

Requirements for the spacing of secondary distribution boxes

Article Overview

Secondary distribution boxes require minimum clearances for safe operation, maintenance, and accessibility, typically 3 ft (914 mm) in front, 30 in (762 mm) wide, and sufficient height for personnel access.

NEC Working Space Requirements

According to NEC 110.26, all electrical equipment, including secondary distribution boxes, must have adequate working space to allow safe inspection, maintenance, and operation. Key requirements include:

- o Depth of working space: For systems up to 600V, a minimum of 3 ft (914 mm) is required in front of the equipment for Condition 1 (live parts on one side, no live or grounded parts on the other). For higher voltages or more hazardous conditions, the depth increases up to 5 ft (1.5 m) for Condition 3 (live parts on both sides) .
- o Width of working space: Must be at least 30 in (762 mm) or the width of the equipment, whichever is greater .
- o Height clearance: Minimum headroom of 6.5 ft (2 m) in front of the panel or distribution box .
- o Dedicated space: The area from the floor to a height of 6 ft (1.8 m) must be kept clear of obstructions .
- o Obstructions: No pipes, cabinets, or other equipment should block access to the distribution box .

Secondary Unit Substation Considerations

For secondary unit substations, which combine transformers and low-voltage switchgear:

- o Equipment should be close-coupled to minimize cable lengths, reduce power losses, and improve voltage regulation .
- o Outdoor substations must follow SSEN specifications, ensuring all enclosures are rated for outdoor use and provide safe access for maintenance .
- o Clearance between facing meter boxes or panels should be at least 1000 mm (3.3 ft) to allow safe operation and cover removal .
- o Doors should open fully outward with adequate space to prevent interference with personnel or adjacent equipment .

Practical Layout Guidelines

- o Maintain unobstructed access to all sides of the distribution box where live parts are present.
- o Ensure ventilation and air circulation around transformers and switchgear to prevent overheating.
- o For indoor installations, avoid placing boxes in bathrooms, closets, or above shelving .
- o For outdoor installations, provide sufficient clearance for emergency access, routine maintenance, and



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potential future expansion . By following these spacing and clearance requirements, secondary distribution boxes can be safely installed, maintained, and operated while complying with NEC and utility-specific standards.

Acceptance Testing for the Communications Distribution System shall be incremental and based upon testing, inspection, and

When all alternatives have been considered, and it is not feasible to achieve the required separation between PG&E electric facilities

Learn about the three-tier power distribution system (main secondary tertiary distribution boards) in a new residential area including

Minimum CLEARANCES in SECONDARY CIRCUITS are determined from Table 2M. The PEAK WORKING VOLTAGE for use in

Follows the principle of "one machine, one switch, one RCD, one box, one lock," ensuring no single switch controls

A visual guide to NEC 110.26 working space requirements. Understand the required depth, width, and height clearances for panels,

Outdoor control cables may require larger conductor size to compensate for voltage drop due to the relatively long distance between

Learn how to install a distribution box safely and correctly. Covers wiring, placement,

Discover the essentials of a Power Distribution Box--how it works, key types, benefits, and

Primary distribution box: three-phase power supply, ground wire and zero wire are introduced from the

Specification DDS-4 UG Revision 12, December 2022 ONCOR ELECTRIC DELIVERY COMPANY SPECIFICATIONS FOR

ICC user note: About this chapter: Chapter 39 addresses the "rough-in" stage of construction in which the wiring system is installed

SPD layout in building distribution boxes ensures proper surge protection, safe equipment operation, and

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compliance

Follow key principles: no cross-level wiring, one machine-one switch, $\leq 30\text{m}$ box spacing, dry/ventilated installation for safe distribution.

Regularly inspect and maintain your distribution box to catch issues early and ensure safe operation. Design

A conductor that is used to connect the CT secondary leads may have different requirements than a cable that is used for the VT

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