

PMB100 Barometer Module for OEM Applications



Features/Benefits

- 800...1100 hPa pressure range
- -5...+45 °C (+23...+113 °F) operating temperature range
- Pressure dependent voltage output: 0...2.5 VDC
- Accuracy:
 - ±0.5 hPa total accuracy over the entire operating range
 - ±0.3 hPa at room temperature
- Compact size: 2.5 cm x 5 cm
- BAROCAP® silicon absolute pressure sensor
- Pressure connector for 1/16 in. tube

The Vaisala BAROCAP® Barometer Module PMB100 offers reliable barometric pressure measurement in a compact size.

The Vaisala BAROCAP® Barometer Module PMB100 is a compact barometric pressure transducer. The module can be used in a variety of applications, such as simple weather stations, laser interferometers and barometric data buoys.

A compact OEM module

The PMB100 module for OEM applications is a circuit board mountable barometric pressure transducer that is designed to interface with an AD converter and a microprocessor. All compensations are performed by the software of the host system. The PMB100 module can be incorporated into the customer's instrumentation.

Individual pressure calculation coefficients are delivered with each PMB100 module and stored in an EEPROM that uses the I2C interface.

All the user needs to do is to measure the temperature of the module and the two voltage outputs and calculate the compensated pressure reading with the help of coefficients. A final offset correction against a high-class pressure standard is recommended.

Vaisala BAROCAP® Sensor

The PMB100 module uses the Vaisala BAROCAP® Sensor, a silicon capacitive absolute pressure sensor developed by Vaisala for professional meteorological measurements. This sensor has excellent hysteresis and repeatability characteristics and outstanding temperature and long-term stability.



The PMB100 modules can be incorporated into data buoys to report barometric pressure at sea.

Technical Data

Operating range	(1hPa=1mbar)
Pressure range	800...1100 hPa
Temperature range	-5...+45 °C (+23...+113 °F)
Humidity range	<80% RH

Accuracy	
After OFFSET correction performed by the customer	
+20 °C (+68 °F) 1000 hPa:	
Linearity	±0.25 hPa
Hysteresis	±0.05 hPa
Repeatability	±0.05 hPa
Accuracy at +20 °C (+68 °F)	±0.3 hPa
Temperature hysteresis	
Total accuracy -5...+45 °C (+23...+113 °F)	±0.5 hPa
Without the OFFSET correction performed by the customer:	
Total accuracy -5...+45 °C (+23 ...+113 °F)	±1.00 hPa
Long term stability	±0.20 hPa (typical)
Effect of thermal or mechanical shocks	<0.20 hPa

An error of 1° C in temperature measurement causes an error of 0.14 hPa in pressure.

Dimensions in mm (inches)

General	
Supply voltage	9...16 VDC
Shut down control	with TTL level trigger ON OFF
	<0.7 V >2.0 V
Supply voltage sensitivity	less than 0.1 hPa
Current consumption	
operation mode	2 mA (typical)
shutdown mode	150µA (typical)
Output voltage	
output	0...2.5 V
reference	2.5 V
Resolution	0.1 hPa
Load resistance	10 kohm minimum
Load capacitance	100 nF maximum
Settling time at power-up	200 ms
Response time	100 ms
Warm-up shift	less than 0.05 hPa
Pressure hose	1/16", vinyl hose, 300 mm
Maximum pressure limit	2000 hPa
Electrical connectors	two 6-pin headers, 2.54 mm grid
Weight	70 g

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