

Electronics Digital Multimeters

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Digital Multimeter (DMM)

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voltage, current, resistance
- allows measurement of both DC (ie. static) and AC (i.e. time-varying) quantities



Sample multimeter - Amprobe 33XR



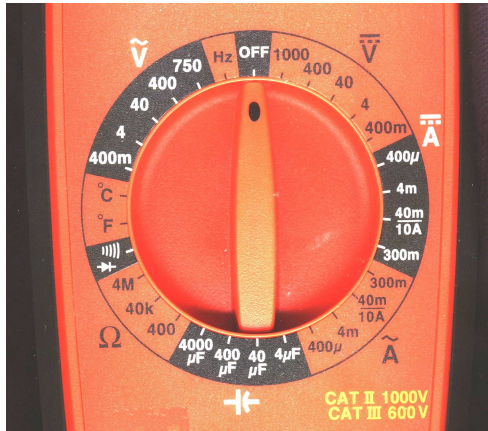
Display section - Amprobe 33XR



Control section - Amprobe 33XR

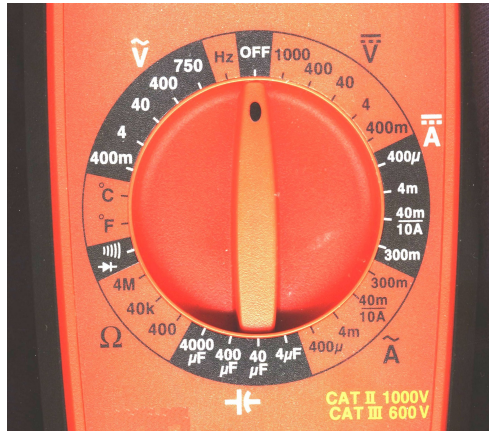


Control section - Amprobe 33XR



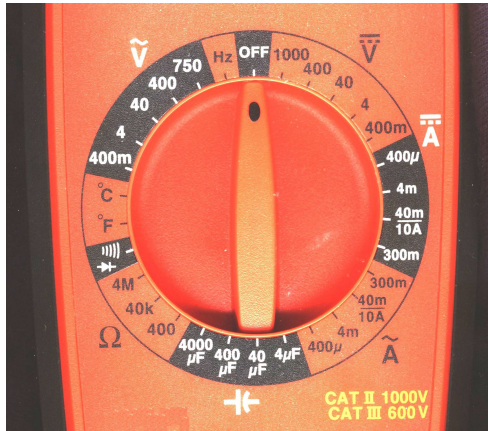
DC voltage

Control section - Amprobe 33XR



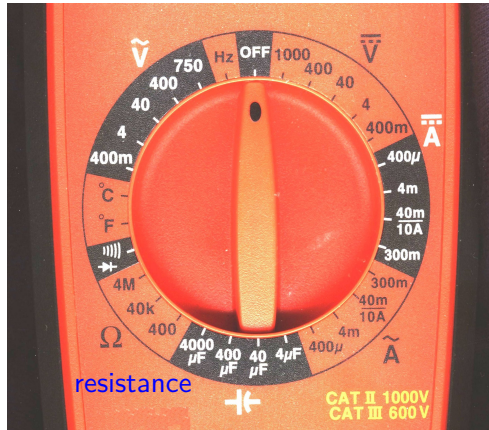
AC current

Control section - Amprobe 33XR

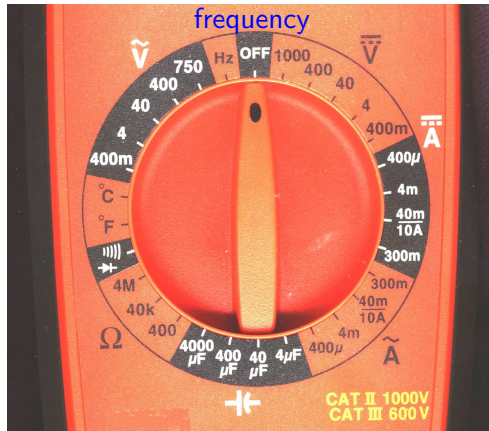


DC current

Control section - Amprobe 33XR

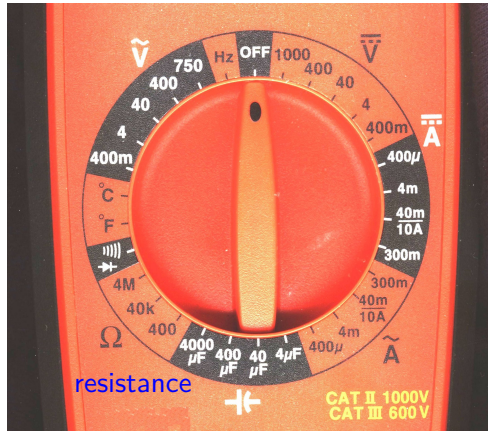


Control section - Amprobe 33XR

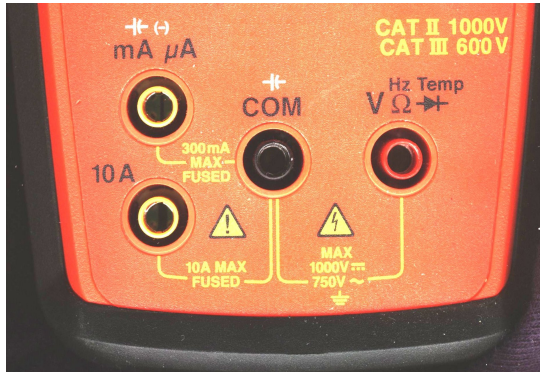


capacitance

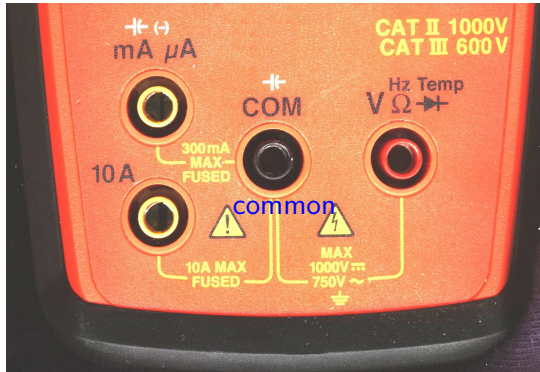
Control section - Amprobe 33XR



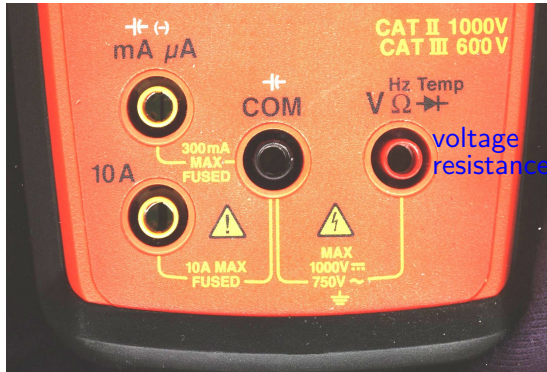
Control section - Amprobe 33XR



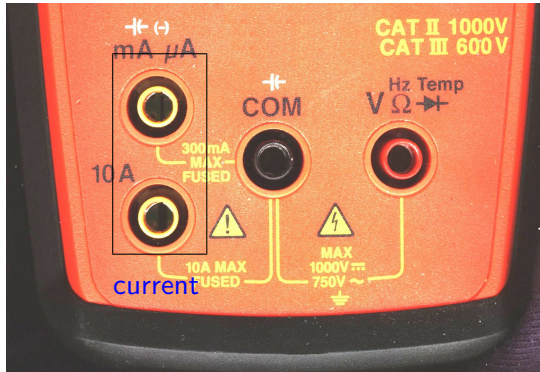
Connection section - Amprobe 33XR



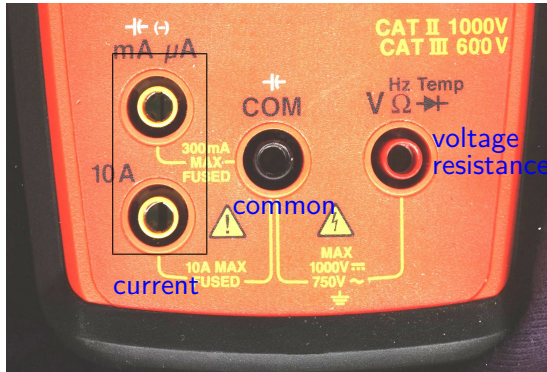
Connection section - Amprobe 33XR



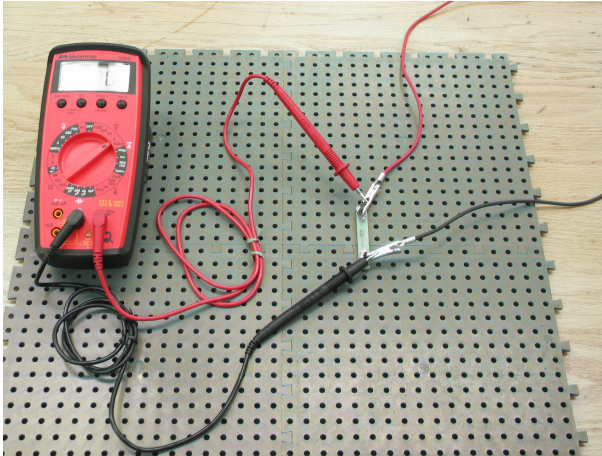
Connection section - Amprobe 33XR



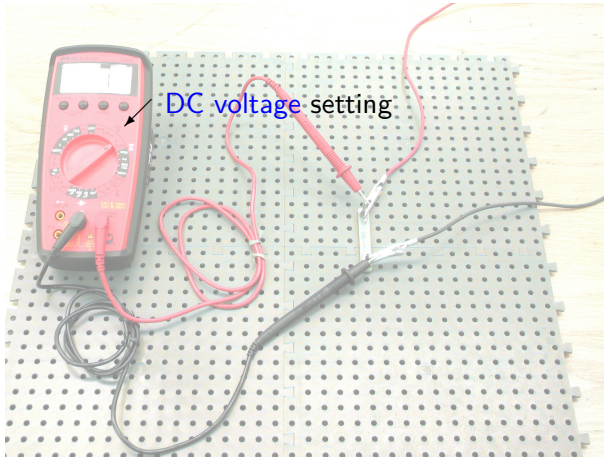
Connection section - Amprobe 33XR



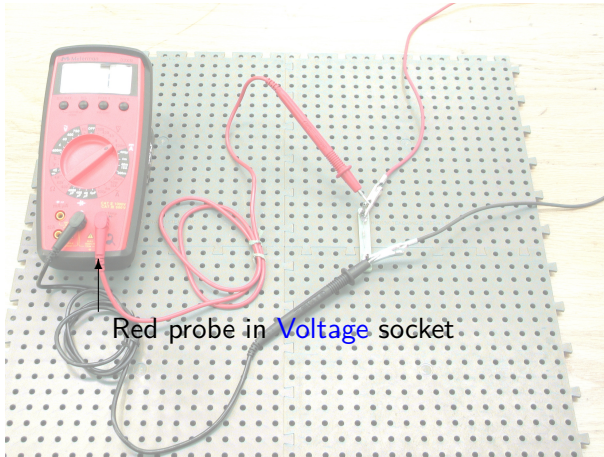
Connection section - Amprobe 33XR



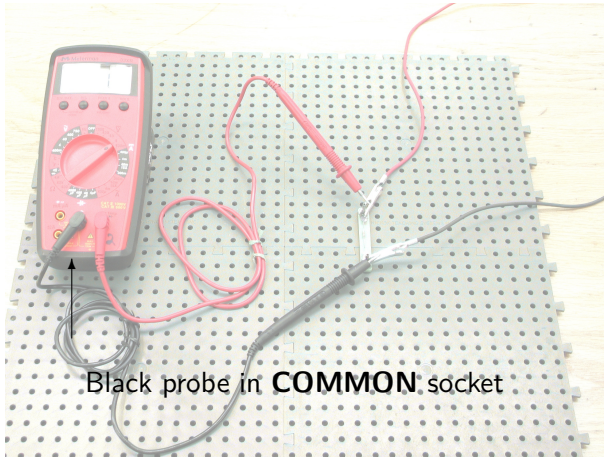
Voltage measurement



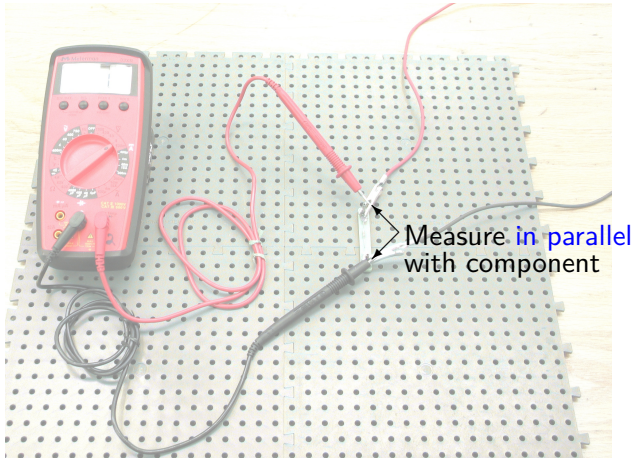
Voltage measurement



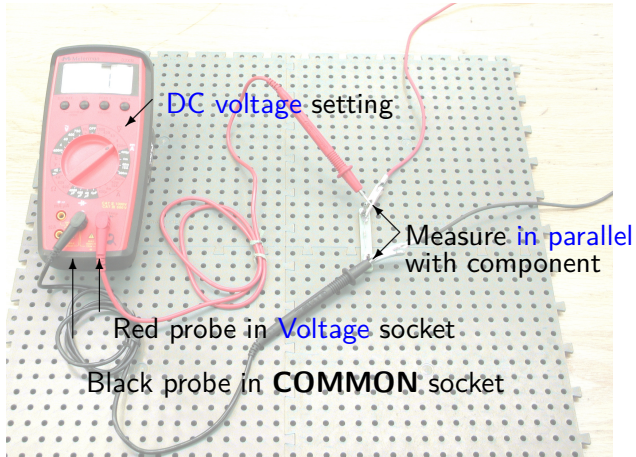
Voltage measurement



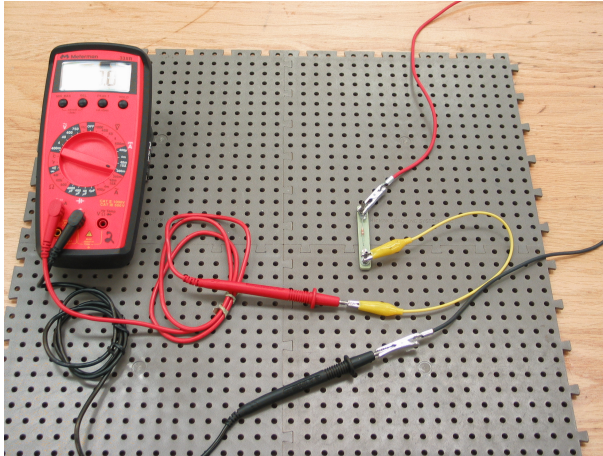
Voltage measurement



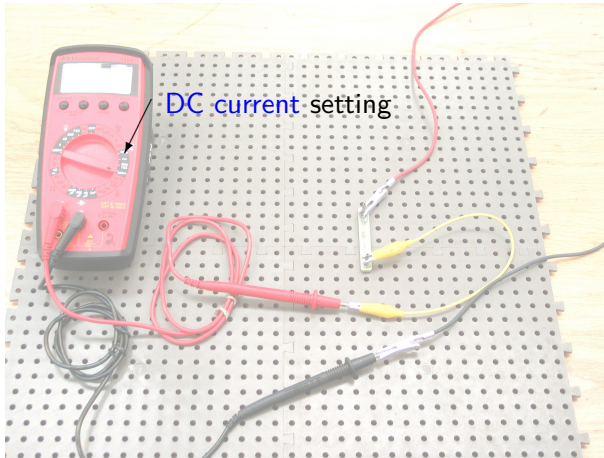
Voltage measurement



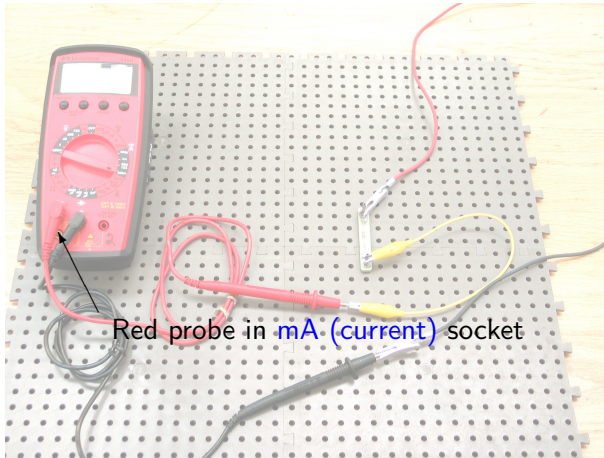
Voltage measurement



Current measurement

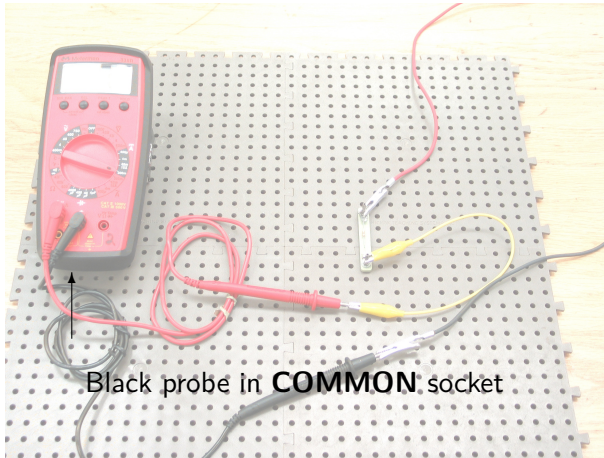


Current measurement



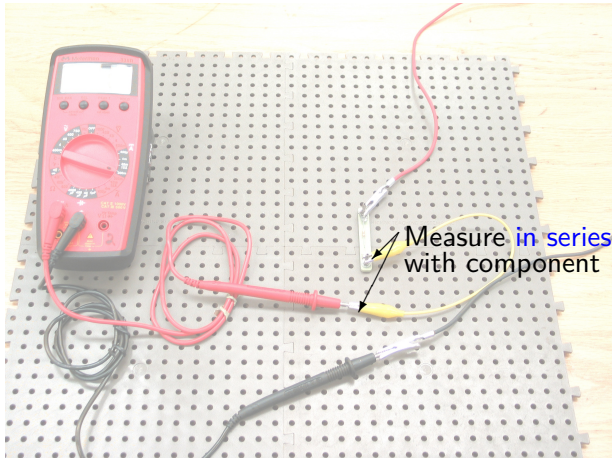
Red probe in mA (current) socket

Current measurement

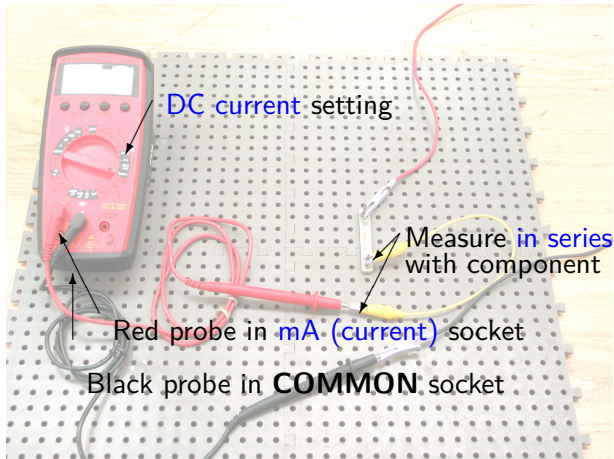


Black probe in **COMMON** socket

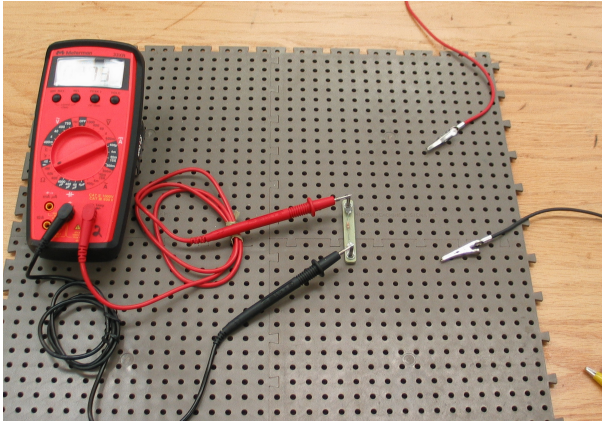
Current measurement



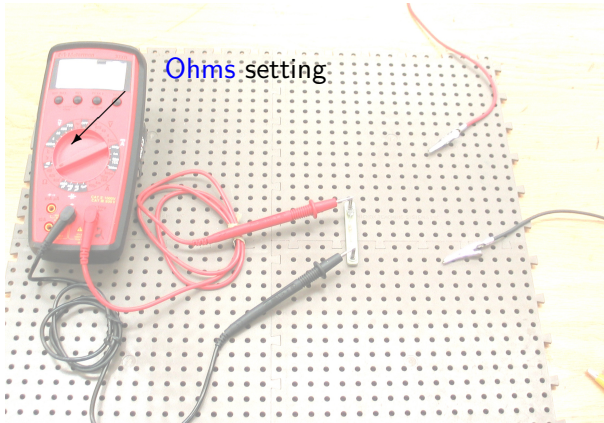
Current measurement



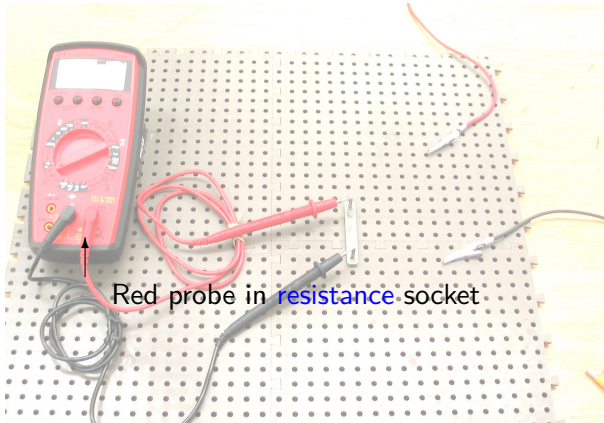
Current measurement



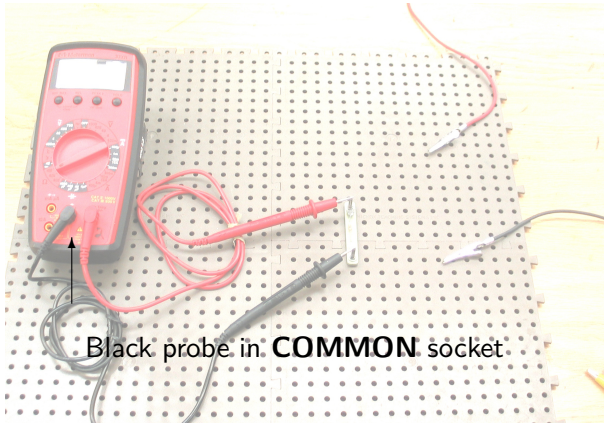
Resistance measurement



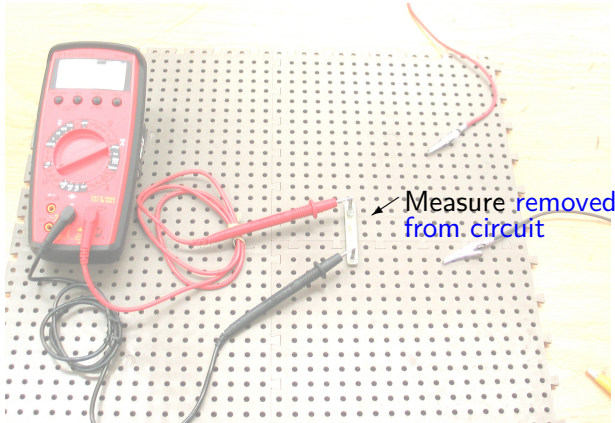
Resistance measurement



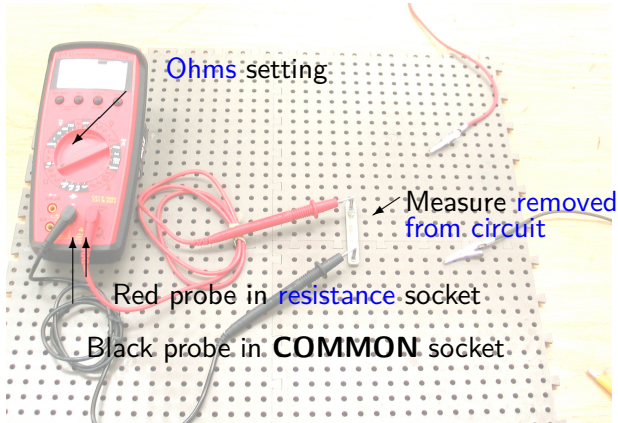
Resistance measurement



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- ① Voltage is always measured by a meter **in parallel** with the device being measured with the leads in the *common* and *voltage* terminals.
- ② Current is always measured by a meter **in series** with the device being measured with the leads in the *common* and *current* terminals.
- ③ Resistance is always measured with the power off, or preferably by removing the resistor from the circuit with the leads in the *common* and *resistance* terminals.

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