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29.020
91.140.50

**ELECTRICAL INSTALLATIONS OF
BUILDINGS -- PART 7-712: REQUIREMENTS
FOR SPECIAL INSTALLATIONS OR
LOCATIONS - SOLAR PHOTOVOLTAIC (PV)
POWER SUPPLY SYSTEMS**

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HARMONIZATION DOCUMENT

HD 60364-7-712

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

July 2005

ICS 27.160; 29.020; 91.140.50

Incorporates Corrigendum April 2006

English version

Electrical installations of buildings
Part 7-712: Requirements for special installations or locations –
Solar photovoltaic (PV) power supply systems
(IEC 60364-7-712:2002)

Installations électriques des bâtiments
Partie 7-712: Règles pour les installations
et emplacements spéciaux –
Alimentations photovoltaïques solaires
(PV)
(CEI 60364-7-712:2002)

Elektrische Anlagen von Gebäuden
Teil 7-712: Anforderungen für
Betriebsstätten, Räume und Anlagen
besonderer Art –
Solar-Photovoltaik(PV)-
Versorgungssysteme
(IEC 60364-7-712:2002)

This Harmonization Document was approved by CENELEC on 2005-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning such national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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Foreword

The text of the International Standard IEC 60364-7-712:2002, prepared by IEC TC 64, Electrical installations and protection against electric shock, together with the common modifications prepared by SC 64A, Protection against electric shock, of Technical Committee CENELEC TC 64, Electrical installations of buildings, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as HD 60364-7-712 on 2005-03-01.

The following dates were fixed:

- latest date by which the existence of the HD
has to be announced at national level (doa) 2005-09-01
- latest date by which the HD has to be implemented
at national level by publication of a harmonized
national standard or by endorsement (dop) 2006-03-01
- latest date by which the national standards conflicting
with the HD have to be withdrawn (dow) 2008-03-01

In this Harmonization Document editorial modifications to the International Standard are indicated by a vertical line in the left margin of the text.

Annexes ZA and ZB have been added by CENELEC.

The contents of the corrigendum of April 2006 have been included in this copy.

712 Solar photovoltaic (PV) power supply systems

NOTE The abbreviation "PV" is used for "solar photovoltaic".

712.1 Scope

The particular requirements of this section apply to the electrical installations of PV power supply systems including systems with AC modules.

NOTE 1 Standards for PV equipment are being prepared by IEC TC 82.

NOTE 2 Requirements for PV power supply systems which are intended for stand-alone operation are under consideration.

712.2 Normative references

See annex ZA.

712.3 Definitions

(See also Figures 712.1 and 712.2).

For the purpose of this part, the following definitions apply. For other general definitions, see IEC 60050-826.

712.3.1

PV cell

basic PV device which can generate electricity when exposed to light such as solar radiation

712.3.2

PV module

smallest completely environmentally protected assembly of interconnected PV cells

712.3.3

PV string

circuit in which PV modules are connected in series, in order for a PV array to generate the required output voltage

712.3.4

PV array

mechanically and electrically integrated assembly of PV modules, and other necessary components, to form a DC power supply unit

712.3.5

PV array junction box

enclosure where all PV strings of any PV array are electrically connected and where protection devices can be located if necessary

712.3.6

PV generator

assembly of PV arrays

712.3.7

PV generator junction box

enclosure where all PV arrays are electrically connected and where protection devices can be located if necessary

712.3.8

PV string cable

cable connecting PV modules to form a PV string

712.3.9

PV array cable

output cable of a PV array

712.3.10

PV DC main cable

cable connecting the PV generator junction box to the DC terminals of the PV inverter

712.3.11

PV inverter

device which converts DC voltage and DC current into AC voltage and AC current

712.3.12

PV supply cable

cable connecting the AC terminals of the PV inverter to a distribution circuit of the electrical installation

712.3.13

PV AC module

integrated module/inverter assembly where the electrical interface terminals are AC only. No access is provided to the DC side

712.3.14

PV installation

erected equipment of a PV power supply system

712.3.15

standard test conditions (STC)

test conditions specified in EN 60904-3 for PV cells and PV modules

712.3.16

open-circuit current under standard test conditions $U_{OC\ STC}$

voltage under standard test conditions across an unloaded (open) PV module, PV string, PV array, PV generator or on the DC side of the PV inverter

712.3.17

short-circuit current under standard test conditions $I_{SC\ STC}$

short-circuit current of a PV module, PV string, PV array, PV generator under standard test conditions

712.3.18

DC side

part of a PV installation from a PV cell to the DC terminals of the PV inverter

712.3.19

AC side

part of a PV installation from the AC terminals of the PV inverter to the point of connection of the PV supply cable to the electrical installation

712.3.20

simple separation

separation between circuits or between a circuit and earth by means of basic insulation

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