

### SLOVENSKI STANDARD SIST EN IEC 61439-7:2021

01-februar-2021

Sestavi nizkonapetostnih stikalnih in krmilnih naprav - 7. del: Sestavi za posebno uporabo, na primer za marine, prostore za kampiranje, tržnice, napajalne postaje za električna vozila (IEC 61439-7:2018+COR1:2019)

Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations (IEC 61439-7:2018+COR1:2019)

Niederspannungs-Schaltgerätekombinationen - Teil 7: Schaltgerätekombinationen für bestimmte Anwendungen wie Marinas, Campingplätze, Marktplätze, Ladestationen für Elektrofahrzeuge (IEC 61439-7:2018+COR1:2019)

#### SIST EN IEC 61439-7:2021

Ensembles d'appareillage à basse tension - Partie 7. Ensembles pour installations publiques particulières telles que les marinas, les terrains de camping, les marchés et les emplacements analogues et pour bornes de charge de véhicules électriques (IEC 61439-7:2018+COR1:2019)

Ta slovenski standard je istoveten z: EN IEC 61439-7:2020

ICS:

29.130.20 Nizkonapetostne stikalne in Low voltage switchgear and

krmilne naprave controlgear

SIST EN IEC 61439-7:2021 de,fr

**SIST EN IEC 61439-7:2021** 

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 61439-7:2021 https://standards.iteh.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61fbe7cd2539aa/sist-en-iec-61439-7-2021

EUROPEAN STANDARD NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

**EN IEC 61439-7** 

May 2020

ICS 29.130.20

#### **English Version**

Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations (IEC 61439-7:2018 + COR1:2019)

Ensembles d'appareillage à basse tension - Partie 7:
Ensembles pour installations publiques particulières telles
que les marinas, les terrains de camping, les marchés et les
emplacements analogues et pour bornes de charge de
véhicules électriques
(IEC 61439-7:2018 + COR1:2019)

Niederspannungs-Schaltgerätekombinationen - Teil 7: Schaltgerätekombinationen für bestimmte Anwendungen wie Marinas, Campingplätze, Marktplätze, Ladestationen für Elektrofahrzeuge (IEC 61439-7:2018 + COR1:2019)

This European Standard was approved by CENELEC on 2019-01-10. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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.

| Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions. | Control of the CEN-CENELEC Management Centre has the same status as the official versions | Control of the CEN-CENELEC Management Centre has the same status as the official version | Control of the CEN-CENELEC Management Centre | C

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

#### EN IEC 61439-7:2020 (E)

#### **European foreword**

The text of document 121B/74/FDIS, future edition 1 of IEC 61439-7, prepared by SC 121B "Low-voltage switchgear and controlgear assemblies" of IEC/TC 121 "Switchgear and controlgear and their assemblies for low voltage" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61439-7:2020.

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
- latest date by which the national standards conflicting with the document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC 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.

### (standards.iteh.ai)

#### **Endorsement notice**

SIST EN IEC 61439-7:2021

https://standards.iteh.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61-

The text of the International Standard IEC 61439-7:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60364-7-708 NOTE Harmonized as HD 60364-7-708
IEC 60364-7-709 NOTE Harmonized as HD 60364-7-709
IEC 60364-7-722 NOTE Harmonized as HD 60364-7-722
IEC 60364-7-740 NOTE Harmonized as HD 60364-7-740
IEC 60670-24 NOTE Harmonized as EN 60670-24
IEC 61439-3 NOTE Harmonized as EN 61439-3
IEC 61851-1:2017 NOTE Harmonized as EN IEC 61851-1:2019 (not modified)
IEC 61851-23 NOTE Harmonized as EN 61851-23

EN IEC 61439-7:2020 (E)

### **Annex ZA**

(normative)

## Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Clause 2 of IEC 61439-1:2011 is applicable except as follows.

#### Addition:

<u>Publication</u>	<u>Year</u>	i <sup>Title</sup> h STANDARD PREVIEW <sup>EN/HD</sup>	<u>Year</u>		
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea EN 60068-2-27 and guidance: Shock	-		
IEC 60068-2-75		Environmental testing + Raft 2-75: Tests - Test Eh: EN 60068-2-75 os Hammer tests i/catalog/standards/sist/117cd2a9-375b-42fe-9e61-	-		
fbe7cd2539aa/sist-en-iec-61439-7-2021					
IEC 61439-1	2011	Low-voltage switchgear and controlgear EN 61439-1 assemblies - Part 1: General rules	2011		

**SIST EN IEC 61439-7:2021** 

## iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN IEC 61439-7:2021 https://standards.iteh.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61fbe7cd2539aa/sist-en-iec-61439-7-2021



IEC 61439-7

Edition 1.0 2018-12

## INTERNATIONAL STANDARD

# NORME INTERNATIONALE



Low-voltage switchgear and controlgear assemblies—IEW
Part 7: Assemblies for specific applications such as marinas, camping sites,
market squares, electric vehicle charging stations

SIST EN IEC 61439-7:2021

Ensembles d'appareillage à basse tension ist/117cd2a9-375b-42fe-9e61-

Partie 7: Ensembles pour installations publiques particulières telles que les marinas, les terrains de camping, les marchés et les emplacements analogues et pour bornes de charge de véhicules électriques

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.130.20 ISBN 978-2-8322-6335-8

Warning! Make sure that you obtained this publication from an authorized distributor. Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

### CONTENTS

FOF	REWORD	3			
1	Scope	5			
2	Normative references	6			
3	Terms and definitions	6			
4	Symbols and abbreviations	8			
5	Interface characteristics	9			
6	Information	12			
7	Service conditions	13			
8	Constructional requirements	13			
9	Performance requirements	15			
10	Design verification	15			
11	Routine verification	24			
Ann	exes	25			
	ex AA (informative) Items subject to agreement between the ASSEMBLY				
	nufacturer and the user				
Ann	ex BB (informative) Design verification  ex CC (normative) Endurance of the individual switching device	30			
	ex DD (informative) Examples of ASSEMBLES in accordance with 5.701.1.1				
	ex EE (informative) List of notes concerning certain countries				
Bibli	iographySIST EN IEC 61439-7:2021 https://standards.iteh.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61-	38			
	fbe7cd2539aa/sist-en-iec-61439-7-2021				
	ure 701 – Diagram of test to verify the resistance to static load				
_	ire 702 – Diagram of test to verify the mechanical strength of doors				
_	ure 703 – Sandbag for test to verify the resistance to shock load				
	ure 704 – Diagram of test to verify resistance to shock load				
_	re 705 – Diagram of test to verify resistance to torsional stress	22			
_	re 706 – Striker element for test of resistance to mechanical shock impacts ced by sharp-edged objects	23			
	re CC.1 – Test circuit for endurance of the individual switching device test				
•	re CC.2 – Informative wave shape of inrush current for tests in accordance with	00			
	ex CC	34			
Figu	re DD.1 – Examples of ASSEMBLIES according to 5.701.1.1	35			
Tab	le 701 – Values of assumed loading	9			
Tab	Table 702 – Mechanical tests				
Tab	le AA.1 – Items subject to agreement between the ASSEMBLY manufacturer and the				
	٢				
Tab	le BB.1 – List of design verifications to be performed	30			

#### INTERNATIONAL ELECTROTECHNICAL COMMISSION

#### LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES -

## Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations

#### **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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user. (Standards.1121.21)
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter https://standards.itch.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61-
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61439-7 has been prepared by subcommittee 121B: Low-voltage switchgear and controlgear assemblies, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage.

This first edition cancels and replaces the relevant technical specification published in 2014. It constitutes a technical revision.

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

- a) a new classification of the stationary ASSEMBLIES in accordance with their mechanical resistance (5.702);
- b) a new Table 702 with the list of tests and relevant severities to which the ASSEMBLIES have to be subjected according to the classification mentioned at point a);

IEC 61439-7:2018 © IEC 2018

c) a new Annex (CC) with a new endurance test for the individual switching devices intended to be used in AEVSC, if they have not already been tested against this requirement;

**-4** -

d) a general editorial review and a technical revision.

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

FDIS	Report on voting
121B/74/FDIS	121B/77/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This standard is to be read in conjunction with IEC 61439-1:2011. The provisions of the general rules dealt with in IEC 61439-1:2011 are applicable to this standard where they are specifically cited. When this document states "addition", "modification" or "replacement", the relevant text in IEC 61439-1:2011 is to be adapted accordingly.

Subclauses that are numbered with a 701 (702, 703, etc.) suffix are additional to the same subclause in IEC 61439-1:2011.

Tables and figures in this document that are new are numbered starting with 701.

New annexes in this document are lettered AA, BB, etc. REVIEW

In this standard, the term ASSEMBLY written in small capitals is defined in 3.1.1 of IEC 61439-1:2011.

The reader's attention is drawn to the fact that Annex EE lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this standard

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.

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

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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.

The contents of the corrigendum of August 2019 have been included in this copy.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

#### LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES -

## Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations

#### 1 Scope

Clause 1 of IEC 61439-1:2011 is applicable except as follows.

#### Replacement:

NOTE 1 Throughout this document, the terms AMHS (see 3.1.701), ACCS (see 3.1.702), AMPS (see 3.1.703), AEVCS (see 3.1.704) are used for low-voltage switchgear and controlgear assemblies intended for use respectively in marinas and similar locations (AMHS), campsites and similar locations (ACCS), market squares and other similar external public sites (AMPS) and charging stations (AEVCS). The term ASSEMBLIES is used for indicating all these boards.

This Part of IEC 61439 defines the specific requirements of ASSEMBLIES as follows:

- ASSEMBLIES for which the rated voltage does not exceed 1 000 V in the case of AC or 1 500 V in the case of DC;
- ASSEMBLIES intended for use in connection with the generation, transmission, distribution and conversion of electric energy, and for the control of electric energy consuming equipment;
- ASSEMBLIES operated by ordinary persons (e.g. plug and unplug of electrical equipment);
- ASSEMBLIES intended to be installed and used in market squares, marinas, campsites and other similar outdoor public sites;
- ASSEMBLIES intended for charging stations for electric vehicles (AEVCS) for Mode 3 and Mode 4. They are designed to integrate the functionality and additional requirements for electric vehicle conductive charging systems according to IEC 61851-1:2017.

For the correct SELECTION of the switching devices and components, the following standards apply:

- IEC 60364-7-709 (AMHS) OR
- IEC 60364-7-708 (ACCS) OR
- IEC 60364-7-740 (AMPS) or
- IEC 60364-7-722 (AEVCS).

This document applies to all ASSEMBLIES whether they are designed, manufactured and verified on a one-off basis or fully standardised and manufactured in quantity.

The manufacture and/or assembly may be carried out other than by the original manufacturer (see 3.10.1 of IEC 61439-1:2011).

This document does not apply to individual devices and self-contained components such as circuit breakers, fuse switches, electronic equipment, which comply with their relevant product standards.

NOTE 2 Where electrical equipment is directly connected to public low voltage supply system and equipped with a meter for billing of the legal provider of the low voltage supply, additional particular requirements based on national regulations apply, if any.

This document does not apply to boxes and enclosures for electrical accessories for household and similar fixed electrical installations as defined in IEC 60670-24.

**- 6 -**

IEC 61439-7:2018 © IEC 2018

### 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.

Clause 2 of IEC 61439-1:2011 is applicable except as follows.

Addition:

IEC 60068-2-27, Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock

IEC 60068-2-75, Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests

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

#### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61439-1:2011 and the following apply.

iTeh STANDARD PREVIEW

ISO and IEC maintain terminological databases for use in standardization at the following addresses: (Standards.iten.al)

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obpe-9e61-

fbe7cd2539aa/sist-en-iec-61439-7-2021

Clause 3 of IEC 61439-1:2011 is applicable except as follows.

#### 3.1 General terms

Additional terms:

#### 3.1.701

### low voltage switchgear and controlgear ASSEMBLY for marinas and harbors sites

combination of one or more transforming or switching devices together with associated control, measuring, signaling, protective and regulating equipment, with all their internal electrical and mechanical interconnections and structural parts, designed and built for use in all marinas, harbors and similar sites

Note 1 to entry: This note applies to the French language only.

#### 3.1.702

### low voltage switchgear and controlgear ASSEMBLY for camping and caravan sites ACCS

combination of one or more transforming or switching devices together with associated control, measuring, signaling, protective and regulating equipment, with all their internal electrical and mechanical interconnections and structural parts, designed and built for use in all camping, caravan and similar sites

Note 1 to entry: This note applies to the French language only.

IEC 61439-7:2018 © IEC 2018

**-7-**

#### 3.1.703

#### low voltage switchgear and controlgear ASSEMBLY for markets and other outdoor public sites

#### **AMPS**

combination of one or more transforming or switching devices together with associated control, measuring, signaling, protective and regulating equipment, with all their internal electrical and mechanical interconnections and structural parts, designed and built for use in all market squares and other similar outdoor public sites

Note 1 to entry: This note applies to the French language only.

#### 3.1.704

#### low voltage switchgear and controlgear ASSEMBLY for electric vehicles charging stations **AEVCS**

combination of one or more transforming or switching devices together with associated control, measuring, signaling, protective and regulating equipment, with all their internal electrical and mechanical interconnections and structural parts, designed and built for electric vehicle charging stations

Note 1 to entry: This note applies to the French language only.

#### 3.3 External design of ASSEMBLIES

Modification:

### iTeh STANDARD PREVIEW

This term of IEC 61439-1:2011 (sea not deploy ds.iteh.ai)

#### SIST EN IEC 61439-7:2021 3.3.2

dead-front ASSEMBILYS://standards.iteh.ai/catalog/standards/sist/117cd2a9-375b-42fe-9e61-

This term of IEC 61439-1:2011 fbe7cd2539aa/sist-en-iec-61439-7-2021 does not apply.

#### 3.5 Conditions of installation of ASSEMBLIES

#### 3.5.3

#### stationary ASSEMBLY

Additional terms:

#### 3.5.3.701

#### ground and floor mounted ASSEMBLY

stationary ASSEMBLY permanently connected to the supply with a part embedded in the ground or intended to be fixed directly on the floor or a base

Note 1 to entry: This type of ASSEMBLY includes poles and columns.

#### 3.5.3.702

#### wall mounted ASSEMBLY

stationary ASSEMBLY intended to be fixed directly on the wall while being permanently fixed to the supply

#### 3.5.4

#### movable ASSEMBLY

This term of IEC 61439-1:2011 does not apply.