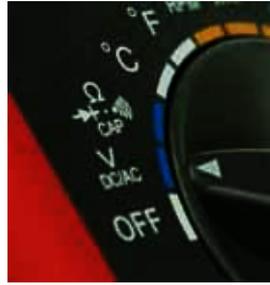


# Potential Thieves

Only 3 faults can occur in a wire

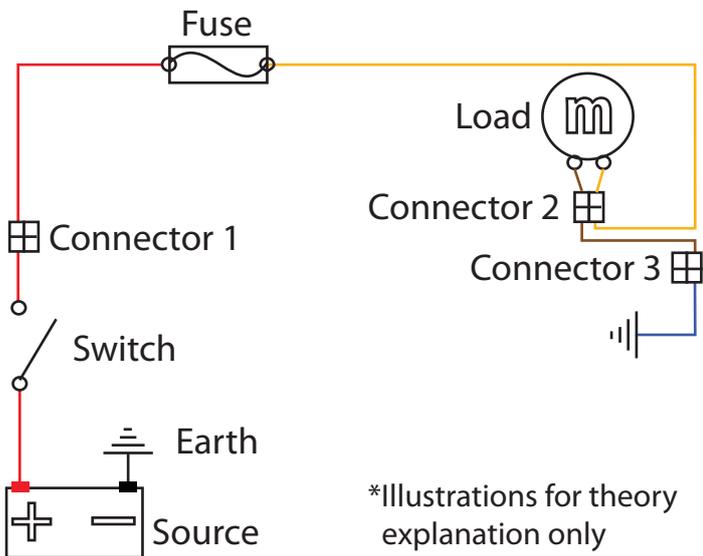
- Short Circuit
- Open Circuit
- High Resistance



I'm at the end of an epic back probing exercise and on the phone to my local parts store, I realise I'm about to make a stupid mistake, I have power, earth but no component operation. Its always going to be the expensive part when you get caught out.

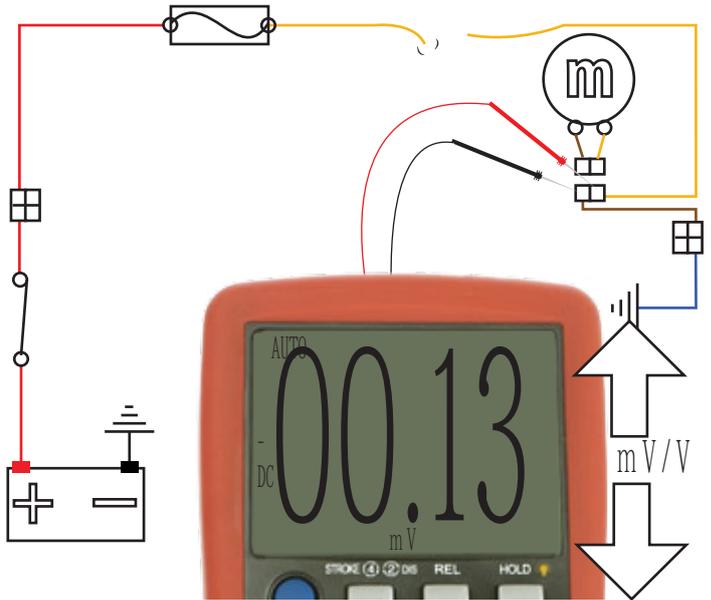
Measuring voltage and performing Dynamic Load Tests is the easiest way to confidently and systematically rule out circuit faults. Measuring resistance requires you to disconnect circuits and can affect diagnostic productivity and accuracy, with Dynamic Load Tests can't disconnect anything because the test wont work. Meaning you can perform accurate tests on connected circuits.

Using the voltage (V DC/AC) setting on your multimeter is the most time efficient and accurate way to diagnose circuit faults.



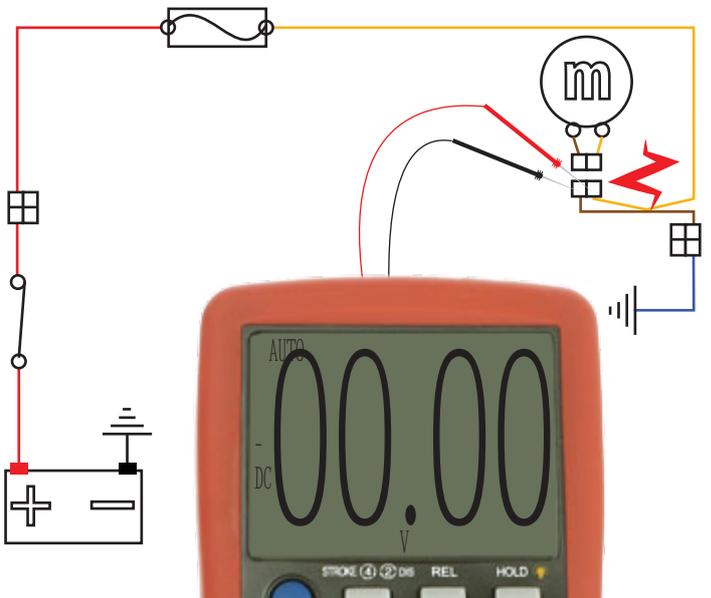
## Open Circuit

Open circuits will be displayed as **ghost voltage**. (appears as a 0.XX voltage fluctuating up and down). **Ghost voltage** means there is no electrical connection between the power supply and the earth.

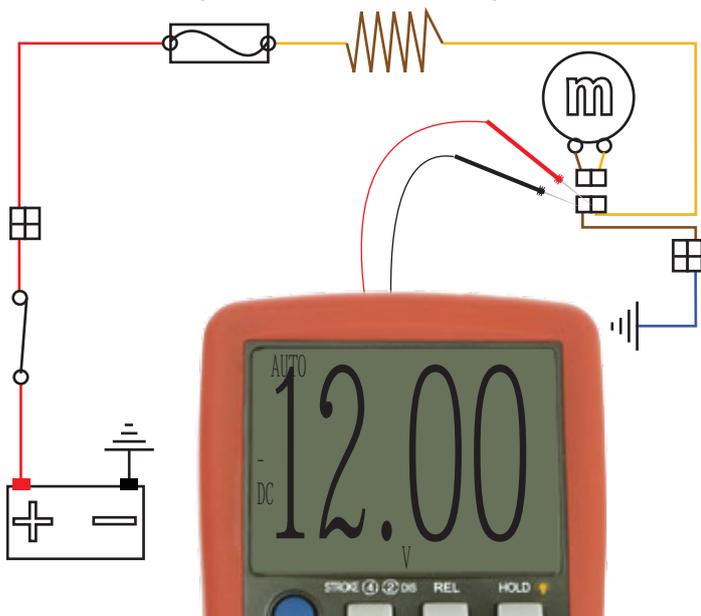


## Short Circuit

Short circuits will be displayed as **Zero volts** (appears as a 0.00 volts). **Zero volts** means you have a short to earth, i.e. Something copper touching something steel.



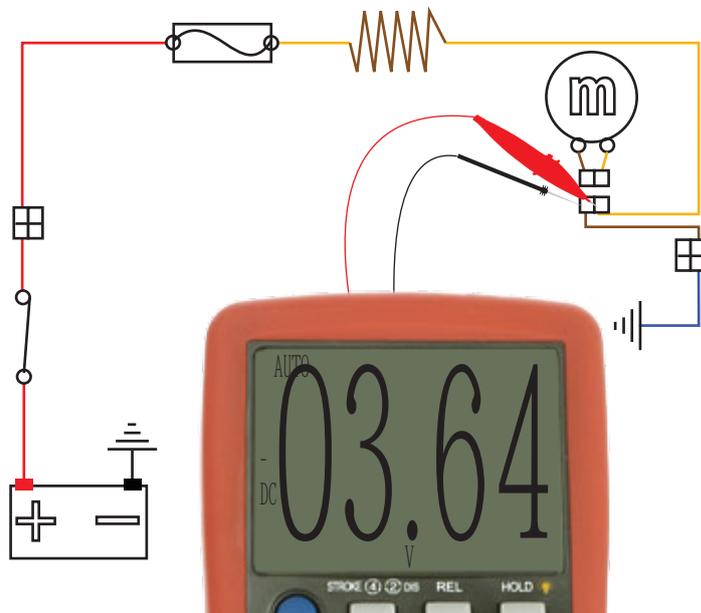
Reading system **voltage** means you can rule out 2 of the possible 3 faults. Opens, Shorts:



### High Resistance

Performing a Dynamic Load Test will allow you to rule out any abnormal circuit resistance, usually in the form of faulty connector or wiring. Because multimeters are so sensitive they will read system voltage with resistance in the circuit, Performing a Dynamic Load Test allows you to rule in or out the 3rd of the only 3 possible faults. **Factually** solidifying your diagnosis.

Imagine you have a wire with all except one thin strand of copper broken, your multimeter will read system voltage and a test light will glow, however trying to run a cooling off that is a never going to happen. **Potential Thief!**



### Dynamic Load Testing

Here we are using an Electronic Specialities **LOADPro**, however this test is able to be performed by applying a 0.5 amp load in the circuit. Loading the circuit will make any voltage potential loss infallibly visible.

By moving the negative probe to the chassis earth and reading system voltage under load we are able to eliminate the potential loss out of the negative side of the circuit. Additionally by moving the positive probe to the fuse and reading system voltage under load we can infer that the resistive fault is in the section of wiring between the fuse and connector 2.

Electronic Specialities **LOADPro** Available from OLCT. [www.olct.co](http://www.olct.co)

Use LoadPro® dynamic test leads to find wiring problems more quickly. Just press the switch to load the circuit. If the circuit has high resistance, the voltage drops. This simple test finds problems fast. Start doing voltage drops now and stop chasing the wrong problem. Diagnose **faster** and **earn** more \$\$\$\$. Works with your existing multimeter.

# LOADpro

- ✓ Open Circuits
- ✓ Shorts to Ground
- ✓ High Corrosive Resistance



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