

Electrical RCD – Find & Reset an RCD + Investigate a Constantly Tripping RCD

Introduction

RCDs (Residual Current Devices) are electrical safety switches that remove the supply to an electrical circuit in when the circuit is unsafe; if an RCD 'trips' it has tripped for a reason, the problem is rarely a faulty RCD.

Many electrical problems are 'momentary' – they only exist for a fraction of a second. RCDs, rightly, 'err on the side of safety' and will trip when the circuit is momentarily unsafe. Once the 'moment' has passed it is possible to 'reset the RCD' and restore power to the circuit.

If the circuit is unsafe for more than a moment the RCD will trip again when it is reset; there are some basic actions the homeowner can follow to fix this. If the 'basic actions' do not stop the RCD tripping the homeowner should call a qualified electrician.

This document will:

- Help you 'Find the RCD'.
- Show you 'How to reset an RCD'.
- Show you 'How to investigate a constantly tripping RCD'.

Find the RCD

The RCD (shown below) will usually be in an RCD 'domestic unit' (shown below). The RCD domestic unit will contain about 10 RCDs.

The RCD domestic unit will usually be in an 'out of the way' place, for instance next to the electricity meter, at the back of a kitchen unit, in an airing cupboard, the cupboard under the stairs.



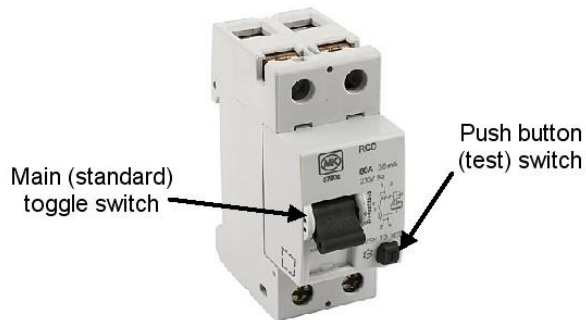
RCD



RCD Domestic Unit

The RCD and RCD domestic unit may not look like the pictures above but will be similar.

The RCD will be about 2 inches (5cm) by 1 inch (2.5cm) and will have a 'standard' toggle switch (the 'main' switch) and a push-button 'push-button' (test) switch. The RCD domestic unit will have thick (large diameter) cable going into it – this cable is the 'main ring' cable.



How to Reset an RCD

To reset an RCD move the main toggle switch to the other position; if down move up, if up move it to the down position.

Look at the RCDs.

Is one main toggle switch in a different position to the rest? Is one main toggle switch up and the other RCD main toggle switches down or down when the rest are up?

If one RCD main toggle switch is in a different position to the rest move it to the same position.

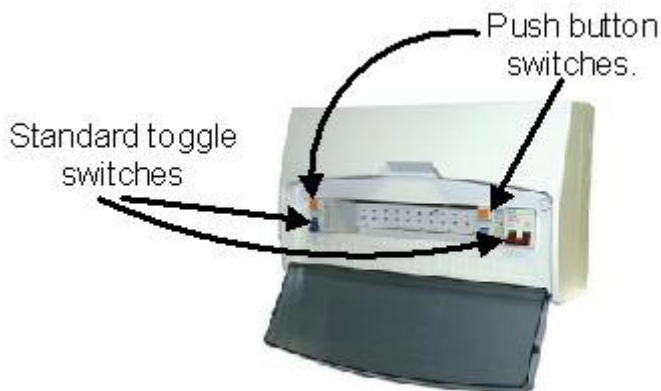
Moving the main toggle switch is called 'resetting the RCD'.

If the RCD stays reset, the main toggle switch does not go back to the other position, the problem is solved.

If the RCD does go back to the other position this is called 'a constantly tripping' RCD – see below.

Homeowners should be aware that some RCD domestic units have their own 'trip switches', some domestic units have their own isolation switches (on/off switches).

These switches may be standard 'toggle' type or 'push button' type. Are the domestic unit switches in the correct position?



How to Investigate a Constantly Tripping RCD

An RCD that trips again (and again) after reset is a 'constantly tripping RCD'. The problem is unlikely to be the RCD. The problem is most likely an electrical appliance causing the RCD to trip; the RCD is 'doing its job'; the RCD is removing the supply to an unsafe electrical circuit.

The approach is to remove (disconnect) as many electrical appliances from the circuit as possible and then connect them back into the circuit one at a time. The faulty appliance will cause the RCD to trip; this shows the homeowner which appliance is faulty (causing the RCD to trip).

The homeowner should remove (unplug) all electrical appliances. If it is not possible to unplug an appliance, turn the appliance off.

After unplugging all appliances, or turning them off, see if the RCD will reset. If the RCD will reset, the fault is with one of the appliances; if the RCD trips again the fault is with the electrical circuit – call a qualified electrician.

Plug each appliance in one at a time. After plugging the appliance in, or turning an appliance on, reset the RCD; keep plugging the appliances in, and resetting the RCD, until the RCD trips.

Connecting the appliances one at a time, and resetting the RCD in-between, shows the homeowner which appliance is causing the RCD to trip. The homeowner should repair, or replace, the faulty appliance.

Plugging each appliance in one at a time is not a 100% guarantee of finding the faulty appliance; it is the best way, but not a 100% guarantee. Certain 'cause\effect' situations can suggest a, say, faulty kettle when the real problem is, say, a faulty cooker.

If the faulty appliance is cheap to replace, for instance a kettle, replacing the appliance is cheaper

than calling a qualified electrician to look into the problem further. If replacing the cheap appliance does not allow the RCD to be reset call a qualified electrician.

If the faulty appliance is expensive, for instance a home cinema centre, call a qualified electrician. The electrician will look into the tripping RCD to ensure the expensive appliance is causing the RCD to trip. The electrician will also know what else can be done to stop the RCD tripping without replacing the expensive appliance; this will probably be cheaper than replacing the appliance.