

Small busbar of cabinet 28

Article Overview

A small busbar in a cabinet is a compact metallic conductor used to distribute electrical power safely to multiple circuits while handling lower current compared to main busbars.

Function and Purpose

A small busbar serves as a distribution node within a switchgear or panelboard, connecting incoming feeders to branch circuits. It allows multiple devices, such as circuit breakers or fuse switch disconnectors, to tap into the power supply efficiently without individual wiring for each connection, reducing impedance and improving reliability. In larger cabinets, small busbars are often used for secondary or lower-current circuits, while larger busbars handle main or high-current feeders.

Material and Construction

Small busbars are typically made of copper or aluminum, chosen for their conductivity and mechanical strength. They can be flat strips, solid bars, or laminated layers, with insulation or protective covers depending on the cabinet design. The cross-sectional area is sized to carry the expected current safely, considering thermal limits, short-circuit withstand, and mechanical forces.

Sizing Considerations

The size of a small busbar is determined by:

- o Continuous current rating: Calculated from the busbar cross-section and material, ensuring the temperature rise stays within IEC 61439 limits.
- o Short-circuit withstand: Ensures the busbar can handle fault currents without exceeding thermal or mechanical limits.
- o Spacing and support: Proper spacing between busbars and secure mounting prevent excessive deflection and vibration. For example, a small copper busbar carrying 200 A might have a cross-section of 50-100 mm², depending on cooling and installation conditions. The exact dimensions for the 28th cabinet would depend on the cabinet's design, load distribution, and protective devices installed.

Summary

In essence, the small busbar of the 28th cabinet is a lower-current distribution busbar designed to safely route power to branch circuits within the cabinet. Its material, size, and mounting are selected to meet current-carrying, thermal, and mechanical requirements, ensuring reliable and safe operation of the electrical system.

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8US busbar systems are used for mounting current-limiting devices (protective devices), such as fuse switch disconnectors, circuit

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