MEASURING ZS, AND WHEN AN RCD GETS IN THE WAY

WOULD YOU MEASURE ZS AT A CEILING ROSE?

Measuring Z_s is a **live** test at **every point** of the circuit. That's why it comes near the end of the sequence: everything about the circuit has already been proved safe.

- **Sockets**: a plug-in adapter makes it straightforward and hands-free.
- **Lighting**: two probes into the live terminals of a ceiling luminaire, up steps. Not a safe situation. Calculate it.
- **A periodic you can't switch off**: measuring is how you check the circuit still disconnects in time without isolating anything.

> ✋ **An ordinary loop test trips the RCD.** It puts current to earth, and a 30 mA RCD sees exactly that.

Testers have "no-trip" settings to get round it, and they work in different ways:

- Some **saturate the RCD with DC** so it can't operate during the test. That works on an older **Type AC** RCD — but **Type A and F** RCDs, now the norm, are made to keep working with pulsating DC (and with smooth DC up to 6 mA for Type A, 10 mA for Type F, Reg 531.3.3), so the DC can't reliably hold them off. The test may trip them or refuse to run. Only a **Type B** handles smooth DC fully.
- A **low-current, three-lead no-trip** Check what your own meter does.

If you can't get a reading without tripping, **calculate**. That's the preferred method anyway.

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