CHOOSING THE RCD: RA × IΔN ≤ 50 V

300 MILLIAMPS OR 30. WHICH, AND WHY?

Guidance Note 3 · pp.83–84 . The formula that decides it:

$$R_A \times I\Delta n \leq 50\ V$$

R_A = 82 Ω, TRYING A 300 MA DEVICE

Put the milliamps into amps first: 300 mA = **0.3 A**

82 × 0.3 = **24.6 V** ≤ 50 V, so it satisfies the requirement

AND A 30 MA DEVICE, FOR COMPARISON

82 × 0.03 = **2.46 V** also well inside 50 V

So both pass the formula. The choice between them comes from what else the circuit needs:

✋ **Both satisfy $R_A \times I\Delta n \leq 50$ V.** A **30 mA** device goes wherever **additional protection** is required. A **300 mA** device upstream is chosen for **selectivity** with the 30 mA devices below it, and to avoid nuisance tripping. And a TT electrode reading can drift upward — 82 Ω today could be 150 Ω in a dry spell.

Check the headroom too.

If a circuit's $R_1 + R_2$ takes Z_s to 82.5 Ω, ask whether that still leaves room for the ground to dry out. Choosing the device is a judgement, not just a calculation that passes.

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