

Install copper lugs on distribution boxes



Overview

Strip to proper length so conductor can be fully inserted. Refer to manufacturer's instructions for strip length.

Key Takeaways

Copper lugs in distribution boxes are connected using properly sized compression lugs, cleaned conductors, and approved crimping tools to ensure a secure, low-resistance, and safe electrical connection. Selecting the Right Copper Lug

Choose a copper lug that matches the conductor size and type. Lugs are available for single, multi-stranded, fine, and superfine copper conductors, and their dimensions and markings are standardized according to DIN 46235 and IEC 61238-1 . Ensure the lug is rated for the current and voltage of the distribution system .

Preparing the Conductor

- Strip the insulation from the end of the copper cable to expose the conductor.
- Clean the exposed copper to remove oxidation, dirt, or debris, which can increase resistance and reduce reliability .
- For sector-shaped or multi-stranded conductors, pre-rounding may be required to fit the lug properly .

Crimping the Lug

- Insert the prepared conductor fully into the lug barrel.
- Use a compression tool approved for the lug type and conductor size. Battery-operated or hydraulic compression tools are commonly used for distribution boxes .

- Follow the manufacturer's die code or indent specifications to ensure proper cold deformation of the lug . Multiple indents may be required, starting from the inner portion of the lug and moving outward .

- Verify that the crimp is tight and secure; a properly crimped lug should not allow the conductor to pull out.

Installing the Lug in the Distribution Box

- Position the lug on the busbar or terminal stud.

- Use the correct bolt or screw torque as specified by the distribution box manufacturer to avoid loose connections or damage.

- If required, apply insulating covers to prevent accidental contact and enhance safety .

Standards and Safety

- Follow IEC 61238-1 for compression connectors and IEC 60228 for conductor classification .

- Avoid using connectors not approved for underground or distribution box applications, such as “Insulinks” for service connections .

- Ensure all connections are mechanically stable to withstand vibration and environmental stress, minimizing the risk of overheating or electrical faults . By adhering to these steps, copper lugs in distribution boxes will provide reliable, low-resistance connections that maintain system efficiency and safety.

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