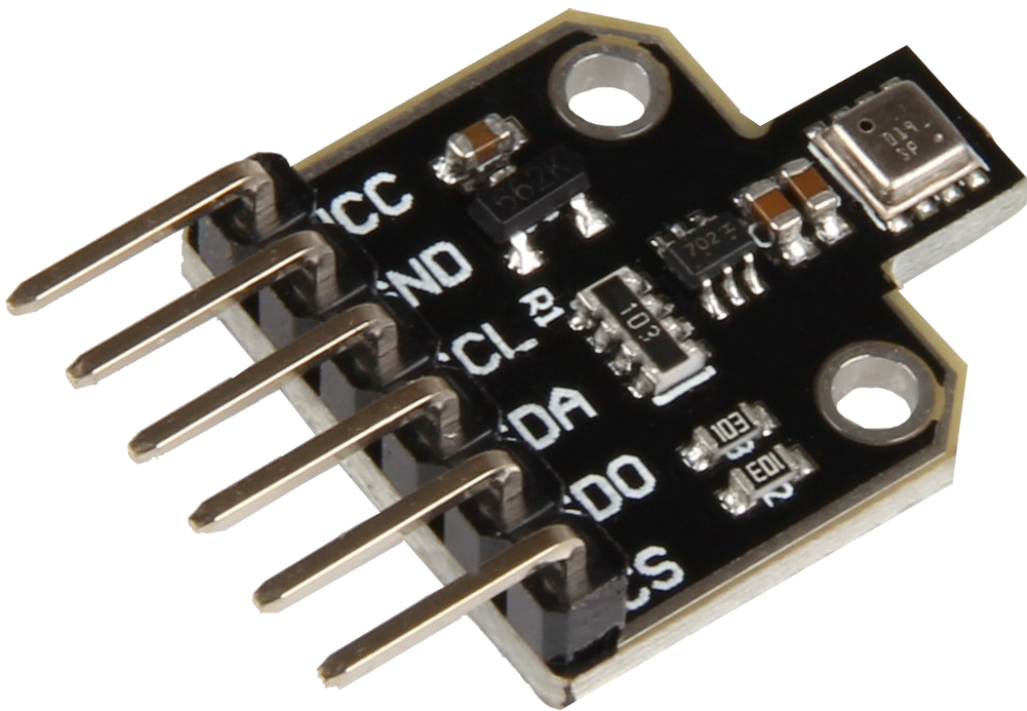# JOY-IT

SEN-BME680
Temperature, air pressure, humidity
and air quality sensor

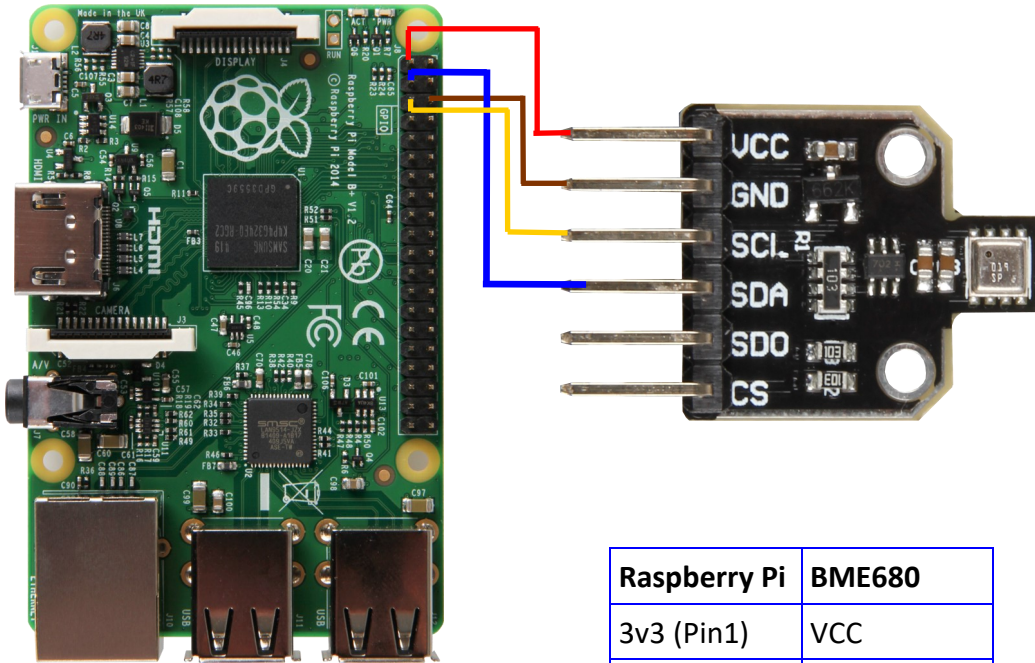# INHALTSVERZEICHNIS

1. Introduction

Dear customer,
thank you for choosing our product.

In the following, we will show you what to observe during the use.
If you encounter any unexpected problems during use, please do not hesitate to contact us.

2. How to use with RaspberryPi

2.1 Wiring

Raspberry Pi	BME680
3v3 (Pin1)	VCC
GND (Pin 6)	GND
SCL (Pin 5)	SCL
SDA (Pin 3)	SDA

2.2 Installation

Open the terminal and execute the following command:

```
sudo pip3 install adafruit-circuitpython-bme680
```

The necessary librarys will be installed now.

Now you have to activate I2C:

```
sudo raspi-config
```

Choose **Interfacing Options** -> and activate **I2C.**

2.3 Code Example

Important!: the adafruit BME680 library will only work with Python3.

```python
import time
import board
from busio import I2C
import adafruit_bme680

# Create library object using our Bus I2C port
i2c = I2C(board.SCL, board.SDA)
bme680 = adafruit_bme680.Adafruit_BME680_I2C(i2c, debug=False)

# change this to match the location's pressure (hPa) at sea level
bme680.sea_level_pressure = 1013.25

while True:
        print("\nTemperature: %0.1f C" % bme680.temperature)
        print("Gas: %d ohm" % bme680.gas)
        print("Humidity: %0.1f %%" % bme680.humidity)
        print("Pressure: %0.3f hPa" % bme680.pressure)
        print("Altitude = %0.2f meters" % bme680.altitude)

        time.sleep(1)
```
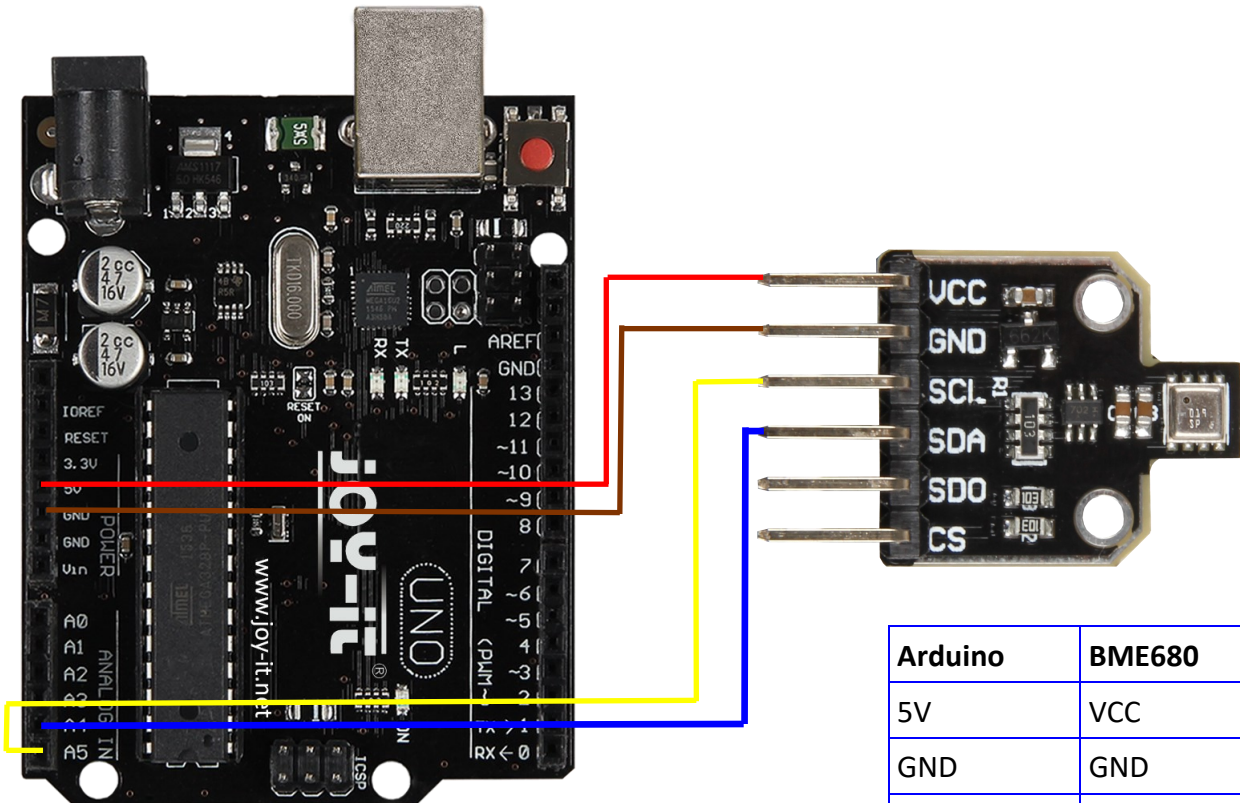
3. How to use with the Arduino

3.1 Wiring
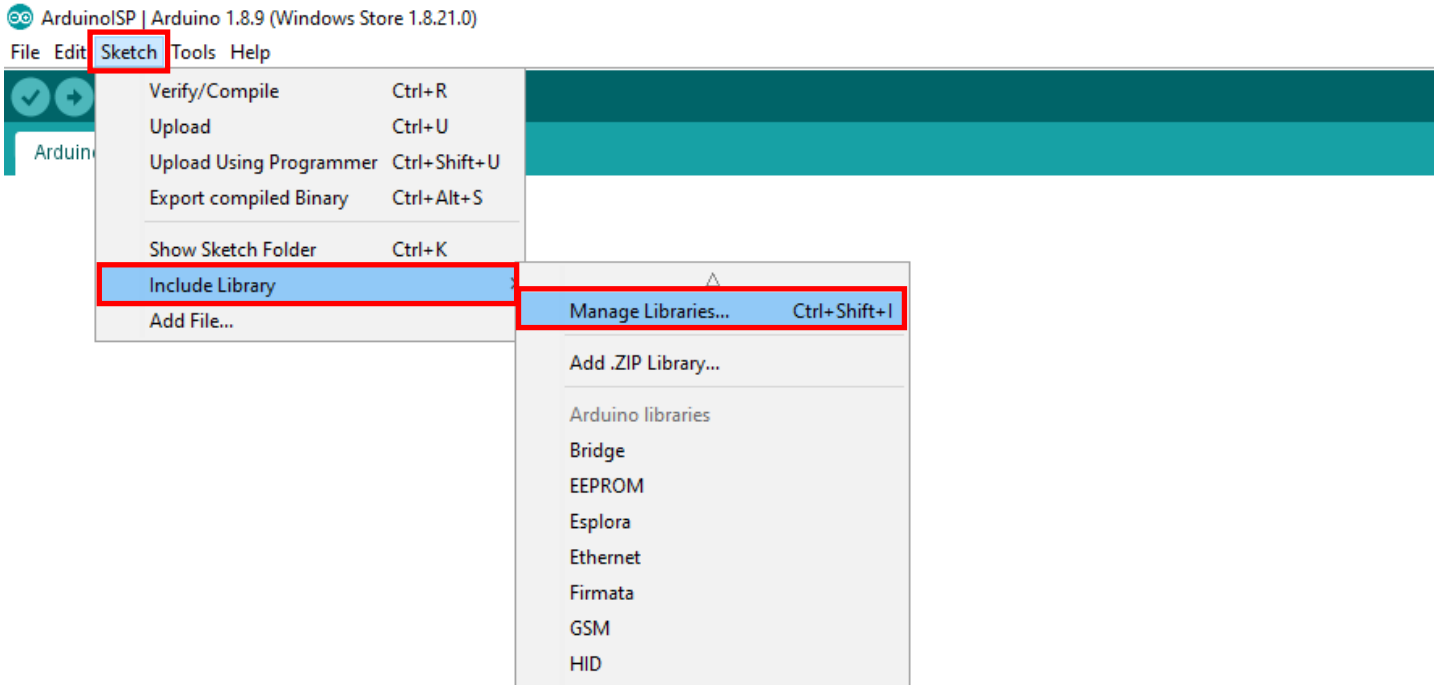

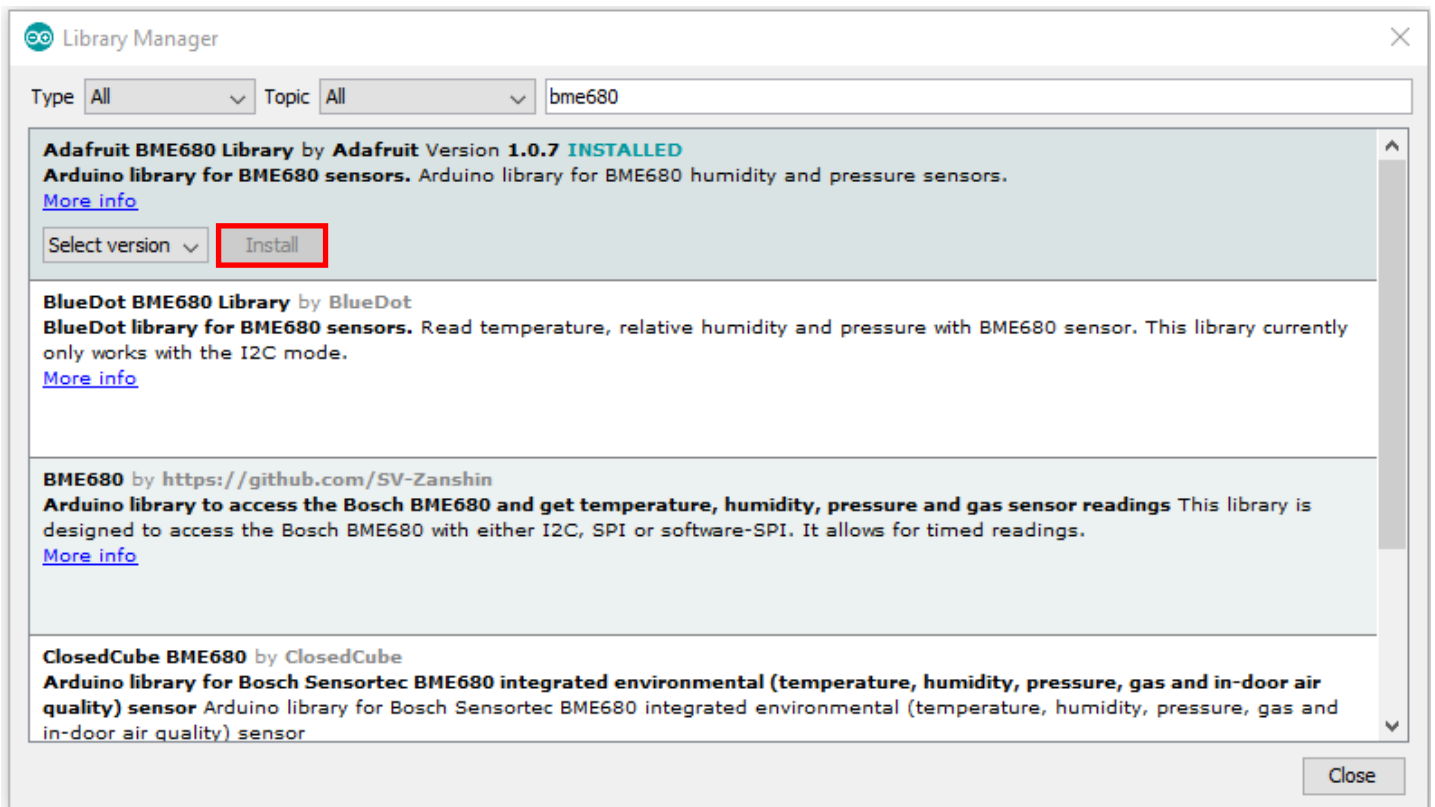| Arduino	BME680
5V	VCC
GND	GND
SCL (A5)	SCL
SDA (A4)	SDA

3.2 Installation

You need to install the necessary librarys for the sensor to work.

Click on **Sketch** -> **Include Library** -> **Manage Libraries...**

Tipe „bme680" in the searchbar and install the **Adafruit BME680 Library by Adafruit**

3.3 Code Example

On the following 2 pages you can see the example code for the BME680 sensor.

```cpp
/***************************************************************************
  This is a library for the BME680 gas, humidity, temperature & pressure sensor

  Designed specifically to work with the Adafruit BME680 Breakout
  ----> http://www.adafruit.com/products/3660

  These sensors use I2C or SPI to communicate, 2 or 4 pins are required
  to interface.

  Adafruit invests time and resources providing this open source code,
  please support Adafruit and open-source hardware by purchasing products
  from Adafruit!

  Written by Limor Fried & Kevin Townsend for Adafruit Industries.
  BSD license, all text above must be included in any redistribution
 ***************************************************************************/

#include <Wire.h>
#include <SPI.h>
#include <Adafruit_Sensor.h>
#include "Adafruit_BME680.h"

#define BME_SCK 13
#define BME_MISO 12
#define BME_MOSI 11
#define BME_CS 10
#define SEALEVELPRESSURE_HPA (1013.25)

Adafruit_BME680 bme; // I2C
//Adafruit_BME680 bme(BME_CS); // hardware SPI
//Adafruit_BME680 bme(BME_CS, BME_MOSI, BME_MISO,  BME_SCK);

void setup() {
  Serial.begin(9600);
  while (!Serial);
  Serial.println(F("BME680 test"));

  if (!bme.begin()) {
    Serial.println("Could not find a valid BME680 sensor, check wiring!");
    while (1);
  }

  // Set up oversampling and filter initialization
  bme.setTemperatureOversampling(BME680_OS_8X);
  bme.setHumidityOversampling(BME680_OS_2X);
  bme.setPressureOversampling(BME680_OS_4X);
  bme.setIIRFilterSize(BME680_FILTER_SIZE_3);
  bme.setGasHeater(320, 150); // 320*C for 150 ms
}
```

3.3 Code Example

```
void loop() {
  if (! bme.performReading()) {
    Serial.println("Failed to perform reading :(");
    return;
  }
  Serial.print("Temperature = ");
  Serial.print(bme.temperature);
  Serial.println(" *C");

  Serial.print("Pressure = ");
  Serial.print(bme.pressure / 100.0);
  Serial.println(" hPa");

  Serial.print("Humidity = ");
  Serial.print(bme.humidity);
  Serial.println(" %");

  Serial.print("Gas = ");
  Serial.print(bme.gas_resistance / 1000.0);
  Serial.println(" KOhms");

  Serial.print("Approx. Altitude = ");
  Serial.print(bme.readAltitude(SEALEVELPRESSURE_HPA));
  Serial.println(" m");

  Serial.println();
  delay(2000);
}
```

4. Information and Take-back Obligations

Symbol on electrical and electronic equipment

This crossed-out dustbin means that electrical and electronic equipment does not belong in the household waste. You must return the old appliances to a collection point. Before handing over waste batteries and accumulators that are not enclosed by waste equipment must be separated from it.

Return options
As an end user, you can return your old appliance (which essentially fulfils the same function as the new appliance purchased from us) free of charge for disposal when you purchase a new appliance. Small appliances with no external dimensions greater than 25 cm can be disposed of in normal household quantities independently of the purchase of a new appliance.

Possibility of return at our company location during opening hours
Simac GmbH, Pascalstr. 8, D-47506 Neukirchen-Vluyn

Possibility of return in your area
We will send you a parcel stamp with which you can return the device to us free of charge. Please contact us by e-mail at Service@joy-it.net or by telephone.

Information on packaging
If you do not have suitable packaging material or do not wish to use your own, please contact us and we will send you suitable packaging.

5. Support

We also support you after your purchase. If there are any questions left or if you encounter any problems, please feel free to contact us by mail, phone, or by our ticket-support-system on our website.

E-Mail: service@joy-it.net
Ticket-System: http://support.joy-it.net
Phone: +49 (0)2845 98469 – 66 (11- 18 o'clock)

For more information, please visit our website:

www.joy-it.net