

Loading of distribution boxes



Overview

In a theatre, a specialty panel known as a rack is used to feed stage lighting instruments. A U.S. style dimmer rack has a 208Y/120 volt 3-phase feed. Instead of just circuit breakers, the rack has a solid state electronic dimmer with its own circuit breaker for each stage circuit. This is known as a dimmer-per-circuit arrangement. The dimmers are equally divided across the three incoming phases. In a 96 dimmer rack, there are 32 dimmers on phase A, 32 dimmers on phase B, and 32 on phase C to spread the load.

Summary of Content

The loading of a distribution box involves safely allocating electrical power to multiple circuits while ensuring each circuit is protected from overloads and faults.

Understanding Distribution Box Loading

A distribution box (DB box) receives electrical power from the main supply and distributes it to multiple branch circuits in a controlled and safe manner. Each circuit is protected by circuit breakers or fuses, which automatically disconnect the circuit if the current exceeds safe limits, preventing damage to appliances and reducing fire risks. Proper loading ensures that no single circuit is overloaded, maintaining system safety and efficiency.

Key Components Affecting Load

- **Main Switch or Main Breaker:** Controls the total power entering the distribution box and is rated for the maximum current capacity of the electrical service.
- **Circuit Breakers:** Protect individual circuits from overcurrent conditions. Each breaker is rated according to the expected load of the connected devices.

Article Content

Distribution board

Overview Theatre lighting North America United Kingdom Manufacturer differences Location and designation

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Distribution Box and Selection Guide: Internal Structure, Components ...

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

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Distribution board

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Understand distribution boxes (DB boxes) in 5 minutes. Learn about types, components, functions, and uses. Find

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In today's step-by-step guide, we will demonstrate how to select the right size panelboard (whether it's a load center, distribution

Distribution box

In this article, you will learn everything you need to know about installing, expanding or replacing a distribution box - from the legal

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