

Intelligent Lighting Module Control Distribution Box



Overview

IP20 Energy conservation and the resulting cost savings are key drivers in the increasing demand for lighting controls.

Key Takeaways

A Lighting Intelligent Control Module Distribution Box is a modular, programmable system that integrates power distribution with smart lighting control, enabling automated, flexible, and energy-efficient management of luminaires.

Intelligent lighting distribution boxes combine traditional electrical distribution with advanced control capabilities. They allow individual or grouped control of connected luminaires through digital communication protocols such as DALI (Digital Addressable Lighting Interface) or proprietary bus systems, enabling plug-and-play installation and software-based configuration without rewiring ().

Key Features

- **Modular Design:** Many boxes, such as the SPO.227/248, are modular and pluggable, allowing easy expansion or upgrades ().
- **Programmable Control:** Boxes can execute predefined logic for lighting behavior, including on/off switching, dimming, and daylight harvesting ().
- **Sensor Integration:** Compatible with motion detectors, brightness sensors, and smart panels to automate lighting based on occupancy or ambient light ().
- **Communication Bus:** Uses bus networks (e.g., M-Bus or DALI BUS) to transmit control signals between modules, sensors, and luminaires ().

- **Energy Efficiency:** Intelligent control can reduce energy consumption by over 50% through dimming, scheduling, and adaptive lighting ().

Technical Specifications

- **Voltage and Current Ratings:** Typical low-voltage boxes operate at AC 380V, 50Hz, with main busbar currents ranging from 10A to 100A and short-time withstand currents up to 4.5 kA ().
- **Protection and Enclosure:** IP30 for operating face and IP20 for other surfaces, suitable for indoor installation ().
- **Load Capacity:** Maximum recommended load per channel is often 6A, with total box load up to 16A; supports multiple digital dimming ballasts ().
- **Expansion Options:** Some systems allow linking multiple boxes via BUS loops or adding expansion units to control additional luminaires ().

Applications

- **Commercial Buildings:** Offices, conference rooms, and lobbies where automated lighting improves comfort and energy efficiency.
- **Industrial Facilities:** Warehouses and production areas requiring flexible lighting zones.
- **Smart Homes and Automation:** Integration with building automation systems for adaptive lighting control ().
- **Emergency and Essential Lighting:** Dual control/supply boxes can manage essential and non-essential circuits independently ().

Advantages

- **Flexible Configuration:** Adjust lighting schedules, dimming levels, and control logic via software without physical rewiring.
 - **Scalability:** Modular design allows easy expansion as building requirements change.
 - **Enhanced Safety:** Integrated protection and BUS isolation prevent damage from electrical faults.
 - **Energy Savings:** Optimized lighting control reduces electricity consumption and supports compliance with energy efficiency regulations ().
- In summary, a Lighting Intelligent Control Module Distribution Box is a versatile solution for modern lighting systems, combining power distribution, intelligent control, and modular expandability to deliver energy-efficient, automated, and programmable lighting management.

Article Content

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These devices combine traditional modular wiring boxes with intelligent DALI lighting control, saving on

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Dual Control/Supply Lighting Distribution Box Use to control 2 groups of luminaires independently of each other (same circuit,

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The SPO.227 and SPO.248 are fully addressable, digitally controlled DALI intelligent modular distribution boxes, connected to the

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The Ex-Or CDW12U5-DALI Connect Digital Box is a highly flexible, configurable and intelligent lighting control module, which

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Lighting Control Modern light management ABB i-bus® KNX ensures optimum lighting of industrial and office buildings as well as

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Connect Digital Box is a highly flexible, configurable and intelligent lighting control module. Designed to change the way lighting

LIGHTING CONTROLS

Get full automatic or manual control, or anything in between. The system also integrates wired and wireless elements for a true

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