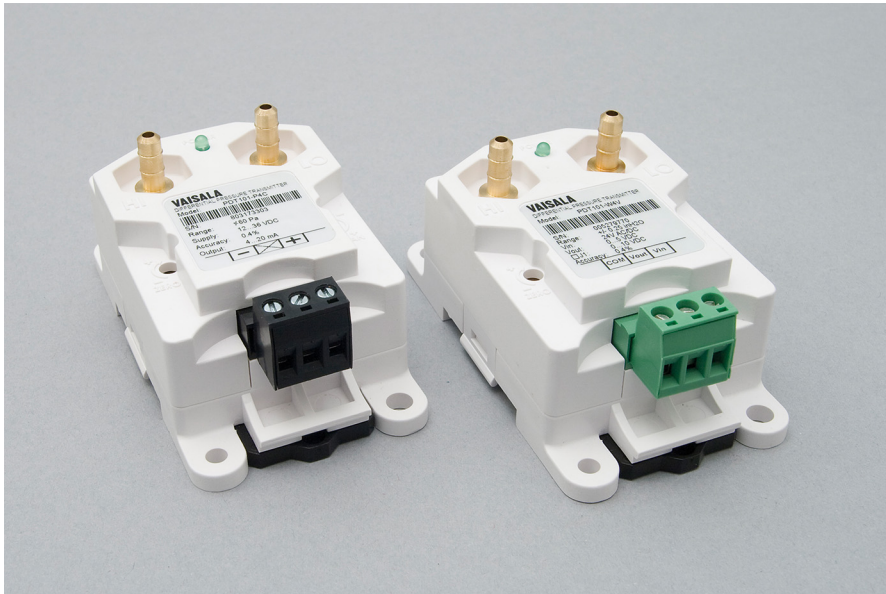




# VAISALA

## PDT101 Differential Pressure Transmitter



### Features

- Easy mounting on wall, DIN rail, or panel
- 3 pressure ranges (Pa and inH<sub>2</sub>O)
- Unidirectional and bidirectional models
- Accessible zero and span adjustment potentiometers
- 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.

## 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 <sub>2</sub> O | 4–20 mA |
| PDT101-W4V                 | ±0.25 inH <sub>2</sub> O | 0–5 V   |
| PDT101-W4C2                | ±0.5 inH <sub>2</sub> O  | 4–20 mA |
| PDT101-W4V2                | ±0.5 inH <sub>2</sub> O  | 0–5 V   |
| PDT101-P10C                | 0–500 Pa                 | 4–20 mA |
| PDT101-P10V                | 0–500 Pa                 | 0–10 V  |
| PDT101-W10C                | 0–2 inH <sub>2</sub> O   | 4–20 mA |
| PDT101-W10V                | 0–2 inH <sub>2</sub> O   | 0–10 V  |
| PDT101-P10Cx <sup>1)</sup> | 0–500 Pa                 | 4–20 mA |
| PDT101-P10Vx <sup>1)</sup> | 0–500 Pa                 | 0–10 V  |
| PDT101-W10Cx <sup>1)</sup> | 0–2 inH <sub>2</sub> O   | 4–20 mA |
| PDT101-W10Vx <sup>1)</sup> | 0–2 inH <sub>2</sub> O   | 0–10 V  |

<sup>1)</sup> 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 <sub>2</sub> O, or ±0.5 inH <sub>2</sub> O                |
| Measurement ranges (unidirectional)                                                          | 0–500 Pa, or 0–2 inH <sub>2</sub> O                                                  |
| 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                                                                          | ±≤0.25 % span/year                                                                   |
| Response time (10–90 %)                                                                      | 250 ms                                                                               |
| Warm-up time                                                                                 | 15 s                                                                                 |
| Compensated temperature range                                                                | +2 ... +54 °C<br>(+35.6 ... +129.2 °F)                                               |
| Temperature dependence                                                                       | ±0.054 % of reading) / °C<br>(±0.03 % of reading) / °F<br>(reference 21 °C or 70 °F) |
| Pressure type                                                                                | Differential, gauge, vacuum and compound                                             |
| <b>Overpressure</b>                                                                          |                                                                                      |
| Proof pressure                                                                               | 1.0 bar                                                                              |
| Burst pressure                                                                               | 1.7 bar                                                                              |
| Static pressure                                                                              | 1.7 bar                                                                              |
| <b>Mounting position</b>                                                                     |                                                                                      |
| Error (zero adjustable)                                                                      | ≤1 %/g (calibration in vertical position is standard)                                |
| <b>Adjustments (front accessible)</b>                                                        |                                                                                      |
| Zero                                                                                         | ±5 % span                                                                            |
| Span                                                                                         | ±3 % span                                                                            |

## Compliance

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

## 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                                                       |
| <b>Material</b>       |                                                               |
| Process connection    | Brass                                                         |
| Sensor element        | Silicon, aluminum, glass                                      |
| Case                  | NEMA type 1 fire-retardant ABS 1 (meets UL94-5VA)             |

## Inputs and outputs

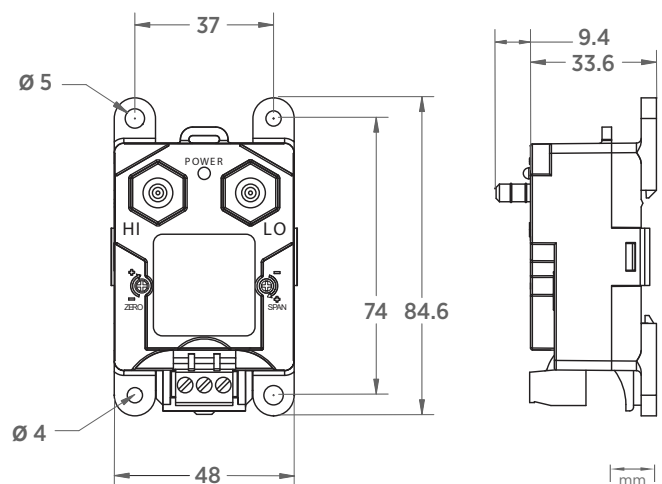
|                                      |                                                                                               |
|--------------------------------------|-----------------------------------------------------------------------------------------------|
| Process connection                   | 1/4" barbed fittings                                                                          |
| Tubing outer and inner dimensions    | Outer dimension (O.D): 1/4" (6.35 mm)<br>Inner dimension (I.D): 1/8" (3.17 mm)                |
| 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 <sup>2</sup> ) |

|                          |                                    |
|--------------------------|------------------------------------|
| <b>Output signal</b>     |                                    |
| 2-wire                   | 4–20 mA                            |
| 3-wire                   | 0–5 or 0–10 V DC (user selectable) |
| <b>Operating voltage</b> |                                    |
| 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 %)



PDT101 dimensions

442 738 3918 ☎

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