

Power Supply Lab

This lab is intended to familiarize you with the set-up and behavior of the bench power supplies you will be using this semester. This will be the last of the the equipment familiarization labs, and it should be a quick one.

Read the manual to understand the operating modes, how current limiting is supposed to work, and any safety issues. Then verify your understanding by experiment, as follows.

One 30-watt 1% resistor of each value, 0.1, 0.5, 2.5, 5.0, and 10.0 [Ω] is available for this experiment; they must be shared by everyone. Banana plug to alligator clip lead pairs are provided, one per team, for this experiment.

Please be careful in making these measurements not to overheat a resistor by energizing it for too long. A few seconds should suffice to make any given measurement. *Also be careful not to burn yourself* when handling these resistors. They can get pretty hot.

Connect the 5-volt supply to each of the resistors in turn, and measure its voltage. Use these data to make a plot of the voltage-current characteristic for the 5-volt supply. A voltage-current plot shows the locus of measured points on the $V I$ plane as the load resistance is varied.

Repeat this experiment using the Master supply with its voltage set to 10 volts and current limit to 4 amps.

Your report should consist of the current voltage plots for these two supplies, and any comments and observations you may have that would help reproduce the experiment and/or explain the results.