

Wires used in the distribution box



AI Overview

The wires in a distribution box include live (phase), neutral, and earth wires, each serving a specific role in safely distributing electricity to circuits.

Types of Wires and Their Functions

Live (L) Wire: Also called the phase or hot wire, this wire carries electrical current from the main supply into the distribution box. It connects to the line terminal of each circuit breaker, providing power to individual circuits . **Neutral (N) Wire:** The neutral wire completes the electrical circuit by returning current to the source. In single-pole (1P) breakers, the neutral bypasses the breaker and connects directly to the neutral busbar, while in double-pole (2P) breakers, both live and neutral wires are controlled and disconnected simultaneously when the breaker trips . **Protective Earth (PE) Wire:** The earth wire is connected to the ground busbar and provides a safety path for fault currents, preventing electric shocks and protecting equipment from damage .

Internal Connections

Inside the distribution box, wires are organized and connected to key components:

- **Circuit Breakers (MCBs):** Live wires are routed through miniature circuit breakers, which trip automatically during overloads or short circuits to protect the circuit .
- **Busbars:** Metal strips distribute power from the main switch to individual breakers. Neutral and earth wires are also connected to their respective busbars for safe and organized distribution .
- **Main Switch:** The incoming live and neutral wires from the main supply connect to...

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