

Article Overview

A 35kV common enclosed busbar must comply with international standards for current rating, short-circuit withstand, insulation, material, temperature rise, and structural support.

Standards and Compliance

For 35kV busbars, compliance with ANSI C37.23, IEC 61439, and ENA TS 41-11 is essential. These standards define the design, testing, and operational limits for medium-voltage busbars, including continuous current ratings, short-circuit withstand, and environmental considerations .

Material and Construction

- o Conductor Material: Copper or aluminum. Copper offers higher conductivity but is heavier and more expensive, while aluminum is lighter and requires a larger cross-section to carry the same current .
- o Busbar Type: Common enclosed tubular or insulated tubular busbars are preferred for 35kV applications, providing mechanical protection and electrical insulation .
- o Insulation: Tubular busbars are fully insulated to prevent phase-to-phase or phase-to-ground faults. Insulation must withstand the rated voltage and environmental conditions.

Electrical Ratings

- o Continuous Current Rating: Determined by cross-sectional area, material, ambient temperature, and enclosure type. Typical ratings for 35kV tubular busbars range from 1250A to 8000A depending on design .
- o Short-Circuit Withstand: Busbars must withstand short-circuit currents for a specified duration (usually 1-2 seconds). ANSI C37.23 provides peak and RMS asymmetrical current ratings for 35kV systems .
- o Temperature Rise: Maximum allowable temperature rise is typically 65-70°C above ambient for continuous operation, ensuring insulation integrity and minimal power loss .

Mechanical and Structural Requirements

- o Support Insulators: Must comply with post insulator specifications (e.g., NPS/003/015) to handle electrical and mechanical loads .
- o Support Structures: Should meet substation structural standards (e.g., NPS/003/033) to resist wind, seismic, and short-circuit forces .
- o Fittings and Connectors: Joints, clamps, and terminal fittings must prevent deformation and ensure reliable current transfer. Copper-to-aluminum connections require anti-corrosion measures .

Installation and Environmental Considerations

- o Enclosure: Fully enclosed, non-ventilated construction is standard to protect against dust, moisture, and accidental contact .
- o Ambient Conditions: Design must account for site temperature, solar radiation, and potential forced cooling if required .
- o Seismic Qualification: Busbar systems should be evaluated for seismic loads according to local regulations .

Documentation and Testing

- o Design Verification: Busbars must be tested for current-carrying capacity, short-circuit withstand, and insulation integrity according to IEC or ANSI standards .
- o Traceability: All components, fittings, and materials should be documented for compliance and maintenance purposes . In summary, a 35kV common enclosed busbar requires careful consideration of material, insulation, current rating, short-circuit capacity, temperature rise, mechanical support, and compliance with IEC, ANSI, and ENA standards to ensure safe and reliable operation in medium-voltage substations.

This document provides specifications for an electrical busbar including its size, number of phases, fault level, and temperature limit.

Safe and secure, lean and flexible - everything that supports the lifelong efficient use of gas-insulated switchgear and transformers in

GFM series high voltage common box enclosed busbar (3-35kv / 250A ~ 4000A) was developed by our company in the late 1980s

Busbar supplier selection guide When purchasing busbar products, it is crucial to choose a supplier with a complete

This specification describes the electrical and mechanical requirements for metal-enclosed, non-segregated phase

All busbar device adapters and device holders are designed for copper busbars according to DIN 46433, width 12 to 30 mm,

Power Busbar Systems are designed for the safe transport and distribution of electrical energy, ranging from 32A to 6300A, ensuring

Technical Requirements for 35kV Common Enclosed Busbar

This specification defines the requirements for design, fabrication, inspection and testing of metal enclosed, self

Technical Specification ABB "BBS Busbar Chamber Systems" is made of 1.5mm or 2mm steel plate finished with impact-resistant

1 Scope This Specification and attached schedules cover the general design specification of single busbar indoor metal-enclosed

Busbar systems and installation accessories When connecting aluminum conductors, ensure that the contact surfaces of the

Non segregated phase BUS DUCK technical data ... 600 Volt Class Size of Phase Busbar & Enclosure Neutral

The rated current of the system can reach 6300A and the rated working voltage can reach 35kv. This system can be widely applied

This guide provides a structured reference to every standard that matters for busbar system specification, explains

This standard covers busbars used for low-voltage assemblies, power distribution,

The shell is coated with fire-resistant paint, and the joint parts are equipped with fire-resistant baffles, effectively preventing flames or

Web: <https://bssoda.pl>

