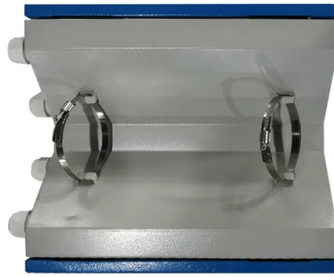


Distribution box wiring PE wire



Article Overview

The PE (protective earth) wire should be connected to a dedicated earth bar in the distribution box, ensuring a reliable path for fault currents to the main earthing terminal and ultimately to the ground.

Key Guidelines for PE Wiring

Connection to Earth Bar: In a distribution box, the PE conductor must have its own terminal on a common earthing bar. This bar collects all protective conductors from branch circuits and connects them to the main earthing terminal of the installation, which is linked to the grounding electrode or earth pit . **Proximity to Live Conductors:** For TN and IT systems, it is recommended that PE conductors run close to the corresponding live conductors (phase and neutral) in the same conduit or cable tray. This minimizes inductive reactance and ensures effective fault current flow . **Avoid** placing any ferromagnetic material between PE and live conductors, as it can interfere with fault current paths . **System-Specific Considerations:**

- **TN-S System:** PE is separate from neutral throughout the installation and starts from the earthed points of the power supply .
 - **TN-C-S System:** The PEN conductor is split into separate PE and neutral conductors at the distribution point, with PE connected to the earth bar .
 - **TT System:** PE conductors connect to local grounding electrodes, and high fault currents are not required for RCD operation .
- Physical Layout:** Ensure the PE wire is securely fastened, properly insulated, and clearly identified (typically green/yellow). The layout should allow easy access for maintenance and future upgrades .
- Integration with Circuit Protection:** The PE wire does not carry current under normal...

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