IEC 62271-203

Edition 3.0 2022-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

High-voltage switchgear and controlgear – Part 203: AC gas-insulated metal-enclosed switchgear for rated voltages above 52 kV

Appareillage à haute tension – Partie 203: Appareillage sous enveloppe métallique à isolation gazeuse et à courant alternatif de tensions assignées supérieures à 52 kV

IEC 62271-203:2022-05 (en-fr)

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Part 203: AC gas-insulated metal-enclosed switchgear for rated voltages above 52 kV

FOREWORD

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IEC 62271-203 has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear. It is an International Standard.

This third edition cancels and replaces the second edition published in 2011. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) the document has been aligned with IEC 62271-1:2017;
b) beside SF_6 also alternative gases have been implemented where needed;
c) the terms and definitions have been updated and terms not used have been removed;
d) Subclause 6.16 "Gas and vacuum tightness" has been updated;

e) Subclause 6.16.3 “Closed pressure systems”: Two classes of gas has been introduced:

   1) GWP ≤ 1 000

   2) GWP > 1 000

   and the tightness requirements for type tests for gasses with GWP > 1 000 has been reduced from 0,5 % to 0,1 % per year per gas compartment;

f) Subclause 6.108 “Interfaces”: Typical maximum pressures in service for interfaces connected to GIS have been defined;

g) Subclauses 7.2 through 7.8 have been restructured;

h) Subclause 7.107 “Corrosion test on earthing connections” has been updated;

i) Subclause 7.108 “Corrosion tests on sealing systems of enclosures and auxiliary equipment” has been updated;

j) Annex F ‘Service Continuity’ has been modified and aligned with the recommendations of CIGRE WG B3.51.

The text of this International Standard is based on the following documents:

Draft	Report on voting
17C/835/FDIS	17C/844/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 203: AC gas-insulated metal-enclosed switchgear for rated voltages above 52 kV

1 Scope

This part of IEC 62271 specifies requirements for gas-insulated metal-enclosed switchgear in which the insulation is obtained, at least partly, by an insulating gas or gas mixture other than air at atmospheric pressure, for alternating current of rated voltages above 52 kV, for indoor and outdoor installation, and for service frequencies up to and including 60 Hz.

For the purpose of this document, the terms “GIS” and “switchgear” are used for “gas-insulated metal-enclosed switchgear”.

The gas-insulated metal-enclosed switchgear covered by this document consists of individual components intended to be directly connected together and able to operate only in this manner.

This document completes and amends, if applicable, the various relevant standards applying to the individual components constituting GIS.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-11, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-17, *Basic environmental testing procedures – Part 2-17: Tests – Test Q: Sealing*

IEC 60085:2007, *Electrical insulation – Thermal evaluation and designation*

IEC 60099-4:2014, *Surge arresters – Part 4: Metal-oxide surge arresters without gaps for a.c. systems*

IEC 60137:2017, *Insulated bushings for alternating voltages above 1 000 V*

IEC 60141-1, *Tests on oil-filled and gas-pressure cables and their accessories – Part 1: Oil-filled, paper or polypropylene paper laminate insulated, metal-sheathed cables and accessories for alternating voltages up to and including 500 kV*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 60376, *Specification of technical grade sulphur hexafluoride (SF_6) and complementary gases to be used in its mixtures for use in electrical equipment*

IEC 60480, *Specifications for the re-use of sulphur hexafluoride (SF_6) and its mixtures in electrical equipment*