# What grounds the casing of the distribution box



## Overview

Each DISTRIBUTION BOX and controller must be grounded. On the US market, a 5.26 mm 2 (10 AWG) ground wire must be used, and in all other markets a 6 mm 2 must be used.

## Key Takeaways

The metal casing of a distribution box is grounded by connecting it to the protective earth (PE) bus and ultimately to the main grounding system using dedicated grounding wires. How the Casing is GroundedThe metal enclosure of a distribution box must be electrically connected to the grounding system to ensure safety in case of faults. This is typically done as follows: Grounding Bolt Connection: The casing has a designated grounding bolt (often marked with a PE symbol) that is connected to the PE bus inside the box using a copper wire or a braided flexible conductor.

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E Bus Integration: The PE bus serves as the central grounding point within the box. All components that require grounding, including the casing, are connected to this bus. Connection to Main Ground: The PE bus is then connected to the factory or building central grounding system, which may include grounding rods or plates, ensuring a low-resistance path to earth.

Metal Conduits: Any metal conduits or threaded pipes attached to the box should also be electrically bonded to the casing, either by welding or using conductive connectors, to maintain continuity.

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### Grounding Wire Specifications

In the US, a 10 AWG (5. 26 mm²) wire is commonly used for grounding the casing, while in other regions, a 6 mm² wire is standard. For connections between the mounting plate and other components like spindle plates, larger wires (e.g., 16 mm² or 6 AWG) may be used to ensure the total ground resistance remains below 0.

1 ohm.

### Safety Considerations

Proper grounding ensures that any fault current is safely conducted to earth, allowing protective devices like circuit breakers to trip and disconnect power. Ungrounded or improperly grounded casings can retain voltage during faults, posing a shock hazard to personnel and increasing the risk of equipment damage. All grounding connections should be secure, corrosion-resistant, and tested to verify low resistance, typically below 25 ohms for the overall system.

By following these practices, the distribution box casing is safely grounded, protecting both the electrical system and anyone interacting with the enclosure.

## Article Content

DISTRIBUTION BOX

Each DISTRIBUTION BOX and controller must be grounded. On the US market, a 5.26 mm 2 (10 AWG) ground wire must be used, and in all other markets a 6 mm 2 must be used.

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The equipotential bonding of its metal casing is the underlying logic that ensures the reliable operation of the system. The topic of system grounding is extremely important, as it affects the susceptibility of

How To Ground The Distribution Box

The metal box itself should be processed with a "box grounding bolt" (with PE mark), which must be connected to the grounded PE bus with a copper core wire or a special braided soft wire;

Grounding Requirements for Electrical Cables, Cable Trays, and

The metal sheath and steel armor of the cables within the box should be connected to the grounding bolts on the box casing using copper conductors equivalent to the cross-sectional area of

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The manufacturer of low-voltage distribution box indicates that this is called the zero connection protection system. TN-C power supply system uses the working zero

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In flammable and explosive environments, explosion-proof distribution boxes should be selected and explosion-proof treatment should be carried out. The installation of explosion-proof

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How do you ground a plastic electrical box

However, with plastic distribution boxes, the grounding process can be somewhat complicated. Here are the steps on how to ground a power distribution box:

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