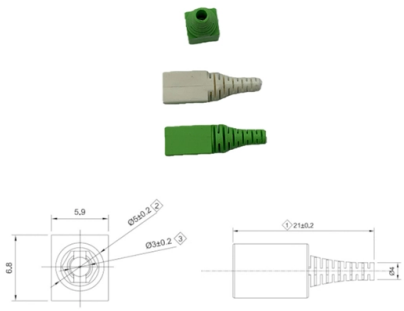
Is a 35kV high-voltage line a double busbar



Overview

Substation Components—Part 5: Busbar ConfigurationsThe double breaker/double bus (DB/DB) scheme is one of the most robust high-voltage substation arrangeme.

Key Takeaways

Yes, a 35kV system can use a double busbar configuration, providing enhanced reliability, operational flexibility, and maintenance without load interruption.

Feasibility and Typical Use

Double busbar (DBB) arrangements are commonly applied in medium-voltage (MV) systems ranging from 6. 6kV to 36kV, which includes 35kV installations. In a DBB setup, two independent busbars—often called Bus A and Bus B—run in parallel, and each feeder or transformer can be connected to either bus via selector disconnectors.

A bus coupler links the two buses, allowing load transfer without interrupting supply.

Advantages

High Reliability: If one bus experiences a fault or requires maintenance, the other bus can continue supplying power, minimizing downtime. Operational Flexibility: Load can be transferred between buses, and circuits can be isolated for inspection, extension, or repair without interrupting service. Maintenance Without Outage: Critical facilities, such as industrial plants, substations, or hospitals, benefit from uninterrupted operation during bus maintenance or breaker replacement.

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Fault Tolerance: A fault on one bus only affects the circuits connected to it, while the remaining circuits stay energized via the healthy bus.

Considerations

Cost and Complexity: DBB systems require more equipment, including additional breakers, disconnectors, and interlocking, which increases installation and maintenance costs. Space Requirements: The physical footprint is larger than a single busbar system, which must be considered in substation design. Protection Coordination: Proper bus differential protection and breaker failure logic are essential to ensure safe and reliable operation during bus transfer or fault conditions.

Applications

Double busbar configurations are typically used in: Utility distribution substations where supply continuity is critical. Industrial plants with high-value or continuous processes. Critical infrastructure such as airports, data centers, and hospitals.

Conclusion

A 35kV system can effectively implement a double busbar arrangement, especially where high reliability, operational flexibility, and uninterrupted maintenance are required. While the initial cost and complexity are higher than single busbar systems, the benefits in critical applications often justify the investment. Proper design, protection, and operational procedures are essential to maximize the advantages of a DBB system.

Article Content

Substation Components—Part 5: Busbar Configurations

The double breaker/double bus (DB/DB) scheme is one of the most robust high-voltage substation arrangements used where continuity of service is critical.

Busbar Configurations in HV and EHV Substations: A Balance

In high voltage and extra high voltage substations (AIS/GIS), the busbar configuration is one of the most critical design decisions that directly impacts reliability, flexibility, and cost.

Double Busbar Schemes for HV Substations

There are three common double busbar layout designs for high voltage and extra high voltage substations: 1. Single-CB double bus scheme connects each feeder bay to a bus with two isolators

Six common bus configurations in substations up to 345 kV

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This technical article explains six most common bus configurations used for distribution, transmission, or switching substations at voltages up to 345 kV. Presented single line diagrams and

Types of Busbar Arrangements in Grid Stations and Substations

This arrangement offers a high degree of supply reliability and operation flexibility because each outgoing line and transformer can be switched without supply interruption from one

35kV Substation Electrical Design | PDF | Transformer

It also covers short-circuit current calculation, selection of electrical equipment, and lightning protection and grounding design. The overall goal is to design a 35kV substation and explore its digital

The essentials of LV/MV/HV substation bus overcurrent and

Medium-voltage metal-clad switchgear uses insulated busbars as standard. Such busbars reduce accidental faults caused by foreign objects or rodents. Using metal-enclosed bus duct or

Electrical Bus System and Electrical Substation Layout

Double Bus Bar Arrangement: This setup uses two bus bars for flexibility, allowing feeders to switch between them, though breaker maintenance can still cause interruptions.

Typ 8DA10 und 8DB10 bis 40,5 kV und 8DAB 24 blue GIS bis 24

Medium-voltage switchgear 8DA/B is indoor, factory-assembled, type-tested, single-pole metal-enclosed, gas-insulated switchgear, for single-busbar and double-busbar applications, as well as for

Types of Bus Arrangements in Substations – A Complete Guide

Learn different types of bus bar arrangement in substations, such as single bus with bus sectionalizer, double bus system, main and transfer bus system etc.

Types of Busbar Arrangements in Grid Stations and Substations

The different types of busbar arrangements used in Grid stations and Substations. The Single, Mesh, Ring and Double Busbar arrangements.

Substation Components—Part 5: Busbar Configurations

Substation Components—Part 5: Busbar Configurations Here, we provide an overview of common substation busbar configurations—Single Bus,

Learn HV substation elements (graphic symbols, basics ...

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However, in general, high voltage substation has the following main equipment: 2.1 Busbars A busbar structure is an assembly of bus conductors with associated connection joints and

Design issues in HV busbar protection systems (substation ...

Busbar protection (BBP) This technical article discusses criteria and requirements for designing protection systems for busbars in HV/EHV networks. One of the most critical requirements

Types of Busbars & Schemes – Explained with

4. What are the key advantages of using busbars over traditional cable wiring? Busbars improve current efficiency, reduce voltage drops, save

The Ultimate Guide to Electrical Busbars [July 2026]

In high-voltage switchyards and low-voltage battery banks, busbars are the go-to solution for managing incoming and outgoing power efficiently. Their compact design helps maximize space

GW5-35 Outdoor Isolator Switch (35kV Double Break

Manual Air-Insulated Isolator for Outdoor Substation and Overhead Line Sectioning The GW5-35 outdoor isolator switch is a 35kV class manually operated air

BUSBAR PROTECTION

Other busbar arrangements, reliability principles and tripping criteria which support the functionality of busbar protection (check zone logic, the directional principle, the saturation detection, voltage and

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