

## 1. Introduction

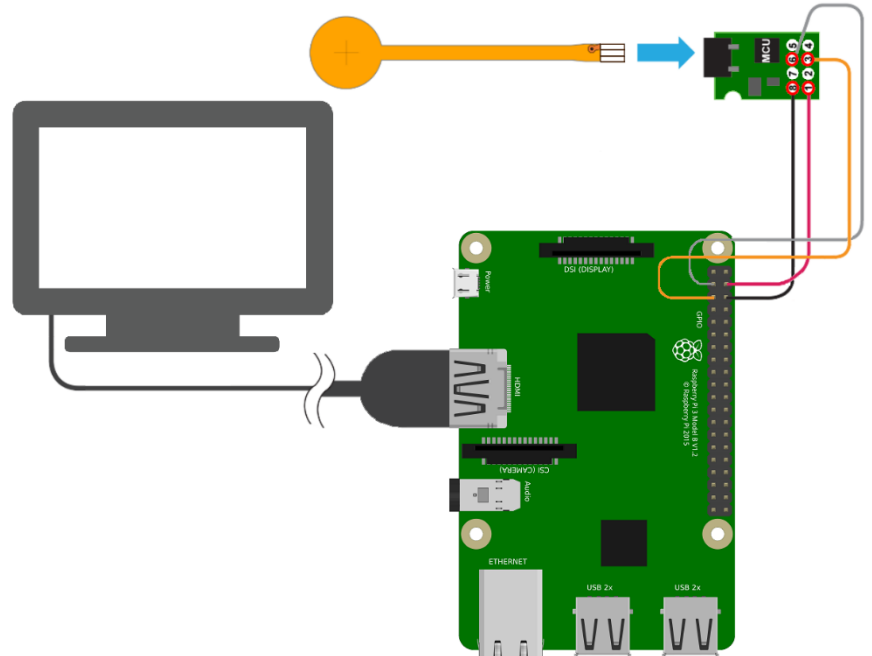
In this project, we create a force measurement device from a Raspberry Pi, SingleTact sensor and electronics. Using Python code, the Pi continuously reads data from the SingleTact over I2C. The data are then plotted in real time on a connected display. The following sections describe how to correctly connect the SingleTact to a Raspberry Pi and install the software.

## 2. Getting Started

Before you start, you will need:

- SingleTact sensor,
- electronics & jumper wires,
- Raspberry Pi;
- display device.

Connect the sensor into the FFC connector on the green interface board then, connect to the Raspberry Pi with four male-to-male jumper wires as shown.



## 3. Configuring the Pi

Download the Raspberry Pi SingleTact demo software either directly from

<https://github.com/SingleTact/RaspberryPiDemo/releases/tag/v1.0>

or use git:

```
git clone https://github.com/SingleTact/RaspberryPiDemo
```

Install the following dependencies.

```
sudo apt-get install python3-gi-cairo python3-smbus i2c-tools
```

By default, I2C (the protocol used to communicate with SingleTact) is not enabled on the Pi. Enable it with the raspi-config tool.

```
sudo raspi-config
```

Select *Interfacing Options* → *I2C* → *Enable/Disable automatic loading*, then select 'yes'.

If running Raspbian releases before 3.18, edit the blacklist configuration as follows.

```
sudo nano /etc/modprobe.d/raspi-blacklist.conf
```

Comment out the following by adding a “#” to the start of each line.

```
blacklist spi-bcm2708  
blacklist i2c-bcm2708
```

Reboot to allow system changes to take effect

```
sudo reboot
```

## 4. Running the Software

The software can be launched directly from the terminal:

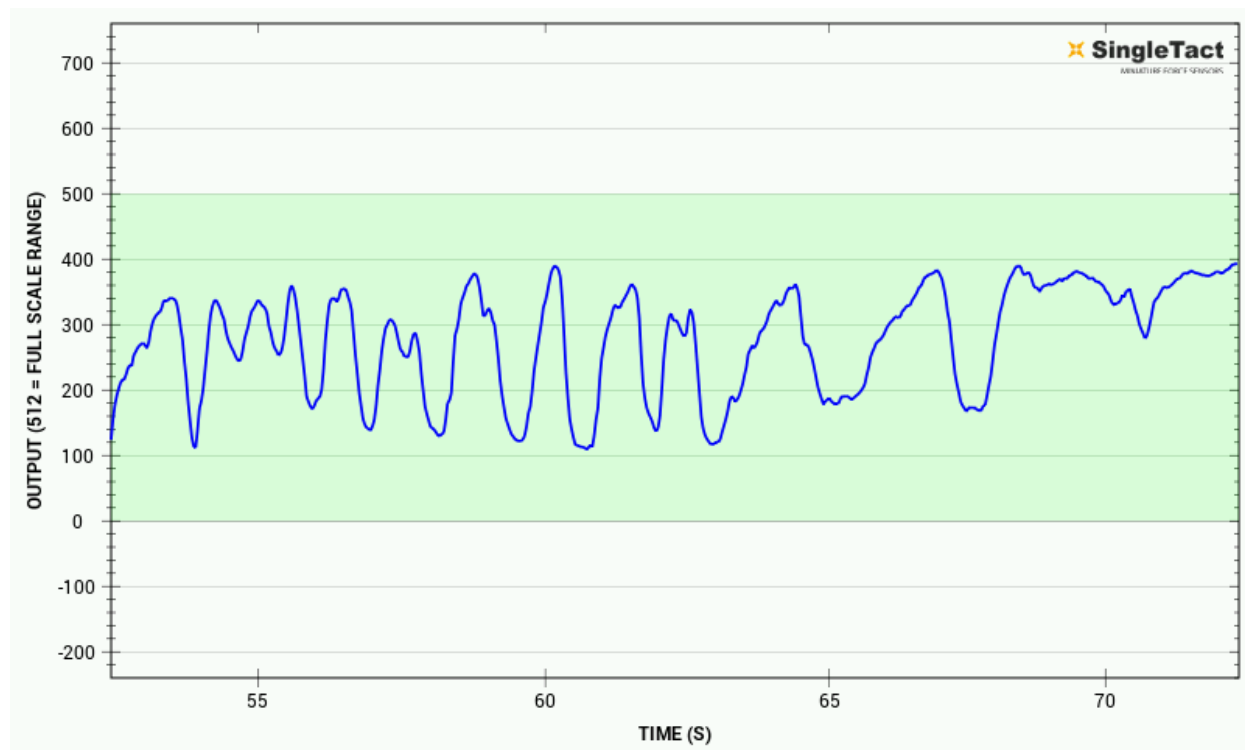
```
cd ~/RaspberryPiDemo  
python pps-singletact.py
```

To create a log of all output data, launch the program in verbose mode with output redirected to a file:

```
python pps-singletact.py -v &>> my_output_file
```

To automatically launch the SingleTact software at startup, append a line to /etc/profile like this:

```
echo "python pps-singletact.py &" | sudo tee -a /etc/profile
```



Please check the SingleTact Manual for troubleshooting and more detailed information:

[http://www.singletact.com/SingleTact\\_Manual.pdf](http://www.singletact.com/SingleTact_Manual.pdf)

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