

Grove – Temp & Humi & Barometer Sensor (BME280)

Part Number: 101020193

Overview:

Upgraded edition of BPM180 High accuracy Easy-to-use Grove Compatible Interface Supports both I2C and SPI communication can be used as an altimeter with accuracy of ± 1 meter.



Product Details:

Based on Bosch [BME280](#), we made this low-cost and high-precision environmental sensor -- the Grove - BME280 Environmental Sensor (Temperature Humidity Barometer). This BME280 supports both I2C and SPI communication and we provide the Arduino BME280 library.

Grove BME280 provides a precise measurement of not only barometric pressure and temperature, but also the humidity in the environment. The air pressure can be measured in a range from 300 hPa to 1100hPa with ± 1.0 hPa accuracy, while the sensor works perfectly for temperatures between -40°C and 85°C with an accuracy of $\pm 1^{\circ}\text{C}$. As for the humidity, you can get a humidity value with an error less than 3%.

Owing to its high accuracy on measuring the pressure, and the pressure changes with altitude, we can calculate the altitude with ± 1 meter accuracy, which makes it a precise altimeter as well.

Another great thing about this module is that you don't even need to worry about the I2C collisions as it provides both I2C and SPI interfaces. To use SPI, simply de-solder the bonding pads on the back of this BME280 breakout board. If you go with I2C, the board also provides 2 I2C addresses for you to select as you want.

BMP280 vs. BME280 vs. DPS310

We've already released the [Grove-BMP280](#) and [Grove-BME 280](#) barometric pressure sensors, let us show you how powerful [Grove-DPS310](#) is through the comparison of the table below.

ITEM	Grove-BMP280	Grove-BME280	Grove-DPS310
Pressure Range	300 ~ 1100 hPa	300 ~ 1100 hPa	300 ~ 1200 hPa
Temperature Range	-40 ~ 85 °C	-40 ~ 85 °C	-40 ~ 85 °C.
Pressure Precision	?	?	± 0.002 hPa (or ±0.02 m)
Pressure Accuracy (Absolute)	± 1 hPa (or ±8 m)	± 1 hPa (or ±8 m)	± 1 hPa (or ±8 m)
Pressure Accuracy (Relative)	± 0.12 hPa	± 0.12 hPa	± 0.06 hPa (or ±0.5 m)
Pressure Resolution	0.18 Pa	0.18 Pa	0.06 Pa
Humidity	-	0 ~ 100%	-
Communication	I2C/SPI	I2C/SPI	I2C/SPI

Features:

- High accuracy, absolute accuracy of ±1.0 hPa for pressure, ±1 accuracy for temperature and ±3% for humidity
- Easy-to-use Grove Compatible Interface
- Supports both I2C and SPI communication
- Can be used as an altimeter with the accuracy of ±1 meter.

Note:

As the sensor is quite sensitive to the environmental conditions, please DO NOT touch it with your fingers.

Technical Details:

Dimensions	40mm x20mm x15mm
Weight	G.W 10g
Battery	Exclude

Supply Voltage	5V or 3.3V
Current Consumption	0.4 mA
Humidity Accuracy	±3%
Interface	I2C and SPI
Grove Port	I2C (selectable address at 0x77(default) and 0x76)
Range	-40 to 85
Accuracy	±1
Range	300 - 1100 hPa
Accuracy	±1.0 hPa

Part List

Grove - Temp&Humi&Barometer Sensor (BME280)	1
Grove - Cable	1

ECCN/HTS

HSCODE	9026900090
USHSCODE	9031808070
UPC	841454118534