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(Revision of
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IEEE Standard for Metal-Enclosed Bus

IEEE Power Engineering Society

Sponsored by the
Switchgear Committee

IEEE

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Abstract: Metal-enclosed (ME) bus assemblies for indoor and outdoor use are covered in this standard. The types of assemblies covered are nonsegregated-phase bus, segregated-phase bus, and isolated-phase bus. Rated maximum voltages of ac ME bus assemblies range from 0.635 kV through 38 kV with continuous current ratings of 600 A through 26 000 A for self-cooled ratings and up to 40 000 A and above for force-cooled ratings. Rated maximum voltage levels of dc bus assemblies range from 300 V through 3200 V with continuous current ratings of 600 A through 12 000 A. Service conditions, ratings, temperature limitations and classification of insulating materials, insulation (dielectric) withstand voltage requirements, test procedures, and application are discussed. A guide for calculating losses in isolated-phase bus is included.
Keywords: isolated-phase bus, metal-enclosed bus, nonsegregated-phase bus, segregated-phase bus

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Introduction

(This introduction is not a part of IEEE Std C37.23-2003, IEEE Standard for Metal-Enclosed Bus.)

This standard has been revised to reflect needed technical changes that have been suggested since the last revision to IEEE Std C37.23 -2003 was published in 1987. The major revision is the removal of reference to metal-enclosed bus with flexible conductors. Other significant changes are as follows:

— A move toward uniformity with related standards by adopting the wording contained therein

— Expansion of the application guide for ME bus

— Inclusion of switches or links for station-service transformers

— Expansion and clarification of the tables in keeping with updates made in other standards

It is also noted that the altitude correction factors listed in Table 6 of this standard are under review by an IEEE Switchgear Committee Working Group. The values included in this document are for reference until the Working Group releases the new values, after which time the new values may be incorporated into this standard.

This standard includes only the requirements for ME bus. These requirements were previously a part of IEEE Std C37.20™-1969, IEEE Standard for Switchgear Assemblies Including Metal-Enclosed Bus (1974, consolidated edition). Other types of equipment previously included in IEEE Std C37.20-1969 are incorporated in separate publications.

IEEE Std C37.20-1969 had for many years covered all switchgear assemblies, including metal-enclosed bus. Standards committees of the IEEE Switchgear Assemblies Subcommittee and the NEMA Power Switchgear Assemblies Technical Committee recommended that the standard be further developed and, where appropriate, that the various sections be identified with their own standards. This approach also coordinates with the conformance test procedure standards.

The IEEE Switchgear Assemblies Subcommittee was responsible for this revision.

This publication is one of a series covering switchgear assemblies as follows:

IEEE Std C37.20.1™-2002	IEEE Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear [B14][a]
IEEE Std C37.20.2™-1999	IEEE Standard for Metal-Clad Switchgear
IEEE Std C37.20.3™-2001	IEEE Standard for Metal-Enclosed Interrupter Switchgear [B15]
IEEE Std C37.20.4™-2001	IEEE Standard for Indoor AC Switches (1 kV–38 kV) for Use in Metal Enclosed Switchgear [B16]
IEEE Std C37.21™-1985	IEEE Standard for Control Switchboards
IEEE Std C37.23-2003	IEEE Standard for Metal-Enclosed Bus
IEEE Std C37.24™-1986	IEEE Guide for Evaluating the Effect of Solar Radiation on Outdoor Metal-Enclosed Switchgear (Reaff 1998)

[a]The numbers in brackets correspond to those in the bibliography in Annex B.

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Interpretations

Current interpretations can be accessed at the following URL: http://standards.ieee.org/reading/ieee/interp/index.html.

Participants

At the time this standard was completed, the IEEE Switchgear Assemblies Subcommittee Working Group had the following membership:

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Edward A. Peters, *Co-Chair*
Michael Wactor, *Secretary*

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Louis Doucet	Anne F. Morgan	Ibrahim Shteyh
Doug J. Edwards	George R. Nourse	James E. Smith
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The Switchgear Assemblies Subcommittee of the IEEE Switchgear Committee that reviewed and approved this standard had the following membership:

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The following members of the balloting committee voted on this standard. Balloters may have voted for approval, disapproval, or abstention.

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IEEE Standard for Metal-Enclosed Bus

1. Scope

This standard covers assemblies of metal-enclosed (ME) conductors along with associated interconnections, enclosures, and supporting structures. When switches and disconnecting links are included, they shall conform to this standard.

This standard is concerned with performance characteristics of enclosed, rather than open, indoor and outdoor conductor assemblies with rated maximum operating voltages through 38 kV. While this standard does cover 600 V bus assemblies, it does not pertain to UL 857-2001 type busways and associated fittings, nor does it pertain to ME bus assemblies utilizing cables as the primary conductors.

2. References

When the following publications are superseded by a revision approved by the issuing authority, the revision shall apply.

ANSI C29.1-1988 (Reaff 2002), American National Standard Test Methods for Electrical Power Insulators.[1]

ASTM D229-2001, Standard Test Methods for Rigid Sheet and Plate Materials Used for Electrical Insulation.[2]

ASTM D1535-2001, Standard Practice for Specifying Color by the Munsell System.

ASTM G21-1996 (Reaff 2002), Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

IEEE Std 1™-2000, IEEE Recommended Practice—Principles for Temperature Limits in the Rating of Electrical Equipment and for the Evaluation of Electrical Insulation.[3,4]

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