VAISALA

PDT101 Differential Pressure Transmitter

Features

- Easy mounting on wall, DIN rail, or panel
- 3 pressure ranges (Pa and inH_2O)
- Unidirectional and bidirectional models
- Accessible zero and span adjustment potentiometers
- ¼" brass tubing connections
- LED status indicator
- Dedicated models for critical and regulated environments and for air handling systems
- Euro style detachable connector
- Calibrations traceable to SI units through national metrology institutes or accredited calibration laboratories

Vaisala Differential Pressure Transmitter PDT101 offers precise measurement of differential air pressure. PDT101 offers dedicated models for critical and regulated environments with very low differential pressures and unidirectional models for air handling systems.

Operating environment

The highly accurate bidirectional models of PDT101 are designed especially for demanding life science and cleanroom applications, and are the perfect choice for any application requiring precise pressure differential measurement. The transmitter is ideal for incorporating into the Vaisala viewLinc Continuous Monitoring System to measure and monitor the critical environmental parameters as required in regulated environments.

The unidirectional models of PDT101 are optimal for air handling units to measure differential pressure over fans or filters, for example.

Zero and span adjustment screws are available on every PDT101 model. Both adjustments are accessible from the front of the unit.

Performance

PDT101 offers high accuracy, sensitivity, and stability, with models providing accuracies of either 0.40 or 1 % of span. The sensor uses a micro-machined, ultra-thin silicon diaphragm which provides inherent sensor repeatability and stability. The sensor enables precise measurement and control in high performance environments. The PDT101 transmitter is available with voltage output (3-wire) or current output (2-wire).

Applications

PDT101 is suitable for high performance environments in the life science, semiconductor, and electronics industries, as well as in building automation systems in data centers and other demanding buildings and environments.

When used in regulated environments as part of the viewLinc system, it is highly suitable for fulfilling the requirements of continuous, documented, and redundant data, to meet FDA, EMA and other international regulations.

The compact design is well suited for mounting in a cleanroom or in the adjacent corridor with LED indicator lights for quick and easy power status spot check.

Technical data

Models

Model	Measurement range	Output
PDT101-P4C	±60 Pa	4 ... 20 mA
PDT101-P4V	±60 Pa	0 ... 5 V
PDT101-P4C2	±125 Pa	4 ... 20 mA
PDT101-P4V2	±125 Pa	0 ... 5 V
PDT101-W4C	±0.25 inH_2O	4 ... 20 mA
PDT101-W4V	±0.25 inH_2O	0 ... 5 V
PDT101-W4C2	±0.5 inH_2O	4 ... 20 mA
PDT101-W4V2	±0.5 inH_2O	0 ... 5 V
PDT101-P10C	0 ... 500 Pa	4 ... 20 mA
PDT101-P10V	0 ... 500 Pa	0 ... 10 V
PDT101-W10C	0 ... 2 inH_2O	4 ... 20 mA
PDT101-W10V	0 ... 2 inH_2O	0 ... 10 V
PDT101-P10Cx [1)]	0 ... 500 Pa	4 ... 20 mA
PDT101-P10Vx [1)]	0 ... 500 Pa	0 ... 10 V
PDT101-W10Cx [1)]	0 ... 2 inH_2O	4 ... 20 mA
PDT101-W10Vx [1)]	0 ... 2 inH_2O	0 ... 10 V

1) The PDT101-P10Cx, PDT101-P10Vx, PDT101-W10Cx, and PDT101-W10Vx models do not include calibration certificate.

Measurement performance

Measurement ranges (bidirectional)	±60 Pa, ±125 Pa, ±0.25 inH_2O, or ±0.5 inH_2O
Measurement ranges (unidirectional)	0 ... 500 Pa, or 0 ... 2 inH_2O
Accuracy (incl. non-linearity, hysteresis, repeatability and zero/span calibration settings)	0.4 % of span (bidirectional models), 1% of span (unidirectional models)
Long-term stability	≤ 0.5 % span/year
Response time (10 ... 90 %)	250 ms
Warm-up time	15 s
Compensated temperature range	+2 ... +54 °C (+35.6 ... +129.2 °F)
Temperature dependence	±(0.065 Pa + 0.054 % of reading) / °C or ±(0.00015 inH_2O + 0.03 % of reading) / °F (reference 21 °C or 70 °F)
Pressure type	Differential, gauge, vacuum and compound
Overpressure	
Proof pressure	1.0 bar
Burst pressure	1.7 bar
Static pressure	1.7 bar
Mounting position	
Error (zero adjustable)	≤ 1 %/g (calibration in vertical position is standard)
Adjustments (front accessible)	
Zero	±5 % span
Span	±3 % span

Mechanical specifications

Medium (measured gas)	Clean and dry air, non-conducting and non-corrosive gases
Mounting	Threaded fastener for wall mounting or DIN rail type EN 50022
IP rating	IP40
Weight	0.07 kg
Material	
Process connection	Brass
Sensor element	Silicon, aluminum, glass
Case	NEMA type 1 fire-retardant ABS 1 (meets UL94-5VA)

Inputs and outputs

Process connection	1/4" barbed fittings
Max. loop resistance for 4 ... 20 mA	≤ (Supply voltage - 12 V)/0.022 A
Supply current	Max. 20 mA for 4 ... 20 mA output signal
Optical process diagnostics	LED visual indicator
Electrical connection	Euro style pluggable terminal block accepts 12 ... 26 AWG wire (0.13 up to 3.31 mm^2)
Output signal	
2-wire	4 ... 20 mA
3-wire	0 ... 5 or 0 ... 10 V DC (user selectable)
Operating voltage	
2-wire output 4 ... 20 mA	12 ... 36 V DC
3-wire output 0 ... 5 V DC	11.5 ... 36 V DC or 24 V AC
3-wire output 0 ... 10 V DC	14 ... 36 V DC or 24 V AC

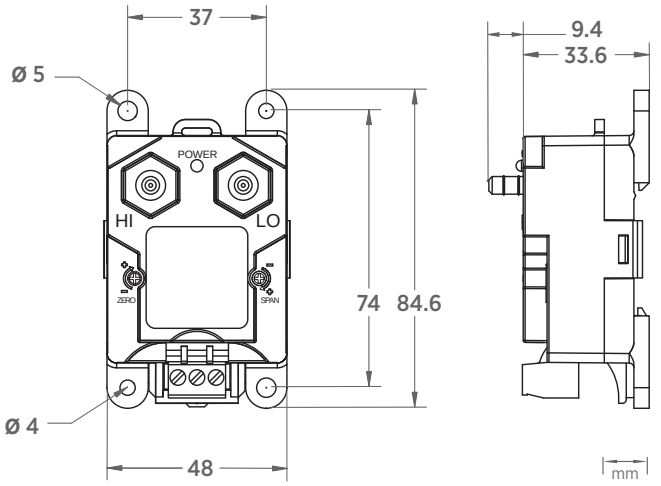
Operating environment

Operating temperature	−18 ... +70 °C (−0.4 ... +158 °F)
Storage temperature	−40 ... +82 °C (−40 ... +179.6 °F)

Note: If used in an electromagnetic field of 3 V/m, with narrow frequency area of 80 ... 120 MHz, it is possible that the current output of PDT101 can deviate max. 0.8 % (with accuracy specified 0.4 %)

Compliance

EU directives and regulations	EMC
Electromagnetic compatibility (EMC)	EN 61326-1, basic immunity test requirements
Compliance marks	CE, RCM



PDT101 dimensions

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