

Custom-made standard primary distribution boxes for construction sites



Overview

Our Custom Power Distribution Boxes are engineered to meet your exact specifications and industry requirements.

Key Takeaways

Primary distribution boxes on construction sites must be customized to meet safety, environmental, and operational standards, including material durability, protection ratings, electrical component configuration, and site-specific installation requirements.

Material and Structural Requirements

Primary distribution boxes should be made from fire-proof and impact-resistant materials, such as thermoplastics, steel, stainless steel, or aluminum, to ensure durability against mechanical stress, UV exposure, and weather conditions (). The enclosures must provide ventilation, heat dissipation, and rainproofing, and the internal mounting plates for electrical components should be electrically bonded to the box body for safety ().

Electrical Components and Safety Features

Customized distribution boxes must include circuit breakers, residual current devices (RCDs), fuses, and protective relays that comply with national standards (). Each socket or outlet should be protected against indirect contact, typically with an RCD rated at 30 mA (). Rubber-insulated cables are recommended for incoming and outgoing lines, with protective rings at entry points to prevent damage ().

Protection Ratings

Boxes should meet IP55 or higher for dust and water ingress protection, and impact resistance ratings such as IK10 to withstand mechanical shocks (). These ratings ensure reliable operation in harsh construction environments.

Customization Process

Requirement Analysis: Collect detailed specifications including power load, environmental conditions, installation location, and integration needs (). **Design & Layout:** Use 3D modeling or digital twin technology to simulate real-world operation, ensuring proper fit and circuit functionality (). **Material Selection & Fabrication:** Choose materials based on environmental exposure and apply precise fabrication processes like cutting, bending, welding, and powder coating ().

Assembly & Wiring: Assemble and wire the panel according to design specifications, following strict quality control protocols (). **Testing & Validation:** Conduct electrical performance tests, protection tests, and optional environmental tests (salt spray, temperature, humidity) to ensure reliability and compliance ().

Installation Considerations

Distribution boxes can be floor-mounted, pole-mounted, or face-mounted depending on site layout (). Mobile or transportable boards should include handles, wheeled carriages, and lockable doors for safe relocation (). Proper cable selection, including CEE plugs and sockets, ensures safe and reliable power delivery to all site equipment ().

Compliance and Maintenance

All components must comply with national electrical standards, and leakage protectors should be tested and recorded regularly (). Customization ensures that the distribution box is optimized for safety, performance, and cost efficiency, reducing the risk of electrical hazards and maintenance issues (). By following these standards and customization steps, construction sites can ensure safe, reliable, and efficient power distribution tailored to the specific operational and environmental conditions of the project.

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Requirements for distribution box at construction site

2□ The rated value and action setting value of the main distribution box shall be compatible with the rated value and action setting value of the branch switch. 3□ The electrical components and leakage

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Customizing distribution boxes based on customer application scenarios Introduction In today's rapidly evolving industrial landscape, electrical distribution systems need to be safe, reliable,

Key Points Of Installation And Collocation Of Distribution Box In ...

The power distribution system at the construction site shall be distributed in different levels. The main distribution box (or distribution room) shall be set up.

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

