

Secondary distribution box external enclosure grounded



Article Overview

The external enclosure of a secondary distribution box must be properly grounded to ensure safety, with a dedicated grounding bus bonded to the enclosure and neutral isolated from the enclosure.

Key Principles

Separation of Neutral and Ground: In a secondary distribution box or subpanel, the neutral bus must remain isolated from the metal enclosure. Unlike the main service panel, where neutral and ground are bonded, bonding them in a subpanel can create parallel paths for neutral current, potentially energizing metal parts and delaying breaker tripping during a fault . **Grounding the Enclosure:** The metal enclosure itself must be connected to a grounding system. This is typically done using a grounding bus bar attached directly to the enclosure. All equipment grounding conductors from branch circuits are connected to this bus, which is then bonded to the building's main grounding system or a dedicated grounding rod .

Practical Steps

- **Install a Grounding Bus Bar:** Mount a grounding bar inside the enclosure and bond it to the metal box using screws or bolts designed for grounding.
- **Connect Ground Wires:** Attach all incoming equipment grounding conductors to the grounding bus. For industrial or tool distribution boxes, additional ground wires may connect the mounting plate and other metallic components to ensure low-resistance paths

Article Content

Jul 21, 2026

How to Ground an Electrical Panel: NEC Requirements

A comprehensive guide on properly grounding an electrical panel according to NEC Article

May 04, 2026

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

The designer will evaluate the sizing of the grounding system and the need for an isolated or bonding ground system separate from

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The Outdoor Ground Box Supplies Power to Outdoor

The Outdoor Ground Box is UL-listed and delivers power, data, or AV connectivity in outdoor spaces.

May 12, 2026

Vertiv NetSure External Distribution Box (EDB)

Overview The Vertiv™ NetSure™ External Distribution Box (EDB) accommodates both DC distribution and fiber distribution in a

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26 05 26 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

Conduit systems and associated fittings and terminations shall be made mechanically tight to provide a continuous

Jul 20, 2026

Industrial Automation Wiring and Grounding Guidelines

Purpose This publication gives you general guidelines for installing an Allen-Bradley industrial automation system that may include

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How to Properly Ground a Sub Panel

This is achieved by installing a main bonding jumper or screw from the dedicated grounding bus directly to the metal

Dec 16, 2025

National Electrical Code 2023 Basics: Grounding and Bonding Part 15

All service conductors enclosures involving meter fittings, boxes, or the like inserted in the service raceway. Typically,

Jul 29, 2025

Understand Ground Faults & Protection Against Ground

Consult the Littelfuse Ground Fault Knowledge Center to learn about this electrical safety risk and

May 07, 2026

Secondary unit substations design guide

secondary unit substation is a close-coupled assembly consisting of enclosed primary high voltage equipment, three

Feb 07, 2026

EN / Grounding and cabling of drive systems reference manual

The purpose of this manual is tell you the grounding and cabling principles of variable speed drive systems. The

May 16, 2026

How to properly ground a subpanel in detached building?

Grounds are for any equipment that becomes shorted in itself and must always have a ground attached to

Aug 14, 2025

Secondary unit substations design guide

Secondary unit substations requiring a primary disconnect are furnished with Eaton's Type MVS metal-enclosed load

Sep 23, 2025

NEC 2023 Basics: Equipment Grounding Conductors

Figure 3. Metal enclosure grounded through an equipment grounding conductor. Image used courtesy of Lorenzo Mari

Dec 27, 2025

The Basics of Bonding and Grounding Transformers

The purpose of the grounding electrode and grounding electrode conductor is to connect the separately derived system/transformer

Feb 18, 2026

Understanding Grounding of Electrical Systems | NFPA

Grounded or grounding, as defined in the 2020 edition of NFPA 70 ®, National Electrical

Apr 08, 2026

National Electrical Code 2023 Basics: Grounding and Bonding Part 1

Learn about the general requirements for grounding and bonding in line with the NEC 2023.

Jan 09, 2026

Grounding of the secondary distribution box for construction

Each DISTRIBUTION BOX and controller must be grounded. On the US market, a 5.26 mm 2 (10 AWG) ground wire must be used,

Apr 27, 2026

How To Ground Electrical Enclosure: The Complete Guide

From a safety perspective, an electrical enclosure should be positively and correctly

Mar 17, 2026

Enclosure Grounding | Grounding Kits, Devices & Straps

Explore enclosure grounding kits, grounding devices, and grounding straps to support electrical safety and

Mar 22, 2026

Do these boxes need to be grounded? : r/electricians

Inspector is telling us these need to be grounded even though they're pass throughs. I've done it this way a hundred times and never

Dec 02, 2025

How to Properly Ground a Subpanel

Proper subpanel grounding requires strict neutral and ground isolation. Learn how to connect the EGC and establish local ground

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DISTRIBUTION BOX

Each DISTRIBUTION BOX and controller must be grounded. On the US market, a 5.26 mm² (10 AWG) ground wire

Jul 09, 2026

Grounding.fm

These metal enclosures include all distribution panel boards, safety switches, circuit breaker enclosures, transformers and branch

Jun 23, 2026

NEC Requirements for Grounding of Services | EC& M

Correct grounding of services depends upon understanding the definition and role of the grounded conductor.

Jun 20, 2026

NEC Requirements for Grounding of Separately Derived Systems

Do you understand the grounding and bonding requirements for the separately derived systems?

Jul 16, 2026

028028_Rev23_4-26-23

Electric and Gas Service Requirements Manual (Greenbook) Purpose and Scope This document provides specifications, ordering

Sep 30, 2025

Secondary Distribution Substations

TG-NET-CIV-001 Foundation Arrangements for Secondary Distribution Plant Installed in Fenced Enclosures and Pad Mount

Contact Us

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