

What does the number on the small busbar mean



Overview

In electric power distribution, a busbar (also bus bar) is a metallic strip or bar, typically housed inside switchgear, panel boards, and busway enclosures for local high current power distribution, transmission, or switching substations. They are also used to connect high voltage equipment at electrical switchyards, and low-voltage equipment in battery banks.

Key Takeaways

The number on a small busbar usually indicates either its current-carrying capacity, cross-sectional area, or bending radius, depending on the context and type of marking.

Current Rating or Cross-Sectional Area

In many cases, the number printed on a busbar corresponds to its rated current or cross-sectional area, which determines how much electrical current the busbar can safely carry without overheating. For example, a copper busbar with a cross-section of 10 mm² can typically carry around 12 Amperes, while aluminum busbars carry slightly less per square millimeter due to lower conductivity. These ratings are based on standards such as IEC 61439, which define permissible temperature rise, short-circuit withstand capacity, and continuous current limits for busbars in low-voltage switchgear and controlgear assemblies. Correctly interpreting this number ensures safe operation and prevents insulation failure, equipment damage, or fire.

Bending Radius (Mechanical Markings)



Alternatively, the number may indicate the bending radius of the busbar, especially on mechanical drawings or in manufacturing contexts. In this case, markings like R10, R20, R50, or R80 specify the inside radius of a bend in millimeters. This is critical for installation because bending a busbar too tightly can cause cracking or mechanical stress, while too large a radius may prevent it from fitting into the panel or switchgear enclosure. The choice of radius depends on busbar thickness, material, and space constraints.

Summary

- **Electrical context:** The number often represents current rating or cross-sectional area, guiding safe load handling.
- **Mechanical context:** The number may indicate bending radius, ensuring proper installation without damaging the busbar.
- **Standards compliance:** Both interpretations are tied to engineering standards like IEC 61439 for electrical performance and mechanical safety. Understanding the meaning of the number is essential for both safe electrical operation and proper mechanical installation of busbars in panels, switchgear, or substations.

Article Content

Busbar Size Chart: Types, Current Rating, Materials

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Busbars Basics

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Busbar

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The number of sections or bundles per phase. All the above values are used to select the proper busbars for a panel board. For

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