

Principle of Electrical Distribution Box in Building Construction

Article Overview

An electrical distribution box safely distributes electrical power from the main supply to multiple circuits, protecting each circuit with breakers or fuses while allowing controlled operation and maintenance.

Core Principle

The electrical distribution box, also called a distribution board or panel, acts as the control hub of a building's electrical system. Its main principle is to receive power from the main supply and distribute it to various circuits in a safe, organized, and manageable way. Each circuit is protected individually, ensuring that faults or overloads in one area do not affect the entire system .

Components and Function

Key components inside a distribution box include:

- **Circuit Breakers:** Automatically disconnect a circuit when excessive current or a short circuit occurs, preventing fire hazards and equipment damage .
- **Fuses:** Sacrifice themselves to protect circuits in certain setups, especially for sensitive electronics .
- **Busbars:** Conduct electricity to multiple circuits efficiently.
- **RCDs (Residual Current Devices):** Protect against electric shocks by detecting leakage currents....

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Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://www.iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

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