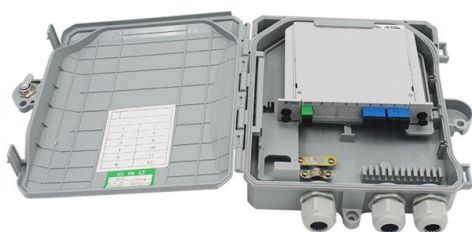


RIVO MULTITRADE OPTICAL SYSTEMS

Main line connection of secondary distribution box



Overview

Commercial and residential customers are connected to the secondary distribution lines through service drops.

Key Takeaways

To connect a secondary distribution box (sub-panel) to the main panel, connect the hot (phase) lines to a dedicated breaker in the main panel, the neutral to the neutral busbar, and the ground to the ground busbar, following proper safety and wiring standards.

Step-by-Step Connection

1. Identify the Panels and Breakers

- The main panel is the primary distribution point receiving power from the utility service and contains the main disconnect breaker.
 - The secondary distribution box (sub-panel) distributes power to specific areas or circuits and has its own set of breakers.
- ##### 2. Prepare Feeder Wires
- Use appropriately rated feeder wires based on the sub-panel's capacity.
- ##### 3. Connect Hot (Phase) Lines
- Typically, a 240V sub-panel uses two hot wires (phase lines), one neutral, and one ground wire.
 - Connect the hot wires from the sub-panel to a double-pole breaker in the main panel.

- For a 120V sub-panel, connect the hot wire to a single-pole breaker . 4. Connect Neutral and Ground
- Connect the neutral wire from the sub-panel to the neutral busbar in the main panel.
- Connect the ground wire from the sub-panel to the ground busbar in the main panel.
- Do not connect the sub-panel neutral and ground together if the sub-panel is remote; they must remain separate to prevent ground loops . 5. Wiring Inside the Sub-Panel
- Connect the incoming hot wires to the main breaker or isolator of the sub-panel.
- Connect the neutral wire to the neutral busbar and the ground wire to the PE (protective earth) busbar .
- From the main breaker, distribute the phase lines to individual circuit breakers. The neutral and ground lines should be connected to their respective busbars for each branch circuit . 6. Safety and Protective Measures
- Ensure the door and box of the sub-panel are bonded with braided copper wire for protective neutral connection .
- Avoid running the ground wire through a residual current device (RCD) or leakage protector, as this can cause nuisance tripping .
- After wiring, perform a safety inspection to check for short circuits, proper insulation, and correct breaker ratings . 7. Final Checks
- Verify that all connections are tight and properly labeled.
- Ensure the sub-panel is rated for the intended load and that all branch circuits are protected by appropriately rated breakers . By following these steps, the secondary distribution box will be safely and correctly connected to the main panel, ensuring reliable power distribution and compliance with electrical safety standards.

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Note: The main distribution box door and the box body must be reliably connected with braided soft copper

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The primary side of the distribution transformer is supplied by two conductors known as a high-voltage line

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The distribution box acts as the center of power distribution, distributing electricity to all connected devices. A

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Primary Distribution Box: Can be understood as the main distribution panel for a construction site or project (usually

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In the power industry, electric power transmission is distinct from the local wiring between high-voltage substations and customers,

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