

## DIFFERENTIAL PRESSURE TRANSMITTERS

### DPT-PRIIMA-MOD

#### Multifunctional high accuracy differential pressure transmitters

DPT-Priima-MOD is a multifunctional high accuracy transmitter for measuring volume flow, velocity, and static and differential pressure. It is designed for cleanrooms and other demanding applications. The measurements can be read and the configuration done via Modbus communication. DPT-Priima-MOD can also be used with several different measurement probes such as FloXact™ or pitot tube, and air dampers.

DPT-Priima-MOD has a new, extremely accurate sensor and automatic zero point calibration, and optional calibration certificate.

#### DPT-Priima-MOD series devices include:

- Two selectable functions:
  - Measure and monitor in-duct volume flow, velocity or differential pressure
  - Measure and monitor air flow across centrifugal fans
- Multiple selectable measurement units:
  - Volume flow: m<sup>3</sup>/s, m<sup>3</sup>/h, cfm, l/s
  - Velocity: m/s, ft/min
  - Pressure: Pa, inWC, mmWC, kPa, mbar, psi
- Backlit display
- AZ (autozero) function for automatic zero point calibration, eliminating the need for periodic manual autozeroing to ensure long term accuracy
- Modbus communication protocol

#### DPT-Priima-MOD series device options offer:

- Calibration certificate



## SIMILAR PRODUCTS

- DPT-Priima series high accuracy differential pressure transmitters
- DPT-R8 series 8-range differential pressure transmitters
- DPT-MOD series differential pressure transmitters with Modbus configuration
- DPT-Flow series air flow transmitters
- AVT series air velocity transmitters

## APPLICATIONS

DPT-Priima-MOD is commonly used in applications requiring high measurement accuracy:

- monitoring pressure in cleanrooms
- monitoring pressure difference across the building envelope
- monitoring pressure and flow

## MODEL SUMMARY

Measurement ranges (Pa)	DPT-Priima-MOD-AZ-D	
±120 Pa, ±240 Pa, ±620 Pa, ±1240 Pa, ±2490 Pa		
Description	Model	Product code
High accuracy differential pressure transmitter with air flow measurement and Modbus communication		
- with display and autozero	DPT-Priima-MOD-AZ-D	102.012.004_62

# DIFFERENTIAL PRESSURE TRANSMITTERS

## DPT-PRIIMA-MOD

### SPECIFICATIONS

#### Performance

##### Measurement ranges:

±120 Pa\*, ±240 Pa, ±620 Pa, ±1240 Pa, ±2490 Pa  
(selectable via menu or modbus)

\*default range

##### Accuracy (at applied pressure):

0.4 % ±0.4 Pa

(Including: general accuracy, linearity, hysteresis, long term stability, and repetition error)

##### Overpressure:

Proof pressure: 10 kPa

Burst pressure: 30 kPa

##### Zero point calibration:

Automatic autozero, manual pushbutton or via Modbus register

##### Response time:

0.4–20 s, selectable via menu or via Modbus register  
(63 % of the change)

#### 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, psi

##### Flow units (select via menu):

Volume: m3/s, m3/hr, cfm, l/s

Velocity: m/s, ft/min

##### Measuring element:

MEMS, no flow-through

##### Environment:

Operating temperature: -5...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 fittings: Brass

Tubing: Silicone

##### 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 mm<sup>2</sup> (16–24 AWG)

#### Cable entry:

Strain relief: M16

Knockout : 16 mm

#### Pressure fittings

Male ø 5.2 mm

+ High pressure

- Low pressure

#### Electrical

##### Supply voltage:

24 VAC or VDC ± 10 %

##### Power consumption:

< 1 W

< 2,2 W during AZ-calibration

##### Output signal:

via Modbus

#### Conformance

Meets requirements for

CE:	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



### AZ-CALIBRATION

AZ-calibration is an autozero 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 measurement 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-Priima-MOD-AZ-D	Product series	Differential pressure transmitter		
	DPT	Model type		
		-Priima-MOD		
		High accuracy, with Modbus communication		
		Zero Point Calibration		
		-AZ		
		With autozero calibration		
		Display		
		-D		
		With display		
Model	DPT	-Priima-MOD	-AZ	-D