SVENSK STANDARD SS-EN 62271-200

Fastställd	Utgåva	Sida	Ingår i
2004-04-26	1	1 (1+89)	SEK Område 17C

Svenska Elektriska Kommissionen, SEK

Kopplingsapparater för spänning över 1 kV – Del 200: Metallkapslade ställverk för växelström med märkspänning 1 kV t o m 52 kV

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

Som svensk standard gäller europastandarden EN 62271-200:2004. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62271-200:2004.

Nationellt förord

Europastandarden EN 62271-200:2004

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62271-200, First edition, 2003 - 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**

utarbetad inom International Electrotechnical Commission

SS-EN 62271-200 skall användas tillsammans med SS-EN 60694, utgåva 1, 1996.

Tidigare fastställd svensk standard SS-EN 60298, utgåva 1, 1996 och SS-EN 60298/A11, utgåva 1, 1999, gäller ej fr o m 2007-02-01.

ICS 29.130.19

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK, som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

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SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

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Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD **EN 62271-200**

NORME EUROPÉENNE

EUROPÄISCHE NORM February 2004

ICS 29.130.19 Supersedes EN 60298:1996 + A11:1999

English version

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
(IEC 62271-200:2003)

Appareillage à haute tension
Partie 200: Appareillage sous enveloppe métallique pour courant alternatif de tensions assignées supérieures à 1 kV et inférieures ou égales à 52 kV
(CEI 62271-200:2003)

Hochspannungs-Schaltgeräte und -Schaltanlagen
Teil 200: Metallgekapselte Wechselstrom-Schaltanlagen für Bemessungsspannungen über 1 kV bis einschließlich 52 kV
(IEC 62271-200:2003)

CENELEC
European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 62271-200:2004 E

Foreword

The text of document 17C/311/FDIS, future edition 1 of IEC 62271-200, prepared by SC 17C, High-voltage switchgear and controlgear assemblies, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62271-200 on 2004-02-01.

This European Standard supersedes EN 60298:1996 + A11:1999.

Significant technical changes with respect to EN 60298:1996 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 EN 60694:1996. Clause numbering follows the clause numbering of that standard. Additional subclauses, as they relate to a particular clause or subclause from EN 60694, are numbered 101, 102, etc.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2004-11-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-02-01

Annexes ZA and ZB have been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 62271-200:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60137	NOTE	Harmonized as EN 60137:1996 (not modified).
IEC 60517	NOTE	Harmonized as HD 358 S3:1992 (not modified).

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Annex ZA
(normative)

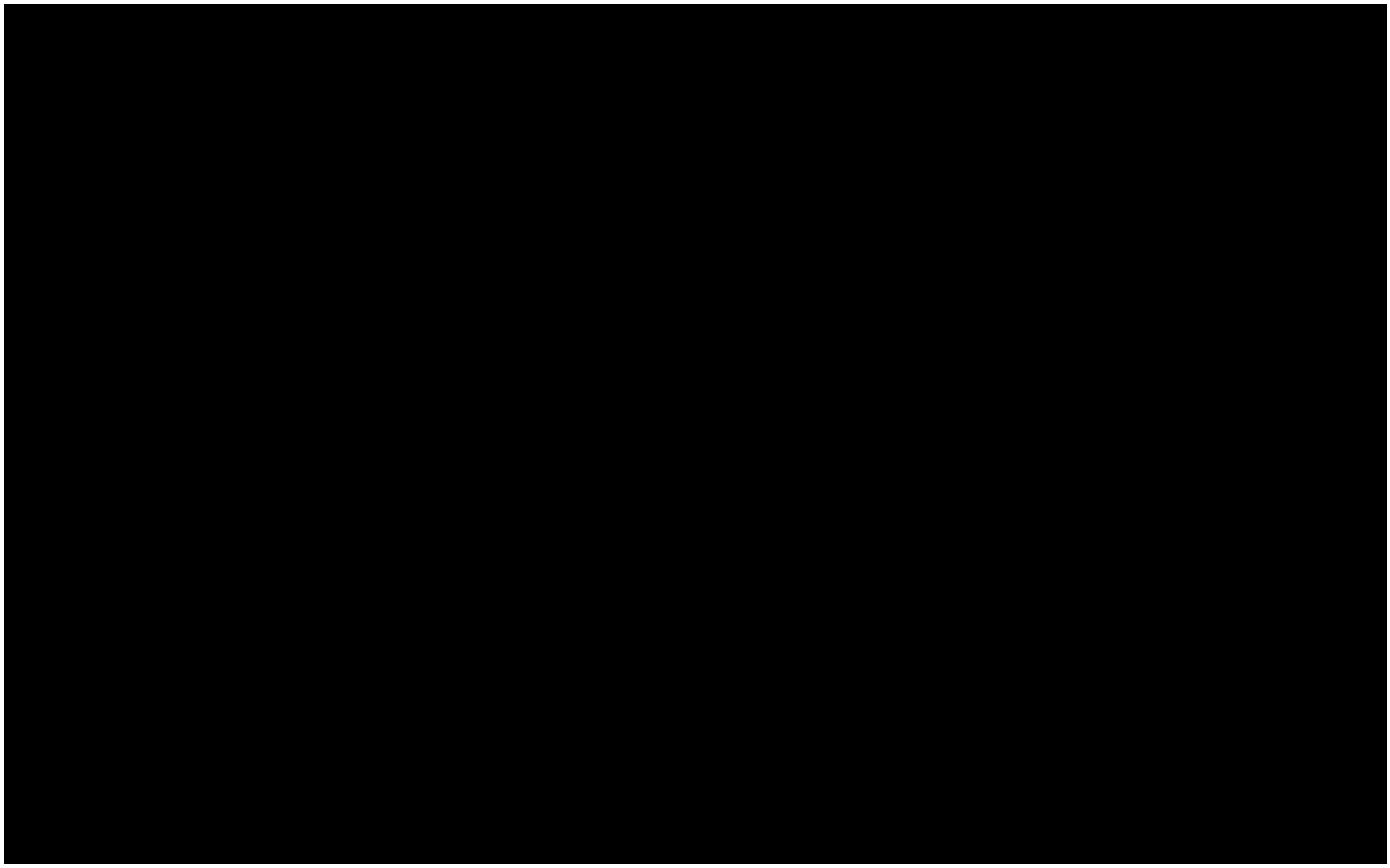
Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-151	2001	International Electrotechnical Vocabulary (IEV) Part 151: Electrical and magnetic devices	-	-
IEC 60050-441	1984	Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60060-1 + corr. March	1989 1990	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60243-1	1998	Electrical strength of insulating materials - Test methods Part 1: Tests at power frequencies	EN 60243-1	1998
IEC 60265-1	1998	High-voltage switches Part 1: Switches for rated voltages above 1 kV and less than 52 Kv	EN 60265-1	1998
IEC 60270	2000	High-voltage test techniques - Partial discharge measurements	EN 60270	2001
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)	EN 60529 + corr. May	1991 1993
IEC 60694	1996	Common specifications for high-voltage switchgear and controlgear standards	EN 60694 + corr. May	1996 1999

Publication	Year	Title	EN/HD	Year
IEC 60909-0	2001	Short-circuit currents in three-phase a.c. systems Part 0: Calculation of currents	EN 60909-0	2001
IEC 60932	1988	Additional requirements for enclosed switchgear and controlgear from 1kV 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 (SF_6) in high-voltage switchgear and controlgear	-	-
IEC 62271-100	2001	High-voltage switchgear and controlgear Part 100: High-voltage alternating-current circuit-breakers	EN 62271-100	2001
IEC 62271-102 + corr. April	2001 2002	Part 102: High-voltage alternating current disconnectors and earthing switches	EN 62271-102	2002
IEC 62271-105	2002	Part 105: Alternating current switch-fuse combinations	EN 62271-105	2003
ISO/IEC Guide 51	1999	Safety aspects - Guidelines for their inclusion in standards	-	-



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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

IEC 62271 series	HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR	Old IEC number, if any
Part	New title	
1	Common specifications	IEC 60694
2	Seismic qualification for rated voltages of 72,5 kV and above	-
100	High-voltage alternating current circuit-breakers	IEC 60056
101	Synthetic testing	IEC 60427
102	High-voltage alternating current disconnectors and earthing switches	IEC 60129
103	Switches for rated voltages above 1 kV and less than 52 kV	IEC 60265-1
104	Switches for rated voltages of 52 kV and above	IEC 60265-2
105	Alternating current switch-fuse combinations	IEC 60420
106	Alternating current contactors and contactor-based motor-starters	IEC 60470
107	Alternating current switchgear-fuse combinations	-
108	Switchgear having combined functions	-
109	Series capacitor by-pass switches	-
200	AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	IEC 60298
201	Insulation-enclosed switchgear and controlgear for rated voltages up to and including 52 kV	IEC 60466
202	High-voltage/low-voltage prefabricated substations	IEC 61330
203	Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	IEC 60517
204	High-voltage gas-insulated transmission lines for rated voltages of 72,5 kV and above	IEC 61640
(300)	Guide for seismic qualification of high-voltage alternating current circuit-breakers	IEC 61166
(301)	Guide for inductive load switching	IEC 61233
(302)	Guide for short-circuit and switching test procedures for metal-enclosed and dead tank circuit-breakers	IEC 61633
(303)	Use and handling of sulphur hexafluoride (SF_6) in high-voltage switchgear and controlgear	IEC 61634
(304)	Additional requirements for enclosed switchgear and controlgear from 1 kV to 72,5 kV to be used in severe climatic conditions	IEC 60932
(305)	Cable connections for gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	IEC 60859
(306)	Direct connection between power transformers and gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	IEC 61639
(307)	Use of electronic and associated technologies in auxiliary equipment of switchgear and controlgear	IEC 62063
308	Guide for asymmetrical short-circuit breaking test duty T100a	–
309	TRV parameters for high-voltage switchgear and controlgear for rated voltages above 1 kV and less than 100 kV	-
310	Electrical endurance testing for circuit-breakers rated 72,5 kV and above	-

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

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.