CHAPTER 44: OVERVOLTAGE, SPDS AND UNDERVOLTAGE

WHEN DO YOU NEED A SURGE PROTECTIVE DEVICE?

Chapter 44 is protection against **voltage disturbances and electromagnetic disturbances**.

443 — TRANSIENT OVERVOLTAGE

> ⚡ **Transient overvoltage of atmospheric origin** means **lightning**. A **surge** is the broader term — it also covers the spike you get when the supply is restored after a power cut.

That's what **SPDs** (surge protective devices) exist for: to divert the excess away from your circuits.

> ✋ **An SPD is a limiting device only.** It is **not** an overload device, **not** a type of RCD and **not** an AFDD. Most have a small window: **green** means serviceable, **red** means it has reached the end of its life and must be replaced. An SPD operates on every surge; the window tells you when it is worn out.

444 — ELECTROMAGNETIC DISTURBANCES

Regulation **444.4.1** lists the sources of electromagnetic disturbance. A typical question asks which is **not** listed. The answer: the **ring final circuit** — found by reading the list rather than reasoning about it.

Further in, **444.5** covers the sizing and installation of copper **bonding ring network** conductors:

> **8 mm**
> Minimum nominal **diameter** for a bonding ring network conductor

445 — UNDERVOLTAGE

The opposite problem, and a real one: where a loss or reduction in voltage could cause danger, precautions are needed. The classic risk is equipment **restarting by itself** when the voltage returns — a motor or a machine springing back into life with someone's hands on it.

Chapter 45 doesn't exist.
It was used in older editions and has been withdrawn, so the book jumps from 44 to 46. Not a misprint.

- **443** · transient overvoltage (lightning)
- **444.4.1** · sources of electromagnetic disturbance
- **444.5** · bonding ring network · minimum 8 mm diameter
- **445** · protection against undervoltage

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