

GROUND BOND TEST

The **ground bond test** (also called PE resistance test, ground continuity test), is the first test required by the electrical safety testing standards.

The **ground bond test** consists in testing whether the ground points of a device under test are well connected in between each other, and also to the mains ground.

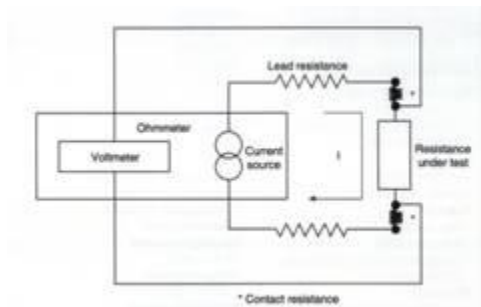
The measure result of a **ground bond test** is a resistance value, which has to be lower than the indicated limit from the international standards.

FOUR WIRE MEASUREMENT (KELVIN METHOD) FOR **GROUND BOND TEST**

When measuring low value resistances (for the **ground bond test** for instance), an important error source is the contact resistance. Actually, in many applications, the contact resistance value can go beyond the value which has to be measured.

The method to cancel this error source, is to supply a high stability permanent current over 2 wires and to combine a voltage measurement on 2 other wires. The voltmeter which is used to measure the voltage drop at the resistance terminals, must have a high input impedance and a good measurement accuracy.

The diagram shows the 4 wire measurement principle used in our milliohmmeters (**ground bond test**).



Because of the high input impedance of the voltmeter, there is no error due to the resistance of the leads and the contacts in the voltage measurement circuit. No current is flowing through these wires.