

AIR HANDLING CONTROLLER DPT-CTRL-MOD

Multifunctional PID controller with differential pressure or air flow transmitter and Modbus communication



The DPT-Ctrl-MOD series PID controllers are engineered for building automation in the HVAC/R industry. With the built-in controller of the DPT-Ctrl-MOD it is possible to control the constant pressure or flow of fans, VAV systems or dampers. When controlling air flow, it is possible to select a fan manufacturer or a common measuring probe that has a K-value.

DPT-Ctrl-MOD series devices include:

- PID-controller
 - o Control differential pressure or air flow in duct or across centrifugal fans
 - o All parameters (PID) are adjustable via menu and Modbus
- 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
- Control output: Voltage (0–10 V)
- One external input: voltage, thermistor or binary input
- Outside air temperature compensation function
- Fixed output function via menu and Modbus
- 2SP feature with a binary input to select between two user-adjustable setpoints. The desired setpoint can be selected, for example, with weekly clock, turn switch or key card switch.



SIMILAR PRODUCTS

- AVT series air velocity transmitters
- DPT-Flow series air flow transmitters
- DPT-R8 series 8-range differential pressure transmitters
- DPT-MOD series differential pressure transmitters with Modbus configuration
- DPT-Ctrl series air handling controller

APPLICATIONS

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

- Controlling differential pressure or air flow in air handling systems
- VAV applications
- Controlling parking garage exhaust fans

MODEL SUMMARY

	DPT-CTRL-MOD-2500		DPT-CTRL-MOD-7000	
Measurement ranges (Pa)	-250–2500 Pa		-700–7000 Pa	
Description	Model	Product code	Model	Product code
PID controller for differential pressure or air flow with Modbus and display	DPT-CTRL-MOD-2500-D	114.003.009	DPT-CTRL-MOD-7000-D	114.009.009

AIR HANDLING CONTROLLER

DPT-CTRL-MOD

SPECIFICATIONS

Performance

Accuracy (from applied pressure):

Model 2500:

Pressure < 125 Pa = 1 % + ±2 Pa

Pressure > 125 Pa = 1 % + ±1 Pa

Model 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:

Manual pushbutton or Modbus

Response time:

1.0–20 s, selectable via menu or Modbus

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

Controller parameter (selectable via menu and Modbus):

Setpoint 0...2500 (model 2500)
0...7000 (model 7000)

P-band 0...10 000

I-gain 0...1000

D-factor 0...1000

Pressure units (selectable via menu):

Pa, kPa, mbar, inWC, mmWC, psi

Flow units (selectable via menu):

Volume: m³/s, m³/hr, cfm, l/s

Velocity: m/s, ft/min

Measuring element:

MEMS, no flow-through

Environment:

Operating temperature: -20...50 °C

Temperature compensated range 0...50 °C

Storage temperature: -40...70 °C

Humidity: 0 to 95 % rH, non condensing

Physical

Dimensions:

Case: 102.0 x 71.5 x 36.0 mm

Weight:

150 g

Mounting:

2 each 4.3 mm screw holes, one slotted

Materials:

Case: ABS

Lid: PC

Pressure inlets: Brass

Protection standard:

IP54

Display:

2-line display (12 characters/line)

Line 1: Direction of control output

Line 2: Pressure or air flow measurement,

selectable via menu

If input is selected, line 2 shows also

input information (for example

temperature)

Size: 46.0 x 14.5 mm

Electrical connections:

4+4 position spring-loaded terminals

Wire: 0.2–1.5 mm² (16–24 AWG)

Cable entry:

Strain relief: M16

Knockout : 16 mm

Pressure fittings

5.2 mm barbed brass

+ High pressure

– Low pressure

Electrical

Supply voltage:

24 VAC or VDC, ±10 %

Power consumption:

< 1.0 W

Output signal:

via Modbus

Control output:

0–10 V

Input signal:

0–10 V, NTC10k, Pt1000, Ni1000/(-LG) or BIN IN

Conformance

Meets the requirements for:

	CE:	UKCA:
EMC:	2014/30/EU	S.I. 2016/1091
RoHS:	2011/65/EU	S.I. 2012/3032
WEEE:	2012/19/EU	S.I. 2013/3113

COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV
ISO 9001 • ISO 14001



HOW TO GENERATE A MODEL?

Example:	Product series		
	DPT-CTRL-MOD-2500-D	DPT-Ctrl-MOD	PID controller for differential pressure or air flow with Modbus
		Measurement ranges (Pa)	
		-2500	-250...2500
		-7000	-700...7000
		Display	
		-D	With display
Model	DPT-Ctrl-MOD	-2500	-D



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