



NSAI
Standards

Irish Standard
I.S. EN 62271-107:2012

High-voltage switchgear and controlgear -- Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV (IEC 62271-107:2012 (EQV))

I.S. EN 62271-107:2012

Incorporating amendments/corrigenda issued since publication:

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English version

**High-voltage switchgear and controlgear -
Part 107: Alternating current fused circuit-switchers for rated voltages
above 1 kV up to and including 52 kV
(IEC 62271-107:2012)**

Appareillage à haute tension -
Partie 107: Circuits-switchers fusibles
pour courant alternatif de tension
assignée supérieure à 1 kV et jusqu'à
52 kV inclus
(CEI 62271-107:2012)

Hochspannungs-Schaltgeräte und -
Schaltanlagen -
Teil 107: Wechselstrom-
Leistungsschalter-Sicherungs-
Kombinationen für
Bemessungsspannungen über 1 kV bis
einschließlich 52 kV
(IEC 62271-107:2012)

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CENELEC

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/997/FDIS, future edition 2 of IEC 62271-107, 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 62271-107:2012.

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) 2013-04-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-07-03

This document supersedes EN 62271-107:2005.

EN 62271-107:2012 includes the following significant technical changes with respect to EN 62271-107:2005:

- the reference to EN 60694 has been changed to EN 62271-1;
- the new clauses and subclauses from EN 62271-1 have been added and where necessary new wording has been provided:
 - 4.11 Rated filling levels for insulation and/or operation;
 - 5.19 X-ray emission;
 - 5.20 Corrosion;
 - 6.10 Additional tests on auxiliary and control circuits;
 - 6.11 X-radiation test procedure for vacuum interrupters;
 - 12 Influence of the product on the environment;
- the normative references have been updated: EN 60265-1 to EN 62271-103, IEC 60787 to IEC/TR 60787, IEC 60466 to EN 62271-201, and IEC/TR 60787 was moved to the bibliography;
- the figures and tables have been placed in the document where they are first cited;
- the numbering of figures and tables has been changed to obtain the correct order;
- the definition of NSDD was deleted. This definition is included in EN 62271-1;
- the acceptance criteria have been aligned with 6.101.4 of EN 62271-103:2011;
- the various provisions expressed about "extension of the validity of type tests" have been grouped under 6.103: some of the rules were duplicated in Clauses 6 and 8, and it seems better fitted to deal within each type test sub-clause only with the type test to be performed. Conditions have not been changed, but the wording is clearer;
- new numbering of subclauses in Clauses 8 and 9 to avoid conflict with clauses from EN 62271-1.

I.S. EN 62271-107:2012

- 3 -

EN 62271-107:2012

This International Standard is to be read in conjunction with EN 62271-1:2008, 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 EN 62271-1. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses, are numbered from 101.

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

Endorsement notice

The text of the International Standard IEC 62271-107:2012 was approved by CENELEC as a European Standard without any modification.

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 60282-1	2009	High-voltage fuses - Part 1: Current-limiting fuses	EN 60282-1	2009
IEC 62271-1	2007	High-voltage switchgear and controlgear - Part 1: Common specifications	EN 62271-1	2008
IEC 62271-100	2008	High-voltage switchgear and controlgear - Part 100: Alternating current circuit-breakers	EN 62271-100	2009
IEC 62271-102 + corr. April + corr. February + corr. May	2001 2002 2005 2003	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches	EN 62271-102 + corr. July + corr. March	2002 2008 2005
IEC 62271-103	2011	High-voltage switchgear and controlgear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV	EN 62271-103	2011
IEC 62271-105	-	High-voltage switchgear and controlgear - Part 105: Alternating current switch-fuse combinations	EN 62271-105	-
IEC 62271-200	-	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	EN 62271-200	-
IEC 62271-201	-	High-voltage switchgear and controlgear - Part 201: AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	EN 62271-201	-

CONTENTS

FOREWORD.....	5
1 General.....	7
1.1 Scope.....	7
1.2 Normative references	7
2 Normal and special service conditions.....	8
3 Terms and definitions	8
3.1 General terms.....	8
3.2 Assemblies of switchgear and controlgear	8
3.3 Parts of assemblies	8
3.4 Switching devices	8
3.5 Parts of switchgear and controlgear.....	9
3.6 Operation	9
3.7 Characteristic quantities	10
3.101 Fuses	12
4 Ratings.....	12
4.1 Rated voltage (U_r)	13
4.2 Rated insulation level	13
4.3 Rated frequency (f_r).....	13
4.4 Rated normal current and temperature rise.....	13
4.4.1 Rated normal current (I_r).....	13
4.4.2 Temperature rise.....	13
4.4.101 Rated maximum thermal current (I_{th})	13
4.5 Rated short-time withstand current (I_k)	13
4.6 Rated peak withstand current (I_p)	13
4.7 Rated duration of short circuit (t_k).....	14
4.8 Rated supply voltage of closing and opening devices and of auxiliary and control circuits (U_a).....	14
4.9 Rated supply frequency of closing and opening devices and of auxiliary circuits.....	14
4.10 Rated pressure of compressed gas supply for controlled pressure systems	14
4.11 Rated filling levels for insulation and/or operation	14
4.101 Rated short-circuit breaking current I_{sc}	14
4.102 Rated transient recovery voltage	14
4.103 Rated short-circuit making current.....	14
4.104 Rated take-over current	15
5 Design and construction	15
5.1 Requirements for liquids in fused circuit-switchers.....	15
5.2 Requirements for gases in fused circuit-switchers.....	15
5.3 Earthing of fused circuit-switchers	15
5.4 Auxiliary and control equipment.....	15
5.5 Dependent power operation.....	16
5.6 Stored energy operation	16
5.7 Independent manual or power operation (independent unlatched operation).....	16
5.8 Operation of releases	16
5.9 Low- and high- pressure interlocking and monitoring devices.....	16
5.10 Nameplates	16

5.11	Interlocking devices	17
5.12	Position indication	17
5.13	Degrees of protection by enclosures	17
5.14	Creepage distances for outdoor insulators	17
5.15	Gas and vacuum tightness	17
5.16	Liquid tightness	17
5.17	Fire hazard (flammability)	17
5.18	Electromagnetic compatibility (EMC)	17
5.19	X-ray emission	17
5.20	Corrosion	17
5.101	Linkages between the fuse striker(s) and the circuit-switcher release	18
5.102	Low over-current conditions (long fuse pre-arcing time conditions)	18
6	Type tests	18
6.1	General	18
6.1.1	Grouping of tests	19
6.1.2	Information for identification of specimens	19
6.1.3	Information to be included in type-test reports	19
6.2	Dielectric tests	19
6.3	Radio interference voltage (r.i.v.) test	19
6.4	Measurement of the resistance of circuits	19
6.5	Temperature-rise tests	19
6.6	Short-time withstand current and peak withstand current tests	19
6.7	Verification of the protection	19
6.8	Tightness tests	20
6.9	Electromagnetic compatibility tests (EMC)	20
6.10	Additional tests on auxiliary and control circuits	20
6.11	X-radiation test procedure for vacuum interrupters	20
6.101	Making and breaking tests	20
6.101.1	Conditions for performing the tests	20
6.101.2	Test duty procedures	25
6.101.3	Behaviour of the fused circuit-switcher during tests	30
6.101.4	Condition of the apparatus after tests	30
6.102	Mechanical operation tests	31
6.102.1	Condition of fused circuit-switcher during and after mechanical operation tests	32
6.102.2	Condition of the fuses during and after mechanical operation tests	32
6.103	Extension of validity of type tests	32
6.103.1	Dielectric properties	32
6.103.2	Temperature rise	32
6.103.3	Making and breaking	33
7	Routine tests	33
7.101	Mechanical operating tests	33
8	Guide for the selection of fused circuit-switchers	34
8.1	Selection of rated values	34
8.2	Continuous or temporary overload due to changed service conditions	34
8.101	Additional criteria	34
8.102	Short-circuit breaking current	34
8.103	Rated maximum thermal current	35
8.104	Currents between thermal current and I_3 of the fuses	35

8.105	Transfer current.....	35
8.106	Take-over current.....	35
8.107	Extension of the validity of type tests.....	35
8.108	Operation.....	36
8.109	Comparison of performances of fused circuit-switchers with performances of switch-fuse combinations and circuit-breakers.....	36
9	Information to be given with enquiries, tenders and orders.....	37
9.1	Information to be given with enquiries and orders.....	37
9.2	Information to be given with tenders.....	37
10	Rules for transport, storage, installation, operation and maintenance.....	38
11	Safety.....	38
12	Influence of the product on the environment.....	38
	Annex A (informative) Applicability of the rated take-over current test duty.....	39
	Bibliography.....	47
	Figure 1 – Characteristics for determining the take-over current.....	15
	Figure 2 – Arrangement of test circuits for test duties $TD_{I_{th}}$, $TD_{I_{sc}}$, $TD_{I_{to}}$ and $TD_{I_{low}}$	22
	Figure 3 – Representation of a specified TRV by a two-parameter reference line and a delay line.....	24
	Figure 4 – Example of a two parameters envelope for a TRV.....	25
	Figure 5 – Measurement of the power frequency recovery voltage with striker operation.....	27
	Figure A.1 – Visualization of the application margin for a given fuse.....	41
	Table 1 – Nameplate markings.....	16
	Table 2 – Summary of test parameters for test duties.....	29
	Table 3 – Comparison between switch-fuse combination and fused circuit-switcher.....	37
	Table 4 – Comparison between fused circuit-switcher and circuit breaker.....	37
	Table A.1 – Minimum application margin A_m according to fuse characteristic.....	44
	Table A.2 – Minimum protection time delay.....	45
	Table A.3 – Examples of possible need for time delay.....	45

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

**Part 107: Alternating current fused circuit-switchers
for rated voltages above 1 kV up to and including 52 kV**

FOREWORD

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International Standard IEC 62271-107 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 2005. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition.

- the reference to IEC 60694 has been changed to IEC 62271-1;
- the new clauses and subclauses from IEC 62271-1 have been added and where necessary new wording has been provided;
 - 4.11 Rated filling levels for insulation and/or operation
 - 5.19 X-ray emission
 - 5.20 Corrosion

- 6.10 Additional tests on auxiliary and control circuits
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 - the figures and tables have been placed in the document where they are first cited;
 - the numbering of figures and tables has been changed to obtain the correct order;
 - the definition of NSDD was deleted. This definition is included in IEC 62271-1;
 - the acceptance criteria have been aligned with 6.101.4 of IEC 62271-103:2011;
 - the various provisions expressed about "extension of the validity of type tests" have been grouped under 6.103: some of the rules were duplicated in Clauses 6 and 8, and it seems better fitted to deal within each type test sub-clause only with the type test to be performed. Conditions have not been changed, but the wording is clearer;
 - new numbering of subclauses in Clauses 8 and 9 to avoid conflict with clauses from IEC 62271-1.

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

FDIS	Report on voting
17A/997/FDIS	17A/1004/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 International Standard is to be read in conjunction with IEC 62271-1:2007, 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. Amendments to these clauses and subclauses are given under the same numbering, whilst additional subclauses, are numbered from 101.

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 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.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 107: Alternating current fused circuit-switchers for rated voltages above 1 kV up to and including 52 kV

1 General

1.1 Scope

Subclause 1.1 of IEC 62271-1:2007 is not applicable, and is replaced as follows.

This part of IEC 62271 applies to three-pole operated units for distribution systems that are functional assemblies of a circuit-switcher and current-limiting fuses designed so as to be capable of:

- breaking, at the rated recovery voltage, any load or fault current up to and including the rated short-circuit breaking current;
- making, at the rated voltage, circuits to which the rated short-circuit breaking current applies.

They are intended to be used for circuits or applications requiring only a normal mechanical and electrical endurance capability. Such applications cover protection of HV/LV transformers for instance, but exclude distribution lines or cables, as well as motor circuits and capacitor bank circuits.

Short-circuit conditions with low currents, up to the fused circuit-switcher rated take-over current, are dealt with by supplementary devices (strickers, relays, etc.), properly arranged, tripping the circuit-switcher. Fuses are incorporated in order to ensure that the short-circuit breaking capacity of the device is above that of the circuit-switcher.

NOTE 1 In this standard the term "fuse" is used to designate either the fuse or the fuse-link where the general meaning of the text does not result in ambiguity.

This standard applies to fused circuit-switchers designed with rated voltages above 1 kV up to and including 52 kV for use on three-phase alternating current systems of either 50 Hz or 60 Hz. Comparison with other existing switching devices is provided in Clause 8.

NOTE 2 Other circuit-switchers exist; see reference [1]¹.

Devices that require a dependent manual operation are not covered by this standard.

Fuses are covered by IEC 60282-1.

Earthing switches forming an integral part of a circuit-switcher are covered by IEC 62271-102.

Installation in enclosure, if any, is covered either by IEC 62271-200 or by IEC 62271-201.

1.2 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

¹ Numbers between brackets refer to the Bibliography.

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