Construction site power distribution box meter

Overview

Power Distribution Box, 110V Electricity Meter Electrical SAFE AND RELIABLE: This power outlet box comes with 4 NEMA 5-20 IP44 Power Distribution Box, 110V.

Key Takeaways

A construction site power distribution box connects the temporary site supply to the public grid, distributes power safely through main and sub-distributors, and allows metering for energy management.Overview of Construction Site Power Connection

A construction site power connection is a temporary, compliant link between the public power grid and the construction site, ensuring safe and reliable electricity for tools, lighting, containers, and machinery such as hydraulic power packs or concrete splitters . It typically includes a site connection box, main distribution board with protection and metering devices, sub-distribution boards, cables, and plug systems .

Components of a Power Distribution Box
• Main Distribution Cabinet: Connects directly to the public supply, measures energy consumption, and distributes power to sub-distributors .

• Sub-Distribution Boxes: Feed work zones, lighting, or machinery, often equipped with CEE and earthed sockets and upstream safety devices .

• Meters: Installed in the connection cabinet to track energy usage, enabling cost allocation and transparent energy management .

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• Protection Devices: Include circuit breakers, residual current devices (RCDs), and fuses to prevent overloads and ensure safety .

Installation and Connection

• Pre-wired boxes simplify installation; electricians only need to connect the live (L) and neutral (N) wires according to the wiring diagram .

• Covers and strain relief clamps allow easy access to fuses and meters without removing the entire cover, reducing connection time and preventing loss of components .

• Phase balancing is crucial: distribute single-phase loads evenly to avoid neutral overloading .

• Cable sizing and routing must account for voltage drop, load peaks, and inrush currents from high-demand equipment .

Standards and Safety

• Construction site power distributors are manufactured according to IEC 61439 and IEC 60364 standards .

• Outdoor boxes are typically robust, weather-resistant, and IP-rated (e.g., IP44–IP65) to protect against water, dust, and mechanical impact .

• Early coordination with the grid operator ensures correct connection capacity, metering, and compliance with local regulations .

Planning Considerations

• Load profile assessment: Identify simultaneous consumers, peak loads, and changing demands as construction progresses .

• Network type: Use three-phase 400 V for heavy machinery and 230 V for small consumers .

• Distribution structure: Plan main and sub-distributions, short feeders, and reserves for high-utilization phases .

• Flexibility: Modular or pluggable distribution boxes allow rapid deployment and easy extension for changing site requirements . By following these guidelines, a construction site can achieve safe, efficient, and code-compliant power distribution, with clear metering and protection for all electrical equipment.

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