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.

5 YEAR WARRANTY

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: m3/s, m3/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 / 2-10 V) or current (4–20 mA)
  - o Pressure: voltage (0–10 V / 2-10 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	
Measurement ranges (Pa)	0–1000 Pa		0–2000 Pa		0–5000 Pa		0–7000 Pa	
Description	**Model**	**Product code**	**Model**	**Product code**	**Model**	**Product code**	**Model**	**Product code**
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	102.004.012	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
- with -40C cold resistant	DPT-Flow-1000-D-40C	102.001.050	DPT-Flow-2000-D-40C	102.002.042	DPT-Flow-5000-D-40C	102.004.031	DPT-Flow-7000-D-40C	102.006.050

For pricing or any further information, please contact Omni Instruments Ltd.

Measurement and data acquisition solutions

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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, linearity, hysteresis, long term stability, and repetition error)
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: m3/s, m3/hr, cfm, l/s, none
Velocity: m/s, ft/min

Flow output scale (select via menu):

Units	Range
m3/s	0.025-50
m3/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, no flow-through
Environment:
Operating temperature: -20...50 °C, with autozero (-AZ) calibration -5...50 °C
-40C model: -40...50 °C
Temperature compensated range 0...50 °C
Storage temperature: -40...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 mm² (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 / 2-10 V, selectable via jumper
Power consumption: <1.0 W
-40C model: <4.0 W when <0 °C
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: <1.2 W
-40C model: <4.2 W when <0 °C
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 =

RoHS 2 2011/65/EU

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				
		Highest available measurement range				
		-1000	0...1000 Pa			
		-2000	0...2000 Pa			
		-5000	0...5000 Pa			
		-7000	0...7000 Pa			
			Zero Point Calibration			
			-AZ	With autozero calibration		
				Standard with pushbutton manual zero point calibration		
				Display		
				-D		With display
					Cold resistance	
					-40C	-40 °C cold resistant (not available with autozero calibration)
						Without -40 °C cold resistance
Model	DPT-FLOW	-1000	-AZ	-D	-40C	

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