

Insulation Resistance

This test prevents the risk of equipment damage, electric shock and fire by checking for breakdown, short circuits or damage to subcircuit and mains cable insulation.



YOU'LL NEED:

- insulation resistance tester (IRT) set to 500v and megohms
- four jumper leads with 'alligator' clips, or similar
- an ammeter.



BEFORE YOU START:

1. Make sure you are using all relevant personal protective equipment.
2. Prove your ammeter is working using the prove-test-prove method.
3. Isolate the supply.
4. Disconnect any surge diverters or functional earth connections.

TIP

Use the **ME Hub app** to document your test results as you work.



HOW:

MAINS OR SUBMAINS

This tests between the conductors in the mains or submains.

1. Confirm the supply is not live using the prove-test-prove method.
2. Use the ammeter to ensure there is no current flowing in the main earth conductor. 
3. Disconnect phase and neutral from point of the supply. *Ensure the cable ends are separated and no one can come into contact with them.*
4. Disconnect main neutral from the neutral busbar.
5. Ensure the main switch is on, all fuses are out and all MCBs are off.



6. Connect probes to the cable ends or terminations of any two conductors.
7. Press the TEST button and check the reading – **reading should be $\geq 1M\Omega$**
8. Repeat steps 5–6 for all possible conductor pair combinations and between all phase conductors and earth.
9. Replace the main neutral.

ENTIRE INSTALLATION

No need to remove lamps, or disconnect sensors and dimmers.

This tests between live parts (phase and neutral) and earth for the entire installation.

1. Turn off the main switch. *Lock out and tag out.*
2. Confirm the installation is not live using the prove-test-prove method.
3. Use the ammeter to ensure there is no current flowing in the main earth conductor. 





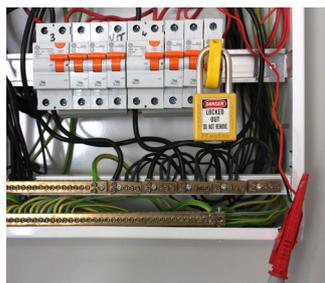
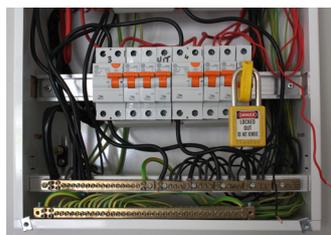
4. Disconnect the main neutral and the MEN link if installed.
5. Connect all phase and neutral conductors together using alligator clips or similar.
6. Ensure all fuses are in and all MCBs are on.
7. Switch on all isolating and control switches.
8. Connect one probe of the IRT to the linked conductors and the other to earth.
9. Press the TEST button and check the reading – **reading should be $\geq 1M\Omega$**
10. Switch on one end of any two-way or intermediate switching system.
11. Press the TEST button again and check the reading – **reading must be $\geq 1M\Omega$**
12. Replace the main neutral, and the MEN link if removed.

SUBCIRCUITS

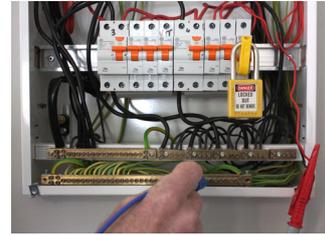
No need to remove lamps, or disconnect sensors and dimmers.

This tests between live parts (phase and neutral) and earth of individual subcircuits.

1. Turn off the main switch or relevant MCB. **Lock out and tag out.**
2. Confirm the subcircuit is not live using the prove-test-prove method.
3. Remove subcircuit neutral from the neutral busbar.
4. Link all phase and neutral conductors.



5. Connect one probe of the IRT to the linked conductors and the other to earth.
6. Press the TEST button and check the reading – **reading should be $\geq 1M\Omega$**
7. Switch on **one end** of any two-way or intermediate switching system if applicable.
8. Press the TEST button again and check the reading – **reading must be $\geq 1M\Omega$**
9. Reconnect subcircuit neutral in the busbar.



PERMANENTLY CONNECTED APPLIANCES WITH HEATING ELEMENTS

Individual appliances with heating elements can have lower insulation resistance than the rest of an installation. This test confirms whether those appliances have adequate insulation resistance.

1. Confirm the supply is not live using the prove-test-prove method.
2. Disconnect the appliance's phase and neutral.
3. Link all phase and neutral conductors with alligator clips or similar.
4. Connect one probe of the IRT to the linked conductors and the other to earth.
5. Press the TEST button and check the reading – **reading must be $\geq 0.01M\Omega$ ($\geq 10,000\Omega$)**
6. Unlink phase(s) and neutral.
7. Reconnect the appliance.

