ICS 29.130.10 SLOVENSKÁ TECHNICKÁ NORMA Február 2024

STN	**Vysokonapäťové spínacie a riadiace zariadenia Časť 103: Spínače striedavého prúdu na menovité napätia nad 1 kV do 52 kV vrátane**	**STN EN IEC 62271-103** 35 4220

High-voltage switchgear and controlgear - Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/24

Obsahuje: EN IEC 62271-103:2023, IEC 62271-103:2021

Oznámením tejto normy sa od 10.11.2026 ruší
STN EN 62271-103 (35 4220) z júna 2012

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62271-103

November 2023

ICS 29.130.10

Supersedes EN 62271-103:2011

English Version

High-voltage switchgear and controlgear - Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV (IEC 62271-103:2021)

Appareillage à haute tension - Partie 103: Interrupteurs à courant alternatif pour tensions assignées supérieures à 1 kV et inférieures ou égales à 52 kV (IEC 62271-103:2021)

Hochspannungs-Schaltgeräte und -Schaltanlagen - Teil 103: Lastschalter für Bemessungsspannungen über 1 kV bis einschließlich 52 kV (IEC 62271-103:2021)

This European Standard was approved by CENELEC on 2021-06-15. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62271-103:2023 E

European foreword

The text of document 17A/1297/FDIS, future edition 2 of IEC 62271-103, prepared by SC 17A "Switching devices" of IEC/TC 17 "High-voltage switchgear and controlgear" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62271-103:2023.

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) 2024-05-10
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2026-11-10

This document supersedes EN 62271-103:2011 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62271-103:2021 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 60059	NOTE	Harmonized as EN 60059
IEC 62271-105	NOTE	Harmonized as EN 62271-105
IEC 62271-200	NOTE	Harmonized as EN 62271-200
IEC 62271-201	NOTE	Harmonized as EN 62271-201
IEC 60507	NOTE	Harmonized as EN 60507
IEC 62271-100	NOTE	Harmonized as EN 62271-100
IEC 60071-1	NOTE	Harmonized as EN IEC 60071-1

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60050-441	-	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 62262	2002	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	2002
IEC 62271-1	2017	High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear	EN 62271-1	2017
IEC 62271-102	2018	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches	EN IEC 62271-102	2018
IEC 62271-110	2017	High-voltage switchgear and controlgear - Part 110: Inductive load switching	EN IEC 62271-110	2018

Annex ZB
(informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN and/or CENELEC member.

This European Standard does not fall under any Directive/Regulation of the EU.

In the relevant CEN and/or CENELEC countries, these A-deviations are valid instead of the respective provisions of the European Standard until the national situation causing the A-deviation has changed

Clause	Deviation
General	**Italy** CAPITOLO VSR 8.B D.M. 1 DICEMBRE 1980 e succ. Modifiche Disciplina dei contenitori a pressione di gas con membrature miste di materiale isolante e di materiale metallico, contenenti parti attive di apparecchiature elettriche. Gas filled compartments having a design pressure exceeding 0,5 bar (gauge) or a volume exceeding 2 m^3 shall be designed according to the Italian pressure vessel code for electrical switchgear.

IEC 62271-103

Edition 2.0 2021-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV

Appareillage à haute tension – Partie 103: Interrupteurs à courant alternatif pour tensions assignées supérieures à 1 kV et inférieures ou égales à 52 kV

IEC 62271-103:2021-05(en-fr)

IEC 62271-103

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV

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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4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62271-103 has been prepared by subcommittee 17A: Switching devices, of IEC technical committee 17: High-voltage switchgear and controlgear. It is an International Standard.

This second edition cancels and replaces the first 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) this document has been aligned with IEC 62271-1:2017 and IEC 62271-102:2018;
b) clarifications regarding the behaviour of the switch during breaking tests regarding current interruption and restrikes have been added;
c) conditions of the switch after making and breaking tests have been clarified;
d) a new informative Annex B intended to provide guidance for the calculation of I_{ef1} and I_{ef2} has been added;

e) new rules for the combination of 50 Hz and 60 Hz switching tests have been defined and a new table (Table 7) has been added;

f) tests with specified TRV have been modified to be in accordance with the practice described in IEC 62271-100;

g) the behaviour of the switch during breaking tests has been clarified and boundaries for restrike allowance have been defined;

h) explanations for short-circuit making tests have been added;

i) vacuum integrity check after mechanical operations has been defined;

j) all test voltages for single-phase capacitive testing have been grouped under 7.101.7.3.2 and have been confirmed by simulation and calculation.

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

Draft	Report on voting
17A/1297/FDIS	17A/1303/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.

This document is to be read in conjunction with IEC 62271-1:2017, to which it refers and which is 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 62271-1:2017. Amendments to these clauses and subclauses are given under the same numbering whilst additional subclauses are numbered from 101.

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

The reader's attention is drawn to the fact that Annex C lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this document.

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.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV

1 Scope

This part of IEC 62271 is applicable to three-phase, alternating current switches and switch-disconnectors for their switching function, having making and breaking current ratings, for indoor and outdoor installations, for rated voltages above 1 kV up to and including 52 kV and for rated frequencies from 16 2/3 Hz up to and including 60 Hz. This document is also applicable to single-pole switches used on three-phase systems.

This document is also applicable to the operating devices of these switches and to their auxiliary equipment.

For switch-disconnectors, refer also to IEC 62271-102 for their disconnecting function.

Devices not covered by this document are:

– devices that require a dependent manual operation;
– earthing switches. Earthing switches forming an integral part of a switch are covered by IEC 62271-102;
– switching devices attached as an element of a high-voltage fuse assembly or its mounting and operated by opening and closing the fuse assembly.

General principles and provisions of this document can also be applicable to single pole switches intended for application in single-phase systems, the requirements for dielectric tests and making and breaking tests being in accordance with the requirements of the specific application.

This document establishes requirements for general, limited and special purpose switches used in distribution systems.

NOTE Except where special clarification is required, the term "switch" is used to refer to all kinds of switches and switch-disconnectors within the scope of this document.

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 60050-441, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses* (available at http://www.electropedia.org)

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
IEC 60529:1989/AMD1:1999
IEC 60529:1989/AMD1:2013

IEC 62262:2002, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-102:2018, *High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches*

IEC 62271-110:2017, *High-voltage switchgear and controlgear – Part 110: Inductive load switching*