

Common Interfaces in Distribution Boxes



Article Overview

Distribution boxes offer multiple interfaces including circuit breakers, isolators, busbars, residual current devices, and smart communication modules to manage and protect electrical circuits.

Standard Interfaces

1. **Circuit Breakers (MCBs, RCBOs, Fuses):** These are the primary interfaces for controlling and protecting individual circuits. Miniature Circuit Breakers (MCBs) protect against overloads and short circuits, while Residual Current Breakers with Overcurrent protection (RCBOs) combine overcurrent and earth fault protection. Fuses are simpler protective devices used in some older or specialized installations .
2. **Isolators and Main Switches:** Manual isolators allow safe disconnection of circuits for maintenance or emergency purposes. The main switch interface provides a single point to disconnect the entire distribution box from the incoming supply .
3. **Busbars and Neutral/Earth Bars:** Busbars serve as the central connection point for distributing current to multiple outgoing circuits. Neutral and earth bars provide organized connection points for neutral and protective earth conductors, ensuring safety and proper grounding .

Specialized Interfaces

4. **Surge Protective Devices (SPDs) and Arc Fault Detection Devices (AFDDs):** SPDs protect connected equipment from voltage spikes, while AFDDs detect and isolate arc faults to prevent electrical fires. These interfaces are increasingly integrated into modern distribution boxes .
5. **Metering and Monitoring Modules:** Some distribution...

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