HK INSTRUMENTS
USER-FRIENDLY MEASURING DEVICES

AIR HANDLING CONTROLLER
DPT-CTRL-MOD

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

5 YEAR WARRANTY

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

UKCA   CE   RoHS COMPLIANT

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