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AIR FLOW AND VELOCITY TRANSMITTERS DPT-FLOW-MOD

Multifunctional air flow transmitters for building automation systems with Modbus communication

5 YEAR WARRANTY

The DPT-Flow-MOD 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 measurements can be read and the configuration can be done via Modbus communication. The DPT-Flow-MOD 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-MOD series devices include:
- Two selectable functions:
  - o Measure and monitor in-duct volume flow, velocity or differential pressure
  - o Measure and monitor air flow across centrifugal fans
- Multiple 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
- Modbus communication protocol

DPT-Flow-MOD 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-2W-Q series differential pressure transmitters with flow linear output
- DPT-R8 series 8-range differential pressure transmitters
- DPT-MOD series differential pressure transmitters with Modbus configuration

APPLICATIONS

DPT-Flow-MOD series devices are commonly used in HVAC/R systems for:
- air flow monitoring across centrifugal fans and blowers
- in-duct air flow or pressure monitoring
- measuring air flow or pressure in VAV applications

MODEL SUMMARY

	DPT-FLOW-MOD-2500		DPT-FLOW-MOD-7000	
Measurement ranges (Pa)	0–2500 Pa		0–7000 Pa	
Description	Model	Product code	Model	Product code
Flow meter for measuring air flow in duct and on centrifugal fans with Modbus communication				
- with display	DPT-FLOW-MOD-2500-D	102.011.001	DPT-FLOW-MOD-7000-D	102.006.027
- with autozero and display	DPT-FLOW-MOD-2500-AZ-D	102.011.003	DPT-FLOW-MOD-7000-AZ-D	102.006.029

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SPECIFICATIONS

Performance

Accuracy (at applied pressure):
Ranges < 125 Pa = ±2 Pa
Ranges 125 Pa = ±1,5 % 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
Zero point calibration:
Automatic autozero, manual pushbutton or via Modbus register
Response time:
1.0–20 s, selectable via menu or via Modbus register

Communication

Protocol: MODBUS over Serial Line
Transmission Mode: RTU
Interface: RS485
Byte format (11 bits) in RTU mode:
- Coding System: 8-bit binary
- Bits per Byte:
  - 1 start bit
  - 8 data bits, least significant bit sent first
  - 1 bit for parity
  - 1 stop bit

Baud rate: selectable in configuration
Modbus address: 1–247 addresses selectable in configuration menu

Technical Specifications

Media compatibility:
Dry air or non-aggressive gases
Pressure units (select via menu):
Pa, kPa, mbar, inWC, mmWC
Flow units (select via menu):
Volume: m3/s, m3/hr, cfm, l/s
Velocity: m/s, ft/min
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: 12–24 AWG (0.2–1.5 mm [2])
Cable entry:
Strain relief: M16
Knockout : 16 mm
Pressure fittings
Male Ø 5.0 mm and 6.3 mm

Electrical

Supply voltage:
24 VAC or VDC ± 10 %
Power consumption:
< 1.3 W
Output signal:
via Modbus

Conformance

Meets requirements for CE marking:
EMC Directive 2014/30/EU
RoHS Directive 2002/95/EY

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-MOD-2500-AZ-D	DPT-FLOW-MOD	Air flow transmitter with Modbus communication			
		Highest available measurement range			
		-2500	0...2500 Pa		
		-7000	0...7000 Pa		
			Zero Point Calibration		
			-AZ	With autozero calibration	
				Standard with pushbutton manual auto zero	
				Display	
				-D	With display
Model	DPT-FLOW-MOD	-2500	-AZ	-D	