



Adafruit BMP581 I2C or SPI Temperature and Pressure Sensor - STEMMA QT

Product ID: 6407

Description

Bosch has been a leader in barometric pressure sensors, from the BMP085, BMP180, BMP280, BMP388, BMP390... now we've got the next generation, the Adafruit BMP58x Precision Barometric Pressure and Altimeter Breakout. As you would expect, this sensor is similar to its earlier versions but even better. The BMP581 has better precision than ever, which makes it excellent for environmental sensing or as a precision altimeter. It can even be used in either I2C and SPI configurations

The BMP58x is the next-generation of sensors from Bosch and is the upgrade to the BMP2xx and BMP3xx - with a low-altitude noise as low as 1cm (0.08Pa) and the same fast conversion time. And like the previous BMP280, you can use I2C or SPI. For simple easy wiring, go with I2C. If you want to connect a bunch of sensors without worrying about I2C address collisions, go with SPI.

This sensor has an astonishing relative accuracy of ± 0.4 Pascals at 900-1100 hPa and 25°C, which translates to about ± 3.3 centimeters of altitude (compare to the BMP280's ± 12 Pascal/ ± 1 meter and BMP388's ± 8 Pascal/ ± 0.5 meter). The typical absolute accuracy is ± 30 Pa or about 2.5 meters. Check the datasheet for how temperature and altitude can affect the absolute/relative accuracy.

The BMP581 is software/firmware compatible with the BMP580 but has better accurate/precision measurements. It's also more expensive! So pick this when accuracy is more important than cost.

The datasheet sort of implies they intend this sensor to be used for drones and quadcopters, to keep altitude stable, but you could also use this for wearables or any project that wants to track height-above-sea-level. Note that for absolute height you'll still need to enter in the barometric pressure at sea level if the weather changes, but that's true of every altimeter sensor that uses pressure. You can also measure temperature with $\pm 0.5^\circ\text{C}$ accuracy.

Technical Details

RoHS 2 2011 65 EU Compliant
RoHS 2 2015 863 EU Compliant