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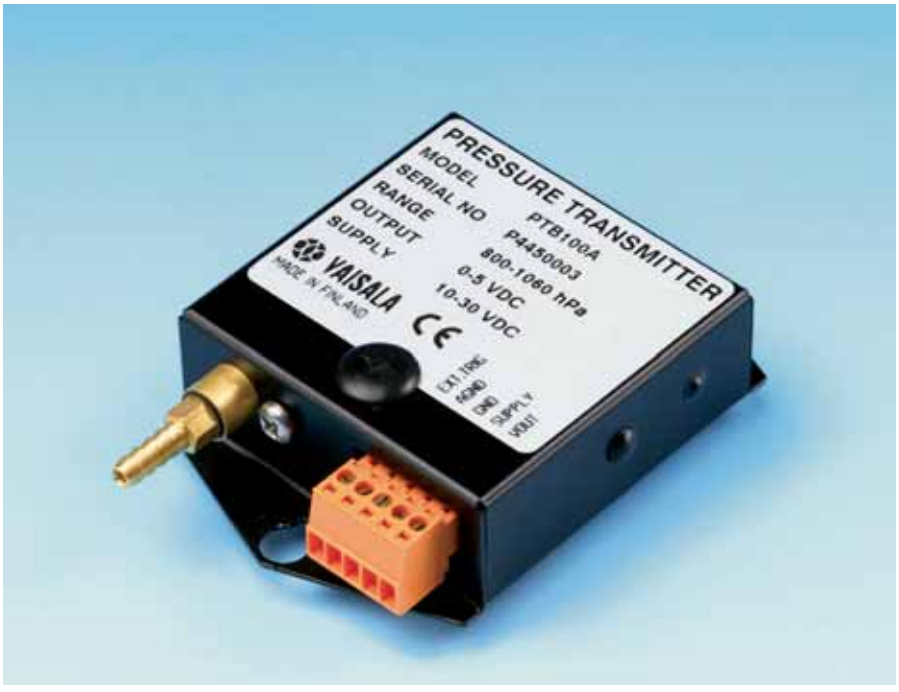
PTB100 Analog Barometer



The Vaisala BAROCAP® Analog Barometer PTB100 is ideal for data logger applications.

Features/Benefits

- Several pressure ranges
- Accuracy at room temperature ±0.3 hPa (PTB100A/PTB101C)
- Long-term stability ±0.1 hPa/year
- 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)

The Vaisala BAROCAP® Analog Barometer PTB100 is suitable for a variety of applications, such as environmental pressure monitoring, data buoys, laser interferometers, agriculture, and hydrology.

Excellent long-term stability

The PTB100 barometer is designed both for accurate barometric measurements at room temperature and for general environmental pressure monitoring over a wide temperature range. The excellent long-term stability of the barometers minimizes or even removes the need for field adjustment in many applications.

Ideal for data logger applications

The compact PTB100 barometer is ideal for data logger applications because of the low power consumption, selectable external on/off control, practical output voltage ranges and three or four wire connection capability.

Vaisala BAROCAP® technology

The PTB100 barometers use 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.

All PTB100 barometers are delivered with a factory calibration certificate, which is NIST traceable.

Technical Data

Operating range (1hPa=1mbar)

Pressure range	
PTB100A	800...1060 hPa
PTB100B/PTB 101B	600...1060 hPa
PTB101C	900...1100 hPa
Temperature range	-40...+60 °C (-40...+140 °F)
Humidity range	non-condensing

Accuracy

	PTB100A/PTB101C	PTB100B/PTB101B
Linearity*	±0.25 hPa	±0.45 hPa
Hysteresis*	±0.03 hPa	±0.05 hPa
Repeatability*	±0.03 hPa	±0.05 hPa
Calibration uncertainty**	±0.15 hPa	±0.15 hPa
Accuracy at +20 °C (+68 °F)***	±0.3 hPa	±0.50 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 at 1000 hPa 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

	PTB100A/PTB101C	PTB100B/PTB101B
+20 °C (+68 °F)	±0.3 hPa	±0.5 hPa
0...+40 °C (+32...104 °F)	±1.0 hPa	±1.5 hPa
-20...+45 °C (-4...113 °F)	±1.5 hPa	±2.0 hPa
-40...+60 °C (-40...140 °F)	±2.5 hPa	±3.0 hPa

Long-term stability	±0.1 hPa/year
Effect of thermal or mechanical shocks	< ±0.2 hPa

General

Supply voltage	10...30 VDC
Supply voltage control	with TTL level trigger
when enabled with an internal jumper, barometer can be triggered on/off using external TTL level trigger	
Supply voltage sensitivity	less than 0.1 hPa
Current consumption	
operation mode	less than 4 mA
shutdown mode	less than 1 µA
Output voltage	
PTB100A/PTB 100B	0...5 VDC
PTB101B/PTB101C	0...2.5 VDC
Resolution	0.1 hPa
Load resistance	10 kohm minimum
Load capacitance	47 nF maximum
Settling time at power-up	1 s
Response time (100% response)	300 ms
Warm-up shift	less than 0.1 hPa
Acceleration sensitivity	negligible
Pressure connector	M5 (10-32) internal thread
Pressure fitting	barbed fitting for 1/8" I.D. tubing
Maximum pressure limit	2000 hPa abs.
Electrical connector	a removable connector for five wires (AWG 28...16)
Housing material	aluminum
Weight	85 g

Complies with EMC standard: EN61326-1:1997 + Am1:1998 + Am2:2001; Generic Environment.

Dimensions

Dimensions in mm (inches)