

VAISALA

Differential Pressure Transmitter PDT102



Features

- In-place system calibration and online monitoring without disturbing process tubes with optional process valve actuator and test jacks
- Ultrathin profile ideally suited for DIN rail mount reduces installation and calibration costs
- High accuracy, two options; 0.25 % or 0.50 % of span
- Extremely robust MEMS silicon sensor technology provides very high accuracy, sensitivity, stability, and durability
- Calibrations traceable to SI units through national metrology institutes or accredited calibration laboratories
- Front side accessible zero and span adjustment potentiometers

Vaisala Differential Pressure Transmitter PDT102 offers ultra low pressure measurement for cleanroom control and monitoring applications.

Operating environment

Vaisala Differential Pressure Transmitter PDT102 is a high performance instrument designed primarily for life science and high technology cleanroom applications. The front panel includes zero and span adjustment potentiometers for convenient adjustment. The PDT102 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.

Performance

PDT102 offers very high accuracy, sensitivity and stability with two options for accuracy, 0.25% or 0.50% of span providing a highly reliable and

repeatable measurement. 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 cleanrooms. The PDT102 transmitter is available with voltage output (3-wire) or current output (2-wire).

Available options

Online monitoring of PDT102 is simple using the optional process valve actuator and the front access test jacks. The front access test jacks provide online process reference signal or calibration signal without disconnecting power supply wiring. Measurements can be made using a standard multimeter.

Applications

PDT102 is designed for use in critical monitoring of cleanrooms for pharmaceutical, biotechnology, medical device, and semiconductor controlled manufacturing environments.

Technical data

Measurement performance

Measurement ranges (bidirectional)	±50 Pa ±0.25 in H ₂ O
Accuracy ¹⁾	0.25 % span or 0.5 % span, depending on choice
Repeatability for 0.25 % span accuracy	0.03 %
Repeatability for 0.5 % span accuracy	0.05 %
Electrical resolution	1 x 10 ⁻⁴ span
Long-term stability	≤0.5 % span/year
Response time (10 ... 90 %)	250 ms
Warm-up time	15 s
Compensated temperature range	+2 ... +57 °C (+35.6 ... +134.6 °F)
Temperature dependence	±(0.036 Pa + 0.036 % of reading) / °C or ±(0.0001 in H ₂ O + 0.02 % of reading) / °F (reference 21 °C or 70 °F)
Pressure type	Differential, gauge, vacuum and compound
Overpressure	
Proof pressure	0.7 bar
Burst pressure	1.7 bar
Static pressure	1.7 bar
Mounting position	
Error (zero adjustable)	≤0.25 %
Adjustments (front accessible)	
Zero	±5 % span
Span	±3 % span

1) Incl. non-linearity, hysteresis, repeatability and zero/span calibration settings.

Inputs and outputs

Process connection	1/8 NPT female according to ANSI/ ASME B1.20.1
Operating voltage	12 ... 36 V DC
Max. loop resistance for 4 ... 20 mA	≤ (Supply voltage - 12V)/0.022 A
Electrical connection	Screw terminals, 12 ... 22 AWG (0.33 up to 3.31 mm ²)
Output signal	
2-wire	4 ... 20 mA
3-wire	0 ... 5 V
Supply current	
For 0 ... 5 V output	Max. 10 mA
For 4 ... 20 mA output	Max. 20 mA

Mechanical specifications

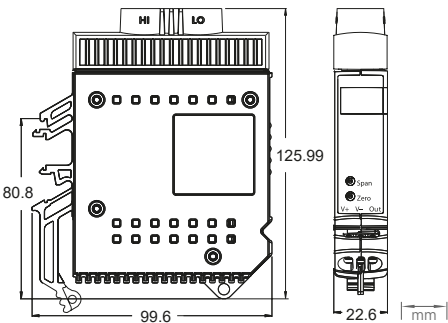
Medium (measured gas)	Clean and dry air, non-conducting and non-corrosive gases
Mounting	DIN rail types EN 50022, EN 50035 and EN 50045
Weight	0.16 kg
Material	
Process connection	Brass
Sensor element	Silicon, aluminum, glass
Case	Polycarbonate, glass filled (UL94-V-1)

Operating environment

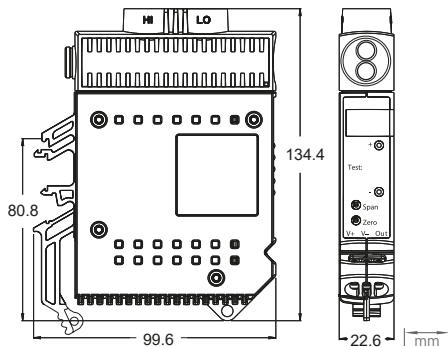
Operating temperature	-29 ... +70 °C (-20.2 ... +158 °F)
Storage temperature	-40 ... +82 °C (-40 ... +179.6 °F)
IP rating	IP30
Note: If used in an electromagnetic field of 3 V/m, with narrow frequency area of 80 - 120 MHz, it is possible that the current output of PDT102 can deviate max. 0.3 % (with accuracy specified 0.25 %)	

Compliance

EU directives	EMC
EMC compatibility	EN 61326-1, basic immunity test requirements
Compliance marks	CE, RCM



PDT102 transmitter dimensions



PDT102 dimensions with process valve actuator and test jacks

Order information for PDT102

PDT102 - XXXT

Measurement range:
P (+/-50 Pa) or **W** (+/-0.25 in H₂O)

Accuracy: **2** (0.25 % span) or **5** (0.5 % span)

Output: **C** (current) or **V** (voltage)

Option: (blank) or **T**