

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Low-voltage switchgear and controlgear assemblies –  
Part 1: General rules**

**Ensembles d'appareillage à basse tension –  
Partie 1: Règles générales**



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## CONTENTS

FOREWORD.....	8
INTRODUCTION.....	11
1 Scope.....	12
2 Normative references.....	12
3 Terms and definitions.....	15
3.1 General terms.....	15
3.2 Constructional units of ASSEMBLIES.....	17
3.3 External design of ASSEMBLIES.....	18
3.4 Structural parts of ASSEMBLIES.....	18
3.5 Conditions of installation of ASSEMBLIES.....	20
3.6 Insulation characteristics.....	20
3.7 Protection against electric shock.....	23
3.8 Characteristics.....	25
3.9 Verification.....	27
3.10 Manufacturer/user.....	28
4 Symbols and abbreviations.....	28
5 Interface characteristics.....	29
5.1 General.....	29
5.2 Voltage ratings.....	29
5.2.1 Rated voltage ( $U_n$ ) (of the ASSEMBLY).....	29
5.2.2 Rated operational voltage ( $U_e$ ) (of a circuit of an ASSEMBLY).....	29
5.2.3 Rated insulation voltage ( $U_i$ ) (of a circuit of an ASSEMBLY).....	29
5.2.4 Rated impulse withstand voltage ( $U_{imp}$ ) (of the ASSEMBLY).....	29
5.3 Current ratings.....	30
5.3.1 Rated current of the ASSEMBLY ( $I_{nA}$ ).....	30
5.3.2 Rated current of a circuit ( $I_{nC}$ ).....	30
5.3.3 Rated peak withstand current ( $I_{pk}$ ).....	30
5.3.4 Rated short-time withstand current ( $I_{cW}$ ) (of a circuit of an ASSEMBLY).....	30
5.3.5 Rated conditional short-circuit current of an ASSEMBLY ( $I_{CC}$ ).....	30
5.4 Rated diversity factor (RDF).....	31
5.5 Rated frequency ( $f_n$ ).....	31
5.6 Other characteristics.....	31
6 Information.....	32
6.1 ASSEMBLY designation marking.....	32
6.2 Documentation.....	32
6.2.1 Information relating to the ASSEMBLY.....	32
6.2.2 Instructions for handling, installation, operation and maintenance.....	32
6.3 Device and/or component identification.....	33
7 Service conditions.....	33
7.1 Normal service conditions.....	33
7.1.1 Ambient air temperature.....	33
7.1.2 Humidity conditions.....	33
7.1.3 Pollution degree.....	33
7.1.4 Altitude.....	34
7.2 Special service conditions.....	34
7.3 Conditions during transport, storage and installation.....	35

8	Constructional requirements .....	35
8.1	Strength of materials and parts .....	35
8.1.1	General .....	35
8.1.2	Protection against corrosion .....	35
8.1.3	Properties of insulating materials .....	35
8.1.4	Resistance to ultra-violet radiation .....	36
8.1.5	Mechanical strength .....	36
8.1.6	Lifting provision .....	36
8.2	Degree of protection provided by an ASSEMBLY enclosure .....	36
8.2.1	Protection against mechanical impact .....	36
8.2.2	Protection against contact with live parts, ingress of solid foreign bodies and water .....	36
8.2.3	ASSEMBLY with removable parts .....	37
8.3	Clearances and creepage distances .....	37
8.3.1	General .....	37
8.3.2	Clearances .....	38
8.3.3	Creepage distances .....	38
8.4	Protection against electric shock .....	39
8.4.1	General .....	39
8.4.2	Basic protection .....	39
8.4.3	Fault protection .....	40
8.4.4	Protection by total insulation .....	42
8.4.5	Limitation of steady-state touch current and charge .....	43
8.4.6	Operating and servicing conditions .....	43
8.5	Incorporation of switching devices and components .....	45
8.5.1	Fixed parts .....	45
8.5.2	Removable parts .....	45
8.5.3	Selection of switching devices and components .....	46
8.5.4	Installation of switching devices and components .....	46
8.5.5	Accessibility .....	46
8.5.6	Barriers .....	47
8.5.7	Direction of operation and indication of switching positions .....	47
8.5.8	Indicator lights and push-buttons .....	47
8.6	Internal electrical circuits and connections .....	47
8.6.1	Main circuits .....	47
8.6.2	Auxiliary circuits .....	48
8.6.3	Bare and insulated conductors .....	48
8.6.4	Selection and installation of non-protected live conductors to reduce the possibility of short-circuits .....	49
8.6.5	Identification of the conductors of main and auxiliary circuits .....	49
8.6.6	Identification of the protective conductor (PE, PEN) and of the neutral conductor (N) of the main circuits .....	49
8.7	Cooling .....	49
8.8	Terminals for external conductors .....	49
9	Performance requirements .....	51
9.1	Dielectric properties .....	51
9.1.1	General .....	51
9.1.2	Power-frequency withstand voltage .....	51
9.1.3	Impulse withstand voltage .....	51

9.1.4	Protection of surge protective devices .....	51
9.2	Temperature rise limits .....	52
9.3	Short-circuit protection and short-circuit withstand strength .....	52
9.3.1	General .....	52
9.3.2	Information concerning short-circuit withstand strength .....	52
9.3.3	Relationship between peak current and short-time current .....	53
9.3.4	Co-ordination of protective devices .....	53
9.4	Electromagnetic compatibility (EMC) .....	53
10	Design verification .....	54
10.1	General .....	54
10.2	Strength of materials and parts .....	55
10.2.1	General .....	55
10.2.2	Resistance to corrosion .....	55
10.2.3	Properties of insulating materials .....	56
10.2.4	Resistance to ultra-violet (UV) radiation .....	58
10.2.5	Lifting .....	58
10.2.6	Mechanical impact .....	59
10.2.7	Marking .....	59
10.3	Degree of protection of ASSEMBLIES .....	59
10.4	Clearances and creepage distances .....	59
10.5	Protection against electric shock and integrity of protective circuits .....	60
10.5.1	Effectiveness of the protective circuit .....	60
10.5.2	Effective earth continuity between the exposed conductive parts of the ASSEMBLY and the protective circuit .....	60
10.5.3	Short-circuit withstand strength of the protective circuit .....	60
10.6	Incorporation of switching devices and components .....	61
10.6.1	General .....	61
10.6.2	Electromagnetic compatibility .....	61
10.7	Internal electrical circuits and connections .....	61
10.8	Terminals for external conductors .....	61
10.9	Dielectric properties .....	61
10.9.1	General .....	61
10.9.2	Power-frequency withstand voltage .....	61
10.9.3	Impulse withstand voltage .....	62
10.9.4	Testing of enclosures made of insulating material .....	64
10.9.5	External operating handles of insulating material .....	64
10.10	Verification of temperature rise .....	64
10.10.1	General .....	64
10.10.2	Verification by testing .....	64
10.10.3	Derivation of ratings for similar variants .....	70
10.10.4	Verification assessment .....	71
10.11	Short-circuit withstand strength .....	74
10.11.1	General .....	74
10.11.2	Circuits of ASSEMBLIES which are exempted from the verification of the short-circuit withstand strength .....	74
10.11.3	Verification by comparison with a reference design – Utilising a check list .....	75
10.11.4	Verification by comparison with a reference design – Utilising calculation .....	75
10.11.5	Verification by test .....	75

10.12	Electromagnetic compatibility (EMC)	80
10.13	Mechanical operation	80
11	Routine verification	80
11.1	General	80
11.2	Degree of protection of enclosures	81
11.3	Clearances and creepage distances	81
11.4	Protection against electric shock and integrity of protective circuits	81
11.5	Incorporation of built-in components	81
11.6	Internal electrical circuits and connections	81
11.7	Terminals for external conductors	81
11.8	Mechanical operation	82
11.9	Dielectric properties	82
11.10	Wiring, operational performance and function	82
Annex A (normative)	Minimum and maximum cross-section of copper conductors suitable for connection to terminals for external conductors (see 8.8)	90
Annex B (normative)	Method of calculating the cross-sectional area of protective conductors with regard to thermal stresses due to currents of short duration	91
Annex C (informative)	User information template	92
Annex D (informative)	Design verification	96
Annex E (informative)	Rated diversity factor	97
Annex F (normative)	Measurement of clearances and creepage distances	106
Annex G (normative)	Correlation between the nominal voltage of the supply system and the rated impulse withstand voltage of the equipment	111
Annex H (informative)	Operating current and power loss of copper conductors	113
Annex I (Void)		115
Annex J (normative)	Electromagnetic compatibility (EMC)	116
Annex K (normative)	Protection by electrical separation	123
Annex L (informative)	Clearances and creepage distances for North American region	126
Annex M (informative)	North American temperature rise limits	127
Annex N (normative)	Operating current and power loss of bare copper bars	128
Annex O (informative)	Guidance on temperature rise verification	130
Annex P (normative)	Verification of the short-circuit withstand strength of busbar structures by comparison with a tested reference design by calculation	135
	Bibliography	139
Figure E.1	– Typical ASSEMBLY	98
Figure E.2	– Example 1: Table E.1 – Functional unit loading for an ASSEMBLY with a rated diversity factor of 0,8	100
Figure E.3	– Example 2: Table E.1 – Functional unit loading for an ASSEMBLY with a rated diversity factor of 0,8	101
Figure E.4	– Example 3: Table E.1 – Functional unit loading for an ASSEMBLY with a rated diversity factor of 0,8	102
Figure E.5	– Example 4: Table E.1 – Functional unit loading for an ASSEMBLY with a rated diversity factor of 0,8	103
Figure E.6	– Example of average heating effect calculation	104
Figure E.7	– Example graph for the relation between the equivalent RDF and the parameters at intermittent duty at $t_1 = 0,5$ s, $I_1 = 7 \cdot I_2$ at different cycle times	105

Figure E.8 – Example graph for the relation between the equivalent RDF and the parameters at intermittent duty at  $I_1 = I_2$  (no starting overcurrent)..... 105

Figure F.1 – Measurement of ribs ..... 110

Figure J.1 – Examples of ports ..... 116

Figure O.1 – Temperature rise verification methods ..... 134

Figure P.1 – Tested busbar structure (TS) ..... 135

Figure P.2 – Non tested busbar structure (NTS)..... 136

Figure P.3 – Angular busbar configuration with supports at the corners ..... 138

  

Table 1 – Minimum clearances in air <sup>a</sup> (8.3.2)..... 82

Table 2 – Minimum creepage distances (8.3.3) ..... 83

Table 3 – Cross-sectional area of a copper protective conductor (8.4.3.2.2) ..... 83

Table 4 – Conductor selection and installation requirements (8.6.4) ..... 84

Table 5 – Minimum terminal capacity for copper protective conductors (PE, PEN) (8.8) ..... 84

Table 6 – Temperature-rise limits (9.2) ..... 85

Table 7 – Values for the factor  $n^a$  (9.3.3) ..... 86

Table 8 – Power-frequency withstand voltage for main circuits (10.9.2) ..... 86

Table 9 – Power-frequency withstand voltage for auxiliary and control circuits (10.9.2)..... 86

Table 10 – Impulse withstand test voltages (10.9.3)..... 87

Table 11 – Copper test conductors for rated currents up to 400 A inclusive (10.10.2.3.2) ..... 87

Table 12 – Copper test conductors for rated currents from 400 A to 4 000 A (10.10.2.3.2) ..... 88

Table 13 – Short-circuit verification by comparison with a reference design: check list (10.5.3.3, 10.11.3 and 10.11.4)..... 88

Table 14 – Relationship between prospective fault current and diameter of copper wire ..... 89

Table A.1 – Cross-section of copper conductors suitable for connection to terminals for external conductors ..... 90

Table B.1 – Values of  $k$  for insulated protective conductors not incorporated in cables, or bare protective conductors in contact with cable covering ..... 91

Table C.1 – Template ..... 92

Table D.1 – List of design verifications to be performed ..... 96

Table E.1 – Examples of loading for an ASSEMBLY with a rated diversity factor of 0,8 ..... 99

Table E.2 – Example of loading of a group of circuits (Section B – Figure E.1) with a rated diversity factor of 0,9 ..... 104

Table E.3 – Example of loading of a group of circuits (Sub-distribution board – Figure E.1) with a rated diversity factor of 0,9 ..... 104

Table F.1 – Minimum width of grooves ..... 106

Table G.1 – Correspondence between the nominal voltage of the supply system and the equipment rated impulse withstand voltage ..... 112

Table H.1 – Operating current and power loss of single-core copper cables with a permissible conductor temperature of 70 °C (ambient temperature inside the ASSEMBLY: 55 °C) ..... 113

Table H.2 – Reduction factor  $k_1$  for cables with a permissible conductor temperature of 70 °C (extract from IEC 60364-5-52:2009, Table B.52.14)..... 114

Table J.1 – Tests for EMC immunity for environment A (see J.10.12.1)..... 120

Table J.2 – Tests for EMC immunity for environment B (see J.10.12.1)..... 121

Table J.3 – Acceptance criteria when electromagnetic disturbances are present.....	122
Table K.1 – Maximum disconnecting times for TN systems .....	125
Table L.1 – Minimum clearances in air .....	126
Table L.2 – Minimum creepage distances .....	126
Table M.1 – North American temperature rise limits .....	127
Table N.1 – Operating current and power loss of bare copper bars with rectangular cross-section, run horizontally and arranged with their largest face vertical, frequency 50 Hz to 60 Hz (ambient temperature inside the ASSEMBLY: 55 °C, temperature of the conductor 70 °C).....	128
Table N.2 – Factor $k_4$ for different temperatures of the air inside the ASSEMBLY and/or for the conductors .....	129

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES –

### Part 1: General rules

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International Standard IEC 61439-1 has been prepared by subcommittee 17D: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

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

This second edition includes the following significant technical changes with respect to the last edition of IEC 61439-1:

- revision of service conditions in Clause 7;
- numerous changes regarding verification methods in Clause 10;
- modification of routine verification in respect of clearances and creepage distances (see 11.3);

- adaption of the tables in Annex C and Annex D to the revised requirements and verification methods;
- revision of the EMC requirements in Annex J;
- shifting of tables from Annex H to new Annex N;
- new Annex O with guidance on temperature rise verification;
- new Annex P with a verification method for short-circuit withstand strength (integration of the content of IEC/TR 61117);
- update of normative references;
- general editorial review.

NOTE It should be noted that when a dated reference to IEC 60439-1 is made in another Part of the IEC 60439 series of assembly standards not yet transferred into the new IEC 61439 series, the superseded IEC 60439-1 still applies (see also the Introduction below).

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

FDIS	Report on voting
17D/441/FDIS	17D/446/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.

In this standard, terms written in small capitals are defined in Clause 3.

The “in some countries” notes regarding differing national practices are contained in the following subclauses:

- 5.4
- 8.2.2
- 8.3.2
- 8.3.3
- 8.4.2.3
- 8.5.5
- 8.6.6
- 8.8
- 9.2
- 10.11.5.4
- 10.11.5.6.1
- Annex L
- Annex M

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61439 series, under the general title *Low-voltage switchgear and controlgear assemblies*, 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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## INTRODUCTION

The purpose of this standard is to harmonize as far as practicable all rules and requirements of a general nature applicable to low-voltage switchgear and controlgear assemblies (ASSEMBLIES) in order to obtain uniformity of requirements and verification for ASSEMBLIES and to avoid the need for verification to other standards. All those requirements for the various ASSEMBLIES standards which can be considered as general have therefore been gathered in this basic standard together with specific subjects of wide interest and application, e.g. temperature rise, dielectric properties, etc.

For each type of low-voltage switchgear and controlgear assembly only two main standards are necessary to determine all requirements and the corresponding methods of verification:

- this basic standard referred to as “Part 1” in the specific standards covering the various types of low-voltage switchgear and controlgear assemblies;
- the specific ASSEMBLY standard hereinafter also referred to as the relevant ASSEMBLY standard.

For a general rule to apply to a specific ASSEMBLY standard, it should be explicitly referred to by quoting the relevant clause or sub-clause number of this standard followed by “Part 1” e.g. “9.1.3 of Part 1”.

A specific ASSEMBLY standard may not require and hence need not call up a general rule where it is not applicable, or it may add requirements if the general rule is deemed inadequate in the particular case but it may not deviate from it unless there is substantial technical justification detailed in the specific ASSEMBLY standard.

Where in this standard a cross-reference is made to another clause, the reference is to be taken to apply to that clause as amended by the specific ASSEMBLY standard, where applicable.

Requirements in this standard that are subject to agreement between the ASSEMBLY manufacturer and the user are summarised in Annex C (informative). This schedule also facilitates the supply of information on basic conditions and additional user specifications to enable proper design, application and utilization of the ASSEMBLY.

For the new re-structured IEC 61439 series, the following parts are envisaged:

- a) IEC 61439-1: General rules
- b) IEC 61439-2: Power switchgear and controlgear ASSEMBLIES (PSC-ASSEMBLIES)
- c) IEC 61439-3: Distribution boards (to supersede IEC 60439-3)
- d) IEC 61439-4: ASSEMBLIES for construction sites (to supersede IEC 60439-4)
- e) IEC 61439-5: ASSEMBLIES for power distribution (to supersede IEC 60439-5)
- f) IEC 61439-6: Busbar trunking systems (to supersede IEC 60439-2)
- g) IEC/TR 61439-0: Guidance to specifying ASSEMBLIES.

This list is not exhaustive; additional Parts may be developed as the need arises.