

Article Overview

The rear shell of a distribution box serves as the protective and structural base, supporting internal components while shielding them from environmental and mechanical damage.

Function of the Rear Shell

The rear shell forms the back part of the distribution box enclosure, providing a rigid foundation for mounting internal components such as circuit breakers, bus bars, fuses, and terminals . It ensures that all electrical parts are securely fixed and maintains proper spacing to prevent short circuits or accidental contact. Additionally, the rear shell contributes to the overall mechanical strength of the box, protecting the internal components from impacts, vibrations, and other physical stresses .

Materials and Construction

Rear shells are typically made from metal (steel, stainless steel, or galvanized steel) or high-grade engineering plastics like ABS or polycarbonate . Metal shells offer high mechanical strength, fire resistance, and durability, making them suitable for industrial or outdoor environments. Plastic shells provide lightweight, corrosion-resistant, and electrically insulating properties, which are ideal for residential or indoor applications . Many shells are designed with IP ratings to ensure protection against dust and water ingress, especially in waterproof or outdoor distribution boxes .

Design Features

- o Mounting pillars and DIN rails: The rear shell often includes integrated mounting points for attaching circuit breakers and other components .
- o Pre-molded knockouts or cable entry points: These allow for organized wiring while maintaining structural integrity .
- o Sealing interfaces: In waterproof boxes, the rear shell works with gaskets to prevent moisture from entering the enclosure .
- o Ventilation and drainage: Some designs include self-draining slopes or vent plugs to manage condensation and maintain internal safety .

Importance in Electrical Safety

The rear shell is crucial for ensuring safe and reliable operation of the distribution box. By providing a stable and insulated mounting surface, it prevents electrical faults, supports proper heat dissipation, and maintains the integrity of the protective enclosure . Proper selection of rear shell material and design is essential for the longevity and safety of the electrical system.

Rear shell of the distribution box

A distribution box ensures that electrical supply is distributed in the building, also known as a distribution board, panel board, breaker

In modern electrical systems, cable distribution boxes (also known as electrical distribution boxes or distribution

A distribution board (also known as panelboard, circuit breaker panel, breaker panel, circuit breaker, electric panel, fuse box or DB

Learn about the internal structure of a distribution box, its components, functions, and key types. Understand its role

A distribution box is not meant to manage power distribution; it is simply a protective shell for what's inside.

In this comprehensive, deep-dive guide, our engineering team will explore exactly what a distribution box is, dissect

Learn how to choose a distribution box and understand its internal structure, including MCBs, busbars, neutral bars,

This article discusses the construction of the distribution box, its functional divisions, and

A distribution box is the heart of any electrical system. It takes the incoming power and safely distributes it to different

The internal structure of the distribution box is designed to safely distribute power from the main power source to

These boxes play a vital role in how your system works, especially if you have multiple

Below the main breaker are the two bus bars carrying the current between the main breaker and the two columns of branch circuit

This document provides a list of components in an electrical distribution box with their names and associated wiring diagrams. It

A distribution box organizes and controls power flow, ensuring safety and efficiency in electrical systems.

Rear shell of the distribution box

A distribution box uses MCBs, RCDs, and busbars to protect circuits, prevent shocks, and

1. Distribution cabinet shall be placed on the foundation section steel one by one according to the layout of construction drawing. The

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