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BSI Standards Publication

Connectors for DC-application in photovoltaic systems - Safety requirements and tests

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National foreword

This British Standard is the UK implementation of EN 62852:2015, incorporating corrigendum February 2019. It is identical to IEC 62852:2014. It supersedes BS EN 50521:2008+A1:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/82, Photovoltaic Energy Systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Compliance with a British Standard cannot confer immunity from legal obligations.

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Amendments/corrigenda issued since publication

Date	Text affected
31 May 2015	This corrigendum renumbers BS IEC 62852:2014 as BS EN 62852:2015
28 February 2019	Implementation of CENELEC corrigendum February 2019: supersession details added to CENELEC title page and Foreword

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EUROPÄISCHE NORM

March 2015

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English Version

Connectors for DC-application in photovoltaic systems - Safety requirements and tests (IEC 62852:2014)

Connecteurs pour applications en courant continu pour systèmes photovoltaïques - Exigences de sécurité et essais
(IEC 62852:2014)

Steckverbinder für Gleichspannungsanwendungen in Photovoltaik-Systemen - Sicherheitsanforderungen und Prüfungen
(IEC 62852:2014)

This European Standard was approved by CENELEC on 2014-12-11. 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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

The text of document 82/878/FDIS, future edition 1 of IEC 62852, prepared by IEC/TC 82 "Solar photovoltaic energy systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62852:2015.

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) 2015-09-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-12-11

This document supersedes EN 50521:2008.

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.

Endorsement notice

The text of the International Standard IEC 62852:2014 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 60068-2-70:1995	NOTE	Harmonized as EN 60068-2-70:1996 (not modified).
IEC 60112:2003	NOTE	Harmonized as EN 60112:2003 (not modified).
IEC 60364-4-41:2005	NOTE	Harmonized as HD 60364-4-41:2007 (modified).
IEC 60364-5-51:2005	NOTE	Harmonized as HD 60364-5-51:2009 (modified).
IEC 60364-5-54:2011	NOTE	Harmonized as HD 60364-5-54:2011 (not modified).
IEC 61730-1:2004	NOTE	Harmonized as EN 61730-1:2007 (modified).
IEC 61730-2	NOTE	Harmonized as EN 61730-2.

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(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 1 When 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050	series	International Electrotechnical Vocabulary	-	-
IEC 60060-1	2010	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	2010
IEC 60068-1	2013	Environmental testing - Part 1: General and guidance	EN 60068-1	2014
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-75	1997	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60068-2-78	2012	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2013
IEC 60228	2004	Conductors of insulated cables	EN 60228	2005
-	-	-	+ corrigendum May	2005
IEC 60309-1	1999	Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements	EN 60309-1	1999
IEC 60352-2	2006	Solderless connections - Part 2: Crimped connections - General requirements, test methods and practical guidance	EN 60352-2	2006
IEC 60352-3	1993	Solderless connections - Part 3: Solderless accessible insulation displacement connections - General requirements, test methods and practical guidance	EN 60352-3	1994

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IEC 60352-4	1994	Solderless connections - Part 4: Solderless non-accessible insulation displacement connections - General requirements, test methods and practical guidance	EN 60352-4	1994
IEC 60352-5	2012	Solderless connections - Part 5: Press-in connections - General requirements, test methods and practical guidance	EN 60352-5	2012
IEC 60352-6	1997	Solderless connections - Part 6: Insulation piercing connections - General requirements, test methods and practical guidance	EN 60352-6	1997
IEC 60352-7	2002	Solderless connections - Part 7: Spring clamp connections - General requirements, test methods and practical guidance	EN 60352-7	2002
IEC 60364-7-712 -	2002 -	Electrical installations of buildings - Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems	HD 60364-7-712 + corrigendum Apr.	2005 2006
IEC 60512	series	Connectors for electronic equipment - Tests and measurements	EN 60512	series
IEC 60512-1	2001	Connectors for electronic equipment - Tests and measurements - Part 1: General	EN 60512-1	2001
IEC 60512-11-7	2003	Connectors for electronic equipment - Tests and measurements - Part 11- 7: Climatic tests - Test 11g: Flowing mixed gas corrosion test	EN 60512-11-7	2003
IEC 60529 -	1989 -	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corrigendum May	1991 1993
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60695-2-11	2014	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN 60695-2-11	2014
IEC 60695-11-10	2013	Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods	EN 60695-11-10	2013
IEC/TR 60943	1998	Guidance concerning the permissible temperature rise for parts of electrical equipment, in particular for terminals	-	-

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IEC 60998-2-3 (mod)	2002	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units	EN 60998-2-3	2004
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included)	EN 60999-1	2000
IEC 60999-2	2003	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units - Part 2: Particular requirements for clamping units for conductors above 35 mm ² up to 300 mm ² (included)	EN 60999-2	2003
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61140	2001	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2002
IEC 61210 (mod)	2010	Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements	EN 61210	2010
IEC 61215	2005	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	EN 61215	2005
IEC 61984	2008	Connectors - Safety requirements and tests	EN 61984	2009
IEC 62444 (mod)	2010	Cable glands for electrical installations	EN 62444	2013
IEC/TS 62548	-	Photovoltaic (PV) arrays - Design requirements	-	-
ISO 4892-2	-	Plastics - Methods of exposure to laboratory light sources - Part 2: Xenon-arc lamps	EN ISO 4892-2	-
ISO 4892-3	-	Plastics - Methods of exposure to laboratory light sources - Part 3: Fluorescent UV lamps	EN ISO 4892-3	-
ISO 6988	1985	Metallic and other non-organic coatings - Sulfur dioxide test with general condensation of moisture	EN ISO 6988	1994

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CONTENTS

FOREWORD	4
1 Scope	6
2 Normative references	6
3 Terms and definitions	8
4 Classification	12
4.1 General	12
4.2 Type of connector	12
4.3 Additional characteristics	12
5 Constructional requirements and performance	13
5.1 General	13
5.2 Marking and identification	13
5.2.1 Identification	13
5.2.2 Marking	13
5.2.3 Technical documentation	13
5.3 Provision against incorrect mating (non-intermateable)	14
5.4 Protection against electric shock	14
5.5 Terminations and connection methods	14
5.6 Resistance to deterioration	15
5.7 General design	15
5.8 Design of a free connector	15
5.9 Degree of protection (IP Code)	16
5.10 Dielectric strength	16
5.11 Mechanical and electrical durability	16
5.12 Range of ambient temperature	16
5.13 Temperature rise	16
5.14 Cable anchorage	16
5.15 Mechanical strength	17
5.16 Connector without locking device	17
5.17 Connector with locking device	17
5.18 Clearances and creepage distances	17
5.18.1 General	17
5.18.2 Clearances	18
5.18.3 Creepage distances	18
5.19 Insulation parts	20
5.19.1 General	20
5.19.2 Outer accessible parts	20
5.19.3 Inner parts	20
5.20 Current carrying parts and resistance against corrosion	20
6 Tests	20
6.1 General	20
6.2 Preparation of specimens	21
6.3 Performance of tests	22
6.3.1 General	22
6.3.2 Durability of marking	23
6.3.3 Protection against electric shock	23
6.3.4 Temperature rise	23

This is a preview of "BS EN 62852:2015". [Click here to purchase the full version from the ANSI store.](#)

6.3.5	Mechanical operation.....	23
6.3.6	Bending (flexing) test (see IEC 60309-1:1999, 24.4).....	24
6.3.7	Measurement of clearances and creepage distances	25
6.3.8	Dielectric strength.....	25
6.3.9	Corrosion test.....	26
6.3.10	Mechanical strength at lower temperatures.....	26
6.3.11	Change of temperature (IEC 60068-2-14 test Na)	26
6.3.12	Damp heat test.....	26
6.3.13	Insertion and withdrawal force	27
6.3.14	Effectiveness of connector coupling device.....	27
6.3.15	Terminations and connecting methods.....	27
6.4	Test schedule (routine test) for non-rewirable free connectors	28
6.5	Test schedule	28
Annex A (informative)	Warning symbols used on connectors	35
Annex B (normative)	Measurement of clearances and creepage distances.....	36
Bibliography	40
Figure 1	– Device for the bending test.....	25
Figure A.1	– Symbol "DO NOT DISCONNECT UNDER LOAD"	35
Figure A.2	– Symbol "DO NOT DISCONNECT UNDER LOAD" (IEC 60417-6070)	35
Figure B.1	– Examples of methods of measuring clearances and creepage distances.....	39
Table 1	– Values for cable anchorage testing.....	17
Table 2	– Rated impulse voltages and minimum clearances.....	18
Table 3	– Creepage distances for basic insulation.	19
Table 4	– Plan of specimens required for tests.....	21
Table 5	– Values of torque for screw-type clamping units.....	22
Table 6	– Mechanical test group A (test group A are separate tests).....	28
Table 7	– Service life test group B	29
Table 8	– Service life test group C	30
Table 9	– Thermal test group D (mated test specimen)	31
Table 10	– Climatic test group E (mated test specimen).....	32
Table 11	– Degree of protection, test group F	33
Table 12	– Insulation material, test group G.....	34
Table B.1	– Dimensions of X.....	36

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR DC-APPLICATION IN PHOTOVOLTAIC SYSTEMS – SAFETY REQUIREMENTS AND TESTS

FOREWORD

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International Standard IEC 62852 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

This International Standard is derived from EN 50521.

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

FDIS	Report on voting
82/878/FDIS	82/905/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.

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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.

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CONNECTORS FOR DC-APPLICATION IN PHOTOVOLTAIC SYSTEMS – SAFETY REQUIREMENTS AND TESTS

1 Scope

This International Standard applies to connectors for use in the d.c. circuits of photovoltaic systems according to class II of IEC 61140:2001 with rated voltages up to 1 500 V d.c. and rated currents up to 125 A per contact.

This standard applies to connectors without breaking capacity but which might be engaged and disengaged under voltage.

This standard also applies to connectors which are intended to be built-in or integrated in enclosures of devices for photovoltaic systems. This standard may be used as a guide for connectors in photovoltaic systems of classes 0 and III according to IEC 61140:2001 as well as for protection for Class II equipment intended for use at less than 50 V d.c.

2 Normative references

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.

IEC 60050 (all parts): *International Electrotechnical Vocabulary* (available at <http://www.electropedia.org>)

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-75:1997, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60068-2-78:2012, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60228:2004, *Conductors of insulated cables*

IEC 60309-1:1999, *Plugs, socket-outlets and couplers for industrial purposes – Part 1: General requirements*

IEC 60352-2:2006, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-3:1993, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance*