

The SCT-013 is a non-invasive AC current sensor capable of measuring currents of up to 100 A. It can be interfaced into any microcontroller such as Arduino.



This current sensor should only be used in a single current-carrying wire, and not on multi-core wires. If your wire is a multi-core type, use only a single wire from the multi-core.



Warnings:

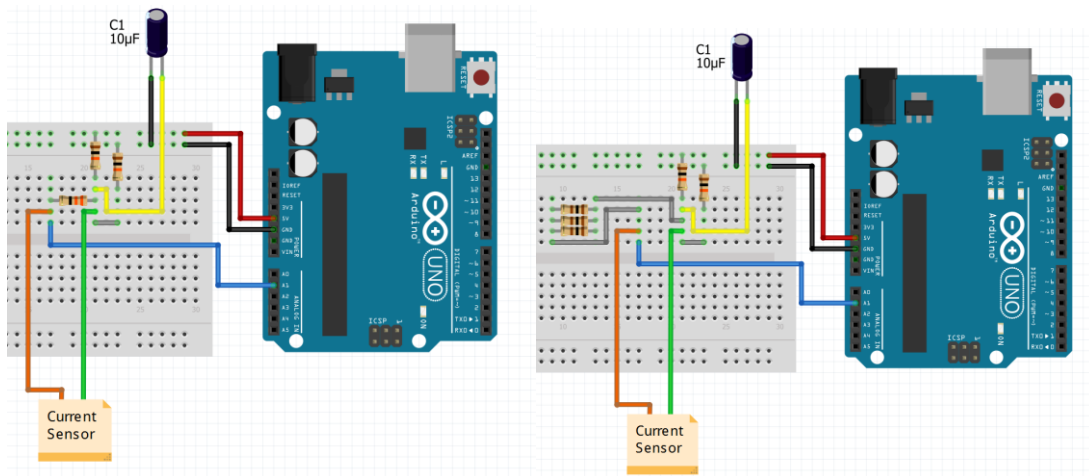
This quickstart guide is only for using Arduino Uno only. Do not attempt to use it on other microcontrollers, as it could destroy your system.

Never clip your sensor around a “live” wire before constructing the circuit. A live wire is any wire connected to a power source with current passing through it.

Always short-circuit the current sensor while it is on a live wire. Never open-circuit the current sensor.

Hardware Configuration

Setup the hardware as shown below. If you do not have 33 Ω resistor, use 3 pieces of 100 Ω resistor connected in parallel.



Using 33Ω (left) and 100Ω(right)

Software Configuration

Download [EmonLib](#). Extract the library and place it into the Arduino libraries folder. By default, it is located on your Documents folder.

Open Arduino IDE, and copy the code below:

```
// EmonLibrary examples openenergymonitor.org, Licence GNU GPL V3

#include "EmonLib.h"                                // Include Emon Library
EnergyMonitor emon1;                                // Create an instance

void setup()
{
  Serial.begin(9600);

  emon1.current(1, 111.1);                            // Current: input pin, calibration.
}

void loop()
{
  double Irms = emon1.calcIrms(1480); // Calculate Irms only

  Serial.print(Irms*230.0);                            // Apparent power
  Serial.print(" ");
  Serial.println(Irms);                                // Irms
}
```

Upload the code. Clip the current sensor around the wire. It should display the current and power reading