

PTB110 Series Analog Barometers



The **PTB 110 Barometer** is designed both for accurate barometric pressure measurements at a room temperature and for general environmental pressure monitoring over a wide temperature range.

The PTB110 barometer uses the Vaisala BAROCAP® Sensor, a silicon capacitive absolute pressure sensor developed 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.

The excellent long-term stability of the barometer minimizes or even removes the need for field adjustment in many 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 PTB 110 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.

Specifications

Operating range:

500 ... 1 100 hPa
600 ... 1100 hPa
800 ... 1100 hPa
800 ... 1060 hPa
600 ... 1060 hPa

Temperature range: -40/+140 °F (-40/+60 °C)

Humidity range: Non-condensing

Linearity* ± 0.25 mb

Hysteresis* ± 0.03 mb

Repeatability* ± 0.03 mb

Calibration uncertainty** ± 0.15 mb

Accuracy at +20 °C*** ± 0.3 mb

* 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

+59/+77 °F (+15/+25 °C): ± 0.3 mb

+32/+104 °F (0/+40 °C): ± 0.6 mb

-4/+113 °F (-20/+45 °C): ± 1.0 mb

-40/+140 °F (-40/+60 °C): ± 1.5 mb

Long-term stability: ± 0.1 mb/year

Supply voltage 10-30 Vdc

Current consumption: less than 4 mA

Output voltage: 0-2.5 Vdc or 0-5 Vdc

Resolution: 0.1 mb

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

Pressure connector: M5 (10-32) internal thread

Pressure fitting: Barbed fitting for 1/8"

Minimum pressure limit: 0 mb abs

Maximum pressure limit 2000 mb 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: Aluminum

Dimensions: 3.54" x 2.69" x 1.11" (90 mm x 68.4 mm x 28.1 mm)

Weight/Shipping: 3 oz (90 g)/1 lb (.5 kg)

Electromagnetic compatibility:

Complies with EMC standard EN 61326-1, Generic Environment