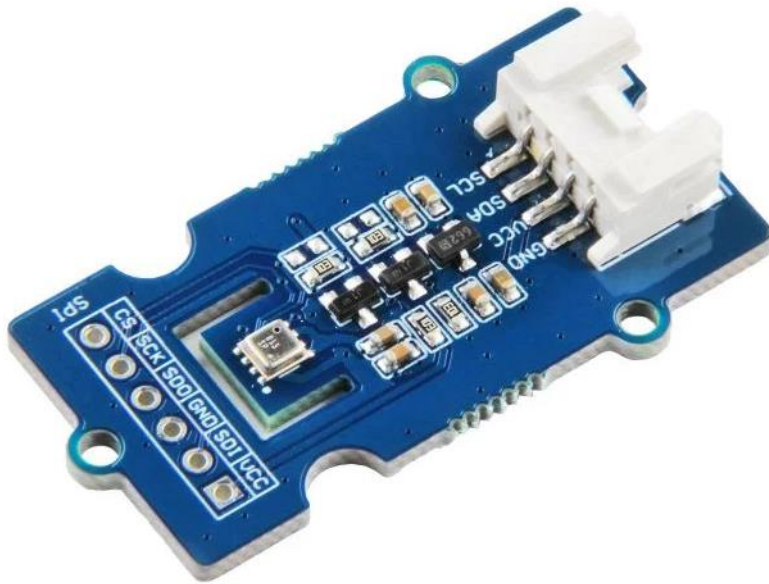


## Grove - Temperature, Humidity, Pressure and Gas Sensor for Arduino - BME680

Part Number: 101020513

### Overview:

A multiple function sensor that can measure temperature, pressure, humidity, and gas at the same time. Based on the BME680 module. It integrates the 4-in-1 function on such a small module and will be very beneficial to apply on GPS devices or IoT projects such as your own Arduino weather station or weather forecast system.



### Product Details:

#### Features:

- 4-in-1 multiple measurement: Temperature, Humidity, Pressure, Gas
- Low power consumption
- Wide measurement range
- Easy project operation: Grove compatible interface
- Optional output:

Individual humidity, pressure and gas sensors can be independently enabled/disabled

#### Description:

The Grove-Temperature&Humidity&Pressure&Gas Sensor (BME680) is not just a simple Arduino temperature sensor or barometer sensor but is a multiple function sensor that can measure temperature, pressure, humidity, and gas at the same time. Based on the BME680 module, it can provide you with rich environmental parameters at low power consumption and a wide measurement range. It integrates the 4-in-1 function on such a small

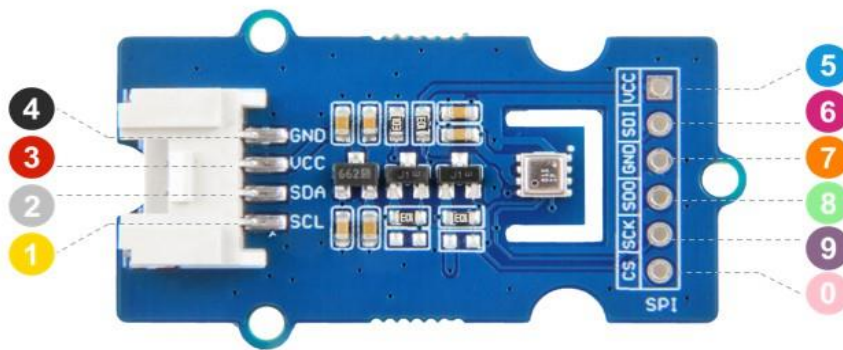
module and will be very beneficial to apply on GPS devices or IoT projects such as your own Arduino weather station or weather forecast system.

To get more technical information and get started with this sensor, please refer to our wiki page: [Grove - Temperature Humidity Pressure Gas Sensor \(BME680\)](#).

### Typical Applications:

- Indoor air quality monitor
- Home automation and control
- IoT device
- Barometer
- Weather forecast system using Arduino
- GPS enhancement(e.g. time-to-first-fix improvement, dead reckoning, slope detection)
- Indoor navigation(change of floor detection, elevator detection)
- Vertical velocity indication (rise/sink speed).

### Pin Map:

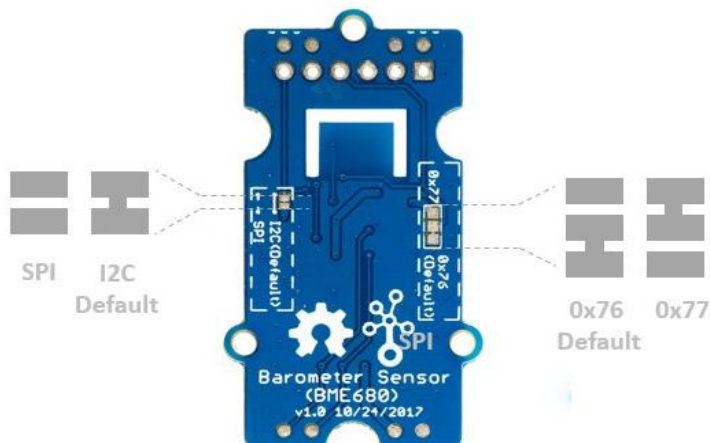


#### I2C

- 4 GND: connect this module to the system GND
- 3 VCC: you can use 5V or 3.3V for this module
- 2 SDA: serial data
- 1 SCL: serial clock

#### SPI

- 5 VCC: you can use 5V or 3.3V for this module
- 6 SDI: serial data input; data input/output in 3-wire mode
- 7 GND: connect the system GND with this module
- 8 SDO: serial data output; hi-Z in 3-wire mode
- 9 SCK: serial clock
- 0 CS: chip select, active low



## Technical Details:

Dimensions	40mm x20mm x7mm
Weight	G.W 9.1g
Battery	Exclude
Operating Voltage	3.3V/5V
Operating Range	-40~+85°C; 0-100% r.H.; 300-1100hPa
Humidity Absolute Accuracy	± 3%r.H. (20-80 %r.H.,25°C)
Humidity Resolution	0.008 %r.H.
Pressure Absolute Accuracy	± 0.6 hPa (300-1100 hPa, 0-65°C)
Pressure Resolution	0.18 Pa
Temperature Absolute Accuracy	± 0.5°C (25°C, At,25) ; ± 1°C (0-65°C, At,full)
Temperature Resolution	0.01°C
Digital Interface	I2C(up to 3.4MHZ)/ SPI(3 and 4 wire, up to 10MHz)
I2C address	0x76(default)/ 0x77(optional)

## Part List:

Grove - Temperature, Humidity, Pressure and Gas Sensor (BME680) – 1

Grove cable – 1

## ECCN/HTS

HSCODE	9025900090
USHSCODE	9031808070
CE	1