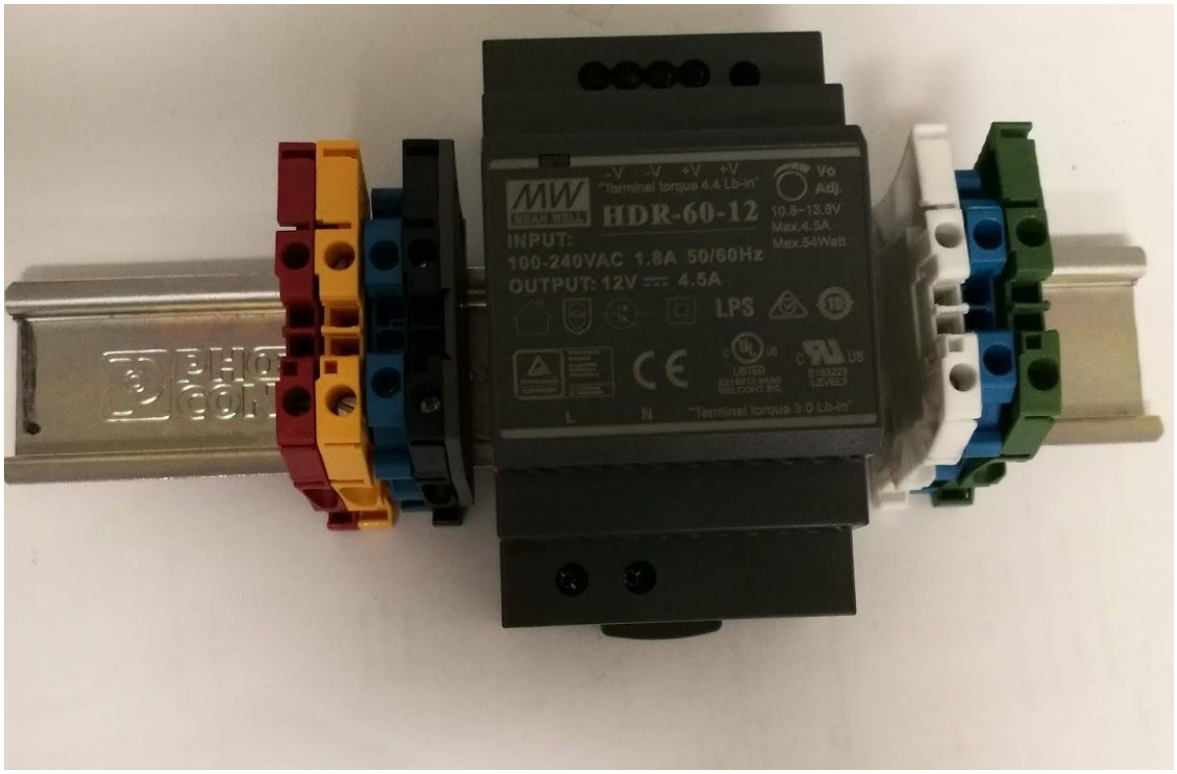
Creating the Power Supplies

The purpose of this document is to show you an example of how the power source can be constructed with the components given.

As shown in the image below, the power supply is connected to the DIN Rail, along with several other cable connections. These however are not necessary to operate OpenPMU. The Power supplies must still be set up and plugged in correctly, which is shown in this document.

To start creating the the DIN power rail, you will need to cut the DIN rail into 20 cm long lengths, as shown below. To do so, I had a faculty member use a bandsaw to cut the rail. Take the DIN rail terminals and attach them to the rail as shown below.

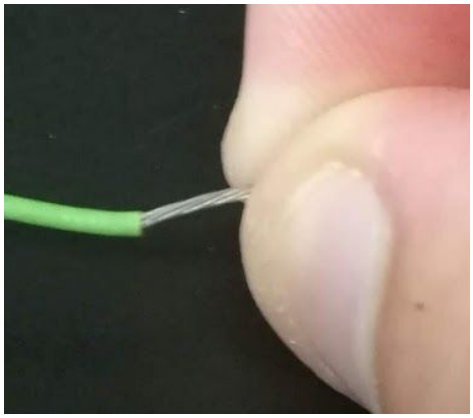


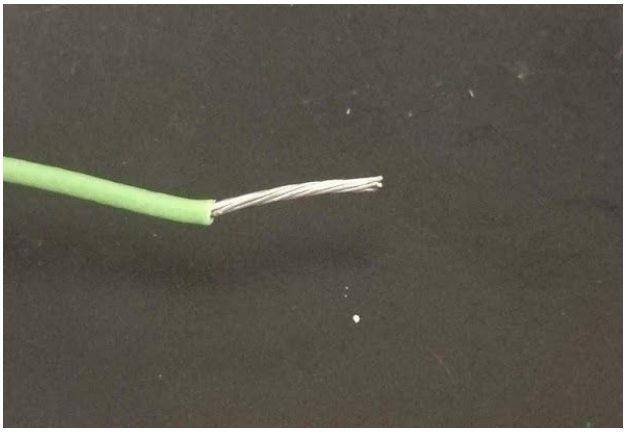
The purpose of the DIN rail and all of the components on it are as follows.

1. To supply voltage and power to the circuit board itself via the 12V power supply.
2. To send the AC voltages to each transformer via the Red, Yellow, and Blue DIN rail mounts.
3. Supply the AC voltages to both the circuit board as stated above, and the power supply via the White, Blue, and Green DIN mounts.

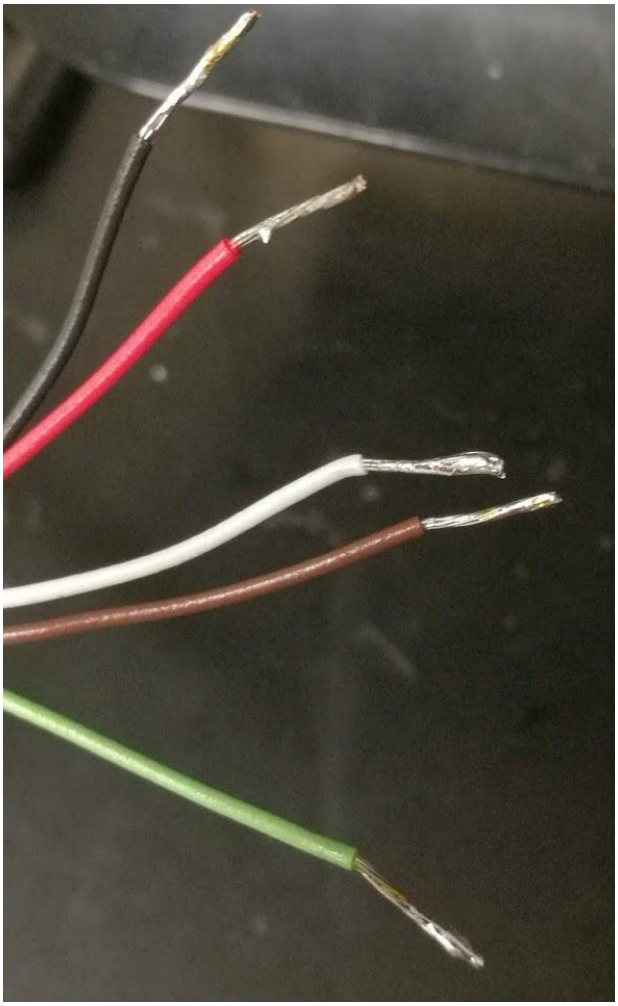
1) Make sure to use Stranded wire
2) I used gauge 22 wire. Whatever you use, make sure it is stranded wire, not a core wire. Begin by getting around 1.5 to 2 feet of wire. Take the cables, strip the ends, and tin

them. In case you are unaware of what tinning is, take the stranded wires and twist the ends. Apply a small amount of solder to the twisted tips to create frosted tips- or solder tips on the wires. The solder will keep the stranded wires from becoming a jumbled mess.



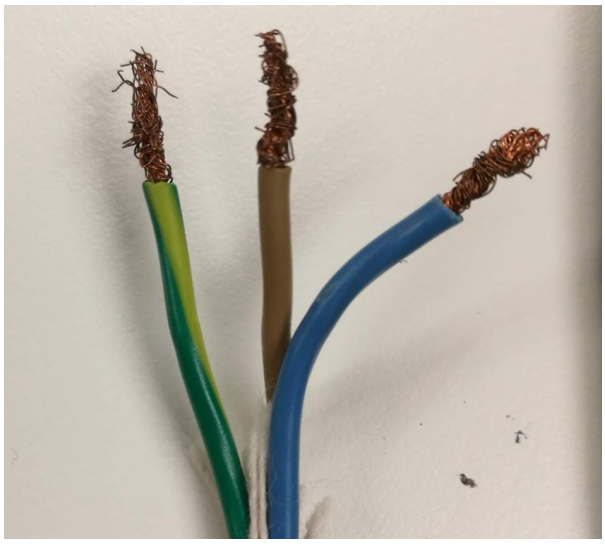


Once complete, the wires should look something similar to this

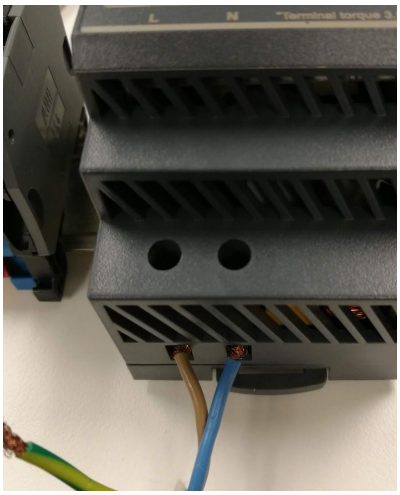


Powering Using the DIN Rail

To power the power supply itself you must start with a cable and For instance, and the one I used, you must get a cable such as the one below.
One side of the cable is plugged into standard North America plugs. The other side are standard European Union wire colors which follow: Brown is the Active line, Blue is the Neutral line and Green/Yellow is the Ground Line. If you have a different cable, you will have to look up the corresponding cables and cable colors.

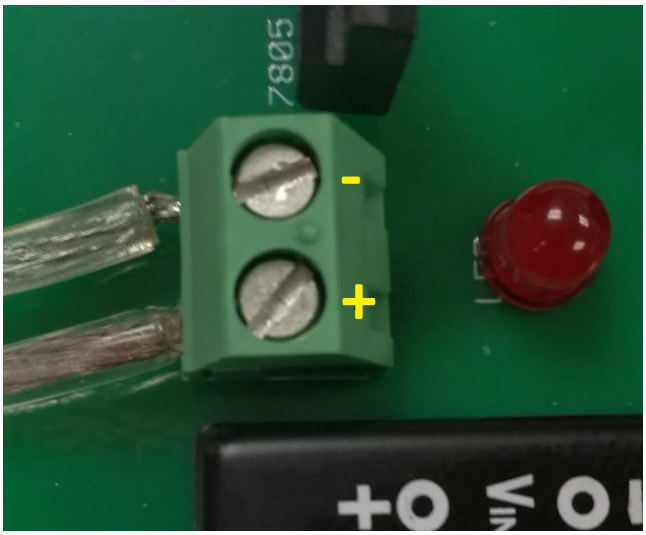


To plug in and power the power supply, begin by loosening the screw on the bottom of the power supply. Notice which screw corresponds to the Line and Neutral (L) and (N).
CAUTION: You are now using AC Line voltages, which are dangerous and could hurt/kill you. Before moving onto the next the section, make sure that your cable is not plugged into the wall



outlet when working with the bare wires. A suggested practice is to tape the unused wire to your work top, to ensure it doesn't move or short with anything.

Next, you will need two more wires to power the board, coming from the power supply and connecting to the board itself. In the images below, +V is the Brown wire and -V is the silver wire. Make sure that your positive wire and negative wires are plugged in correctly like that of below.



Once all wires are plugged in, plug in the power supply power cable into the wall outlet. The Red LED will turn on, and you may hear several clicks coming from the power supply.