



Testing Resistance

RESISTANCE MEASUREMENTS:

First a little familiarity with your meter is helpful. Set the meter to the lowest ohms resistance position. Some meters will not accurately measure resistances less than 100 ohms. You will need a meter that can accurately measure ohms of resistance as low as 5 ohms. Some meters will allow you to zero the meter with an ohms adjustment dial on the meter while the leads are touching each other. If your meter does not have an ohms adjustment then touch the leads together and you should read 0.0 ohms. If your meter reads 0.1, 0.2, 0.3, 0.4 or something other than 0.0 then you will need to subtract that number from the your meter readings.

Make sure you can identify a series or parallel circuit for your kiln elements. See the Basic Electricity section to help you with this distinction.

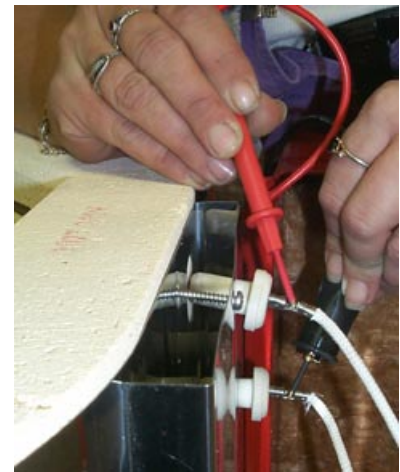
See the [KM element resistance chart](#). These resistance readings can be done at the element pigtails. On kilns with elements in series like the model KM818, if an element is broken you will see infinite ohms of resistance. On kilns with elements in parallel like the KM1027, if one element is broken then you will be measuring the resistance of the unbroken element because the path for electricity still exists through the jumper wires. For example the KM1027/240 volt 1 phase kiln has 23.3 ohm top and bottom elements and 32.6 ohm center elements. If the top element is broken then you will be measuring the resistance of the other element in the top section which is a 32.6 ohm center element.

If your element readings are about 1.5 ohms more than the nominal readings then your elements are considered worn out and the kiln will not heat up to the rated temperature.

There are some cases where contamination will effect the actual resistance readings at room temperature. In this case it is possible to have fine resistance readings at room temperature but the elements don't behave properly at red hot temperatures. Sometimes contamination can cause elements resistance to be less than nominal.

Elements that are collapsing on themselves will also have resistance readings that are unreliable and the elements should be replaced.

Amperage readings can also be performed on the wiring to the kiln inside the circuit breaker box by qualified electricians.



Testing Elements at Connector