SPDS AND AFDDS ON A LIVE CONSUMER UNIT

WHAT DOES A RED SPD WINDOW MEAN?

Take a live split-load board, the same as the one above, wired to a ring final, a cooker circuit and a lighting circuit. Reading it from the main switch outwards:

- **Main switch:** the same 100 A on-load isolator as before, with the loose busbars fitted underneath and screwed in.
- **SPD (surge protective device):** protects the installation against **overvoltage**, like a lightning strike. Ours is a **Type 2 (T2)** plug-in **cartridge** with a little window: **green** is fine, **red = replace**. Where it sits in the board varies by manufacturer.
- The SPD **doesn't disconnect circuits**. Pull it out and everything still works. Think of it as a **sponge**: it soaks up the surge, turns red, and you replace the cartridge.
- **Two RCBOs** on the unprotected side. You can tell they're RCBOs from the **RCD symbol** and the **neutral fly leads** at the back.
- The first is a **B32, 30 mA AFDD/RCBO**: a Type B 32 A breaker, a 30 mA RCD **and** an **arc fault detection device** in one. It feeds the **ring final** (two lines in the top, two neutrals). It does more than a plain RCBO, because it will also detect **loose connections** (arcing).
- The second is an empty **B6, 30 mA RCBO**, ideal for a **domestic lighting circuit** needing additional protection. Line in the left-hand terminal, neutral in the far terminal.
- **RCD 1** (30 mA Type A) has two CBs, one in use: the **cooker circuit**. Its neutral goes to **RCD 1's neutral bar**.
- **RCD 2** has three CBs, one in use: the **lighting circuit** on a **6 A** breaker. Its neutral goes to the **third** neutral bar. All CPCs go to the earth bar.

SPD · Type 2 cartridge · green window OK, red = replace

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