

AIR HANDLING CONTROLLER DPT-CTRL

Multifunctional PID controller with differential pressure or air flow transmitter for building automation systems



The DPT-Ctrl series PID controllers are engineered for building automation in the HVAC/R industry.

With the built-in controller of the DPT-Ctrl 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 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
- Differential pressure or air flow transmitter (selectable via menu)
 - o Measure and monitor differential pressure or air flow in duct or 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
- Unique proportional output options:
 - o Control output: Voltage (0–10 V) or current (4–20 mA)
 - o Differential pressure or air flow: Voltage (0–10 V) or current (4–20 mA)



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

APPLICATIONS

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

- Controlling differential pressure or air flow in air handling systems
- VAV applications

MODEL SUMMARY

	DPT-CTRL-2500		DPT-CTRL-7000	
Measurement ranges (Pa)	0–2500 Pa		0–7000 Pa	
Description	Model	Product code	Model	Product code
PID controller with differential pressure or air flow transmitter				
- with display	DPT-CTRL-2500-D	103.007.102	DPT-CTRL-7000-D	103.016.044
- with autozero and display	DPT-CTRL-2500-AZ-D	103.007.103	DPT-CTRL-7000-AZ-D	103.016.045

AIR HANDLING CONTROLLER

DPT-CTRL

Multifunctional PID controller with differential pressure or air flow transmitter for building automation systems

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 or manual pushbutton
 Response time:
 1.0–20 s, selectable via menu

Technical Specifications

Media compatibility:
 Dry air or non-aggressive gases
 Controller parameter (selectable via menu):
 Setpoint 0...2500/7000 Pa
 P-band 0...100 000
 I-time 0...1000 s
 D-factor 0...100
 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
 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
 Size: 46.0 x 14.5 mm

Electrical connections:
 4-screw terminal block
 Wire: 12–24 AWG (0.2–1.5 mm²)
 Cable entry:
 Strain relief: M16
 Knockout: 16 mm
 Pressure fittings
 5.2 mm barbed brass
 + High pressure
 – Low pressure

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: <1.2 W
 Maximum load: 500 Ω

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: DPT-CTRL-2500-AZ-D	Product series			
	DPT-CTRL	PID controller with differential pressure or air flow transmitter		
		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-CTRL	-2500	-AZ	-D