

DIFFERENTIAL PRESSURE TRANSMITTERS DPT-PRIIMA SERIES

High accuracy, multi-range differential pressure transmitter for demanding applications



DPT-Priima is a high accuracy differential pressure transmitter designed for cleanrooms and other high accuracy applications. DPT-Priima has a new, extremely accurate sensor and automatic zero point calibration, optional span point calibration.

DPT-Priima series devices include:

- Multiple measuring units, field selectable via jumper, including: Pa, kPa, mbar, inchWC, mmWC, psi.
- 8 field selectable measurement ranges, unidirectional or bi-directional, selectable via jumper, (see Model Summary).
- AZ (autozero) function for automatic zero point calibration, eliminating the need for periodic manual autozeroing to ensure long term accuracy.
- Proportional output options including: voltage (0/2–10 V) and current (4–20 mA).



DPT-Priima series device options offer:

- Backlit display
- Field adjustable span point calibration (i.e. gain)

SIMILAR PRODUCTS

- DPT-R8 series 8-range differential pressure transmitters
- DPT-2W series differential pressure transmitters with 4–20 mA 2-wire configuration
- DPT-MOD series differential pressure transmitters with Modbus configuration
- DPI series electronic differential pressure switches
- PS series mechanical differential pressure switches
- DPT-Flow series air flow transmitters

APPLICATIONS

DPT-Priima 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) (field selectable via jumper) (For optional units, see Specifications)	DPT-Priima ±25, ±50, ±100, ±500 0...25, 0...50, 0...250, 0...1000	
Description	Model	Product code
High accuracy differential pressure transmitter		
- with AZ	DPT-Priima-AZ	103.039.001
- with AZ & display	DPT-Priima-AZ-D	103.039.002
- with AZ & span point calibration	DPT-Priima-AZ-S	103.039.003
- with AZ, display & span point calibration	DPT-Priima-AZ-D-S	103.039.004

DIFFERENTIAL PRESSURE TRANSMITTERS

DPT-PRIIMA SERIES

SPECIFICATIONS

Performance

Measurement accuracy* (from applied pressure):
0.4 % ±0.4 Pa
(including: general accuracy, linearity, hysteresis, long term stability, and repetition error)

Output accuracy*:
Voltage: ± 0.025 V at 25 °C
Current: ± 0.04 mA typical, at 25 °C, load 100 Ω
± 0.1 mA max, at 25 °C, load 20–500 Ω

*after an half-hour warm-up time

Overpressure:
Proof pressure: 10 kPa
Burst pressure: 30 kPa

Zero point calibration:
Automatic autozero and manual pushbutton

Response time:
0.4 s or 8.0 s, selectable via jumper
(63 % of the change)

Technical Specifications

Media compatibility:
Dry air or non-aggressive gases

Measuring units:
Pa, kPa, mbar, inchWC, mmWC, psi, selectable via jumper

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: 90.0 x 95.0 x 36.0 mm

Weight:
140g

Mounting:
2 each 4.3 mm screw holes, one slotted

Materials:
Case: ABS
Lid: PC
Duct connectors: ABS
Tubing: PVC

Protection standard:
IP54

Display (Optional)
2-line display (12 characters/line)
Line 1: active measurement
Line 2: units

Electrical connections:
4-screw terminal block
Wire: 0.2–1.5 mm² (12–24 AWG)
Cable entry: M16

Pressure fittings:
Male Ø 5,2 mm
+ High pressure
– Low pressure

Electrical

Voltage:
Circuit: 3-wire (V Out, 24 V, GND)
Input: 24 VAC or VDC, ±10 %
Output: 0–10V / 2–10V
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
Power consumption: <1.2 W,
Maximum load: 500 Ω
Minimum load: 20 Ω

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



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 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-Priima-AZ-D-S	Product series				
	DPT	Differential pressure transmitter			
		Model type			
		-Priima	High accuracy		
			Zero point calibration		
			-AZ With autozero calibration		
			Display		
			-D With display		
			Without display		
			Span point calibration		
				-S Span point calibration	
Model	DPT	-Priima	-AZ	-D	-S