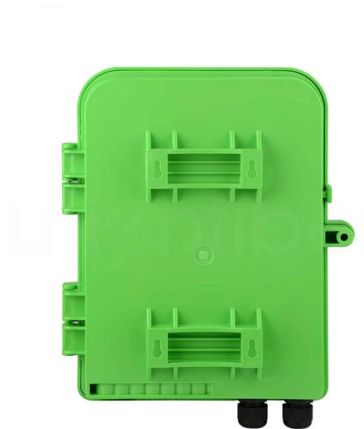


Capacity of the secondary power distribution box on the construction site



Overview

How to Size Temporary Power Distribution Systems and Spider Box Learn how to size temporary power distribution systems and spider box loads for Canadian in.

Key Takeaways

A secondary power distribution box (SDB) on a construction site typically handles three-phase 400 V or single-phase 230 V loads, with capacities ranging from 16 A to 125 A depending on the equipment and site requirements.

A secondary distribution box (SDB) receives power from the main distribution box and distributes it to branch circuits for tools, machinery, and floor modules on a construction site . It is designed to handle temporary, high-demand loads safely and efficiently, often in harsh outdoor environments .

Typical Electrical Capacity

- Voltage: 400 V three-phase for heavy machinery, 230 V single-phase for smaller tools .
- Current Ratings: Common SDBs are designed for 16 A, 32 A, 63 A, or 125 A connections, depending on the load profile and number of devices connected .
- Power Output: Modern temporary distribution boxes can deliver up to 3.8 kW per circuit, with multiple circuits allowing simultaneous operation of several machines .



- **Connection Types:** CEE plug systems are standard, with options for snap-on extender cables and terminal blocks for custom wiring .

Safety and Environmental Considerations

- **Protection Class:** Most SDBs have IP55 protection, ensuring resistance to dust and water jets, which is essential for construction site conditions .
- **Circuit Protection:** Built-in earth leakage circuit breakers (RCDs) and overcurrent protection prevent electrical hazards .
- **Phase Balancing:** Single-phase loads are distributed evenly across phases to avoid neutral overloading .

Integration with Main Distribution

The SDB is connected to the main power distribution box via an extender cable and acts as a hub for distributing power to localized areas of the site . This modular setup allows for scalable power distribution, accommodating changing construction phases and additional machinery as needed .

Practical Implications

When planning an SDB, consider the load profile, including continuous loads (lighting, containers) and high inrush current equipment (hydraulic power packs, concrete splitters). Proper sizing ensures operational safety, prevents voltage drops, and avoids nuisance tripping . In summary, the capacity of a secondary power distribution box depends on the site's load requirements but typically ranges from 16 A to 125 A, supports 230 V single-phase and 400 V three-phase, and includes safety features suitable for construction environments .

Article Content

Secondary Distribution Box

The Secondary Distribution Box (SDB) receives power from Main Power Distribution box via an extender cable and provides a

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