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Reserve half the perimeter of the distribution box



Overview

Distribution Box and Selection Guide: Internal Structure, Components. Learn how to choose a distribution box and understand its internal structure, inclu.

Key Takeaways

When installing a distribution box, it is important to reserve adequate space around it—typically half the perimeter or more—to allow for wiring, maintenance, and heat dissipation.Understanding the Concept

Reserving half the perimeter of a distribution box means leaving sufficient clearance around the box so that cables can be routed, breakers can be accessed, and maintenance can be performed safely. This is especially important for embedded or wall-mounted boxes, where space constraints can affect installation quality and safety .

Installation Guidelines
• Wall Embedding: When embedding a distribution box in masonry, the reserved hole should be about 20 mm larger than the box's length and width, and the depth should accommodate the box thickness plus plastering . This ensures that the box fits snugly while leaving room for adjustments.

• Fixing the Box: Use expansion bolts or wood bricks to secure the box. The bolt length should account for embedded depth, box bottom thickness, nut and washer thickness, and a small head allowance (~5 mm), .

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• Clearance for Wiring: Leave space around the box for incoming and outgoing cables. For a typical 220V load, one phase, one neutral, and one ground wire are required; for 380V three-phase loads, three-phase lines plus neutral and ground are needed . Adequate perimeter clearance ensures wires are not cramped and reduces the risk of overheating or insulation damage.

• Accessibility: Ensure the box is installed horizontally and vertically with minimal deviation (≤3 mm). The edges should be close to the wall, and anti-corrosion paint can be applied to contact points . This allows easy access to breakers, busbars, and protective devices.
Practical Tips
• Ventilation: Leave space for heat dissipation to prevent overheating of internal components such as MCBs, RCDs, and busbars .

• Future Expansion: Reserving extra perimeter space allows for adding circuits or upgrading to smart DB boxes without major modifications .

• Safety Compliance: Follow local codes (IEC, NEC, or regional standards) to ensure that the reserved space meets safety and accessibility requirements . By reserving half the perimeter or more, you ensure that the distribution box is safe, accessible, and adaptable for future electrical needs. Proper spacing also facilitates neat wiring, reduces fire hazards, and simplifies maintenance.

Article Content

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A comprehensive understanding of distribution box

□□ Introduction Distribution boxes are at the heart of safe and organized electrical systems—whether in residential,

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