SLOVENSKI STANDARD
SIST EN IEC 62477-2:2019

01-februar-2019

Varnostne zahteve za močnostne polprevodniške pretvorniške sisteme in opremo - 2. del: Močnostni polprevodniški pretvorniki iz 1000 V izmenično ali 1500 V enosmerno v 36 kV izmenično ali 54 kV enosmerno (IEC 62477-2:2018)

Safety Requirements for Power Electronic Converter Systems and Equipment - Part 2: Power Electronic Converters from 1000 V a.c. or 1500 V d.c. up to 36 kV a.c. or 54 kV d.c. (IEC 62477-2:2018)

Exigences de sécurité applicables aux systèmes et matériels électroniques de conversion de puissance - Partie 2: Convertisseurs électroniques de puissance entre 1 000 V en courant alternatif ou 1 500 V en courant continu et 36 kV en courant alternatif ou 54 kV en courant continu (IEC 62477-2:2018)

Exigences de sécurité applicables aux systèmes et matériels électroniques de conversion de puissance - Partie 2: Convertisseurs électroniques de puissance entre 1 000 V en courant alternatif ou 1 500 V en courant continu et 36 kV en courant alternatif ou 54 kV en courant continu (IEC 62477-2:2018)

Ta slovenski standard je istoveten z: **EN IEC 62477-2:2018**

ICS:

29.200	Usmerniki. Pretvorniki. Stabilizirano električno napajanje	Rectifiers. Convertors. Stabilized power supply

SIST EN IEC 62477-2:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62477-2

September 2018

ICS 29.200

English Version

Safety requirements for power electronic converter systems and equipment - Part 2: Power electronic converters from 1 000 V AC or 1 500 V DC up to 36 kV AC or 54 kV DC (IEC 62477-2:2018)

Exigences de sécurité applicables aux systèmes et matériels électroniques de conversion de puissance - Partie 2: Convertisseurs électroniques de puissance entre 1 000 V en courant alternatif ou 1 500 V en courant continu et 36 kV en courant alternatif ou 54 kV en courant continu (IEC 62477-2:2018)

Sicherheitsanforderungen an Leistungshalbleiter-Umrichtersysteme und -Betriebsmittel - Teil 2: Leistungselektronik Umrichter von 1 000 V a.c. oder 1 500 V d.c. bis 36 kV a.c. oder 54 kV d.c. (IEC 62477-2:2018)

This European Standard was approved by CENELEC on 2018-07-26. 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.

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 IEC 62477-2:2018 E

European foreword

The text of document 22/290/FDIS, future edition 1 of IEC 62477-2, prepared by IEC/TC 22 "Power electronic systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62477-2:2018.

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) 2019-04-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2021-07-26

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 62477-2:2018 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 60071-1:2006	NOTE	Harmonized as EN 60071-1:2006 (not modified)
IEC 60071-2:1996	NOTE	Harmonized as EN 60071-2:1997 (not modified)
IEC 60146-1-1	NOTE	Harmonized as EN 60146-1-1
IEC 60243-1:2013	NOTE	Harmonized as EN 60243-1:2013 (not modified)
IEC 60529:1989	NOTE	Harmonized as EN 60529:1991 (not modified)
IEC 60721-3 series	NOTE	Harmonized as EN 60721-3 series
IEC 60990:2016	NOTE	Harmonized as EN 60990:2016 (not modified)
IEC 61936-1	NOTE	Harmonized as EN 61936-1
IEC 62271-200:2011	NOTE	Harmonized as EN 62271-200:2012 (not modified)
IEC 62271-201:2014	NOTE	Harmonized as EN 62271-201:2014 (not modified)

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 60204-11	-	Safety of machinery - Electrical equipment of machines - Part 11: Requirements for equipment for voltages above 1 000 V AC or 1 500 V DC and not exceeding 36 kV	-	-
IEC 60417-DB	-	Graphical symbols for use on equipment	-	-
IEC 60617-DB	-	Graphical symbols for diagrams	-	-
IEC 60730-1	-	Automatic electrical controls - Part 1: General requirements	EN 60730-1	-
IEC 61230	-	Live working - Portable equipment for earthing or earthing and short-circuiting	EN 61230	-
IEC 62271-102	-	High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches	EN IEC 62271-102	-
IEC 62477-1	2012	Safety requirements for power electronic converter systems and equipment - Part 1: General	EN 62477-1	2012
-	-		+ A11	2014
+ A1	2016		+ A1	2017
IEC Guide 104	-	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
ISO/IEC Guide 51	2014	Safety aspects - Guidelines for their inclusion in standards	-	-

IEC 62477-2

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION
PUBLICATION GROUPÉE DE SÉCURITÉ

Safety requirements for power electronic converter systems and equipment – Part 2: Power electronic converters from 1 000 V AC or 1 500 V DC up to 36 kV AC or 54 kV DC

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CONTENTS

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SAFETY REQUIREMENTS FOR POWER ELECTRONIC CONVERTER SYSTEMS AND EQUIPMENT –

Part 2: Power electronic converters from 1 000 V AC or 1 500 V DC up to 36 kV AC or 54 kV DC

FOREWORD

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International Standard IEC 62477-2 has been prepared by IEC technical committee 22: Power electronic systems and equipment.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
22/290/FDIS	22/293/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 document has been drafted in accordance with the ISO/IEC Directives, Part 2.

It has the status of a group safety publication in accordance with IEC Guide 104.

This International Standard is to be used in conjunction with IEC 62477-1:2012 and IEC 62477-1:2012/AMD1:2016.

This document supplements or modifies the corresponding clauses in IEC 62477-1:2012 and IEC 62477-1:2012/AMD1:2016. Where this document states "addition", "modification" or "replacement", the relevant requirement, test specification or explanatory matter in IEC 62477-1:2012 and IEC 62477-1:2012/AMD1:2016 is adapted accordingly. Where no change is necessary, this document indicates that the relevant clause or subclause applies. Where this document states “does not apply” this clause of the mentioned version of IEC 62477-1 does not apply to any section of the equipment. Products that are designed to be compliant to IEC 62477-1:2012 and IEC 62477-1:2012/AMD1:2016 are acceptable as components within the equipment designed to this document. Additional subclauses, tables and figures are numbered starting at 101. Additional annexes are numbered with double capital characters, starting with AA.

A list of all the parts in the IEC 62477 series, published under the general title *Safety requirements for power electronic converter systems and equipment* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INTRODUCTION

This part of IEC 62477 relates to products that include power electronic converters, with a rated system voltage from 1 000 V AC or 1 500 V DC up to 36 kV AC or 54 kV DC. It specifies requirements to reduce risks of fire, electric shock, thermal, energy and mechanical hazards, except functional safety as defined in IEC 61508 (all parts). The objectives of this document are to establish a common terminology and basis for the safety requirements of products that contain power electronic converters across several IEC technical committees.

This document has been developed with the intention

- to be used as a reference document for product committees inside TC 22 in the development of product standards for power electronic converter systems and equipment;
- to replace IEC 62103 as a product family standard providing minimum requirements for safety aspects of power electronic converter systems and equipment in apparatus for which no product standard exists, and

  NOTE The scope of IEC 62103 contains reliability aspects, which are not covered by this document.

- to be used as a reference document for product committees outside TC 22 in the development of product standards of power electronic converter systems and equipment intented renewable energy sources. Especially TC 82, TC 88, TC 105 and TC 114 have been identified as relevant technical committees at the time of publication.

Technical committees using this document should carefully consider the relevance of each paragraph in this document for the product under consideration and reference, add, replace or modify requirement as relevant. Product specific topics not covered by this document are in the responsibility of the technical committees using this document as reference document.

This document will not take precedence on any product specific standard according to IEC Guide 104. IEC Guide 104 provides information about the responsibility of product committees to use group safety standards for the development of their own product standards.

The most significant differences compared to IEC 62477-1:2012 and IEC 62477-1:2012/AMD1:2016 are the following:

- this document extends the range of rated system voltages for high-voltage (HV) up to 36 kV AC or 54 kV DC;
- this document adds arc fault rating label requirements with testing instructions.