

Article Overview

A distribution box with a grounding terminal ensures safe fault current flow by connecting all metal parts and circuits to a common ground, typically via a DIN rail or dedicated grounding studs.

Grounding Terminal Types

DIN Rail Grounding Terminal Blocks: These blocks clamp mechanically onto a DIN rail, creating a reliable electrical connection between the cage clamp terminals and the rail, which acts as a busbar distributing ground potential to all connected terminals . They are often color-coded green/yellow for easy identification and can serve as end stops to prevent lateral movement of other terminal blocks .

Threaded Studs in Distribution Boxes: Many distribution boxes, especially stainless steel or IP65 enclosures, have dedicated grounding studs or bolts on the base plate or side walls, marked with grounding symbols for easy connection . Ground wires are attached from these studs to the mounting plate and then to the central grounding point, ensuring the total ground resistance remains below 0.1 Ohm .

Installation Best Practices

- o **Wire Sizing:** Use appropriate ground wire sizes according to local standards. For example, in the US, 10 AWG is typical, while other markets may require 6 mm² .
- o **Connection Quality:** Clean contact surfaces and use anti-loosening washers to maintain low-resistance connections and prevent corrosion . Applying a small amount of conductive grease can further reduce contact resistance and slow electrochemical corrosion .
- o **Flexible Connections:** For enclosures with doors, braided copper tape can connect the door panel to the box body to maintain continuity .
- o **Testing:** After installation, measure resistance from any point on the enclosure to the main grounding electrode to ensure proper grounding .

Advantages of Grounding Terminal Blocks

- o **Time-Saving:** Terminal blocks simplify wiring compared to individual studs or wire lugs .
- o **Safety:** Covers and insulated jumpers prevent accidental contact with live circuits, maintaining IP20 touch protection .
- o **Organization:** Labeling and modular design allow easy identification and maintenance .
- o **ESD Protection:** Central grounding boxes are ideal for ESD-sensitive environments, providing secure connections for multiple grounding wires . By following these practices, a distribution box with a grounding terminal ensures safe, reliable, and low-resistance grounding, protecting both equipment and personnel from electrical faults.

Distribution box with grounding terminal

The distribution blocks and device terminal blocks from the FIX block system are available ready to

Explore our complete guide to the grounding terminal block. Learn about types, standards, and installation best

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Our terminal boxes have been designed to offer an easy, fast and reliable solution for core and frame

Distribution box with grounding terminal

Junction boxes are used for protecting, securing, and organising electrical connections in domestic and commercial environments.

A terminal box is responsible for providing a secure and organized environment for electrical connections, while a

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