High-voltage switchgear and controlgear –
Part 200:
AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

This English-language version is derived from the original bilingual publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.
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FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 62271-200 has been prepared by subcommittee 17C: High-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

This first edition of IEC 62271-200 cancels and replaces the third edition of IEC 60298, published in 1990, and constitutes a technical revision.

Significant technical changes from the third edition of IEC 60298 are as follows:

This revised document has been basically changed to be updated to today’s use of high-voltage switchgear and controlgear up to 52 kV. The main changes are: new definitions and classification of equipment, introduction of internal arc classes (IAC) and its testing.
This standard is to be read in conjunction with IEC 60694\(^1\) published in 1996. Clause numbering follows the clause numbering of that standard. Additional subclauses, as they relate to a particular clause or subclause from IEC 60694, are numbered 101, 102, etc.

The text of this standard is based on the following documents:

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2009. At this date, the publication will be

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

\(^1\) IEC 60694 (1996) will be replaced by IEC 62271-1 as soon as available.
COMMON NUMBERING OF IEC 62271 PUBLICATIONS FALLING UNDER
THE RESPONSIBILITY OF SUBCOMMITTEES SC 17A AND SC 17C

In accordance with the decision taken at the joint SC 17A/SC 17C meeting in Frankfurt, June 1998 (item 20.7 of 17A/535/RM), a common numbering system has been established for the publications falling under the responsibility of SC 17A and SC 17C. IEC 62271 – High-voltage switchgear and controlgear is the publication number and main title element for the common publications.

The numbering of these publications will apply the following principle.

a) Common standards prepared by SC 17A and SC 17C will start with IEC 62271-1.
b) Standards of SC 17A will start with IEC 62271-100.
c) Standards of SC 17C will start with number IEC 62271-200.
d) Publications prepared by SC 17A and SC 17C will start with number IEC 62271-300.

The table below relates the new numbers to the old numbers. The parts numbered (xxx) will be given a final number pending the decision to publish the revised publication as standard or technical report.
Common numbering of IEC 62271 publications falling under the responsibility of subcommittees SC 17A and SC 17C

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1 General

1.1 Scope

This part of IEC 62271 specifies requirements for factory-assembled metal-enclosed switchgear and controlgear for alternating current of rated voltages above 1 kV and up to and including 52 kV for indoor and outdoor installation, and for service frequencies up to and including 60 Hz. Enclosures may include fixed and removable components and may be filled with fluid (liquid or gas) to provide insulation.

NOTE 1 Although primarily dedicated to three-phase systems, this standard can also be applied to single-phase or two-phase systems.

This standard defines several types of metal enclosed switchgear and controlgear which differ due to
– the consequences on network service continuity in case of maintenance on the switchgear and controlgear;
– the need and convenience of maintenance of the equipment.

NOTE 2 Safety of an installation results from the design, implementation and coordination of products, installations and operations.

For metal-enclosed switchgear and controlgear containing gas-filled compartments, the design pressure is limited to a maximum of 300 kPa (relative pressure).

NOTE 3 Gas-filled compartments having a design pressure exceeding 300 kPa (relative pressure) should be designed and tested in accordance with IEC 60517.

Metal-enclosed switchgear and controlgear for special use, for example, in flammable atmospheres, in mines or on board ships, may be subject to additional requirements.

Components contained in metal-enclosed switchgear and controlgear are to be designed and tested in accordance with their various relevant standards. This standard supplements the standards for the individual components regarding their installation in switchgear and controlgear assemblies.

This standard does not preclude that other equipment may be included in the same enclosure. In such a case, any possible influence of that equipment on the switchgear and controlgear is to be taken into account.

NOTE 4 Switchgear and controlgear assemblies having an insulation enclosure are covered by IEC 60466.

NOTE 5 Metal-enclosed switchgear and controlgear for rated voltages above 52 kV insulated by ambient air may be covered by this standard taking into account the insulation levels of IEC 60694.
1.2 Normative references

The following referenced documents are indispensable for the application 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 60050(441):1984, International Electrotechnical Vocabulary – Chapter 441: Switchgear, controlgear and fuses

IEC 60060-1:1989, High-voltage test techniques – Part 1: General definitions and test requirements


IEC 60265-1:1998, High-voltage switches – Part 1: Switches for rated voltages above 1 kV and less than 52 kV

IEC 60270:2000, High-voltage test techniques – Partial discharge measurements

IEC 60466:1987, AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 38 kV

IEC 60470:2000, High-voltage alternating current contactors and contactor-based motor-starters

IEC 60480:1974, Guide to the checking of sulphur hexafluoride (SF₆) taken from electrical equipment

IEC 60529:1989, Degrees of protection provided by enclosures (IP Code)

IEC 60694:1996, Common specifications for high-voltage switchgear and controlgear standards

IEC 60909-0:2001, Short-circuit currents in three-phase a.c. systems – Part 0: Calculation of currents

IEC 60932:1988, Additional requirements for enclosed switchgear and controlgear from 1 kV to 72,5 kV to be used in severe climatic conditions

IEC 61634:1995, High-voltage switchgear and controlgear – Use and handling of sulphur hexafluoride (SF₆) in high-voltage switchgear and controlgear

IEC 62271-100:2001, High-voltage alternating-current circuit-breakers

