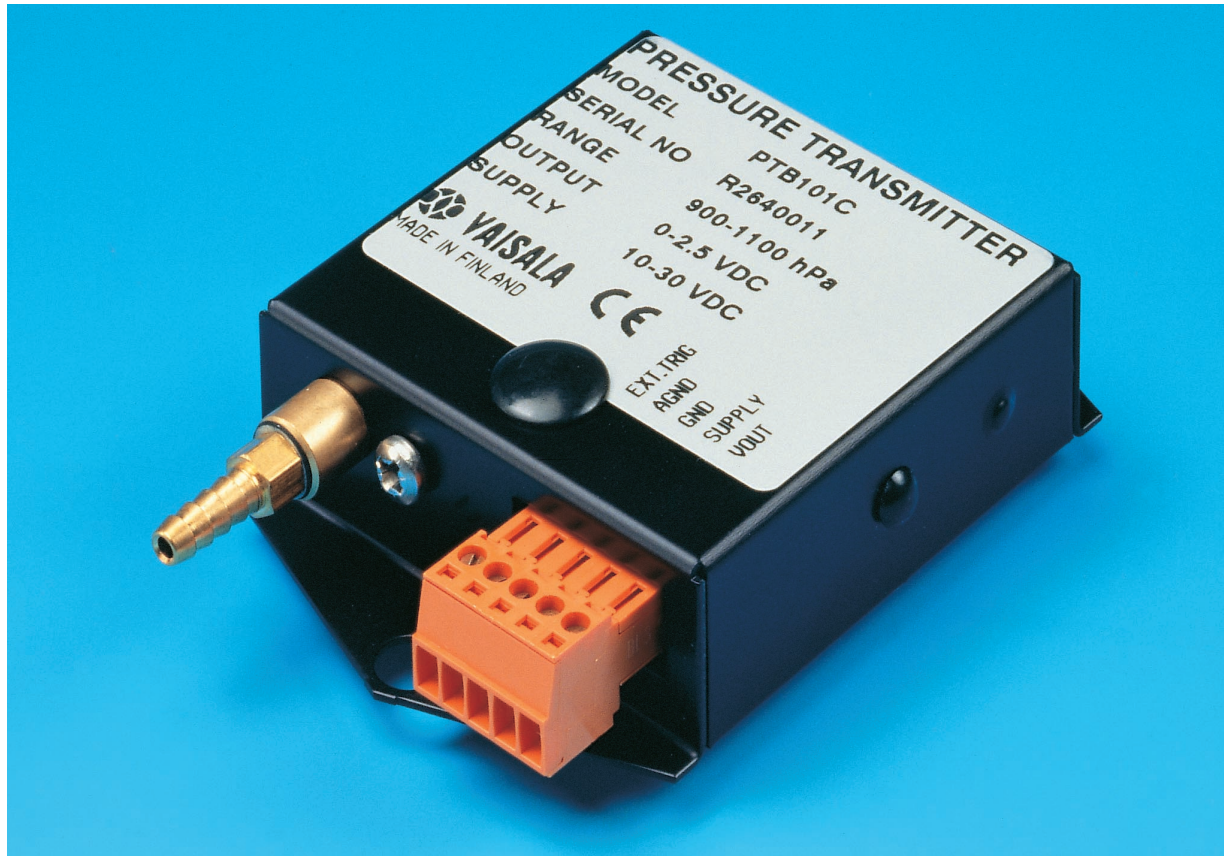


PTB100 Series Analogue Barometers



FEATURES

- standard pressure ranges
 - 900...1100 hPa
 - 800...1060 hPa
 - 600...1060 hPa
- accuracy at room temperature including traceability to NIST
 - ±0.3 hPa 900...1100 hPa
 - ±0.3 hPa 800...1060 hPa
 - ±0.5 hPa 600...1060 hPa
- long-term stability ±0.1 hPa/year
- supply voltage 10...30 VDC
- 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
- meets CE requirements for EMC

APPLICATIONS

- environmental pressure monitoring
- agriculture
- hydrology
- data buoys
- laser interferometers

EXCELLENT LONG-TERM STABILITY

The PTB100 series analogue barometers are 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.

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

The PTB100 series barometers use the BAROCAP[®] silicon capacitive absolute pressure sensor developed by Vaisala for barometric pressure measurement applications. The BAROCAP[®] sensor combines the outstanding elasticity characteristics and mechanical stability of single-crystal silicon with the proven capacitive detection principle.

TECHNICAL DATA

PTB100 SERIES ANALOGUE BAROMETERS

OPERATING RANGE (1 hPa = 1 mbar)

Pressure range	
PTB100A	800...1060 hPa
PTB100B/PTB101B	600...1060 hPa
PTB101C	900...1100 hPa
Temperature range	-40...+60 °C
Humidity range	non-condensing

ACCURACY

PTB100A/PTB101C

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

PTB100B/PTB101B

Linearity *	±0.45 hPa
Hysteresis *	±0.05 hPa
Repeatability *	±0.05 hPa
Calibration uncertainty **	±0.15 hPa
Accuracy at +20 °C ***	±0.5 hPa

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

** Defined as ±2 standard deviation limits of in-accuracy 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	<u>PTB100A/PTB101C</u>
+20 °C	±0.3 hPa
0...+40 °C	±1 hPa
-20...+45 °C	±1.5 hPa
-40...+60 °C	±2.5 hPa

Total accuracy	<u>PTB100B/PTB101B</u>
+20 °C	±0.5 hPa
0...+40 °C	±1.5 hPa
-20...+45 °C	±2 hPa
-40...+60 °C	±3 hPa

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

BAROCAP® is a registered trademark of Vaisala
Specifications subject to change without further notice.
© Vaisala Oy



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/PTB100B	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	aluminium
Weight	85 g

Dimensions in mm (inches)

