Adafruitsht31 Library Documentation

Release 1.0

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Dec 21, 2018

Contents

CircuitPython module for the SHT31-D temperature and humidity sensor.

CHAPTER 1

Dependencies

This driver depends on:

- Adafruit CircuitPython
- Bus Device

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

CHAPTER 2

Usage Example

You must import the library to use it:

```
import adafruit_sht31d
```

This driver takes an instantiated and active I2C object (from the `busio` or the `bitbangio` library) as an argument to its constructor. The way to create an I2C object depends on the board you are using. For boards with labeled SCL and SDA pins, you can:

```
from busio import I2C
from board import SCL, SDA

i2c = I2C(SCL, SDA)
```

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

```
sensor = adafruit_sht31d.SHT31D(i2c)
```

And then you can start measuring the temperature and humidity:

```
print(sensor.temperature)
print(sensor.relative_humidity)
```

CHAPTER 3

Contributing

Contributions are welcome! Please read our Code of Conduct before contributing to help this project stay welcoming.

CHAPTER 4

Building locally

To build this library locally you'll need to install the circuitpython-build-tools package.

```
python3 -m venv .env
source .env/bin/activate
pip install circuitpython-build-tools
```

Once installed, make sure you are in the virtual environment:

```
source .env/bin/activate
```

Then run the build:

```
circuitpython-build-bundles --filename_prefix adafruit-circuitpython-sht31d --library_
↪location .
```

4.1 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the index.html in your browser to view them. It will also (due to -W) error out on any warning like Travis will. This is a good way to locally verify it will pass.

CHAPTER 5

Table of Contents

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/sht31d_simpletest.py

```
import time
import board
import busio
import adafruit_sht31d

# Create library object using our Bus I2C port
i2c = busio.I2C(board.SCL, board.SDA)
sensor = adafruit_sht31d.SHT31D(i2c)

loopcount = 0
while True:
    print("\nTemperature: %0.1f C" % sensor.temperature)
    print("Humidity: %0.1f %%" % sensor.relative_humidity)
    loopcount += 1
    time.sleep(2)
    # every 10 passes turn on the heater for 1 second
    if loopcount == 10:
        loopcount = 0
        sensor.heater = True
        print("Sensor Heater status =", sensor.heater)
        time.sleep(1)
        sensor.heater = False
        print("Sensor Heater status =", sensor.heater)
```

5.2 adafruit_sht31d

This is a CircuitPython driver for the SHT31-D temperature and humidity sensor.

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5.2.1 Implementation Notes

Hardware:

- Adafruit Sensiron SHT31-D Temperature & Humidity Sensor Breakout (Product ID: 2857)

Software and Dependencies:

- Adafruit CircuitPython firmware for the ESP8622 and M0-based boards: https://github.com/adafruit/circuitpython/releases
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class adafruit_sht31d.**SHT31D**(*i2c_bus*, *address=68*)
A driver for the SHT31-D temperature and humidity sensor.

Parameters

- **i2c_bus** – The busio.I2C object to use. This is the only required parameter.
- **address** (*int*) – (optional) The I2C address of the device.

heater
Control the sensor internal heater.

relative_humidity
The measured relative humidity in percent.

reset()
Execute a Soft RESET of the sensor.

status
The Sensor status.

temperature
The measured relative humidity in percent.

CHAPTER 6

Indices and tables

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- modindex
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