

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**High-voltage switchgear and controlgear –
Part 104: Alternating current switches for rated voltages higher than 52 kV**

**Appareillage à haute tension –
Partie 104: Interrupteurs à courant alternatif pour tensions assignées
supérieures à 52 kV**



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CONTENTS

FOREWORD.....	6
1 General.....	8
1.1 Scope.....	8
1.2 Normative references.....	9
2 Normal and special service conditions.....	9
3 Terms and definitions.....	9
3.1 General terms.....	9
3.2 Assemblies.....	9
3.3 Parts of assemblies.....	9
3.4 Switching devices.....	10
3.6 Operation.....	11
3.7 Characteristic quantities.....	11
4 Ratings.....	13
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 (I_r).....	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).....	13
4.8 Rated supply voltage of closing and opening devices and of auxiliary and control circuits (U_a).....	13
4.9 Rated supply frequency of closing and opening devices and of auxiliary circuits.....	13
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 earth fault breaking current.....	14
4.102 Rated short-circuit making current.....	14
4.103 Rated mainly active load-breaking current.....	14
4.104 Rated closed-loop breaking current.....	14
4.105 Rated capacitive switching currents.....	14
4.105.1 Rated line-charging breaking current.....	14
4.105.2 Rated cable-charging breaking current.....	14
4.105.3 Rated single capacitor bank breaking current.....	14
4.105.4 Rated back-to-back capacitor bank breaking current.....	14
4.105.5 Single capacitor bank inrush making current.....	15
4.105.6 Rated back-to-back capacitor bank inrush making current.....	15
4.105.7 Rated cable and line-charging breaking current under earth fault conditions.....	15
4.106 Inductive load switching.....	15
4.106.1 Shunt reactor breaking current.....	15
4.106.2 Rated no-load transformer breaking current.....	15
4.107 Rated mechanical terminal load.....	15
4.108 Coordination of rated values for a general-purpose switch.....	15
4.109 Coordination of rated values for limited-purpose and special-purpose switches.....	16

5	Design and construction	16
5.1	Requirements for liquids in high-voltage switches	16
5.2	Requirements for gases in high-voltage switches	16
5.3	Earthing of high-voltage switches	17
5.4	Auxiliary and control equipment	17
5.5	Dependent power operation	17
5.6	Stored energy operation	17
5.7	Independent manual or power operation (independent unlatched operation)	17
5.8	Operation of releases	17
5.9	Low- and high-pressure interlocking and monitoring devices	17
5.10	Nameplates	17
5.11	Interlocking devices	18
5.12	Position indication	19
5.13	Degree of protection provided by enclosures	19
5.14	Creepage distances for outdoor insulators	19
5.15	Gas and vacuum tightness	19
5.16	Liquid tightness	19
5.17	Fire hazard (flammability)	19
5.18	Electromagnetic compatibility (EMC)	19
5.19	X-ray emission	19
5.20	Corrosion	19
5.101	Closing mechanism	19
5.102	Mechanical strength	19
5.103	Position of the movable contact system and its indicating or signalling device	19
5.103.1	Securing the position	19
5.103.2	Indication of position	20
5.103.3	Auxiliary contacts for signalling	20
6	Type tests	20
6.1	General	20
6.2	Dielectric tests	21
6.3	Radio interference voltage (r.i.v.) tests	22
6.4	Measurement of the resistance of circuits	22
6.5	Temperature rise tests	22
6.6	Short-time withstand current and peak withstand current tests	22
6.7	Verification of the protection	22
6.8	Tightness tests	22
6.9	Electromagnetic compatibility tests (EMC)	22
6.10	Additional tests on auxiliary and control circuits	22
6.11	X-radiation test procedure for vacuum interrupters	22
6.101	Mechanical operation tests	22
6.101.1	Arrangement of the switch for tests	22
6.101.2	Tests for general-purpose switches	23
6.101.3	Tests for limited-purpose and special-purpose switches	24
6.101.4	Condition of switch during and after mechanical operation tests	24
6.101.5	Operation under severe ice conditions	24
6.101.6	Static terminal load tests	24
6.102	Miscellaneous provision for making and breaking tests	25
6.102.1	Arrangement of the switch for tests	25

6.102.2	Behaviour of switch during breaking tests	26
6.102.3	Condition of switch after breaking tests	26
6.102.4	Condition of switch during and after short-circuit making tests.....	26
6.103	Test circuits for making and breaking tests	27
6.103.1	General	27
6.103.2	Earthing of test circuit and switch	27
6.103.3	Mainly active load circuit (test duty 1 and test duty 3)	28
6.103.4	Closed-loop circuits (test duty 2)	31
6.103.5	Test circuits for short-circuit making tests (test duty 6).....	35
6.103.6	Test circuits for breaking tests under earth fault conditions (test duties 7a and 7b).....	37
6.104	Test quantities	37
6.104.1	Test frequency	37
6.104.2	Test voltage for breaking tests	37
6.104.3	Breaking current	38
6.104.4	Test voltage for short-circuit making tests.....	39
6.104.5	Short-circuit making current.....	40
6.105	Capacitive current switching tests.....	40
6.105.1	Applicability	40
6.105.2	General	41
6.105.3	Characteristics of supply circuits	41
6.105.4	Earthing of the supply circuit	41
6.105.5	Characteristics of the capacitive circuit to be switched	41
6.105.6	Waveform of the current.....	41
6.105.7	Test voltage.....	41
6.105.8	Test current	42
6.105.9	Test duties.....	42
6.105.10	Tests with specified TRV	43
6.105.11	Criteria to pass the test	43
6.106	Inductive load switching (test duty 5)	43
6.106.1	No-load transformer circuit (test duty 5a).....	43
6.106.2	Shunt-reactor current switching tests (test duty 5b).....	43
6.107	Tests for general-purpose switches	44
6.108	Tests for limited-purpose switches.....	45
6.109	Tests for special-purpose switches	45
6.110	Type test reports.....	45
7	Routine tests	46
7.1	Dielectric tests on main circuit	46
7.2	Tests on auxiliary and control circuits	46
7.3	Measurement of the resistance of the main circuit.....	46
7.4	Tightness test	46
7.5	Design and visual checks	46
7.101	Mechanical operating tests.....	46
8	Guide to the selection of high-voltage switches	47
8.1	Selection of rated values	47
8.2	Continuous or temporary overload due to changed service conditions	47
8.101	General.....	47
8.102	Conditions affecting application	47

8.103	Insulation coordination	47
9	Information to be given with enquiries, tenders and orders.....	48
9.1	Information with enquiries and orders	48
9.2	Information with tenders	48
10	Transport, storage, installation, operation and maintenance.....	48
11	Safety	48
12	Influence of the high-voltage switch on the environment	48
	Bibliography	49
Figure 1 – Single-phase test circuit for mainly active load current switching for test duties 1 and 3.....		28
Figure 2 – Single-phase test circuit for transmission line closed loop and parallel-transformer current switching test, for test duties 2a and 2b.....		28
Figure 3 – Three-phase test circuit for mainly active load current switching, for test duties 1 and 3.....		29
Figure 4 – Supply and load side transient for mainly active load current switching tests (see Table 4)		30
Figure 5 – Three-phase test circuit for transmission line closed loop and parallel-transformer current switching test for test duties 2a and 2b.....		31
Figure 6 – Illustration of the transient associated with transmission line closed loop current breaking tests (see Table 5)		33
Figure 7 – Three-phase test circuit for short circuit making current test for test duty 6		36
Figure 8 – Single-phase test circuit for short circuit making current test for test duty 6		36
Table 1 – Preferred values of line- and cable-charging breaking currents for a general-purpose switch		16
Table 2 – Nameplate information.....		18
Table 3 – Type tests		21
Table 4 – Supply circuit TRV parameters for mainly active load current breaking tests		30
Table 5 – TRV parameters for transmission line closed loop current breaking tests		32
Table 6 – Test duties for single-phase tests on three-pole switches having a non-simultaneity between poles of 0,25 cycle or less.....		33
Table 7 – Test duties for single-phase tests on three-pole switches having more than 0,25 cycle non-simultaneity and switches operated pole after pole		34
Table 8 – TRV parameters for parallel transformer current breaking tests.....		35
Table 9 – Test duties for three-phase tests on three-pole switches		37

INTERNATIONAL ELECTROTECHNICAL COMMISSION

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –**Part 104: Alternating current switches
for rated voltages higher than 52 kV**

FOREWORD

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International Standard IEC 62271-104 has been prepared by subcommittee 17A: High-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition replaces and cancels the first edition published in 2009 and constitutes a technical revision.

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

- the title was changed such that the voltage range now is >52 kV instead of ≥ 52 kV;
- the references have been updated;
- the comments in 17A/1063/RVC have been addressed.

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

FDIS	Report on voting
17A/1079/FDIS	17A/1082/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 62271-1 (2007), IEC 62271-100 (2008), IEC 62271-102 (2001) and IEC 62271-110 (2012). In order to simplify the indication of corresponding requirements, the same numbering of clauses and subclauses is used as in IEC 62271-1. Modifications 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 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.

HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 104: Alternating current switches for rated voltages higher than 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 is applicable to three-pole alternating current switches for rated voltages higher than 52 kV, having making and breaking current ratings, for indoor and outdoor installations, and for rated frequencies up to and including 60 Hz.

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

NOTE 1 Switches for gas insulated switchgear are covered by this standard.

NOTE 2 Switches having a disconnecting function and called switch-disconnectors are also covered by IEC 62271-102.

NOTE 3 Earthing switches are not covered by this standard. Earthing switches forming an integral part of a switch are covered by IEC 62271-102.

The main object of this standard is to establish requirements for switches used in transmission and distribution systems. General-purpose switches for this application are designed to comply with the following service applications:

- carrying rated normal current continuously;
- carrying short-circuit currents for a specified time;
- switching of mainly active loads;
- switching of no-load transformers;
- switching of the charging current of unloaded cables, overhead lines or busbars;
- switching of closed-loop circuits;
- making short-circuit currents.

A further object of this standard is to establish requirements for limited-purpose and special-purpose switches used in transmission and distribution systems.

Limited-purpose switches comply with one or more of the service applications indicated above.

Special-purpose switches may comply with one or more of the service applications indicated above and, in addition, are suitable for one or more of the following applications:

- switching single capacitor banks;
- switching back-to-back capacitor banks;
- switching shunt reactors including secondary or tertiary reactors switched from the primary side of the transformer;
- applications requiring an increased number of operating cycles;
- switching under earth fault conditions in non-effectively earthed neutral systems.

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 undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-441:1984, *International Electrotechnical Vocabulary – Chapter 441: Switchgear, controlgear and fuses*

IEC 60071 (all parts), *Insulation co-ordination*

IEC 60071-1, *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60270, *High-voltage test techniques – Partial discharge measurements*

IEC 62271-1:2007, *High-voltage switchgear and controlgear – Part 1: Common specifications*
IEC 62271-1:2007/AMD1:2011

IEC 62271-100:2008, *High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers*
IEC 62271-100:2008/AMD1:2012

IEC 62271-102:2001, *High-voltage switchgear and controlgear – Part 102: Alternating current disconnectors and earthing switches*
IEC 62271-102:2001/AMD1:2011
IEC 62271-102:2001/AMD2:2013

IEC 62271-110:2012, *High-voltage switchgear and controlgear – Part 110: Inductive load switching*

2 Normal and special service conditions

Clause 2 of IEC 62271-1:2007/AMD 1:2011 is applicable.

3 Terms and definitions

Clause 3 of IEC 62271-1:2007 is applicable with the the following additions.

For the purposes of this document, definitions of general terms are based on IEC 60050-441 and IEC 60071-1.

Additional terms and definitions are based solely on IEC 60050-441.

3.1 General terms

Subclause 3.1 of IEC 62271-1:2007 is applicable.

3.2 Assemblies

Subclause 3.2 of IEC 62271-1:2007 is applicable.

3.3 Parts of assemblies

Subclause 3.2 of IEC 62271-1:2007 is applicable.