COETZER OPTICAL SYSTEMS (Pty) Ltd

Copper tube type small busbar terminal

Overview

Copper Bus Bars | McMaster-CarrChoose from our selection of copper bus bars, including over 650 products in a wide range of styles and sizes. Same and Next.

Key Takeaways

A copper tube type small busbar terminal is a compact, highly conductive electrical connector used to distribute power efficiently in tight spaces, typically made from high-purity copper such as Cu-ETP or OF-Cu.Overview

Copper busbar terminals are designed to route electricity within switchboards, battery banks, and electrical panels, providing a central connection point for multiple wires or circuits while minimizing voltage drop and energy loss . The tube-type design allows for secure wire insertion and bolted connections, making it ideal for small-scale or compact installations where space is limited .

Material and Conductivity
• Copper Types: High-conductivity copper such as Cu-ETP (Electrolytic Tough Pitch) or OF-Cu (Oxygen-Free Copper) is commonly used for busbars due to its excellent electrical conductivity and low resistance .

• Advantages: Copper provides superior current-carrying capacity compared to aluminum or other alloys, allowing for smaller cross-sections while maintaining high current density .

• Surface Finishes: Copper busbars can be galvanically refined or tinned to improve corrosion resistance and facilitate soldering or bolting .

Design and Applications

• Small Busbar Terminals: These are typically compact, tubular, or flat bar designs that allow for easy integration into tight enclosures or battery terminals .

• Applications: Used in switchboards, renewable energy systems, battery storage, e-mobility, and industrial electrical panels .

• Customization: Many suppliers offer custom lengths, diameters, hole patterns, and insulation options to match specific electrical and mechanical requirements .

Installation and Mounting

• Connection Methods: Wire connections are usually made via bolts, screws, or compression fittings into the copper tube terminal.

• Mounting: Small busbar terminals can be mounted using insulating supports or brackets to ensure electrical isolation and mechanical stability .

• Current Rating: The current-carrying capacity depends on the cross-sectional area, copper purity, and ambient temperature, and can be calculated using standard busbar design formulas .

Suppliers and Availability

• McMaster-Carr: Offers a wide range of copper busbars suitable for small terminals with same-day or next-day delivery .

• Amazon: Provides various sizes and configurations for small copper busbars .

• Specialized Manufacturers: Companies like EMS Power and MSS International provide custom copper busbars, including small tube-type terminals, with engineering support for precise specifications .

Key Considerations

• Ensure the copper grade matches the required conductivity and mechanical strength.

• Verify the current rating for your application to prevent overheating.

• Consider surface treatment for corrosion resistance and ease of connection.

• Evaluate customization options if standard sizes do not fit your installation constraints. A copper tube type small busbar terminal is therefore a highly efficient, customizable solution for compact electrical distribution, offering excellent conductivity, durability, and flexibility for various industrial and renewable energy applications .

Article Content

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