

EXTECH DIGITAL MULTIMETER

This guide covers the major features of this product - it does not cover all of the available functions. This guide is not intended to replace the original equipment manual. Please refer to the manual for more detailed operating instructions and safety information.

SAFETY NOTES

1. Do not touch exposed energized wires directly with your hands.
2. Do not exceed the maximum allowable input range of any function.
3. Do not apply voltage to meter when resistance function is selected.
4. When changing ranges using the selector switch always disconnect the test leads from the circuit under test.
5. Set Function Dial to appropriate position before measuring.
6. Set the Function Dial to OFF when meter is not in use.

EQUIPMENT DESCRIPTION

This Extech Digital Multimeter [1] is capable of measuring AC and DC Current, AC and DC Voltage, Resistance, Temperature.



Figure 1: Extech Digital Multimeter

EQUIPMENT OPERATION

DIAL

The dial [2] indicates the type of measurement being made and the maximum value that can be measured. For example, if the dial is set to the 2V DC setting, it can only measure up to 2V of DC voltage. If the voltage measured is actually 3V, then the LCD screen will show a 1 in the far left. If you aren't sure of the approximate size of the value you are going to be measuring, it is best to start on the highest setting and work your way down. As you decrease the maximum readable value, you will be able to read the measurement with greater accuracy.



Figure 2: Dial

CURRENT MEASUREMENTS:

1. Insert the black test lead into the jack labeled **COM** [3] at the bottom of the meter.
2. For current measurements up to 200mA, insert the red test lead into the jack labeled **μA/mA** [3] at the bottom of the meter. For current measurements up to 20A, insert the lead into the jack labeled **20A** [3].



Figure 3: Test Lead Jacks

- Turn the dial to the appropriate spot for the measurement you are about to make. For DC Current, the dial should be on one of the three settings indicated in [4]. For AC Current, the dial should be on one of the two settings indicated in [5].



Figure 4: DC Current Dial Settings



Figure 5: AC Current Dial Settings

Open the circuit at the point where current is to be measured and touch the black test probe tip to the negative wire of the circuit. Touch the red test probe tip to the positive wire of the circuit [6]. **Do not touch exposed energized wires directly with your hands.** If the probes must be physically attached to the wires, turn off the power to the circuit before doing so.

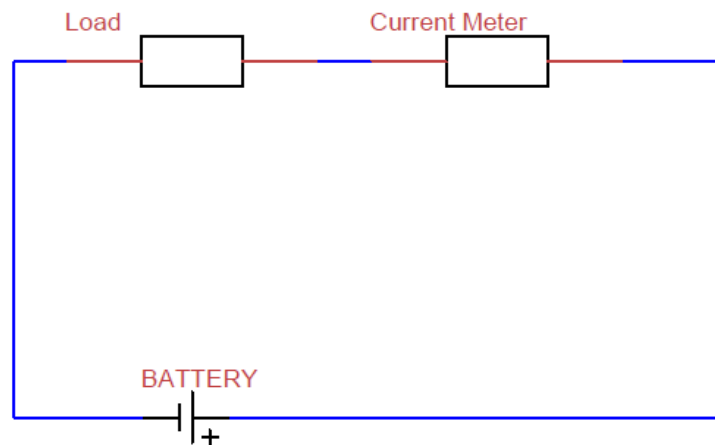


Figure 6: Measuring Current

VOLTAGE MEASUREMENT

1. Insert the black test lead into the jack labeled **COM** [3] at the bottom of the meter.
2. Insert the red test lead into the jack labeled **Temp·Ω·V** [3] at the bottom of the meter.
3. Turn the dial to the appropriate spot for the measurement you are about to make. For DC Voltage, the dial should be on one of the four settings indicated in [7]. For AC Voltage, the dial should be on one of the three settings indicated in [8].



Figure 7: DC Voltage Dial Settings



Figure 8: AC Voltage Dial Settings

4. Connect the black test lead to the negative side of the circuit and the red test lead to the positive side of the circuit on either side of the location across which you are measuring voltage [9]. **Do not touch exposed energized wires directly with your hands.** If the probes must be physically attached to the wires, turn off the power to the circuit before doing so.

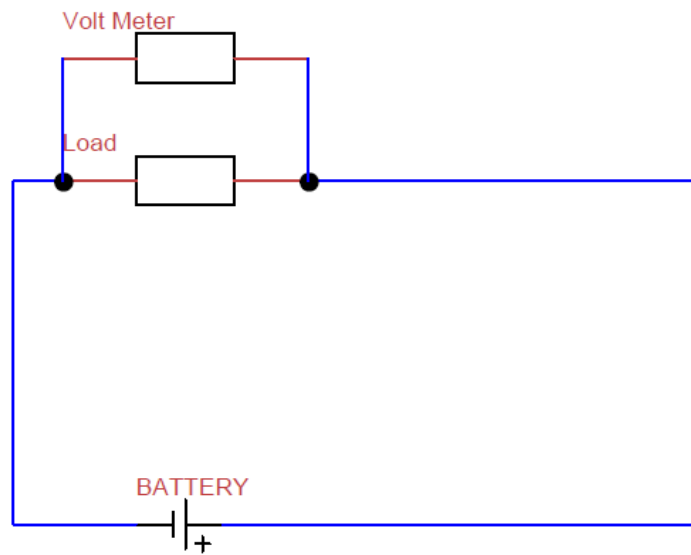


Figure 9: Measuring Voltage

RESISTANCE MEASUREMENTS:

1. Insert the black test lead into the jack labeled **COM** [3] at the bottom of the meter.
2. Insert the red test lead into the jack labeled **Temp·Ω·V** [3] at the bottom of the meter.
3. Set the Function Dial to the highest Ω position [10].
4. Touch the test probes on either side of the circuit elements to be measured [11]. Ensure that the element is not part of an energized circuit as this will give an incorrect reading and potentially damage the meter.



Figure 10: Resistance Dial Settings

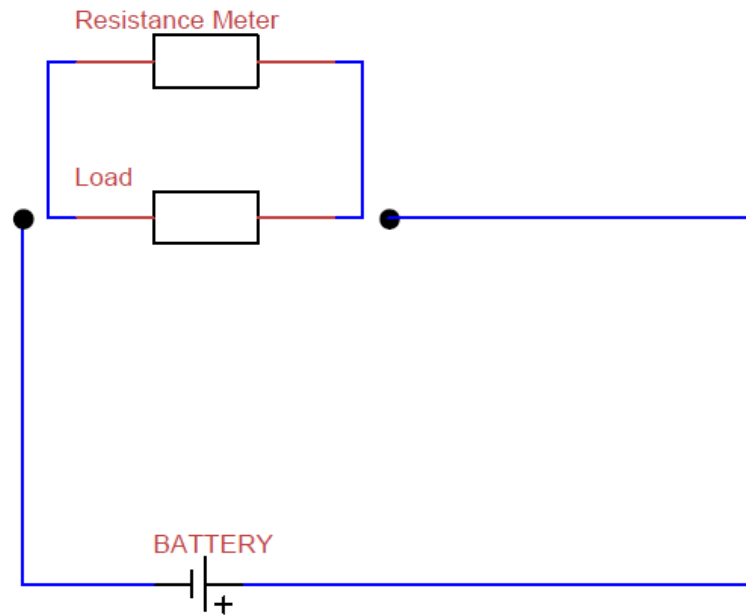


Figure 11: Measuring Resistance

HOLD

Pressing the **HOLD** button will lock the currently displayed value on the LCD Screen.

If the meter appears not to be working (number won't change on the screen) it is often because the **HOLD** button has been pressed. **HOLD** will be displayed on the screen when the meter is in **HOLD** mode. Pressing **HOLD** again will release it from **HOLD** mode.