# Grove - High Precision Barometric Pressure Sensor (DPS310)

SKU 101020812

Grove - DPS310 is a high precision barometric pressure sensor, it can measure air pressure change caused by height changes in the centimeter level.

As shown in the figure below, when the height changes in centimeter-level, the barometer reading inside the mobile phone has almost no change, and the output of the Grove DSP310 changes significantly.
What is called "high precision"? That is high precision!!!
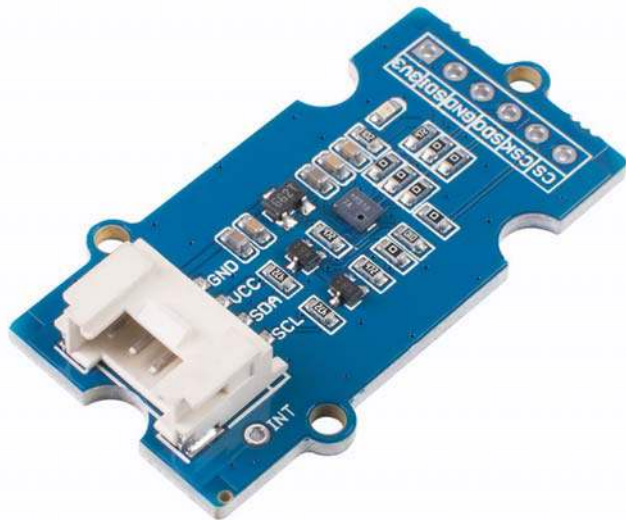
Features

- **High Pressure Precision**: ± 0.002 hPa (or ±0.02 m)
- **High Pressure Accuracy**: ± 0.06 hPa (or ±0.5 m)-Relative; ± 1 hPa (or ±8 m)-Absolute
- **Wide Range**: Pressure: 300 –1200 hPa; Temperature: -40 – 85 °C.
- **Easy to Use**: Grove IIC (with interrupt) / SPI
- Low power consumption

We can't wait to introduce you to this marvelous Barometer Sensor! With 0.06 Pa$_{RMS}$ (or 0.01m) pressure data resolution, ± 0.002 hPa (or ±0.02 m) pressure sensor precision and ± 0.06 hPa (or ±0.5 m) relative accuracy, it's probably one of the best barometric pressure sensors, incredibly, it only costs $ 5.9!

The Grove - High Precision Barometric Pressure Sensor is based on Infineon latest DPS310. The DPS310 is a miniaturized Digital Barometric Air Pressure Sensor with high accuracy and low current consumption, capable of measuring both pressure and temperature. The pressure measurement range of this sensor is 300 -1200 hPa, and the temperature measurement range is -40-85 ° C. Therefore you can use it to measure the air pressure, altitude, temperature, and build your own Arduino barometer.

This sensor is not only highly accurate but also extremely easy to use. You can flexibly choose the onboard Grove IIC interface or 6-pin SPI interface. When it comes to Grove IIC port, you can just plug it into the Seeeduino or Arduino+baseshiled, no wiring, no soldering required, and works for both 3.3V/5V system. All in all, it's a time and money saving high precision Arduino barometric pressure sensor solution, don't miss it.
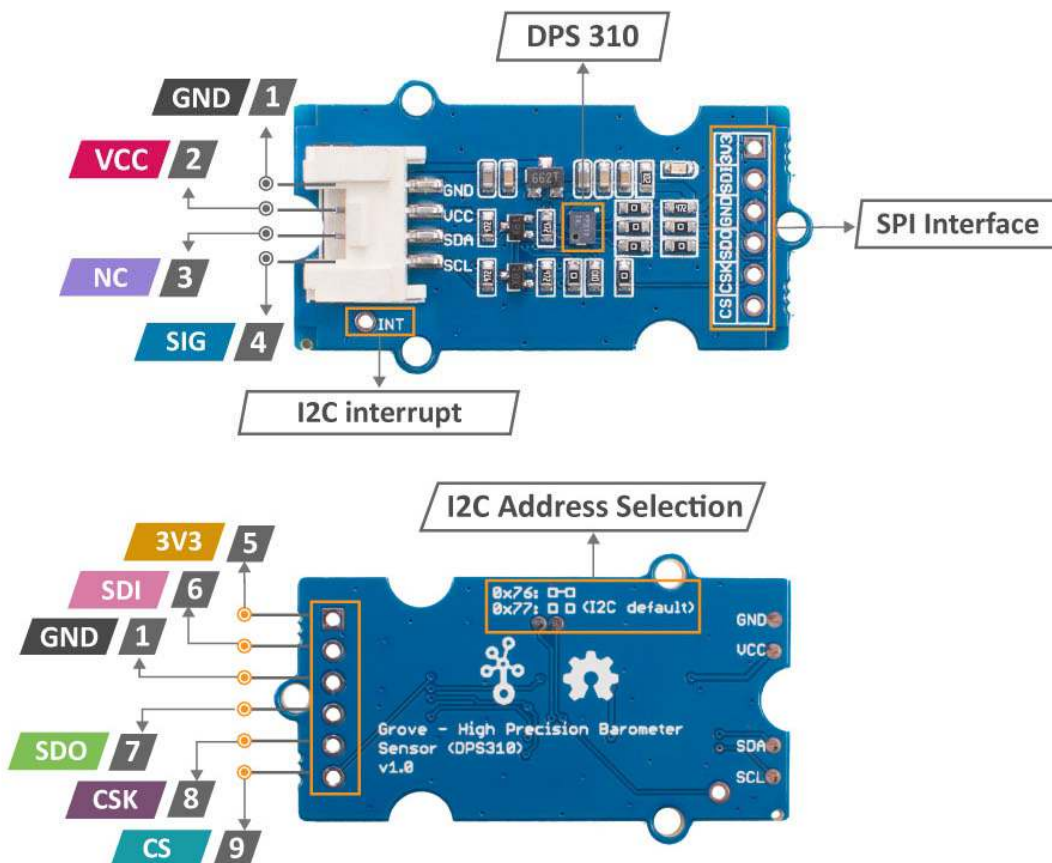
BMP280 vs. BME280 vs. DPS310

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 ℃	-40 ~ 85 ℃	-40 ~ 85 ℃.
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
Price	$8.9	$17.0	$5.9

Hardware Overview

1 : Connected to the system GND

2 : Power supply from grove 5V/3.3V

3 : Not connected

4 : Analog signal output

DPS 310

GND **1**

VCC **2**

NC **3**

SIG **4**

SPI Interface

I2C interrupt

I2C Address Selection

3V3 **5**

SDI **6**

GND **1**

SDO **7**

CSK **8**

CS **9**

0x76: ▢-▢
0x77: ▢ ▢ (I2C default)

GND
VCC
SDA
SCL

Grove - High Precision Barometer
Sensor (DPS310)
v1.0

5 : 3.3V Power supply

6 : Master data out, slave data in

7 : Master data in, slave data out

8 : Serial Clock

9 : Pull CS pin low to select SPI mode

Typical Application

- Indoor Navigation (floor detection e.g. in shopping malls and parking garages)
- Health and Sports (accurate elevation gain and vertical speed)
- Outdoor Navigation (GPS start-up time and accuracy improvement, dead-reckoning e.g. in tunnels)
- Weather Station('Micro-weather' and local forecasts)
- Drones (flight stability and height control)

Part List

- Grove - High Precision Barometric Pressure Sensor (DPS310) x1
- 20cm Grove Cable x1

ECCN/HTS

HSCODE	9026900000
UPC	

https://www.seeedstudio.com/Grove-High-Precision-Barometer-Sensor-DPS310-p-4397.html/1-14-20