

How to work with the digital multi-meter (MM)

With the digital multi-meter, one can measure resistance, electric potential difference between two points (voltage), and current.

For measuring resistance or voltage, the two wires need to be plugged in at the right side of the MM. For measuring currents, one of the wires needs to be plugged in on the left side of the MM. Then, you need to **turn the dial** to the quantity you want to measure, and to the appropriate range.

When measuring the resistance of an object, that object needs to be disconnected from any circuit.

When measuring voltage across a circuit element, the MM must be connected in parallel with that circuit element.

When measuring the current through a circuit element, the MM must be connected in series with that circuit element.

For all types of measurement:

Start out with the **least sensitive** setting of the MM. The least sensitive setting is the one with the largest range, e.g. $20\text{ M}\Omega$ for resistance. If you do not get a reading, switch to the next range, and repeat this as often as necessary.

Make sure that you write down the units of your measured value, not just the number shown on the display (Ω and $M\Omega$ are different!).

At the end of the lab, turn the dial to "Off".