
Visokonapetostne stikalne naprave – 110. del: Preklapljanje induktivnih bremen (IEC 62271-110:2005)

High-voltage switchgear and controlgear – Part 110: Inductive load switching (IEC 62271-110:2005)

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EUROPEAN STANDARD

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**High-voltage switchgear and controlgear
Part 110: Inductive load switching
(IEC 62271-110:2005)**

Appareillage à haute tension
Partie 110: Manoeuvre de charges
inductives
(CEI 62271-110:2005)

Hochspannungs-Schaltgeräte und
-Schaltanlagen
Teil 110: Schalten induktiver Lasten
(IEC 62271-110:2005)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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

Foreword

The text of document 17A/729/FDIS, future edition 1 of IEC 62271-110, prepared by SC 17A, High-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62271-110 on 2005-10-01.

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) 2006-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2008-10-01

This European Standard should be read in conjunction with EN 62271-100:2001 and EN 60694:1996, to which it refers and which are applicable, unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in EN 62271-100 and EN 60694. Additional subclauses are numbered from 101.

Annex ZA has been added by CENELEC.

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The text of the International Standard IEC 62271-110:2005 was approved by CENELEC as a European Standard without any modification.
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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60470 NOTE Harmonized as EN 60470:2000 (not modified).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62271-100	2001	High-voltage switchgear and controlgear Part 100: High-voltage alternating-current circuit-breakers	EN 62271-100	2001

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Part 110:
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**Part 110: Inductive load switching**

FOREWORD

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International Standard IEC 62271-110 has been prepared by subcommittee 17A: High-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This first edition cancels and replaces IEC 61233 TS (1994) and constitutes a technical revision. The main changes from IEC 61233 are as follows: Sections 1, 2, 3 and 4 have been retained and revised to conform to IEC 60694 and 62271-100 in terms of numbering and format. Section 5 and all annexes have been removed and are now included in Cigre Brochure "CIGRE Guide for application of IEC 60694 and IEC 62271-100".

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

FDIS	Report on voting
17A/729/FDIS	17A/734/RVD

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.

This standard is to be read in conjunction with IEC 62271-100, first edition, published in 2001, and with IEC 60694, second edition, published in 1996, to which it refers and which are applicable, unless otherwise specified. In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 62271-100 and IEC 60694. Additional subclauses are numbered from 101.

The following standards belong to the same IEC 62271 series, under the general title *High-voltage switchgear and controlgear*:

Part 102: Alternating current disconnectors and earthing switches

Part 105: Alternating current switch-fuse combinations

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

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

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 110: Inductive load switching

1 General

1.1 Scope

This International Standard is applicable to a.c. circuit-breakers designed for indoor or outdoor installation, for operation at frequencies of 50 Hz and 60 Hz on systems having voltages above 1000 V and applied for inductive current switching with or without additional short-circuit current breaking duties. The standard is applicable to circuit-breakers in accordance with IEC 62271-100 that are used to switch high-voltage motor currents and shunt reactor currents and also to high-voltage contactors used to switch high-voltage motor currents [1] ¹.

Switching unloaded transformers, i.e. breaking transformer magnetizing current, is not considered in this standard. The reasons for this are as follows:

- a) due to the non-linearity of the transformer core, it is not possible to correctly model the switching of transformer magnetizing current using linear components in a test laboratory. Tests conducted using an available transformer, such as a test transformer, will only be valid for the transformer tested and cannot be representative for other transformers;
- b) as detailed in the guide for application of IEC 62271-100 and IEC 60694 (hereafter referred to as the guide [2]), the characteristics of this duty are usually less severe than any other inductive current switching duty. It should be noted that such a duty may produce severe overvoltages within the transformer winding(s) depending on the circuit-breaker re-ignition behaviour and transformer winding resonance frequencies.

Short-line faults, out-of-phase current making and breaking and capacitive current switching are not applicable to circuit-breakers applied to switch shunt reactors or motors. These duties are therefore not included in this standard.

Subclause 1.1 of IEC 62271-100 is otherwise applicable.

1.2 Normative references

Subclause 1.2 of IEC 62271-100 is applicable with the following addition:

IEC 62271-100:2001, *High-voltage switchgear and controlgear – Part 100: High-voltage alternating-current circuit-breakers* ²

¹ Figures in square brackets refer to the bibliography.

² A consolidated edition is available (2003).