CO2Meter.com
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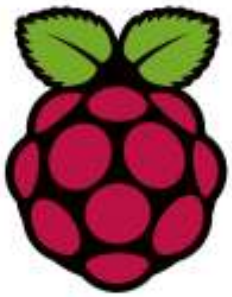
Application Note: 142

K-30/K-33 I2C on Raspberry Pi



Overview:

This Application note will show you how to use a Raspberry Pi to interact with a K series sensor over I2C.

Getting Started:

This guide assumes you have gotten your Raspberry Pi operating system installed and the I2C port enabled. If not, follow these two guides before proceeding:

- Rpi Getting Started [Engadget]
- Rpi I2C [Instructables]

Once you have followed those steps all you will still need one last module called “notSMB”. It is a python library for i2c that gives you more control than the smBus library which does not follow the same protocol as the K series sensors. To install it just open a terminal and type the following commands:

sudo apt-get update
sudo apt-get install python-dev
mkdir notsmb
cd notsmb
wget http://www.byvac.com/downloads/sws/notsmb_1_0.zip
unzip notsmb_1_0.zip
sudo python setup.py install

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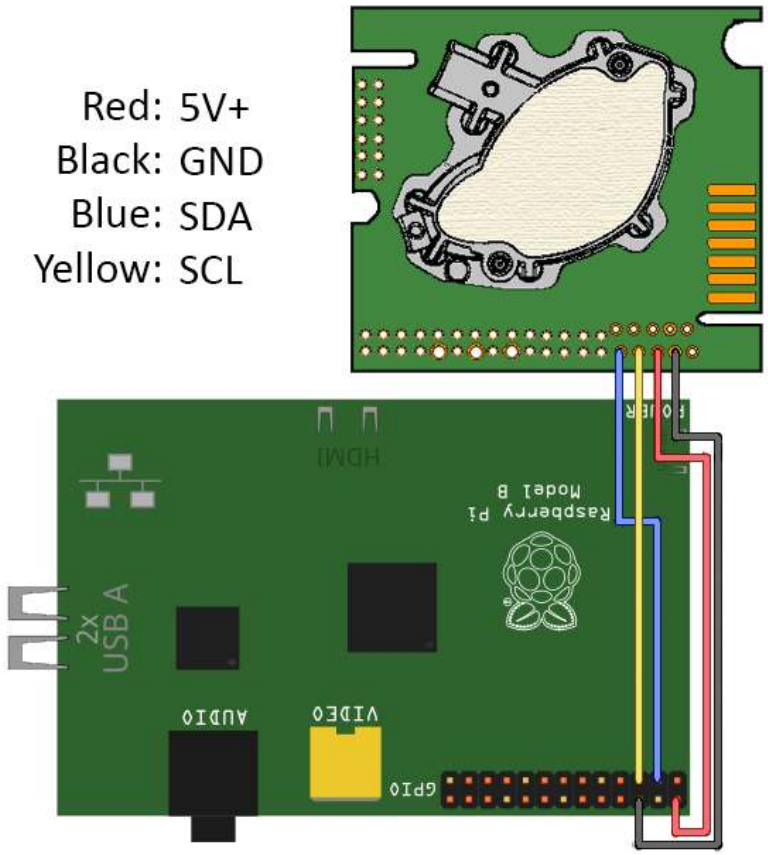
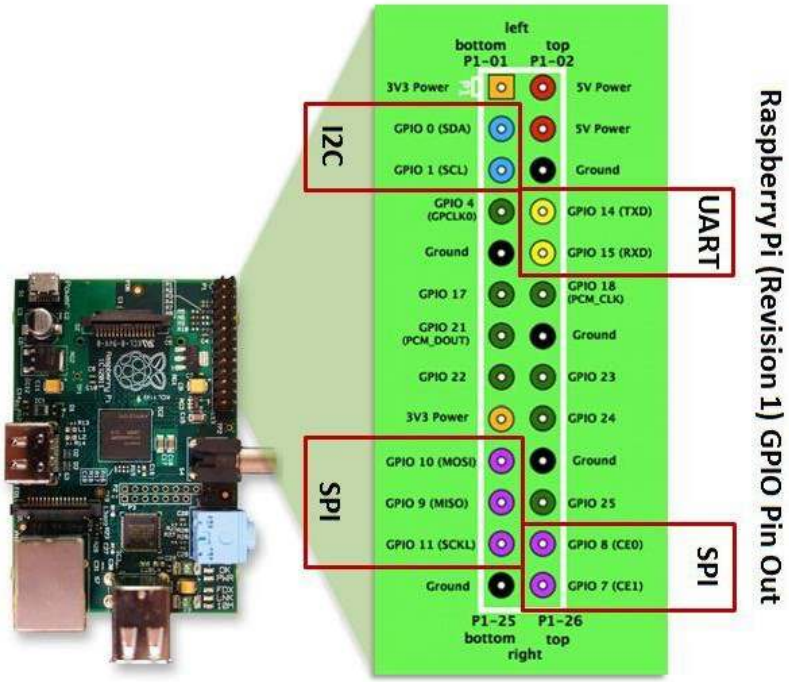
Wiring the sensor:

The next step is to wire the sensor to the Raspberry Pi following the image below:





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Modifying the script:

Once the board is wired you are ready to run the script. Just Copy the code below to a new text file and save it as "CO2Meter.py". Using the I2C port requries root access, so to run it open a terminal and navigate to the folder containing the script and type:

sudo python CO2meter.py

The script will run, poll the sensor for its values, and then report the packet received followed by the CO2 level in ppm on the next line. (if the sensor is a K33 ICB or K33 BLG you have to multiply the value by 10 to get the actual ppm)

Code:

```
import time

from notsmb import notSMB


I2CBUS = 1

CO2_ADDR = 0x68

READ = 0x22

readBytes = [0x00, 0x08, 0x2A]


bus = notSMB(I2CBUS)

while True:
   try:
      resp = bus.i2c(CO2_ADDR,[0x22,0x00,0x08,0x2A],4)
      time.sleep(0.1)
      #resp = bus.i2c(CO2_ADDR,[],4)
      co2Val = (resp[1]*256) + resp[2]
      print(resp)
      print(co2Val);
      break
   except:
      blank =0;
```