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# **Adafruit MCP9808 Library Documentation**

***Release 1.0***

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The MCP9808 is an awesome, high accuracy temperature sensor that communicates over I2C. Its available on [Adafruit](#) as a *breakout*.



# CHAPTER 1

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## Dependencies

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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

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### Usage Notes

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Getting the temperature in Celsius is easy! First, import all of the pins from the board, busio for native I2C communication and the thermometer library itself.

```
from board import *
import busio
import adafruit_mcp9808
```

Next, initialize the I2C bus in a with statement so it always gets shut down ok. Then, construct the thermometer class:

```
# Do one reading
with busio.I2C(SCL, SDA) as i2c:
    t = adafruit_mcp9808.MCP9808(i2c)

# Finally, read the temperature property and print it out
print(t.temperature)
```



## CHAPTER 3

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### Contributing

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



## CHAPTER 4

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### Building locally

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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-mcp9808 --
↳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.



### 5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/mcp9808\_simpletest.py

```
1 import time
2 import board
3 import busio
4 import adafruit_mcp9808
5
6 # This example shows how to get the temperature from a MCP9808 board
7 i2c_bus = busio.I2C(board.SCL, board.SDA)
8 mcp = adafruit_mcp9808.MCP9808(i2c_bus)
9
10 while True:
11     tempC = mcp.temperature
12     tempF = tempC * 9 / 5 + 32
13     print('Temperature: {} C {} F '.format(tempC, tempF))
14     time.sleep(2)
```

### 5.2 adafruit\_mcp9808 - MCP9808 I2C Temperature Sensor

CircuitPython library to support MCP9808 high accuracy temperature sensor.

- Author(s): Scott Shawcroft

#### 5.2.1 Implementation Notes

**Hardware:**

- Adafruit [MCP9808 High Accuracy I2C Temperature Sensor Breakout](#) (Product ID: 1782)

### Software and Dependencies:

- Adafruit CircuitPython firmware (0.8.0+) 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](https://github.com/adafruit/Adafruit_CircuitPython_BusDevice)

### Notes:

1. Datasheet: <http://www.adafruit.com/datasheets/MCP9808.pdf>

**class** `adafruit_mcp9808.MCP9808` (*i2c\_bus*, *address=24*)

Interface to the MCP9808 temperature sensor.

**temperature**

Temperature in celsius. Read-only.



## CHAPTER 6

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### Indices and tables

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- `genindex`
- `modindex`
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