SUMMARY

	DPT-FLOW-1000		DPT-FLOW-2000		DPT-FLOW-5000		DPT-FLOW-7000	
<b>Measurement ranges (Pa)</b>	0–1000 Pa		0–2000 Pa		0–5000 Pa		0–7000 Pa	
<b>Description</b>	<b>Model</b>	<b>Product code</b>	<b>Model</b>	<b>Product code</b>	<b>Model</b>	<b>Product code</b>	<b>Model</b>	<b>Product code</b>
Flow meter for measuring air flow in duct and on centrifugal fans								
- with display	DPT-Flow-1000-D	102.001.012	DPT-Flow-2000-D	102.002.009	DPT-Flow-5000-D	100.004.012	DPT-Flow-7000-D	102.006.013
- with autozero and display	DPT-Flow-1000-AZ-D	102.001.002	DPT-Flow-2000-AZ-D	102.002.002	DPT-Flow-5000-AZ-D	102.004.003	DPT-Flow-7000-AZ-D	102.006.002

# AIR FLOW AND VELOCITY TRANSMITTERS

## DPT-FLOW

### SPECIFICATIONS

#### Performance

##### Accuracy (from applied pressure):

Models 1000 and 2000:

Pressure < 125 Pa = 1 % + ±2 Pa

Pressure > 125 Pa = 1 % + ±1 Pa

Models 5000 and 7000:

Pressure < 125 Pa = 1.5 % + ±2 Pa

Pressure > 125 Pa = 1.5 % + ±1 Pa

(Accuracy specifications include: general accuracy, temperature drift, linearity, hysteresis, long term stability, and repetition error)

##### Thermal effects:

Temperature compensated across the full spectrum of capability

##### Overpressure:

Proof pressure: 25 kPa

Burst pressure: 30 kPa

##### Zero point calibration:

Automatic autozero or manual pushbutton

##### Response time:

1.0–20 s, selectable via menu

#### Technical Specifications

##### Media compatibility:

Dry air or non-aggressive gases

##### Pressure units (select via menu):

Pa, kPa, mbar, inWC, mmWC, psi

##### Pressure output scale (select via menu):

	DPT-Flow-1000	DPT-Flow-2000	DPT-Flow-5000	DPT-Flow-7000
Pa	100-1,000	200-2,000	500-5,000	700-7,000
kPa	0.1-1.0	0.2-2.0	0.5-5.0	0.7-7.0
mbar	1-10	2.0-20	5.0-50	7.0-70
mmWC	10-100	20-200	50-500	70-700
inWC	0.4-4.0	0.8-8.0	2.0-20	2.5-30

##### Flow units (select via menu):

Volume: m<sup>3</sup>/s, m<sup>3</sup>/hr, cfm, l/s, none

Velocity: m/s, ft/min

##### Flow output scale (select via menu):

Units	Range
m <sup>3</sup> /s	0.025-50
m <sup>3</sup> /hr	100-200,000
cfm	50-100,000
l/s	25-50,000
m/s	1-100
f/min	200-20,000

##### Measuring element:

MEMS

##### Environment:

Operating temperature:

-10...50 °C, with autozero (-AZ) calibration -5...50 °C

Storage temperature: -20...70 °C

Humidity: 0 to 95 % rH, non condensing

#### Physical

##### Dimensions:

Case: 90.0 x 95.0 x 36.0 mm

##### Weight:

150 g

##### Mounting:

2 each 4.3 mm screw holes, one slotted

##### Materials:

Case: ABS

Lid: PC

Duct connectors: ABS

Tubing: PVC

##### Protection standard:

IP54

##### Display

2-line display (12 characters/line)

Line 1: Volume or velocity measurement

Line 2: Pressure measurement

Size: 46.0 x 14.5 mm

##### Electrical connections:

4-screw terminal block

Wire: 0.2–1.5 mm<sup>2</sup> (12–24 AWG)

##### Cable entry:

Strain relief: M16

Knockout: 16 mm

##### Pressure fittings

Male ø 5.0 mm and 6.3 mm

#### Electrical

##### Voltage:

Circuit: 3-wire (V Out, 24 V, GND)

Input: 24 VAC or VDC, ±10 %

Output: 0–10 V, selectable via jumper

Power consumption: <1.0 W

Resistance minimum: 1 kΩ

##### Current:

Circuit: 3-wire (mA Out, 24 V, GND)

Input: 24 VAC or VDC, ±10 %

Output: 4–20 mA, selectable via jumper

Power consumption: <1.0 W

Maximum load: 500 Ω

Minimum load: 20 Ω

#### Conformance

Meets requirements for CE marking:

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

WEEE Directive 2012/19/EU

**COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV GL  
= ISO 9001 = ISO 14001 =**



### AZ-CALIBRATION

AZ-calibration is a function in the form of an automatic zeroing circuit built into the PCB board. The AZ-calibration electronically adjusts the transmitter zero at predetermined time intervals (every 10 minutes). The AZ-calibration eliminates all output signal drift due to thermal, electronic or mechanical effects, as well as the need for technicians to remove high and low pressure tubes when performing initial or periodic transmitter zero point calibration.

The AZ adjustment takes 4 seconds. To avoid conflict with the BAS system, the output and display values will freeze to the latest measured value, after which the device returns to its normal measuring mode. Transmitters equipped with the AZ-calibration are virtually maintenance free.

### HOW TO GENERATE A MODEL?

Example:	Product series			
	DPT-FLOW-1000-AZ-D	DPT-FLOW	Air flow transmitter	
		<b>Highest available measurement range</b>		
		-1000	0...1000 Pa	
		-2000	0...2000 Pa	
		-5000	0...5000 Pa	
		-7000	0...7000 Pa	
		<b>Zero Point Calibration</b>		
		-AZ	With autozero calibration	
			Standard with pushbutton manual zero point calibration	
		<b>Display</b>		
		-D	With display	
			Without display	
Model	DPT-FLOW	-1000	-AZ	-D