

Configuration inside the distribution box



Article Overview

A distribution box safely distributes incoming power to multiple circuits using components like MCBs, RCDs, busbars, neutral and earth bars, surge protectors, and a main switch, all arranged for protection, control, and maintenance.

Overview

A distribution box (also called a distribution board or DB box) is a central electrical unit that receives power from the main supply and distributes it to various circuits within a building. Its primary functions are power distribution and circuit protection, ensuring safe operation and preventing overloads or short circuits in residential, commercial, or industrial systems .

Key Internal Components

- Main Switch/Isolator: Controls the incoming power and allows complete disconnection for maintenance .
- Miniature Circuit Breakers (MCBs): Protect individual circuits from overload and short circuits .
- Residual Current Devices (RCDs) / RCBOs: Provide additional protection against earth faults and leakage currents .
- Busbars: Copper or aluminum rails that distribute power to multiple breakers efficiently .
- Neutral Bar: Collects and distributes the neutral connections from all circuits .
- Earth Bar: Provides grounding for safety, preventing electric shock and equipment damage .
- Surge Protective Devices (SPDs): Protect connected equipment from voltage spike...

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