
Adafruit's CCS811 Library Documentation

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CircuitPython driver for the [CCS811](#) air quality sensor.

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)
- [Register](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).

CHAPTER 2

Installing from PyPI

On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-ccs811
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-ccs811
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name  
python3 -m venv .env  
source .env/bin/activate  
pip3 install adafruit-circuitpython-ccs811
```


See the [guide](#) for wiring and installation instructions.

Of course, you must import the library to use it:

```
import busio
import adafruit_ccs811
```

Next, initialize the I2C bus object.

```
from board import *
i2c_bus = busio.I2C(SCL, SDA)
```

Once you have created the I2C interface object, you can use it to instantiate the CCS811 object

```
ccs = adafruit_ccs811.CCS811(i2c_bus)
```

3.1 Reading Sensor

To read the gas sensor simply read the attributes:

```
print("CO2: ", ccs.eco2, " TVOC:", ccs.tvoc)
```


CHAPTER 4

Contributing

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

CHAPTER 5

Documentation

For information on building library documentation, please check out [this guide](#).

6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/ccs811_simpletest.py

```
1 # SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
2 # SPDX-License-Identifier: MIT
3
4 import time
5 import board
6 import busio
7 import adafruit_ccs811
8
9 i2c = busio.I2C(board.SCL, board.SDA)
10 ccs811 = adafruit_ccs811.CCS811(i2c)
11
12 # Wait for the sensor to be ready
13 while not ccs811.data_ready:
14     pass
15
16 while True:
17     print("CO2: {} PPM, TVOC: {} PPB".format(ccs811.eco2, ccs811.tvoc))
18     time.sleep(0.5)
```

6.2 CCS811 - Adafruit CCS811 Air Quality Sensor Breakout - VOC and eCO2

This library supports the use of the CCS811 air quality sensor in CircuitPython.

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Notes:

#. Datasheet

class adafruit_ccs811.CCS811 (*i2c_bus*, *address=90*)
CCS811 gas sensor driver.

Parameters

- **i2c** (*I2C*) – The I2C bus.
- **addr** (*int*) – The I2C address of the CCS811.

baseline

The property reads and returns the current baseline value. The returned value is packed into an integer. Later the same integer can be used in order to set a new baseline.

data_ready

True when new data has been read.

eco2

Equivalent Carbon Dioxide in parts per million. Clipped to 400 to 8192ppm.

error

True when an error has occurred.

error_code

Error code

reset ()

Initiate a software reset.

set_environmental_data (*humidity*, *temperature*)

Set the temperature and humidity used when computing eCO2 and TVOC values.

Parameters

- **humidity** (*int*) – The current relative humidity in percent.
- **temperature** (*float*) – The current temperature in Celsius.

set_interrupt_thresholds (*low_med*, *med_high*, *hysteresis*)

Set the thresholds used for triggering the interrupt based on eCO2. The interrupt is triggered when the value crossed a boundary value by the minimum hysteresis value.

Parameters

- **low_med** (*int*) – Boundary between low and medium ranges
- **med_high** (*int*) – Boundary between medium and high ranges
- **hysteresis** (*int*) – Minimum difference between reads

temp_offset = 0.0

Temperature offset.

temperature

Deprecated since version 1.1.5: Hardware support removed by vendor

Temperature based on optional thermistor in Celsius.

tvoc

Total Volatile Organic Compound in parts per billion.

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Indices and tables

- `genindex`
- `modindex`
- `search`

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