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**Visokonapetostne stikalne in krmilne naprave - 101. del: Sintetično preskušanje
(IEC 62271-101:2012)**

High-voltage switchgear and controlgear - Part 101: Synthetic testing (IEC 62271-101:2012)

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Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 101: Synthetische Prüfung (IEC 62271-101:2012)

SIST EN 62271-101:2013

Appareillage à haute tension - Partie 101: Essais synthétiques (CEI 62271-101:2012)

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English version

**High-voltage switchgear and controlgear -
Part 101: Synthetic testing**
(IEC 62271-101:2012)

Appareillage à haute tension -
Partie 101: Essais synthétiques
(CEI 62271-101:2012)

Hochspannungs-Schaltgeräte und -
Schaltanlagen -
Teil 101: Synthetische Prüfung
(IEC 62271-101:2012)

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

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Foreword

The text of document 17A/1015/FDIS, future edition 2 of IEC 62271-101, 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 approved by CENELEC as EN 62271-101:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2013-08-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-11-16

This document supersedes EN 62271-101:2006 + A1:2010.

EN 62271-101:2013 includes the following significant technical changes with respect to EN 62271-101:2006:

- addition of the new rated voltages of 1 100 kV and 1 200 kV;
- revision of Annex F regarding circuit-breakers with opening resistors;
- alignment with the EN 62271-100:2009 + A1:2012.

This publication shall be read in conjunction with EN 62271-100:2009, to which it refers. The numbering of the subclauses of Clause 6 is the same as in EN 62271-100. However, not all subclauses of EN 62271-100 are addressed; merely those where synthetic testing has introduced changes.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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.

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|-----------------------|--------------|---|----------------------|--------------|
| IEC 62271-100 + A1 | 2008 2012 | High-voltage switchgear and controlgear - Part 100: Alternating current circuit-breakers | EN 62271-100 + A1 | 2009 2012 |

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NORME INTERNATIONALE



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Appareillage à haute tension –
Partie 101: Essais synthétiques

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**Part 101: Synthetic testing**

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 62271-101 has been prepared by subcommittee 17A: High-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition cancels and replaces the first edition published in 2006 and its Amendment 1 published in 2010. It constitutes a technical revision.

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

- addition of the new rated voltages of 1 100 kV and 1 200 kV;
- revision of Annex F regarding circuit-breakers with opening resistors;
- alignment with the second edition of IEC 62271-100:2008 and its Amendment 1 (2012).

The text of this standard is based on the first edition of IEC 62271-101 and the following documents:

| | |
|---------------|------------------|
| FDIS | Report on voting |
| 17A/1015/FDIS | 17A/1024/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 publication shall be read in conjunction with IEC 62271-100, published in 2008, to which it refers. The numbering of the subclauses of Clause 6 is the same as in IEC 62271-100. However, not all subclauses of IEC 62271-100 are addressed; merely those where synthetic testing has introduced changes.

A list of all the parts in the IEC 62271 series, under the general title *High-voltage switchgear and controlgear*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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 101: Synthetic testing

1 Scope

This part of IEC 62271 mainly applies to a.c. circuit-breakers within the scope of IEC 62271-100. It provides the general rules for testing a.c. circuit-breakers, for making and breaking capacities over the range of test duties described in 6.102 to 6.111 of IEC 62271-100:2008, by synthetic methods.

It has been proven that synthetic testing is an economical and technically correct way to test high-voltage a.c. circuit-breakers according to the requirements of IEC 62271-100 and that it is equivalent to direct testing.

The methods and techniques described are those in general use. The purpose of this standard is to establish criteria for synthetic testing and for the proper evaluation of results. Such criteria will establish the validity of the test method without imposing restraints on innovation of test circuitry.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62271-100:2008, *High-voltage switchgear and controlgear – Part 100: Alternating current circuit-breakers*
Amendment 1:2012

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62271-100, as well as the following, apply.

3.1

direct test

test in which the applied voltage, the current and the transient and power-frequency recovery voltages are all obtained from a circuit having a single-power source, which may be a power system or special alternators as used in short-circuit testing stations or a combination of both

3.2

synthetic test

test in which all of the current, or a major portion of it, is obtained from one source (current circuit), and in which the applied voltage and/or the recovery voltages (transient and power frequency) are obtained wholly or in part from one or more separate sources (voltage circuits)

3.3

test circuit-breaker

circuit-breaker under test

SEE: 6.102.3 of IEC 62271-100:2008.