

RIVO MULTITRADE OPTICAL SYSTEMS

Connect the small busbar terminals with copper rods



Overview

Step-by-Step Busbar Installation Guide Selecting between copper and aluminum busbars involves considering these performance differences, as discussed Coppe.

Key Takeaways

A copper rod can be securely connected to a small busbar terminal using bolted, clamped, or soldered connections, ensuring high conductivity and mechanical stability. Material Considerations

Copper rods and busbars are typically made from high-conductivity electrolytic tough pitch (Cu-ETP) or oxygen-free copper (OF-Cu), offering excellent electrical conductivity (approximately 101% IACS) and minimal voltage drop . Using the same copper material for both the rod and busbar ensures compatibility and prevents galvanic corrosion.

Connection Methods

- Bolted or Clamped Connections:
- Use a terminal lug or busbar clamp sized appropriately for the rod diameter.
- Ensure the contact surfaces are clean and free of oxidation to maintain low resistance.
- Tighten bolts to the manufacturer's recommended torque to prevent loosening under vibration or thermal cycling .

- Soldering or Brazing:
 - For smaller busbar terminals, soldering can provide a permanent, low-resistance connection.
 - Use high-purity solder compatible with copper and ensure proper heating to avoid cold joints.
 - This method is suitable for low to moderate current applications where mechanical stress is minimal .
- Compression or Crimping:
 - Compression lugs can be used for a secure mechanical and electrical connection.
 - Ensure the crimping tool matches the lug and rod size to achieve uniform pressure and avoid hotspots .

Installation Tips

- Surface Preparation: Clean both the rod and busbar terminal to remove oxides or contaminants.
- Insulation and Safety: If the busbar is part of a high-current system, consider insulating sleeves or barriers to prevent accidental short circuits .
- Current Rating: Verify that the cross-sectional area of the rod and busbar can handle the intended current without excessive heating .
- Mechanical Support: Ensure the rod is supported to prevent bending or stress on the terminal, especially in vertical or vibration-prone installations .

Summary

For a reliable connection of a copper rod to a small busbar terminal, choose a method (bolting, clamping, soldering, or crimping) that matches the current rating and mechanical requirements. Maintain clean contact surfaces, use compatible copper materials, and follow torque or soldering specifications to ensure low resistance and long-term stability .

Article Content

Choosing the Right Electrical Bus Bar Connector for Your Application

Cover various types of bus bar connectors, such as bolted, compression, and clamp connectors, and provides expert

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