Help! My RCD Keeps Tripping

In a vast number of homes nowadays are devices called RCD's, you may have one or more in your consumer unit ,a special RCD socket or a plug in adapter which you use with your lawn mower etc.

Why are RCD's so important?

First we must understand how an RCD works. A Residual Current Device to give it the proper name functions by detecting an imbalance between the live and neutral conductors.

When a circuit is healthy with no faults and good insulation the current flowing into and out of the circuit will be the same. When a fault develops some of the current will be divert down the circuit protective conductor or earth.

When this current reaches a prescribed value (for additional protection generally <30mAs) the RCD will trip, cutting off the power. This can save your life!

The Reasons Why Your RCD May Trip

There are a few of reasons that an RCD may trip and they are:

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You have a faulty appliance plugged into the socket circuit. This is probably the number one reason that an RCD will operate and can be tracked down by noting if you have just operated an appliance when it tripped. Common causes are irons, kettles and fridges.

Fridges and freezers can be a bit problematic to identify because it may only happen when the motor kicks in and you may not be aware of when that is happening.

You have a faulty circuit. It's also possible that one or more of the circuits in your house has developed a fault. For the average homeowner this can be difficult to identify and a logical approach can come in very handy here.

You have a high cpc current. Nowadays many appliances, especially IT equipment will have filter circuits within them, this presents the RCD with a problem. The circuit is healthy but the filters are causing an earth leakage. The only way to fix

this problem is to divide the circuits amongst two or more RCD's so that the leakage current is kept below a certain level.

A less common problem

that will cause some RCD's to trip is a supply fault, in rural areas especially overhead lines can deteriorate to the point that they can affect a RCD, these are active RCD's and can sometimes be identified by a thin white or green and yellow coming off the RCD and connect with earth.

What To Do When The RCD Trips.

Firstly turn off all the circuits that are protected by the device and try to reset it. If it stays set, you can then turn on each circuit one by one. It may be that al the circuits will turn back on and the RCD will be OK, you will then have to try and identify the cause which may be as simple as a blown lamp.

If one of the circuits trips the RCD you can leave that one off until you have found the cause or until you can get an electrician in. At least you will have some power. Sometimes it will appear that every circuit causes the device to operate, this is usually a symptom of a neutral fault and really is a job for a skilled electrician.

An increasingly common piece of kit for a professional electrician is a milliamp clamp meter, this allows him or her to take an accurate measurement of the current flowing to earth and is a great diagnostic tool. Cost is a factor here as these testers are quite expensive and beyond the scope of the DIYer.