

Connectors for photovoltaic systems - Safety requirements and tests

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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**Connectors for photovoltaic systems -
Safety requirements and tests**

Connecteurs pour systèmes
photovoltaïques -
Exigences de sécurité et essais

Steckverbinder für Photovoltaik-Systeme -
Sicherheitsanforderungen und Prüfungen

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CENELEC

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

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Foreword

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| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2009-10-01 |
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Contents

1	Scope	5
2	Normative references	5
3	Definitions	7
4	Classification	10
4.1	General	10
4.2	Type of connector	10
4.3	Additional characteristics	10
5	Constructional requirements and performance	11
5.1	General	11
5.2	Marking and identification	11
5.3	Provision against incorrect mating (non-intermateable)	12
5.4	Protection against electric shock	12
5.5	Terminations and connection methods	12
5.6	Resistance to ageing	13
5.7	General design	13
5.8	Design of a free connector	14
5.9	Degree of protection (IP-Code)	14
5.10	Dielectric strength	14
5.11	Mechanical and electrical durability	14
5.12	Range of ambient temperature	14
5.13	Temperature rise	14
5.14	Cable anchorage	15
5.15	Mechanical strength	15
5.16	Connector without locking device	15
5.17	Connector with locking device	16
5.18	Clearances and creepage distances	16
5.19	Insulation	17
5.20	Insulation parts	18
5.21	Current carrying parts and resistance against corrosion	18
6	Tests	18
6.1	General	18
6.2	Preparation of specimens	19
6.3	Performance of tests	20
6.4	Test schedule (routine test) for non-rewirable free connectors	25
6.5	Test schedule	26
	Annex A (normative) Symbol	33
	Bibliography	34
	Figures	
	Figure 1 – Device for the bending test	23
	Figure A.1 – Symbol "DO NOT DISCONNECT UNDER LOAD"	33

Tables

Table 1 – Values for cable anchorage testing	15
Table 2 – Rated impulse voltages	16
Table 3 – Plan of specimens required for tests	19
Table 4 – Values of torque for screw-type clamping units.....	20
Table 5 – Test voltages	24
Table 6 – Mechanical test group A (test group A are for themselves separate tests)	26
Table 7 – Service life test group B.....	28
Table 8 – Thermal test group C (mated test specimen).....	29
Table 9 – Climatic test group D (mated test specimen)	30
Table 10 – Degree of protection, test group E	31
Table 11 – Insulation material, test group F	32

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1 Scope

This Standard applies to connectors of application Class A according to EN 61730-1 for use in photovoltaic systems with rated voltages up to 1 000 V d.c. and rated currents up to 125 A per contact.

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

NOTE For connectors according to Class B and C of EN 61730 as well as for protection for Class II equipment intended for use between 0 V and 120 V d.c. in photovoltaic-systems this standard may be used as a guide.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 50262:1998, *Cable glands for electrical installations*
A1:2001
A2:2004

EN 60068-1:1994, *Environmental testing – Part 1: General and guidance*
(IEC 60068-1:1988 + A1:1992 + corr. 1988)

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

EN 60068-2-70:1996, *Environmental testing – Part 2: Tests – Test Xb: Abrasion of marking and letterings caused by rubbing of fingers and hands* (IEC 60068-2-70:1995)

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

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

EN 60228, *Conductors of insulated cables* (IEC 60228)

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

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

EN 60352-3:1994, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance* (IEC 60352-3:1993)

EN 60352-4:1994, *Solderless connections – Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance* (IEC 60352-4:1994)

EN 60352-5, *Solderless connections – Part 5: Solderless press-in connections – General requirements, test methods and practical guidance* (IEC 60352-5)

EN 60352-6, *Solderless connections – Part 6: Insulation piercing connections – General requirements, test methods and practical guidance* (IEC 60352-6)

EN 60352-7, *Solderless connections – Part 7: Spring clamp connections – General requirements, test methods and practical guidance* (IEC 60352-7)

EN 60512 series, *Connectors for electronic equipment – Tests and measurements* (IEC 60512 series)

EN 60512-1, *Electromechanical components for electronic equipment – Basic testing procedures and measuring methods – Part 1: General* (IEC 60512-1)

- EN 60512-11-7:2003, *Connectors for electronic equipment – Tests and measurements – Part 11- 7: Climatic tests – Test 11g: Flowing mixed gas corrosion test* (IEC 60512-11-7:2003)
- EN 60529:1991, *Degrees of protection provided by enclosures (IP Code)* (IEC 60529:1989)
- EN 60664-1:2003, *Insulation coordination for equipment within low voltage systems – Part 1: Principles, requirements and tests* (IEC 60664-1:1992 + A1:2000 + A2:2002)
- EN 60695-2-10, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure* (IEC 60695-2-10)
- EN 60695-11-10, *Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods* (IEC 60695-11-10)
- EN 60998-2-3, *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* (IEC 60998-2-3)
- EN 60999-1:2000, *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 mm² up to 35 mm² (included)* (IEC 60999-1:1999)
- EN 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 mm² up to 300 mm² (included)* (IEC 60999-2:2003)
- EN 61140:2002, *Protection against electric shock – Common aspects for installation and equipment* (IEC 61140:2001)
- EN 61210:1995, *Connecting devices – Flat quick-connect terminations for electrical copper conductors – Safety requirements* (IEC 61210:1993, mod.)
- EN 61215:2005, *Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval* (IEC 61215:2005)
- EN 61730-1, *Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction* (IEC 61730-1, mod.)
- EN 61984, *Connectors – Safety requirements and tests* (IEC 61984)
- HD 60364-7-712, *Electrical installations of buildings – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems* (IEC 60364-7-712)
- EN ISO 4892-2, *Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc sources* (ISO 4892-2)
- EN ISO 6988:1994, *Metallic and other non organic coatings – Sulfur dioxide test with general condensation of moisture* (ISO 6988:1985)
- IEC 60050-581:1978, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electromechanical components for electronic equipment*
- IEC 60050-826:1982, *International Electrotechnical Vocabulary (IEV) – Chapter 826: Electrical installations*
- IEC 60060-1:1989, *High-voltage test techniques – Part 1: general definitions and test requirements*
- IEC/TR 60629¹⁾, *Standard sheets for a modular system (for installation accessories for use in domestic and similar installations)*
- IEC 60760:1989, *Flat, quick-connect terminations*

¹⁾ Withdrawn publication.