SLOVENSKI STANDARD
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Sestavi nizkonapetostnih stikalnih in krmilnih naprav - 6. del: Zbiralčni povezovalni sistemi (zbiralčna vodila) (IEC 61439-6:2012)

Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways) (IEC 61439-6:2012)

Niederspannungs-Schaltgerätekombinationen - Teil 6: Schienenverteilersysteme (busways) (CEI 61439-6:2012)

Ensembles d'appareillage à basse tension - Partie 6: Systèmes de canalisation préfabriquée (IEC 61439-6:2012)

Ta slovenski standard je istoveten z: **EN 61439-6:2012**

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear

SIST EN 61439-6:2012 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems (busways) (IEC 61439-6:2012)

Ensembles d'appareillage à basse tension - Partie 6: Systèmes de canalisation préfabriquée (CEI 61439-6:2012)

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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.

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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 17D/452/FDIS, future edition 1 of IEC 61439-6, prepared by IEC/TC SC 17D "Low-voltage switchgear and controlgear assemblies" of IEC TC 17 "Switchgear and controlgear" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61439-6:2012.

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)	2013-03-27
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-06-27

This document supersedes EN 60439-2:2000 + A1:2005.

EN 61439-6:2012 includes the following significant technical changes with respect to EN 60439-2:2000 + A1:2005:

- alignment of the second edition of EN 61439-1:2011 regarding the structure and technical content, as applicable;
- introduction of new verifications, accordingly;
- correction of inconsistencies in resistance, reactance and impedance measurements and calculations;
- numerous editorial improvements.

This standard is to be read in conjunction with EN 61439-1:2011.

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.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 61439-6:2012 was approved by CENELEC as a European Standard without any modification.

The Bibliography of EN 61439-1:2011 is applicable with the addition of the following notes for the standards indicated:

IEC 60570:2003	NOTE	Harmonised as EN 60570:2003 (modified).
IEC 60909-0:2001	NOTE	Harmonised as EN 60909-0:2001 (not modified).
IEC 61439 series	NOTE	Harmonised as EN 61439 series (partly modified).
IEC 61534 series	NOTE	Harmonised as EN 61534 series (not modified).

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.

This clause of EN 61439-1:2011 is applicable with the addition of the following references:

Publication	Year	Title	EN/HD	Year
IEC 60332-3-10	2000	Tests on electric and optical fibre cables under fire conditions - Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables - Apparatus	EN 60332-3-10[1)]	2009
IEC 60439-2	2000	Low-voltage switchgear and controlgear assemblies - Part 2: Particular requirements for busbar trunking systems (busways)	EN 60439-2	2000
IEC 61439-1	2011	Low-voltage switchgear and controlgear assemblies - Part 1: General rules	EN 61439-1	2011
IEC 61786	1998	Measurement of low-frequency magnetic and electric fields with regard to exposure of human beings - Special requirements for instruments and guidance for measurement	-	-
ISO 834-1	1999	Fire-resistance tests - Elements of building construction - Part 1: General requirements	-	-

[1)] EN 60332-3-10 includes A1 to IEC 60332-3-10.

Annex ZZ
(informative)

Coverage of Essential Requirements of EU Directive 2004/108/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant essential requirements as given in Article 1 of Annex I of the EU Directive 2004/108/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

IEC 61439-6

Edition 1.0 2012-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage switchgear and controlgear assemblies – Part 6: Busbar trunking systems (busways)

Ensembles d'appareillage à basse tension – Partie 6: Systèmes de canalisation préfabriquée

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES –

Part 6: Busbar trunking systems (busways)

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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International Standard IEC 61439-6 has been prepared by subcommittee 17D: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 17: Switchgear and controlgear.

This first edition of IEC 61439-6 cancels and replaces the third edition of IEC 60439-2 (2000) and its Amendment 1 (2005), and constitutes a technical revision.

This edition of IEC 61439-6 includes the following significant technical changes with respect to the latest edition of IEC 60439-2:

- alignment on the second edition of IEC 61439-1 (2011) regarding the structure and technical content, as applicable;
- introduction of new verifications, accordingly;
- correction of inconsistencies in resistance, reactance and impedance measurements and calculations;
- numerous editorial improvements.

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

FDIS	Report on voting
17D/452/FDIS	17D/454/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 the second edition of IEC 61439-1. The provisions of the general rules dealt with in IEC 61439-1 (hereinafter referred to as Part 1) are only applicable to this standard insofar as they are specifically cited. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 is to be adapted accordingly.

Subclauses that are numbered with a 101 (102, 103 etc.) suffix are additional to the same subclause in Part 1.

Tables and figures in this Part 6 that are new are numbered starting with 101.

New annexes in this Part 6 are lettered AA, BB, etc.

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

5.4

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.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES –

Part 6: Busbar trunking systems (busways)

1 Scope

NOTE 1 Throughout this part, the abbreviation BTS is used for a busbar trunking system. Where reference to Part 1 is made, the term ASSEMBLY therefore reads as "BTS".

This part of IEC 61439 lays down the definitions and states the service conditions, construction requirements, technical characteristics and verification requirements for low voltage BTS (see 3.101) as follows:

- BTS for which the rated voltage does not exceed 1 000 V in case of a.c. or 1 500 V in case of d.c.;
- BTS intended for use in connection with the generation, transmission, distribution and conversion of electric energy, and for the control of electric energy consuming equipment;
- BTS designed for use under special service conditions, for example in ships, in rail vehicles, and for domestic applications (operated by unskilled persons), provided that the relevant specific requirements are complied with;

  NOTE 2 Supplementary requirements for BTS in ships are covered by IEC 60092-302.
- BTS designed for electrical equipment of machines. Supplementary requirements for BTS forming part of a machine are covered by the IEC 60204 series.

This standard applies to all BTS whether they are designed, manufactured and verified on a one-off basis or fully standardized and manufactured in quantity.

The manufacture and/or assembly may be carried out by a manufacturer other than the original manufacturer (see 3.10.1 and 3.10.2 of Part 1).

This standard does not apply to individual devices and self-contained components, such as motor starters, fuse switches, electronic equipment, etc. which will comply with the relevant product standard.

This standard does not apply to the specific types of ASSEMBLIES covered by other parts of the IEC 61439 series, to supply track systems in accordance with IEC 60570, to cable trunking and ducting systems in accordance with the IEC 61084 series, nor to power track systems in accordance with the IEC 61534 series.

2 Normative references

This clause of Part 1 is applicable except as follows.

Addition:

IEC 60332-3-10:2000, *Tests on electric and optical fibre cables under fire conditions – Part 3-10: Test for vertical flame spread of vertically-mounted bunched wires or cables – Apparatus*

IEC 60439-2:2000, *Low-voltage switchgear and controlgear assemblies – Part 2: Particular requirements for busbar trunking systems (busways)*

IEC 61439-1:2011, *Low-voltage switchgear and controlgear assemblies – Part 1: General rules*

IEC 61786:1998, *Measurement of low-frequency magnetic and electric fields with regard to exposure of human beings – Special requirements for instruments and guidance for measurements*

ISO 834-1:1999, *Fire-resistance tests – Elements of building construction – Part 1: General requirements*

3 Terms and definitions

This clause of Part 1 is applicable except as follows.

Additional definitions:

3.101
busbar trunking system
BTS
busway
enclosed ASSEMBLY used to distribute and control electrical energy for all types of loads, intended for industrial, commercial and similar applications, in the form of a conductor system comprising busbars which are spaced and supported by insulating material in a duct, trough or similar enclosure

[SOURCE: IEC 60050-441:1984, 441-12-07 modified]

Note 1 to entry: See 3.1.1 of Part 1 for the definition of ASSEMBLY.

Note 2 to entry: The BTS may consist of a full range of mechanical and electrical components such as:

– busbar trunking units with or without tap-off facilities;
– phase transposition, expansion, flexible, feeder and adapter units;
– tap-off units;
– additional conductors for communication and/or control.

Note 3 to entry: The term "busbar" does not presuppose the geometrical shape, size and dimensions of the conductor.

3.102
busbar trunking unit
BTU
unit of a BTS complete with busbars, their supports and insulation, external enclosure and any fixing and connecting means to other units, with or without tap-off facilities

Note 1 to entry: BTUs may have different geometrical shapes such as straight length, elbow, tee or cross.

3.103
busbar trunking run
BT run
number of BTUs connected together to form the BTS, excluding the tap-off units

3.104
busbar trunking unit with tap-off facilities
BTU with tap-off facilities
BTU designed to enable tap-off units to be installed at one or more points as predetermined by the original manufacturer

3.105
busbar trunking unit with trolley-type tap-off facilities
BTU with trolley-type tap-off facilities
BTU designed to permit the use of roller- or brush-type tap-off units

3.106
busbar trunking adapter unit
adapter BTU
BTU intended to connect two units of the same system but of different type or of different rated current

3.107
busbar trunking thermal expansion unit
thermal expansion BTU
BTU intended to permit a certain movement in the axial direction of the BT run due to thermal expansion of the system

Note 1 to entry: This term does not presuppose which elements permit movement, e.g. the conductors within the enclosure or both conductors and enclosure

3.108
busbar trunking phase transposition unit
phase transposition BTU
BTU intended to change the relative positions of the phase conductors in order to balance the inductive reactances or to transpose the phases (such as L1-L2-L3-N to N-L3-L2-L1)

3.109
flexible busbar trunking unit
flexible BTU
BTU having conductors and enclosures designed to allow a specified change of direction during installation

3.110
busbar trunking feeder unit
feeder BTU
BTU serving as an incoming unit

Note 1 to entry: See 3.1.9 of Part 1 for the definition of incoming unit.

3.111
tap-off unit
outgoing unit, either fixed or removable, for tapping-off power from the BTU

Note 1 to entry: See 3.1.10, 3.2.1 and 3.2.2 of Part 1 for the definition of outgoing unit, fixed part and removable part.

Note 2 to entry: A plug-in tap-off unit is a removable tap-off unit (see 8.5.2) which can be connected or disconnected by manual operation

3.112
busbar trunking unit for building movements
BTU for building movements
BTU intended to allow for building movements due to thermal expansion, contraction and/or flexing of the building

3.113
busbar trunking fire barrier unit
fire barrier BTU
BTU or a part of, intended to prevent the propagation of fire through building divisions for a specified time under fire conditions