

Specifications and dimensions of mains power distribution boxes



Overview

Electrical Distribution Panel Guide: Types, Sizing & 600 Amp Tips From residential 100-amp panels to massive 600 amp main distribution panels in commercial.

Key Takeaways

Mains power distribution boxes vary in size and configuration, typically ranging from single-gang units for one device to large multi-gang industrial panels, with features designed for safety, flexibility, and ease of installation.

Physical Dimensions

- Residential and Small Commercial Boxes: Single-gang boxes are designed for one device, double-gang for two, and multi-gang boxes for multiple devices. Typical single-gang boxes measure approximately 2-3 inches in width, 3-4 inches in height, and 2-3 inches in depth, while larger multi-gang boxes can be significantly deeper to accommodate multiple breakers and wiring space .

- Industrial and Commercial Panels: Low-voltage switchgear assemblies and main distribution boards can handle currents up to 1600 A. These panels are often custom-built, with dimensions depending on the number of incomers, outgoing circuits, and busbar arrangements. They include generous wiring space, removable gland plates, and modular mounting for MCBs, MCCBs, or RCDs .

Specifications and Features

- Incoming Devices: Distribution boxes can be fitted with switch disconnectors, MCCBs, MCBs, RCCBs, RCDs, or direct cable connections. Some models allow factory-fitted incomers or installer-fitted kits for flexibility .

- **Busbar Design:** Busbars are shrouded to prevent hot spots and ensure safety. Aluminum profiles with plastic clips allow self-aligning outgoing MCBs .
- **Mounting and Installation:** Boxes typically have four studs with adjustable nuts for easy mounting and removal of the pan assembly. Top and bottom extension boxes can be fixed or removed as needed .
- **Wiring Space:** Panels are designed with generous internal space to facilitate cable management, reduce congestion, and allow future expansion .
- **Voltage and Phase Configurations:** Distribution boards are available for single-phase (120/240V) and three-phase systems (208V/120V or 480V/277V), suitable for residential, commercial, and industrial applications .
- **Safety and Compliance:** Front cover screws are located behind the door for personal safety. Boxes comply with local electrical codes, and modular designs allow easy replacement or addition of protection devices .

Typical Applications

- **Residential:** Single-phase consumer units for homes, often 100–200 A main panels.
- **Commercial:** Three-phase distribution boards for offices, retail, or small industrial facilities.
- **Industrial:** Heavy-duty panels up to 600–1600 A for factories, large commercial buildings, or specialized installations like photovoltaic systems .

Summary

Mains power distribution boxes are designed to safely distribute electrical power, accommodate multiple circuits, and provide flexibility for installation and future expansion. Their dimensions and specifications vary widely depending on the application, from compact single-gang residential units to large industrial switchgear assemblies with modular components, shrouded busbars, and extensive wiring space . Proper selection ensures compliance, safety, and efficient power management.

Article Content

Main Distribution Box

To eliminate inter-voltage connection, each connector is keyed and color-coded to meet specific voltage requirements. The MDB can

Main Distribution Box

The Main Distribution Box (MDB) is the heart of the Global IFS Cable System Modular Wiring System. It provides power to the Floor

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

