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# What is an open ring circuit and why is it potentially dangerous?

Put simply, an open ring circuit could allow the cables to melt, creating a fire hazard should they be overloaded.

To understand how this is possible we need to know what an MCB does and how a ring circuit is wired. What is an MCB? An MCB (Miniature circuit breaker) Is a device designed to protect the cables.
It has a metallic strip inside, when current flows through this strip it heats up. If a MCB is only rated at 6 amps and you are using equipment which has a rating of 13 amps, the metallic strip will heat up and eventually bend away from its contact points breaking the circuit and turning it off.

## How is a ring main wired?

Cables come in different sizes, the most popular for a ring circuit is 2.5mm². This size cable, on its own it can carry around 26 amps. A ring is wired so it essentially forms a loop, it starts at the fuseboard, goes to each socket in turn and returns to the fuseboard. Due to this loop, we essentially double the size of the cable to 5mm² which gives us a total of 52 usable amps!

If the cable starts at the fuseboard, runs to each socket in turn and ends at the last socket, this is called a radial circuit, and we would only have the 26 amps from a single length of 2.5mm² cable. Traditionally ring circuits are wired in 2.5mm² and protected by a 32amp MCB, if we have a 'break' in a ring circuit we will have 2 radial circuits both capable of carrying 26 amps but protected by a 32amp
MCB.

If we plug lots of appliances into 1 of these radials, we could theoretically be using 31 amps on a length of cable that is only rated for 26 amps and the MCB won't trip because it's not over the MCBs rating of 32 amps. Eventually the insulation around the cables could melt potentially causing a fire. If no alterations have been made then the ring circuit will most probably stay intact. If you have had alterations made by someone who is not a qualified electrician, you should think about having the circuit tested.