



SLOVENSKI STANDARD
SIST EN IEC 62477-1:2024

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**Varnostne zahteve za močnostne elektrone pretvorniške sisteme in opreme - 1.
del: Splošno (IEC 62477-1:2022)**

Safety requirements for power electronic converter systems and equipment - Part 1:
General (IEC 62477-1:2022)

Sicherheitsanforderungen an Leistungshalbleiter-Umrichtersysteme und -betriebsmittel -
Teil 1: Allgemeines (IEC 62477-1:2022)

Exigences de sécurité applicables aux systèmes et matériels électroniques de
conversion de puissance - Partie 1: Généralités (IEC 62477-1:2022)

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**Safety requirements for power electronic converter systems and equipment - Part 1: General
(IEC 62477-1:2022)**

Exigences de sécurité applicables aux systèmes et matériels électroniques de conversion de puissance -
Partie 1: Généralités
(IEC 62477-1:2022)

Sicherheitsanforderungen an Leistungselektronik-Umrichtersysteme und -betriebsmittel - Teil 1: Allgemeines
(IEC 62477-1:2022)

This European Standard was approved by CENELEC on 2023-08-09. 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.

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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

EN IEC 62477-1:2023 (E)**European foreword**

The text of document 22/355/FDIS, future edition 2 of IEC 62477-1, 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 62477-1:2023.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-05-09 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2026-08-09 document have to be withdrawn

This document supersedes EN 62477-1:2012 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 62477-1:2022 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 standard indicated:

IEC 60068-1:2013	NOTE Approved as EN 60068-1:2014 (not modified)
IEC 60068-2-14	NOTE Approved as EN IEC 60068-2-14
IEC 60068-2-31:2008	NOTE Approved as EN 60068-2-31:2008 (not modified)
IEC 60073:2002	NOTE Approved as EN 60073:2002 (not modified)
IEC 60085	NOTE Approved as EN 60085
IEC 60112:2020	NOTE Approved as EN IEC 60112:2020 (not modified)
IEC 60204-1:2016	NOTE Approved as EN 60204-1:2018
IEC 60216 (series)	NOTE Approved as EN 60216 (series)
IEC 60320-1:2015	NOTE Approved as EN 60320-1:2015 (not modified)
IEC 60332-1-2:2004	NOTE Approved as EN 60332-1-2:2004 (not modified) + A11:2016
IEC 60332-1-2:2004/A1:2015	NOTE Approved as EN 60332-1-2:2004/A1:2015 (not modified)
IEC 60332-1-3:2004	NOTE Approved as EN 60332-1-3:2004 (not modified)
IEC 60332-1-3:2004/A1:2015	NOTE Approved as EN 60332-1-3:2004/A1:2015 (not modified)
IEC 60332-2-2:2004	NOTE Approved as EN 60332-2-2:2004 (not modified)

IEC 60364-1:2005	NOTE	Approved as HD 60364-1:2008 + A11:2017
IEC 60364-4-44:2007	NOTE	Approved as HD 60364-4-444:2010
IEC 60364-4-44:2007/A1:2015	NOTE	Approved as HD 60364-4-443:2016
IEC 60364-5-52:2009	NOTE	Approved as HD 60364-5-52:2011 + A11:2017
IEC 60445:2021	NOTE	Approved as EN IEC 60445:2021 (not modified)
IEC 60695-10-3:2016	NOTE	Approved as EN 60695-10-3:2016 (not modified)
IEC 60695-11-5:2016	NOTE	Approved as EN 60695-11-5:2017 (not modified)
IEC 60695-11-10:2013	NOTE	Approved as EN 60695-11-10:2013 (not modified)
IEC 60721 (series)	NOTE	Approved as EN 60721 (series)
IEC 60865 (series)	NOTE	Approved as EN 60865 (series)
IEC 60865-1	NOTE	Approved as EN 60865-1
IEC 60909 (series)	NOTE	Approved as EN 60909 (series)
IEC 60909-0:2016	NOTE	Approved as EN 60909-0:2016 (not modified)
IEC 60947 (series)	NOTE	Approved as EN IEC 60947 (series)
IEC 60947-1:2020	NOTE	Approved as EN IEC 60947-1:2021 (not modified)
IEC 60947-2:2016	NOTE	Approved as EN 60947-2:2017 (not modified)
IEC 60947-2:2016/A1:2019	NOTE	Approved as EN 60947-2:2017/A1:2020 (not modified)
IEC 60947-6-1:2021	NOTE	Approved as EN IEC 60947-6-1:2023 (not modified)
IEC 60691	NOTE	Approved as EN 60691
IEC 61082-1	NOTE	Approved as EN 61082-1
IEC 61084 (series)	NOTE	Approved as EN IEC 61084 (series)
IEC 61140:2016	NOTE	Approved as EN 61140:2016 (not modified)
IEC 61148:2011	NOTE	Approved as EN 61148:2012 (not modified)
IEC 61386 (series)	NOTE	Approved as EN 61386 (series)
IEC 61439-1:2020	NOTE	Approved as EN IEC 61439-1:2021 (not modified)
IEC 61508 (series)	NOTE	Approved as EN 61508 (series)
IEC 61558 (series)	NOTE	Approved as EN 61558 (series)
IEC 61643-11:2011	NOTE	Approved as EN 61643-11:2012 + A11:2018
IEC 61643-12	NOTE	Approved as CLC/TS 61643-12
IEC 62311:2019	NOTE	Approved as EN IEC 62311:2020 (not modified)
IEC/IEEE 82079-1:2019	NOTE	Approved as EN IEC/IEEE 82079-1:2020 (not modified)
ISO 9773:1998	NOTE	Approved as EN ISO 9773:1998 (not modified)
IEC 60127 (series)	NOTE	Approved as EN IEC 60127 (series)
IEC 60309-1	NOTE	Approved as EN IEC 60309-1

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IEC 60317 (series)	NOTE Approved as EN IEC 60317 (series)
IEC 60730 (series)	NOTE Approved as EN IEC 60730 (series)
IEC 60931 (series)	NOTE Approved as EN 60931 (series)
IEC 60940	NOTE Approved as EN 60940
IEC 60947 (series)	NOTE Approved as EN IEC 60947 (series)
IEC 60691	NOTE Approved as EN 60691
IEC 61008 (series)	NOTE Approved as EN 61008 (series)
IEC 61009 (series)	NOTE Approved as EN 61009 (series)
IEC 61010-1	NOTE Approved as EN 61010-1
IEC 61051-2	NOTE Approved as EN IEC 61051-2
IEC 61058-1	NOTE Approved as EN IEC 61058-1
IEC 61071	NOTE Approved as EN 61071
IEC 61439 (series)	NOTE Approved as EN IEC 61439 (series)
IEC 61558-2-16	NOTE Approved as EN IEC 61558-2-16
IEC 61810-1	NOTE Approved as EN 61810-1
IEC 61984	NOTE Approved as EN 61984
IEC 62368-1:2018	NOTE Approved as EN IEC 62368-1:2020 (not modified) + A11:2020
IEC 62423	NOTE Approved as EN 62423

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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.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-112	-	International Electrotechnical Vocabulary - Part 112: Quantities and units	-	-
IEC 60050-113	-	International Electrotechnical Vocabulary - Part 113: Physics for electrotechnology	-	-
IEC 60050-114	-	International Electrotechnical Vocabulary - Part 114: Electrochemistry	-	-
IEC 60050-151	-	International Electrotechnical Vocabulary - Part 151: Electrical and magnetic devices	-	-
IEC 60050-161	-	International Electrotechnical Vocabulary. Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-192	-	International electrotechnical vocabulary - Part 192: Dependability	-	-
IEC 60050-426	-	International Electrotechnical Vocabulary (IEV) - Part 426: Explosive atmospheres	-	-
IEC 60050-441	-	International Electrotechnical Vocabulary. Switchgear, controlgear and fuses	-	-
IEC 60050-442	-	International Electrotechnical Vocabulary - Part 442: Electrical accessories	-	-
IEC 60050-551	-	International Electrotechnical Vocabulary - Part 551: Power electronics	-	-
IEC 60050-601	-	International Electrotechnical Vocabulary. Chapter 601: Generation, transmission and distribution of electricity - General	-	-
IEC 60050-826	-	International Electrotechnical Vocabulary - Part 826: Electrical installations	-	-
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-52	2017	Environmental testing - Part 2-52: Tests ; Test Kb: Salt mist, cyclic (sodium chloride solution)	EN IEC 60068-2-52	2018
IEC 60068-2-68	1994	Environmental testing - Part 2-68: Tests - Test L: Dust and sand	EN 60068-2-68	1996
IEC 60068-2-78	2012	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2013
IEC 60320	series	Appliance couplers for household and similar general purposes	-	-
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	2017
+ A1	2017			
-	-		+ A11	2017
-	-		+ A12	2019
IEC 60364-5-54	2011	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	2011
-	-		+ A11	2017
+ A1	2021		+ A1	2022
IEC 60384-14	2013	Fixed capacitors for use in electronic equipment - Part 14: Sectional specification - Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	EN 60384-14	2013
IEC 60417	-	Graphical symbols for use on equipment. Index, survey and compilation of the single sheets.	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529	1991
-	-		+ corrigendum May	1993
+ A1	1999		+ A1	2000
+ A2	2013		+ A2	2013
IEC 60617	-	Standard data element types with associated classification scheme for electric components - Part 4: IEC reference collection of standard data element types and component classes	-	-
IEC 60664-1	2020	Insulation coordination for equipment within low-voltage supply systems - Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 60664-3	2016	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2017

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Publication	Year	Title	EN/HD	Year
IEC 60664-4	2005	Insulation coordination for equipment within low-voltage systems - Part 4: Consideration of high-frequency voltage stress	EN 60664-4	2006
-	-		+ corrigendum Oct.	2006
IEC 60695-2-10	2013	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2013
IEC 60695-2-11	2021	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end products (GWEPT)	EN IEC 60695-2-11	2021
IEC 60695-2-13	2010	Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials	EN 60695-2-13	2010
+ A1	2014		+ A1	2014
IEC 60695-10-2	2014	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test method	EN 60695-10-2	2014
IEC 60695-11-20	2015	Fire hazard testing - Part 11-20: Test flames - 500 W flame test method	EN 60695-11-20	2015
+ A1	1995		-	-
+ A2	1996		-	-
IEC 60721-3-3	1994	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations	-	-
+ A1	1995		-	-
+ A2	1996		-	-
IEC 60721-3-4	1995	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weatherprotected locations	-	-
+ A1	1996		-	-
IEC 60730-1 (mod)	2013	Automatic electrical controls - Part 1: General requirements	EN 60730-1	2016
+ A1	2015		+ A1	2019
+ A2	2020		+ A2	2022
IEC 60738-1-1	2008	Thermistors - Directly heated positive step-function temperature coefficient - Part 1-1: Blank detail specification - Current limiting application - Assessment level EZ	EN 60738-1-1	2008
IEC 60755	2017	General safety requirements for residual current operated protective devices	-	-
IEC 60799	2018	Electrical accessories - Cord sets and interconnection cord sets	EN IEC 60799	2021

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60947-7	series	Low-voltage switchgear and controlgear	EN 60947-7	series
IEC 60949	1988	Calculation of thermally permissible short-circuit currents, taking into account non-adiabatic heating effects	-	-
+ A1	2008		-	-
IEC 60990	2016	Methods of measurement of touch current and protective conductor current	EN 60990	2016
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61180	2016	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	2016
IEC 61189-3	2007	Test methods for electrical materials, printed boards and other interconnection structures and assemblies - Part 3: Test methods for interconnection structures (printed boards)	EN 61189-3	2008
IEC 61204-7	2016	Low-voltage switch mode power supplies - Part 7: Safety requirements	EN IEC 61204-7	2018
IEC 61558-1	2017	Safety of transformers, reactors, power supply units and combinations thereof - Part 1: General requirements and tests	EN IEC 61558-1	2019
IEC 62109-1	2010	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements	-	-
ISO/IEC Guide 51	2014	Safety aspects - Guidelines for their inclusion in standards	-	-
IEC Guide 104	2019	The preparation of safety publications and the use of basic safety publications and group safety publications	-	-
IEC Guide 116	2018	Guidelines for safety related risk assessment and risk reduction for low voltage equipment	-	-
ISO 3746	2010	Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Survey method using an enveloping measurement surface over a reflecting plane	EN ISO 3746	2010
ISO 3864	series	Safety colours and safety signs	-	-
ISO 3864-1	2011	Graphical symbols - Safety colours and safety signs - Part 1: Design principles for safety signs and safety markings	-	-
ISO 7000	-	Graphical symbols for use on equipment - Registered symbols	-	-
ISO 7010	-	Graphical symbols - Safety colours and safety signs - Registered safety signs	-	-
ISO 9614-1	1993	Acoustics - Determination of sound power levels of noise sources using sound intensity - Part 1: Measurement at discrete points	EN ISO 9614-1	2009



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