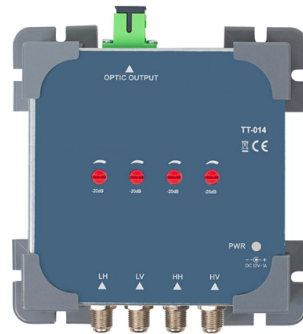


Principle of Lighting Distribution Box



AI Overview

A lighting distribution box distributes electrical power to multiple lighting circuits while providing protection, control, and monitoring of the system.

Overview

A lighting distribution box is a low-voltage electrical enclosure designed to manage and distribute power to lighting circuits in buildings, factories, or substations. It serves as a central hub where electricity from the main supply is divided into multiple circuits, each protected and controlled individually. The box ensures safe, reliable, and efficient operation of lighting systems while allowing easy maintenance and monitoring.

Components and Functions

- **Switchgear:** Enables manual or automatic switching of circuits, allowing lights to be turned on or off as needed.
- **Protective Devices:** Includes circuit breakers (LS switches) and residual current devices (RCDs) to prevent overloads, short circuits, and electrical accidents. RCDs disconnect the circuit within milliseconds if a residual current is detected, protecting people and animals.
- **Measuring Instruments:** Display operational parameters such as voltage, current, and power consumption. Some instruments can trigger alarms or signals if values deviate from normal conditions.
- **Auxiliary Equipment:** May include contactors, timers, motion sensors, or automation modules for intelligent control of lighting circuits.
- **Enclosure:** Typically made of metal or durable plastic, providing insulation, waterproofing, and protection from environmental factors.

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