SLOVENSKI STANDARD
SIST EN 62446-1:2016/A1:2018

01-december-2018

Fotonapetostni sistemi - Zahteve za preskušanje, dokumentiranje in vzdrževanje - 1. del: Sistemi, priključeni na omrežje -Dokumentacija, prevzemni preskusi in nadzor - Dopolnilo A1

Photovoltaic (PV) systems - Requirements for testing, documentation and maintenance - Part 1: Grid connected systems - Documentation, commissioning tests and inspection

Photovoltaik (PV) Systeme - Anforderungen an Prüfung, Dokumentation und Instandhaltung - Teil 1: Netzgekoppelte Systeme - Dokumentation, Inbetriebnahmeprüfung und Prüfanforderungen

Systèmes photovoltaïques (PV) - Exigences pour les essais, la documentation et la maintenance - Partie 1: Systèmes connectés au réseau électrique - Documentation, essais de mise en service et examen

Ta slovenski standard je istoveten z: **EN 62446-1:2016/A1:2018**

ICS:

27.160	Sončna energija	Solar energy engineering

SIST EN 62446-1:2016/A1:2018 **en**

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 62446-1:2016/A1

October 2018

ICS 27.160

English Version

Photovoltaic (PV) systems - Requirements for testing, documentation and maintenance - Part 1: Grid connected systems - Documentation, commissioning tests and inspection (IEC 62446-1:2016/A1:2018)

Systèmes photovoltaïques (PV) - Exigences pour les essais, la documentation et la maintenance - Partie 1: Systèmes connectés au réseau électrique - Documentation, essais de mise en service et examen
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Photovoltaik (PV) Systeme - Anforderungen an Prüfung, Dokumentation und Instandhaltung - Teil 1: Netzgekoppelte Systeme - Dokumentation, Inbetriebnahmeprüfung und Prüfanforderungen
(IEC 62446-1:2016/A1:2018)

This amendment A1 modifies the European Standard EN 62446-1:2016; it was approved by CENELEC on 2018-09-14. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

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

CENELEC

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

Ref. No. EN 62446-1:2016/A1:2018 E

European foreword

The text of document 82/1415/FDIS, future IEC 62446-1:2016/A1, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62446-1:2016/A1:2018.

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) 2019-06-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-09-14

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.

Endorsement notice

The text of the International Standard IEC 62446-1:2016/A1:2018 was approved by CENELEC as a European Standard without any modification.

Replace the Annex ZA of EN 62446-1:2016 by the following:

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.

Publication	Year	Title	EN/HD	Year
IEC 60364-6	-	Low voltage electrical installations - Part 6: Verification	HD 60364-6	-
IEC 60891	2009	Photovoltaic devices - Procedures for temperature and irradiance corrections to measured I-V characteristics	EN 60891	2010
IEC 61010	series	Safety requirements for electrical equipment for measurement, control, and laboratory use	EN 61010	series
IEC 61557	series	Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. - Equipment for testing, measuring or monitoring of protective measures	EN 61557	series
IEC 61730	series	Photovoltaic (PV) module safety qualification	EN IEC 61730	series
IEC 62548	2016	Photovoltaic (PV) arrays - Design requirements	-	-

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NORME INTERNATIONALE

AMENDMENT 1
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Part 1: Grid connected systems – Documentation, commissioning tests and inspection

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FOREWORD

This amendment has been prepared by the IEC technical committee 82: Solar photovoltaic energy systems.

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

FDIS	Report on voting
82/1415/FDIS	82/1426/RVD

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

The committee has decided that the contents of this amendment and the base 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.

2 Normative references

Replace the following standard:

IEC TS 62548:2013, *Photovoltaic (PV) arrays – Design requirements*

By:

IEC 62548:2016, *Photovoltaic (PV) arrays – Design requirements*

Add the following new note after IEC 62548:

NOTE In some countries IEC 60364-7-712 is preferred over IEC 62548. Both standards are expected to provide similar results.

Add the following new normative reference:

IEC 60891:2009, *Photovoltaic devices – Procedures for temperature and irradiance corrections to measured I-V characteristics*

3 Terms and definitions

Add the following new terms:

3.17
string wiring harness
prefabricated cable assembly that aggregates the output of multiple PV string conductors along a single main cable

Note 1 to entry: The harness may or may not include fusing on the individual string conductors. The wiring harness typically does not include a disconnect device in line.

Note 2 to entry: An IEC standard for string wiring harnesses is under development.

3.18
Harness Sub Array
HSA
group of PV strings connected in parallel using a string wiring harness

Note 1 to entry: For the purposes of this document, the HSA shall have a combined $I_{SC\text{-}STC}$ of no greater than 30 A and combine no more than 10 PV strings.

Note 2 to entry: In some subclauses of this document, HSA tests are presented as an alternative to individual string tests. The 30 A and 10 string limits defined herein set the limit where a HSA test is considered a safe and valid alternative to individual string tests.

Note 3 to entry: This note applies to the French language only.

4.9 Test results and commissioning data

Replace the existing text of this subclause by the following new text:

Copies of all test and commissioning data shall be provided. As a minimum, these shall include the results from the verification tests detailed in Clauses 5 to 9 of this document (see also model forms in Annexes A to C).

5 Verification

Replace “IEC TS 62548:2013” *by* “IEC 62548:2016” *throughout this clause*.

5.2.8 DC system – Selection and erection of electrical equipment

e) *Delete the first sentence of the note.*

5.3.3 Test regimes for systems with module level electronics

Add the following new note at end of this subclause:

NOTE Typically I-V curve testing and electroluminescence inspection are not possible for those systems. Module level data can be used to find performance problems on module level instead.

5.3.4 Category 1 test regime – All systems

Replace:

d) String open circuit voltage test.

e) String circuit current test (short circuit or operational).