



DRAFT TANZANIA STANDARD

(Draft for comments only)

High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear

TANZANIA BUREAU OF STANDARDS



1 National Foreword

This draft Tanzania Standard has been prepared by the TBS Electrical Equipment Technical Committee, under the supervision of the Electrotechnical Divisional Standards Committee (EDC)

This draft Tanzania Standard is identical to International Standard IEC 62271-1:2017+AMD1:2021 *High-voltage switchgear and controlgear - Part 1: Common specifications for alternating current switchgear and controlgear*, which has been prepared by the International Electrotechnical Commission.

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- 1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- 2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”



HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –Part 1: Common specifications for alternating current switchgear and controlgear

1 Scope

This part of IEC 62271 applies to AC switchgear and controlgear designed for indoor and/or outdoor installation and for operation at service frequencies up to and including 60 Hz and having rated voltages above 1 000 V.

This document applies to all high-voltage switchgear and controlgear except as otherwise specified in the relevant IEC standards for the particular type of switchgear and controlgear.

NOTE For the use of this document, high-voltage is defined as the rated voltage above 1 000 V. However, the

term medium voltage is commonly used for distribution systems with voltages above 1 kV and generally applied up

to and including 52 kV.

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 60038:2009, IEC standard voltages

IEC 60050-131:2002, International Electrotechnical Vocabulary (IEV) – Part 131: Circuit theory

IEC 60050-151:2001, International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices

IEC 60050-192:2015, International Electrotechnical Vocabulary (IEV) – Part 192: Dependability

IEC 60050-351, International Electrotechnical Vocabulary (IEV) – Part 351: Control technology



IEC 60050-441:1984, International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses

IEC 60050-441:1984/AMD1:2000

IEC 60050-551, International Electrotechnical Vocabulary (IEV) – Part 551: Power electronics

IEC 60050-581:2008, International Electrotechnical Vocabulary (IEV) – Part 581:

Electromechanical components for electronic equipment

IEC 60050-601, International Electrotechnical Vocabulary (IEV) – Chapter 601: Generation, transmission and distribution of electricity – General

IEC 60050-605, International Electrotechnical Vocabulary (IEV) – Chapter 605: Generation, transmission and distribution of electricity – Substations

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IEC 60050-614:2016, International Electrotechnical Vocabulary (IEV) – Part 614: Generation, transmission and distribution of electricity – Operation

IEC 60050-811, International Electrotechnical Vocabulary (IEV) – Part 811: Electric traction

IEC 60050-826:2004, International Electrotechnical Vocabulary (IEV) – Part 826: Electrical installations

IEC 60060-1:2010, High-voltage test techniques – Part 1: General definitions and test requirements

IEC 60068-2-1:2007, Environmental testing – Part 2-1: Tests – Test A: Cold

IEC 60068-2-2:2007, Environmental testing – Part 2-2: Tests – Test B: Dry heat

IEC 60068-2-30:2005, Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)

IEC 60071-1:2006, Insulation co-ordination – Part 1: Definitions, principles and rules

IEC 60071-1:2006/AMD1:2010

IEC 60071-2:1996, Insulation co-ordination – Part 2: Application guide

IEC 60085:2007, Electrical insulation – Thermal evaluation and designation

IEC 60255-21-1:1988, Electrical relays – Part 21: Vibration, shock, bump and seismic tests on



measuring relays and protection equipment – Section One: Vibration tests (sinusoidal)

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

IEC 60296, Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear

IEC 60376, Specification of technical grade sulphur hexafluoride (SF₆) for use in electrical equipment

IEC 60480, Guidelines for the checking and treatment of sulphur hexafluoride (SF₆) taken from electrical equipment and specification for its re-use

IEC 60507, Artificial pollution tests on high-voltage ceramic and glass insulators to be used on a.c. systems

IEC 60512-2-2, Connectors for electronic equipment – Tests and measurements – Part 2-2: Electrical continuity and contact resistance tests – Test 2b: Contact resistance – Specified test current method

IEC 60529:1989, Degrees of protection provided by enclosures (IP Code)

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC TS 60815-1:2008, Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 1: Definitions, information and general principles

IEC TS 60815-2:2008, Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 2: Ceramic and glass insulators for a.c. systems

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IEC TS 60815-3:2008, Selection and dimensioning of high-voltage insulators intended for use in polluted conditions – Part 3: Polymer insulators for a.c. systems

IEC 61000-4-4, Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test

IEC 61000-4-11, Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement



techniques – Voltage dips, short interruptions and voltage variations immunity tests
IEC 61000-4-17:2009, Electromagnetic compatibility (EMC) – Part 4-17: Testing and measurement techniques – Ripple on d.c. input power port immunity test

IEC 61000-4-18, Electromagnetic compatibility (EMC) – Part 4-18: Testing and measurement techniques – Damped oscillatory wave immunity test

IEC 61000-4-29, Electromagnetic compatibility (EMC) – Part 4-29: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests

IEC 61000-6-2, Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

IEC 61000-6-5, Electromagnetic compatibility (EMC) – Part 6-5: Generic standards – Immunity for equipment used in power station and substation environment

IEC 61180, High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment

IEC 61810-7:2006, Electromechanical elementary relays – Part 7: Test and measurement procedures

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

IEC 62271-4, High-voltage switchgear and controlgear – Part 4: Handling procedures for sulphur hexafluoride (SF₆) and its mixtures

CISPR 11:2015, Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement

CISPR TR 18-2, Radio interference characteristics of overhead power lines and high-voltage equipment – Part 2: Methods of measurement and procedure for determining limits