

Connection of main line to distribution box



Overview

How to Install a Cable Distribution Box Safely and Terminal connection: Connect the input and output lines to the terminals in the distribution How To Conn.

Key Takeaways

The main line connection to a distribution box involves connecting the phase, neutral, and protective earth lines through the main isolator, RCCB, and MCBs, ensuring proper safety and distribution to subcircuits. Step-by-Step Connection Method



1. Incoming Main Supply: The main supply lines—three-phase lines (A, B, C) for three-phase systems or single-phase line and neutral for domestic systems—are drawn from the main distribution switch or utility meter. The protective earth (PE) line and neutral (N) line are also brought in. The distribution box door and body must be reliably connected with braided soft copper wire for protective grounding . 2. Main Isolator Connection: The phase lines are connected to the main isolating switch of the distribution box. This isolator acts as the main switch, allowing manual opening and closing of the circuit for maintenance or emergency purposes . 3. RCCB/Leakage Protection: From the main isolator, the phase lines are connected to the RCCB (Residual Current Circuit Breaker) or leakage protector. The neutral line passes through the RCCB to the neutral terminal block. The RCCB protects against current leakage, electric shock, and earthing faults . Note that the PE line should not pass through the RCCB to prevent nuisance tripping . 4. Distribution to MCBs: The output of the RCCB is connected to the input of branch MCBs (Miniature Circuit Breakers). Single-pole MCBs are used for individual loads, while double-pole MCBs may be used for special or high-capacity loads. The neutral line is distributed to all MCBs via the neutral link, and the earth line is connected to the PE terminal or earth link . 5. Output to Subcircuits: From the MCBs, the phase and neutral lines are led to the respective subcircuits, such as lighting, power outlets, or fixed appliances. The PE line is connected to the earth terminals of all loads. For three-phase systems, each phase is distributed to the corresponding branch circuits, maintaining proper separation and safe distances . 6. Safety and Earthing: Ensure all metallic parts of the distribution box, including doors and panels, are connected to the protective earth. Proper earthing is essential to prevent electric shock and ensure the system operates safely .

Key Points to Remember

- Maintain safe distances between phase, neutral, and PE lines.
 - PE lines should never pass through RCCBs.
 - Use braided soft copper wire for grounding the box body and door.
 - Select MCB and RCCB ratings according to load requirements and safety standards.
 - Verify all connections before energizing the system to prevent faults or hazards.
- This method ensures safe, reliable, and organized distribution of electrical power from the main supply to all subcircuits in the distribution box.

Article Content

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