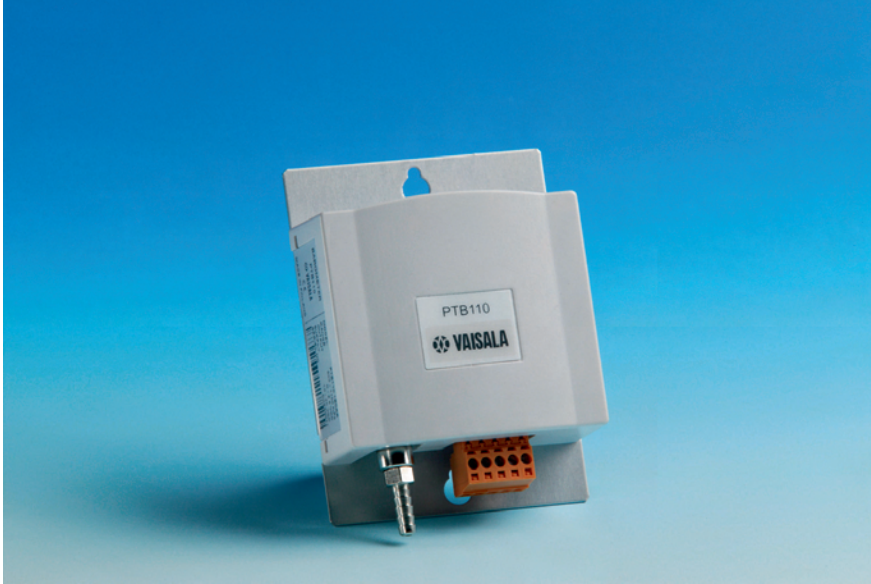


PTB110 Barometer for Industrial Use



The Vaisala BAROCAP® Barometer PTB110 offers outstanding long-term stability.

Features/Benefits

- Vaisala BAROCAP® sensor
- Several pressure ranges
- Accuracy ± 0.3 hPa at $+20$ °C
- Long-term stability
- On/off control with external trigger
- Output voltage 0 ... 2.5 or 0 ... 5 VDC
- Current consumption less than 4 mA
- Mountable on a (35 mm wide) DIN rail
- NIST traceable (certificate included)

PTB110

The Vaisala BAROCAP® Barometer PTB110 is designed both for accurate barometric pressure measurements at a room temperature and for general environmental pressure monitoring over a wide temperature range.

Vaisala BAROCAP® technology

The PTB110 barometer uses the Vaisala BAROCAP® Sensor, a silicon capacitive absolute pressure sensor developed by Vaisala for barometric pressure measurement applications.

The sensor combines the outstanding elasticity characteristics and mechanical stability of single-crystal silicon with the proven capacitive detection principle.

Accuracy and stability

The excellent long-term stability of the barometer minimizes or even removes the need for field adjustment in many applications.

Applications

The PTB110 is suitable for a variety of applications, such as environmental pressure monitoring, data buoys, laser interferometers, and in agriculture and hydrology.

The compact PTB110 is especially ideal for data logger applications as it has low power consumption. Also an external On/Off control is available. This is practical when the supply of electricity is limited.



The PTB110 can be used in data buoys.

Technical Data

Operating range (1 hPa=1mbar)

| | |
|-------------------|----------------------------------|
| Pressure ranges | 500 ... 1100 hPa |
| | 600 ... 1100 hPa |
| | 800 ... 1100 hPa |
| | 800 ... 1060 hPa |
| | 600 ... 1060 hPa |
| Temperature range | -40 ... +60 °C (-40 ... +140 °F) |
| Humidity range | non-condensing |

Accuracy

| | |
|---------------------------|-----------|
| Linearity* | ±0.25 hPa |
| Hysteresis* | ±0.03 hPa |
| Repeatability* | ±0.03 hPa |
| Calibration uncertainty** | ±0.15 hPa |
| Accuracy at +20 °C*** | ±0.3 hPa |

* Defined as ±2 standard deviation limits of end-point non-linearity, hysteresis error or repeatability error.

** Defined as ±2 standard deviation limits of inaccuracy of the working standard including traceability to NIST.

*** Defined as the root sum of the squares (RSS) of end-point non-linearity, hysteresis error, repeatability error and calibration uncertainty at room temperature.

Total accuracy at

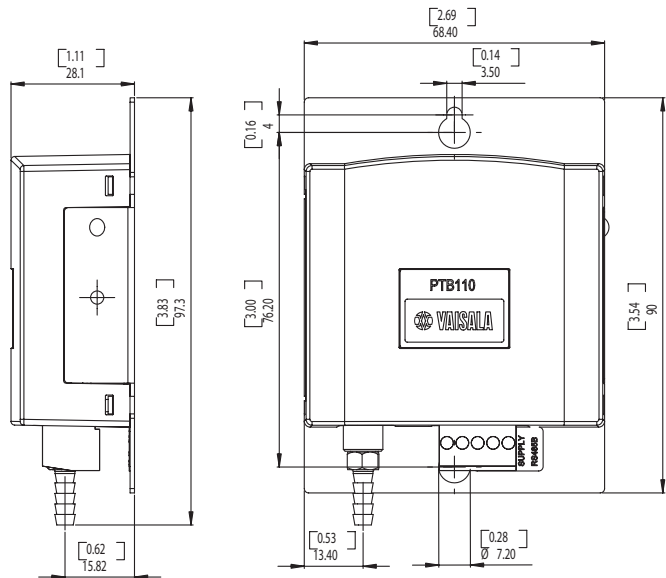
| | |
|----------------------------------|---------------|
| +15 ... +25 °C (+59 ... +77 °F) | ±0.3 hPa |
| 0 ... +40 °C (+32 ... +104 °F) | ±0.6 hPa |
| -20 ... +45 °C (-4 ... +113 °F) | ±1.0 hPa |
| -40 ... +60 °C (-40 ... +140 °F) | ±1.5 hPa |
| Long-term stability | ±0.1 hPa/year |

General

| | |
|---------------------------------|---|
| Supply voltage | 10 ... 30 VDC |
| Supply voltage control | with TTL level trigger |
| Supply voltage sensitivity | negligible |
| Current consumption | less than 4 mA |
| in shutdown mode | less than 1 µA |
| Output voltage | 0 ... 2.5 VDC |
| | 0 ... 5 VDC |
| Output frequency | 500 ... 1100 Hz |
| Resolution | 0.1 hPa |
| Load resistance | minimum 10 kohm |
| Load capacitance | maximum 47 nF |
| Settling time | 1 s to reach full accuracy after power-up |
| Response time | 500 ms to reach full accuracy after a pressure step |
| | negligible |
| Acceleration sensitivity | negligible |
| Pressure connector | M5 (10-32) internal thread |
| Pressure fitting | barbed fitting for 1/8" |
| Minimum pressure limit | 0 hPa abs |
| Maximum pressure limit | 2000 hPa abs |
| Electrical connector | removable connector for 5 wires (AWG 28 ... 16) |
| Terminals | Pin 1: external triggering Pin 2: signal ground Pin 3: supply ground Pin 4: supply voltage Pin 5: signal output |
| Housing material, plastic cover | ABS/PC blend |
| Housing classification | IP32 |
| Metal mounting plate | Al |
| Weight | 90 g |
| Electromagnetic compatibility | Complies with EMC standard EN 61326-1, Generic Environment |

Dimensions

Dimensions in mm (inches)



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Specifications subject to change without prior notice.
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