Factory 380V Distribution Box Configuration

Overview

When you sell on Alibaba as an electrical equipment exporter from Southeast Asia, understanding three phase distribution box configurations is essential for meeting global buyer requirements.

Key Takeaways

A 380V distribution box in a factory is typically configured as a three-phase, low-voltage system with modular compartments for circuit breakers, busbars, and protective devices, designed for safe and efficient power distribution. Key Components and LayoutThree-Phase System: The 380V distribution box operates on a three-phase system, with three conductors carrying alternating current at 120° phase differences, providing efficient power for industrial motors and heavy machinery ( ). The nominal line-to-line voltage is 380V, compatible with 400V or 415V systems within ±10% tolerance.

Main Components: Incoming Main Breaker: Protects the entire distribution system from overcurrent. Busbars: Copper or aluminum bars distribute power to individual circuits. Circuit Breakers: Modular breakers for individual loads, including production lines, HVAC, and lighting.

Protective Devices: Overcurrent, short-circuit, and arc-fault protection devices ensure safety ( ). Monitoring Instruments: Voltmeters, ammeters, and energy meters for real-time monitoring. Compartmentalization: Modern distribution boxes, such as the XL-21 series, feature segregated compartments for main power, control circuits, and measurement devices, enhancing safety and maintenance access ( ).

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Design Considerations

Load Calculation: Determine total power demand, including continuous and intermittent loads, to select appropriately rated breakers and busbars ( ). Placement and Accessibility: Position distribution boxes near high-power equipment clusters while minimizing cable lengths to reduce losses. Wall-mounted or floor-standing designs can be chosen based on space and operational requirements ( ).

Environmental Protection: For indoor factory environments, choose dustproof, ventilated enclosures (IP54 or higher). For outdoor or harsh conditions, select waterproof and dustproof models (IP65) capable of withstanding extreme temperatures ( ). Modularity and Customization: Modular designs allow flexible combinations of breakers, contactors, relays, and measurement instruments.

Custom boxes can accommodate non-standard voltage levels or specific cable entry requirements ( ). Safety and StandardsIEC Compliance: Ensure the distribution box and components comply with IEC standards for low-voltage systems. Clear Separation: Maintain physical separation between high-voltage and control compartments to prevent accidental contact.

Double-

Door Access: Enhances safety by allowing meter viewing or maintenance without touching live components ( ).

Summary

A well-configured 380V distribution box in a factory should combine modular design, proper load calculation, compartmentalization, and protective devices to ensure safe, reliable, and efficient power distribution. Selecting the right enclosure type, adhering to IEC standards, and planning for accessibility and environmental conditions are critical for long-term operational safety and efficiency.

Article Content

Three Phase Distribution Box 380V: Complete Selection Guide for ...

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CE-Certified 380V Component Configuration Industrial Power

How to choose cables?A: The input end of the distribution board is connected to the power supply, and the output end is connected to the load. The cable selection should be based on the rated current

Electric Distribution Box

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Customized complete distribution boxes, ideal for indoor environments like factories and workshops, offer a range of configuration options. These include choices of brands such as Renmin/Delixi,

Single Line Diagram for DB Systems

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380V Power Distribution Cabinet Procurement Guide for Factory and ...

Complete guide to 380V power distribution cabinet procurement for Southeast Asian factories and warehouses. Learn about voltage standards, safety certifications (IEC 61439, UL 508A), and how to

Three Phase AC 220V 380V Power Distribution Cabinet XL21

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