Method for intermediate connection of tubular busbars



Overview

CN111834761A In order to overcome the technical disadvantages, the invention aims to provide an intermediate connection device and method for an insulated.

Key Takeaways

Intermediate connections for insulated tubular busbars are typically achieved using specialized connecting devices that ensure mechanical stability, electrical continuity, and equipotential treatment.

Overview of Intermediate Connection

Tubular busbars, often made of copper or aluminum and externally insulated, require reliable intermediate connections to extend their length or connect segments within substations or power assemblies. The connection must maintain high current-carrying capacity, mechanical strength, and electrical safety, while preventing galvanic corrosion and ensuring proper insulation. Common Methods1.

Bolted Joints Bolted connections involve overlapping busbar ends and securing them with bolts and washers. This method is field-friendly and provides reliable mechanical and electrical contact. Proper torque and washer sizing are critical to ensure uniform pressure and minimize contact resistance.

2.

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Press-

Fit or Solderless Connections High-force press-fit interfaces allow busbars to be connected without soldering. These connections provide excellent conductivity, handle thermal expansion, and reduce assembly complexity. They are particularly suitable for high-current, compact power applications where heat-sensitive components are present.

3. Forming with Auxiliary Elements This method uses mechanical interlocking, such as semi-tubular rivets inserted through aligned holes in the busbar ends. It generates high contact pressure along the overlapping area, improving electrical performance and mechanical stability.

Progressive forming tools can perform lancing, bending, and forging operations to secure the joint. 4. Specialized Intermediate Connection Devices For insulated tubular busbars, patented intermediate devices include a connecting body with a lining core and components for equipotential treatment.

These devices allow the ends of insulated busbars to be joined while maintaining insulation integrity and electrical safety. They can incorporate manual wrapping, insulating shields, or cold-shrinkable joints to enhance performance and reliability.

Key Considerations

Material Compatibility: Ensure copper-to-aluminum connections are treated to prevent electrochemical corrosion. Current Rating: The number of clamps or connection points should match the busbar's continuous current rating. Mechanical Strength: Connections must withstand short-circuit forces, wind loading, and thermal expansion.

Insulation and Safety: Intermediate devices should maintain insulation and provide equipotential bonding to prevent electrical hazards.

Conclusion

The choice of intermediate connection method depends on current rating, environmental conditions, and installation constraints. For insulated tubular busbars, using a dedicated intermediate connection device with proper equipotential treatment is the most reliable approach, while bolted or press-fit connections may be suitable for less demanding applications or field assembly. Proper design ensures long-term electrical performance, mechanical integrity, and safety.

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Article Content

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In order to overcome the technical disadvantages, the invention aims to provide an intermediate connection device and method for an insulated tubular busbar and application thereof, so...

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The tubular busbar intermediate connection device comprises an intermediate joint and a shielding structure which wraps the intermediate joint in a sealing mode, the intermediate joint...

Design Guide for bus bars

Plating is a major consideration in designing a bus bar because it is the point of contact for all bus bar electrical connections. The plating can provide advantageous electrical properties, decreasing the

Intermediate connection device and method for insulated tubular bus

In the intermediate connection device, method and application of tubular busbars, from manual wrapping to insulating and shielding copper platform to cold shrinkable intermediate joints, the technology and

DL/T 5789-2019 (DLT 5789) PDF English

5.1 General provisions 5.1.1 The laying path of insulated tubular busbars shall be connected to water, heating, oil, gas and other pipelines, roads, buildings and other live installations.

Connection method of tubular bus

This is the most common method used for tubular busbars, which are directly connected from the low-voltage terminals of the main transformer to the switchgear terminals in the control room.

Canalis KT Busbar Trunking System

Canalis KT Busbar Trunking System - Installation Manual Date: 13 Jan 2026 Type: User guide Languages: English

Business Documentation (DBD)

The purpose of this document is to detail the requirements of Northern Powergrid in relation to the tubular busbar systems and associated fittings detailed within this document.

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Power Applications Using High-force Press-Fit

The full integration of busbars within power applications by using pluggable, high-force, press-fit technology can significantly improve power efficiency, reduce the bill-of-material costs, decrease

Copper for Busbars – Guidance for Design and Installation

It is usually necessary to joint busbars on site during installation and this is most easily accomplished by bolting bars together or by welding. For long

Medium Voltage Tubular Busbar Switchgear

Welding flange form, the connection is welded disc flange, two sections of copper pipe busbar through the flange surface connection. Tubular busbars with large

Catalogue SIMABUS-EPP-2829-8-16 rev2-HD

Innovating solutions that drive to significant savings in the projects. Connection points rationalization, reduction of installation cost by avoiding weldments or bending of the tubes, original solution for

Copper for Busbars

For busbar systems, the maximum working current is determined primarily by the maximum tolerable working temperature, which is, in turn,

Power Applications Using High-force Press-Fit

The conventional methods used in larger power applications, such as bolting, welding, or clamping connections to busbars, are not always feasible as new-gen power applications get smaller and more

Types of Busbars & Schemes – Explained with

Understand Types of Busbars and how they make complex power distributions simpler in electrical power distribution,.

Advanced Busbar Systems for Electrical Engineer Contractors

Common forms include flat strips and solid busbars, with the surface area of a busbar significantly impacting its conductivity and ability to dissipate heat. Busbars serve as central points for

Intermediate connection joint of tubular bus and connection method ...

A technology for connecting joints and pipe busbars, applied in the field of pipe busbars, can solve problems such as affecting appearance and product quality, difficulty in manufacturing outer

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Busbars and Connectors in HV and EHV installations

Learn about materials, connection methods, thermal management, and their vital role in power distribution for industrial and data center applications.

Related Video Reference

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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