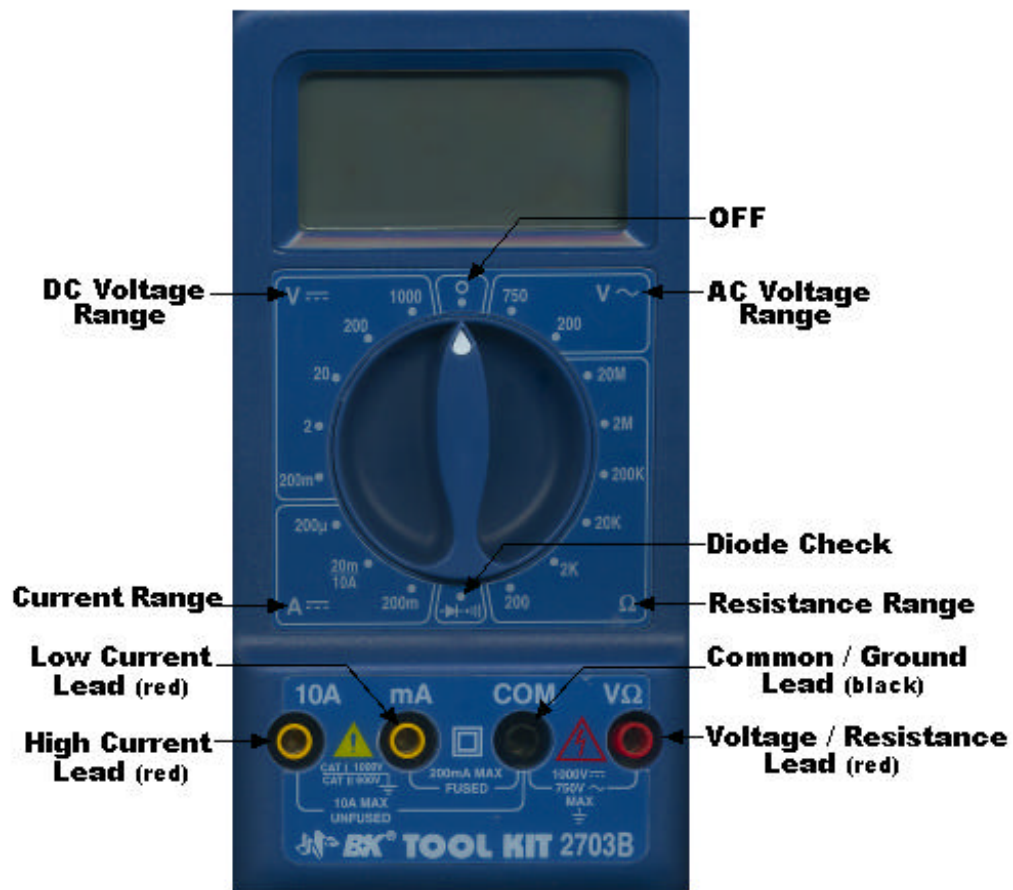


B+K 2703B Multi-meter Instructions



The above meter is shown with the switch in the off position.

Moving clock-wise around the scale on the outside of the switch, this meter can test:

1. Alternating Current voltage from 0 to 750 VAC
2. Resistance from 0 to 20M (20,000,000) Ohms
3. Diode check position
4. Current from 0 to 10 Amperes
5. Direct Current voltage from 0 to 1000 VDC



Resistance Ranges

(1) 200Ω

3 digits left of decimal; 1 digit right of decimal
 Example: brown – gray – brown
 180Ω resistor displays 181.2Ω

(2) 2kΩ

1 digit left of the decimal; 3 digits right of decimal
 Example: brown – orange – red
 1300Ω resistor displays 1.347 or 1.347kΩ
 Example: blue – red – brown
 620 Ω resistor displays .638 or 0.638kΩ

(3) 20kΩ

2 digits left of decimal; 2 digits right of decimal
 Example: brown – green – orange
 15000Ω resistor displays 16.41 or 16.41kΩ

(4) 200kΩ

3 digits left of decimal; 1 digit right of decimal
 Example: brown – orange – yellow
 130,000Ω resistor displays 127.8 or 127.8kΩ

(5) 2MΩ

1 digit left of decimal; 3 digits right of decimal
 Example: brown – black – green
 1,000,000Ω resistor displays 1.028 or 1.028MΩ

(6) 20MΩ

2 digits left of decimal; two digits right of decimal
 Example: blue – red – green
 6,200,000Ω resistor displays 6.21 or 6.21MΩ

Resistance is the opposition to current flow in an electric circuit and the units for resistance is the **ohm** (Ω).

Resistance measurements:

1. Turn off the power to the circuit and remove the component under test.
2. Connect black probe to the “com” and the red probe to the “VΩ”
3. Turn the switch to the desired range for resistance.
4. Place the ends of the probe across the component and observe the LCD read out. If a “1” appears, the resistance is larger than the selected range of the switch. Move the switch to the next higher range and try again.

Note the suffix and position of the decimal point when reading resistance on the LCD. The meter will display up to 4 significant digits.



DC Voltage Ranges

- (1) **200m - 200milivolts – 0.200mv DC**
3 digits left of decimal; one digit right of decimal
0.125 volts will display as 125.0
- (2) **2** – maximum of 2 VDC is displayed
1 digit left of decimal; three digits right of decimal
1.5 VDC battery will display as 1.5
- (3) **20** – maximum of 20 VDC is displayed
2 digits left of decimal; 2 digits right of decimal
- (4) **200** – maximum of 200 VDC is displayed
3 digits left of decimal; 1 digit right of decimal
- (5) **1000** – maximum of 1000 VDC is displayed
4 digits left of decimal

AC Voltage Ranges

- (1) **200** – maximum of 200 VAC is displayed
3 digits left of decimal; 1 digit right of decimal
120 VAC from the wall outlet displays as 120.0
- (2) **750** – maximum of 750 VAC is displayed
Only displays 3 digits to left of decimal
120 VAC from the wall outlet displays as 120

Electromotive force (EMF) is the force of the electric charge moving through a circuit. The unit for EMF is the **volt**.

Voltage measurements:

1. Power to the circuit is present and use caution to avoid becoming a part of the circuit.
High voltages can be lethal!
2. Connect black probe to the “com” and the red probe to the “VW”
3. Turn the switch to the desired **AC** or **DC** voltage range.
4. AC voltage is measure by placing the probes across the component.
5. DC voltage is measured by placing the black probe at ground or the negative terminal of the supply voltage. The red probe is touched to the location in the circuit where the voltage is to be measured.
6. The voltage across an individual component can be displayed by placing the probes on each side of the component. The **black probe must be towards the negative terminal** or ground. The **red probe must be towards positive terminal**.

The meter will display up to 4 significant digits.



Current Ranges

(1) **200m** - 200 microamperes - .000200 A
3 digits left of decimal; 1 digit right of decimal

(2) **20m/10A** – 20 milliamperes - .020 A
or 10 amperes

Note: For this switch position the red probe is in the mA for low current measurements and in the 10A for high current measurements.

2 digits left of decimal; 2 digits right of decimal
10.6 milliamperes (.0106A) will display 10.60

(3) **200m** – 200 milliamperes – 0.200 A
3 digits left of decimal; 1 digit right of decimal
10.6 milliamperes (.0106A) will display 10.6

Current is the quantity of the force (EMF) of the electric charge moving through a circuit. The unit for current is the **ampere (A)**.

Current measurements:

1. Power to the circuit is present and use caution to avoid becoming a part of the circuit.
Again note: High voltages can be lethal!
2. Connect the black probe to the “com” and the red probe to the “mA” terminal for low current measurements; less than 200 mA (.200 A). Connect the red probe to the 10A terminal and the switch to the 20m/10A for current measurements from 200 mA to 10A.
3. Turn the switch to the desired **current** range.
4. Disconnect the power to the circuit.
5. Insert the meter into the circuit at the point the current is to be measured. The black probe is connected towards the negative terminal and the red probe is connected towards the positive terminal.
6. Apply power to the circuit and read the current display on the meter.
7. Remove power to remove the meter from the circuit.

Note the suffix and position of the decimal point when reading resistance on the LCD. The meter will display up to 4 significant digits.