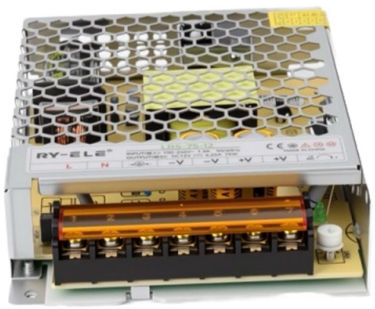
ZITHA TECH SPECIALTY CABLES (Pty) Ltd

Intelligent Control Module Distribution Box



Overview

Intelligent Power Distribution Box Solution Compared with the traditional power distribution box, it is safer to cut off the strong power supply remotely.

Key Takeaways

An Intelligent Control Module enables remote monitoring, automated control, and energy management for modern distribution boxes, enhancing safety, efficiency, and integration with IoT systems.Overview

An Intelligent Control Module (ICM) is a central component in smart distribution boxes that manages power distribution, monitors energy usage, and allows automated or remote control of electrical circuits. It integrates with traditional components like air switches, AC contactors, and leakage protectors, while adding digital intelligence for real-time monitoring and control .

Key Features
• Remote Control and Automation: Users can turn circuits on/off via mobile apps or PC applications, schedule operations, and automate responses to sensor triggers such as smoke, motion, or power loss .

• Energy Monitoring: Modules often include energy meters to track consumption per channel, enabling efficient energy management and cost savings .

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

• Safety Enhancements: Intelligent modules can cut off power remotely, respond to emergency triggers, and maintain critical functions during faults or accidents, such as in automotive applications .

• IoT Integration: Many modules support Wi-Fi, 4G, or 5G connectivity, allowing integration with smart home platforms (e.g., Tuya) or industrial IoT systems for predictive maintenance and real-time alerts .

• Sensor Connectivity: Inputs from environmental or security sensors allow the system to automatically respond to conditions like fire, intrusion, or water leakage .

Applications

• Smart Homes and Buildings: Control lighting, HVAC, and appliances remotely, with energy monitoring and automated safety features .

• Industrial and Factory Floors: Manage high-demand circuits, monitor equipment status, and perform predictive maintenance using edge computing and AI algorithms .

• Automotive and Transportation: Intelligent power distribution modules (iPDS/iPDM) manage vehicle electrical systems, ensuring safety-critical functions remain operational while non-essential loads can be switched off during emergencies .

• Utility and Grid Management: Enterprise solutions like Huawei's IDS provide digital monitoring of transformer districts, enabling greener, safer, and more stable power distribution .

Technical Considerations

• Controller Types: Modules may use microcontrollers (e.g., ESP32) or embedded Linux systems (e.g., Raspberry Pi CM4) to handle multiple relay channels and digital inputs .

• Load Capacity: Depending on the design, modules can control from a few channels to 32 or more, with configurable AC or DC outputs .

• Integration with Existing Infrastructure: Intelligent modules can be retrofitted into traditional distribution boxes or designed as part of a new smart panel, supporting both local and cloud-based control .

Benefits

• Enhanced safety through automated cut-offs and sensor-triggered responses.

• Improved energy efficiency via monitoring and scheduling.

• Greater convenience with remote access and automation.

• Scalability for residential, industrial, and automotive applications.

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

• Data-driven insights for predictive maintenance and operational optimization. Intelligent Control Modules transform conventional distribution boxes into smart, connected, and safer energy hubs, suitable for modern homes, industrial facilities, and vehicles, while enabling integration with IoT and AI-driven management systems .

Article Content

Intelligent Power Distribution Box Solution

Compared with the traditional power distribution box, it is safer to cut off the strong power supply remotely, and it can save energy

284B6-ZE03B Genuine Nissan 284B6ZE03B Controller Assy-Ipdm

Designed by Nissan manufacturer and are produced with stringent factory specifications, undergoing the quality control procedures.

Low Voltage Power & Data Distribution | LEONI Group

Our intelligent and mechanical boxes in the area of power and data distribution offer modular solutions for

POWER DISTRIBUTION BOX – Smart Home Automation | KinCony

Smart Distribution Box Solution Powered by KinCony B32M + B16M Controllers The KinCony Smart Distribution Box is a

IX3212 Intelligent Xpansion™ Power Distribution Module

The IX3212 Intelligent Xpansion™ power distribution module (PDM) expands CAN bus

Intelligent Distribution ay

8V power to load equipment. Using Intelligent Protection Device (IPD) breakers, users can monitor current for individual loads and an

PDM: Still One of the Smartest Ways to Power Your

The Murphy Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus

Intelligent Smart Distribution Box Solutions – People Electric

A residential smart distribution box supports safer and more transparent electrical control in smart homes. It can work with smart

Intelligent Power Distribution Modules (IPDMs)

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Unlike traditional fuse boxes, IPDMs use microprocessors and relays to intelligently control

Intelligent Distribution Box

Whether facing harsh environmental conditions or complex electrical equipment requirements, it ensures stable and efficient power

Murphy by Enovation Intelligent Xpansion Power Distribution Module

The Murphy Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus control networks by replacing existing relay

Low Voltage Power & Data Distribution | LEONI Group

The intelligent power distribution boxes are called iPDS and iPDM and stand for Intelligent Power

Smarter Power Distribution: Shaping the Future of Automotive

A look inside power distribution modules Learn about design approaches to power distribution modules and various design

Intelligent Power Modules (IPMs): Concepts, Features, and Applications

What Is an Intelligent Power Module (IPM)? Here''s the short answer: “Power module” refers to the presence of a

Bivocom IoT Electrical Panel: Smart Power Distribution Solutions

Revolutionizing Smart Power Management An electrical panel, often called a distribution board or breaker box

Solid State Automotive Power Distribution Module with eFuse

Renesas provides an efficient power distribution network system built on intelligent power device (IPD) technologies. The advanced

Electrical Distribution Boxes for Power Distribution

Electrical distribution boxes for modular power distribution and installation. Flexible distribution solutions for

Intelligent motor control center fundamentals | Eaton

Learn the fundamentals of how motor control centers (MCCs) provide monitoring and control for the operation of a collection of

Room Automation Distribution Boxes for DALI & Building Automation

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Intelligent room automation devices are essential to ensure that they perform their task ideally. For fast, flexible and safe installation,

OEM ''16-''22 Nissan Maxima IPDM Fuse / Relay Controller Module

OEM 2016-2022 Nissan Maxima IPDM Fuse / Relay Controller Module. The IPDM, also called the Intelligent Power Distribution

Nissan''s Intelligent Power Distribution Module (IPDM)

A typical Nissan that rolls into your bay has an underhood fuse/relay center called the intelligent power distribution module (IPDM). A

CENTERLINE 2500 Low Voltage Motor Control Centers and

The CENTERLINE 2500 MCC provides intelligent control with common communication protocols that are easily networked in the

Not just a fuse box

In some cases, the fuse box itself becomes a module that might need to be programmed/re-programmed when it is

Power Distribution Boxes Explained Simply

Learn what a power distribution box is, how it works, key components, types, and why it''s vital for safe and efficient

What is IPDM? | AutoCodes

General Explanation: The IPDM, or Intelligent Power Distribution Module, is a component found in Nissan and Infiniti

Construction of intelligent power distribution system in box-type ...

Abstract and Figures Based on the field-bus technology and combined with the industrial control products, the

Elecnova: Electrical/Electronic Control Rack Cabinet, Electronic ...

The Intelligent Control Cabinet is a cutting-edge solution designed to streamline and optimize control systems in various industries.

Distributed Control System (DCS) | Yokogawa Electric Corporation

What is a distributed control system? A Distributed Control System (DCS) is an automated control solution widely used in industrial

Intelligent Power Module (IPM) Devices

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

These intelligent power modules deliver significant efficiency gains with the latest generation of power semiconductors, optimized IC

Murphy by Enovation Intelligent Xpansion Power Distribution Module

The Murphy Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus control networks by replacing existing relay

Low Voltage Power & Data Distribution | LEONI Group

The intelligent power distribution boxes are called iPDS and iPDM and stand for Intelligent Power

Smarter Power Distribution: Shaping the Future of Automotive

A look inside power distribution modules Learn about design approaches to power distribution modules and various design

Intelligent Power Modules (IPMs): Concepts, Features, and Applications

What Is an Intelligent Power Module (IPM)? Here''s the short answer: “Power module” refers to the presence of a

Bivocom IoT Electrical Panel: Smart Power Distribution Solutions

Revolutionizing Smart Power Management An electrical panel, often called a distribution board or breaker box

Solid State Automotive Power Distribution Module with eFuse

Renesas provides an efficient power distribution network system built on intelligent power device (IPD) technologies. The advanced

Intelligent Distribution | Solutions | ABB

Intelligent Distribution Solutions for smart low voltage electrical distribution Digital technologies such as Cloud Computing, Big Data,

Intelligent Remote Distribution Box Monitoring Solution

The distribution box is embedded with the DTU distribution device, distribution device power module, and distribution device power

IX3212 Intelligent Xpansion™ Power Distribution Module

The IX3212 Intelligent Xpansion™ power distribution module (PDM) expands CAN bus control networks by replacing

Electrical AC/DC Power Distribution Box & Cabinet for

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Power Distribution Equipment The intelligent AC/DC power distribution box is a distribution automation

Electrical Distribution Boxes for Power Distribution

Electrical distribution boxes for modular power distribution and installation. Flexible distribution solutions for

Intelligent motor control center fundamentals | Eaton

Learn the fundamentals of how motor control centers (MCCs) provide monitoring and control for the operation of a collection of

Room Automation Distribution Boxes for DALI & Building Automation

Intelligent room automation devices are essential to ensure that they perform their task ideally. For fast, flexible and safe installation,

OEM ''16-''22 Nissan Maxima IPDM Fuse / Relay Controller Module

OEM 2016-2022 Nissan Maxima IPDM Fuse / Relay Controller Module. The IPDM, also called the Intelligent Power Distribution

Intelligent Power Distribution Box Solution

Compared with the traditional power distribution box, it is safer to cut off the strong power supply remotely, and it can save energy

284B6-ZE03B Genuine Nissan 284B6ZE03B Controller Assy-Ipdm

Designed by Nissan manufacturer and are produced with stringent factory specifications, undergoing the quality control procedures.

Low Voltage Power & Data Distribution | LEONI Group

Our intelligent and mechanical boxes in the area of power and data distribution offer modular solutions for

POWER DISTRIBUTION BOX – Smart Home Automation | KinCony

Smart Distribution Box Solution Powered by KinCony B32M + B16M Controllers The KinCony Smart Distribution Box is a

IX3212 Intelligent Xpansion™ Power Distribution Module

The IX3212 Intelligent Xpansion™ power distribution module (PDM) expands CAN bus

Intelligent Distribution ay

8V power to load equipment. Using Intelligent Protection Device (IPD) breakers, users can monitor current for individual loads and an

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

PDM: Still One of the Smartest Ways to Power Your

The Murphy Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus

Intelligent Smart Distribution Box Solutions – People Electric

A residential smart distribution box supports safer and more transparent electrical control in smart homes. It can work with smart

Intelligent Power Distribution Modules (IPDMs)

Unlike traditional fuse boxes, IPDMs use microprocessors and relays to intelligently control

Intelligent Distribution Box

Whether facing harsh environmental conditions or complex electrical equipment requirements, it ensures stable and efficient power

Intelligent Power Distribution Box Solution

Compared with the traditional power distribution box, it is safer to cut off the strong power supply remotely, and it can save energy

284B6-ZE03B Genuine Nissan 284B6ZE03B Controller Assy-Ipdm

Designed by Nissan manufacturer and are produced with stringent factory specifications, undergoing the quality control procedures.

Low Voltage Power & Data Distribution | LEONI Group

Our intelligent and mechanical boxes in the area of power and data distribution offer modular solutions for

POWER DISTRIBUTION BOX – Smart Home Automation | KinCony

Smart Distribution Box Solution Powered by KinCony B32M + B16M Controllers The KinCony Smart Distribution Box is a

IX3212 Intelligent Xpansion™ Power Distribution Module

The IX3212 Intelligent Xpansion™ power distribution module (PDM) expands CAN bus

Intelligent Distribution ay

8V power to load equipment. Using Intelligent Protection Device (IPD) breakers, users can monitor current for individual loads and an

PDM: Still One of the Smartest Ways to Power Your

The Murphy Intelligent Xpansion™ Power Distribution Module (PDM) expands CAN bus

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved

Intelligent Smart Distribution Box Solutions – People Electric

A residential smart distribution box supports safer and more transparent electrical control in smart homes. It can work with smart

Intelligent Power Distribution Modules (IPDMs)

Unlike traditional fuse boxes, IPDMs use microprocessors and relays to intelligently control

Intelligent Distribution Box

Whether facing harsh environmental conditions or complex electrical equipment requirements, it ensures stable and efficient power

Contact Us

Continue your research online:

Website: https://zithatech.co.za
Technical inquiry: https://zithatech.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ZITHA TECH SPECIALTY CABLES (Pty) Ltd - All rights reserved