

Junction boxes for photovoltaic modules

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NATIONAL FOREWORD

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Junction boxes for photovoltaic modules

Boîtes de jonction pour modules
photovoltaïques

Anschlussdosen für Photovoltaik-Module

This European Standard was approved by CENELEC on 2011-02-14. 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
Comité Européen de Normalisation Electrotechnique
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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 82, Solar photovoltaic energy systems.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2012-02-14
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2014-02-14

1 Scope

This European Standard applies to junction boxes up to 1 500 V DC for use on photovoltaic modules according to application class A of EN 61730-1:2007.

NOTE For junction boxes according to application classes B and C of EN 61730-1:2007 in photovoltaic-systems, this standard can be used as a guideline.

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 50521, *Connectors for photovoltaic systems — Safety requirements and tests*

EN 60060-1, *High-voltage test techniques — Part 1: General definitions and test requirements* (IEC 60060-1)

EN 60068-1, *Environmental testing — Part 1: General and guidance* (IEC 60068-1)

EN 60068-2-14:2009, *Environmental testing — Part 2—14: Tests — Test N: Change of temperature* (IEC 60068-2-14:2009)

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

EN 60068-2-75, *Environmental testing — Part 2—75: 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 60352-2, *Solderless connections — Part 2: Crimped connections — General requirements, test methods and practical guidance* (IEC 60352-2)

EN 60512-12-1, *Connectors for electronic equipment — Tests and measurements — Part 12—1: Soldering tests — Test 12a: Solderability, wetting, solder bath method* (IEC 60512-12-1)

EN 60512-12-2, *Connectors for electronic equipment — Tests and measurements — Part 12-2: Soldering tests — Test 12b: Solderability, wetting, soldering iron method* (IEC 60512-12-2)

EN 60529, *Degrees of protection provided by enclosures (IP Code)* (IEC 60529)

EN 60664-1:2007, *Insulation coordination for equipment within low-voltage systems — Part 1: Principles, requirements and tests* (IEC 60664-1:2007)

EN 60695-2-11, *Fire hazard testing — Part 2-11: Glowing/hot-wire based test methods — Glow-wire flammability test method for end-products* (IEC 60695-2-11)

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 60695-11-20:1999, *Fire hazard testing — Part 11-20: Test flames — 500 W flame test methods* (IEC 60695-11-20:1999)

EN 60947-7-1, *Low-voltage switchgear and controlgear — Part 7-1: Ancillary equipment — Terminal blocks for copper conductors* (IEC 60947-7-1)

EN 60998-2-1, *Connecting devices for low-voltage circuits for household and similar purposes — Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units* (IEC 60998-2-1)

EN 60998-2-2, *Connecting devices for low-voltage circuits for household and similar purposes — Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units* (IEC 60998-2-2)

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, *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)

EN 61032, *Protection of persons and equipment by enclosures — Probes for verification* (IEC 61032)

EN 61140:2002, *Protection against electric shock — Common aspects for installation and equipment* (IEC 61140:2001)

EN 61730-1:2007, *Photovoltaic (PV) module safety qualification — Part 1: Requirements for construction* (IEC 61730-1:2004, mod.)

EN ISO 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)* (ISO 868:2003)

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps* (ISO 4892-2:2006)

EN ISO 4892-3, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps* (ISO 4892-3:2006)

IEC/TR 60943, *Guidance concerning the permissible temperature rise for parts of electrical equipment, in particular for terminals*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

junction box

combination of parts, such as boxes, covers, cover-plates, lids, box extensions, accessories, etc., providing after assembly and installation at the photovoltaic-module as in normal use, an appropriate protection against external influences, and a defined protection against contact with enclosed live parts from any accessible direction