RCM OR RCD — THE LIFE-SUPPORT QUESTION

WOULD YOU PUT A LIFE SUPPORT CIRCUIT ON AN RCD?

A good question: *if you're monitoring a life-support system with an RCM, would you gang that with an RCD on the same circuit?* Not one to answer from memory — it needs checking against the standards. There are three separate things going on in it.

1. **Do you want a critical system interrupted at all?** If a fault elsewhere trips a shared RCD, the life-support system goes off with it. So no — you don't put life-support systems, or anything similar, on an RCD in the first place.
2. **Medical locations have their own rules.** They are covered to an extent by BS 7671, but they also sit under **separate standards and guidance** that you'd have to follow. Don't assume BS 7671 is the whole answer on a medical installation.
3. **So would you fit an RCM?** Only where the book provides for it, and for a specific monitoring purpose — see 532.3 below.

> § The book's own wording (532.3, p.168) is that in IT systems **RCMs may be used instead of RCDs**. It also requires the device to be in a location under the supervision of **one or more skilled or instructed persons**, so someone has to actually be watching it.

> **In a domestic property it will be RCDs, every time.**

WHY DOMESTIC IS RCDS AND NOTHING ELSE

- **411.3.4**: in domestic (household) premises, AC final circuits supplying **luminaires** need additional protection by a **30 mA RCD**.
- **411.3.3**: socket-outlets up to **32 A**, and mobile equipment up to 32 A used outdoors, need it too, in any premises, not only homes.
- Socket outlets don't have to be protected from the consumer unit — you can use **individual RCD socket outlets**. Almost nobody does; the protection normally sits in the board.

DEVICE	ROUGH COST
RCD	£10–£15, sometimes less
RCBO	more than an RCD
RCM	around **£500**

That price gap is the real answer to "why wouldn't I just fit an RCM?" — nobody is choosing to spend £500 protecting a domestic circuit. RCMs are specialist

devices for specialist reasons.

WAYS IN THE BOARD — RCD VS RCBO

Worth knowing because it comes up constantly in design questions. One RCD serving several circuits still occupies board space, and every circuit behind it shares its trip. Three **RCBOs** in the same footprint give you **three independently protected circuits**. You get more circuits per board with RCBOs, and only the faulty one goes off.

> **This is where the 9 mA figure from earlier bites.**
> Every circuit leaks a small amount of residual current. Pile ten breakers behind one 30 mA RCD and the accumulated leakage creeps toward the trip threshold — you get nuisance tripping with no actual fault. That's a coordination problem, and coordination is coming up in a moment.

532.3 · p.168 · RCMs (BS EN 62020) · may be used instead of RCDs in IT systems

Part 7 · medical locations (plus separate standards)

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