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Električne inštalacije zgradb - 7-722. del: Zahteve za posebne inštalacije ali lokacije - Napajanje električnih vozil

Low-voltage electrical installations - Part 7-722: Requirements for special installations or locations - Supply of electric vehicle

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Installations électriques à basse tension - Partie 7-722: Exigences pour les installations et emplacements spéciaux – Alimentation des véhicules électriques

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43.120	Električna cestna vozila	Electric road vehicles

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en

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English Version

Low-voltage electrical installations -
Part 7-722: Requirements for special installations or locations -
Supplies for electric vehicles
(IEC 60364-7-722:2015 , modified)

Installations électriques à basse tension - Partie 7-722:
Exigences pour les installations et emplacements spéciaux -
Alimentation des véhicules électriques
(IEC 60364-7-722:2015 , modifiée)

Errichten von Niederspannungsanlagen - Teil 7-722:
Anforderungen für Betriebsstätten, Räume und Anlagen
besonderer Art - Stromversorgung von Elektrofahrzeugen
(IEC 60364-7-722:2015 , modifiziert)

This Harmonization Document was approved by CENELEC on 2015-04-06. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document at national level.

Up-to-date lists and bibliographical references concerning such national implementations may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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

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

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European foreword

The text of document 64/1986/FDIS, future edition 1 of IEC 60364-7-722 prepared by IEC/TC 64 "Electrical installations and protection against electric shock" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as HD 60364-7-722:2016.

A draft amendment, which covers common modifications to IEC 60364-7-722:2015 (64/1986/FDIS), was prepared by CLC/TC 64 "Electrical installations and protection against electric shock" and approved by CENELEC.

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) 2016-08-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-02-26

This document supersedes HD 60364-7-722:2012.

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.

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This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association.

In this document, the common modifications to the International Standard are indicated by a vertical line in the left margin of the text.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60364-7-722:2015 are prefixed "Z".

HD 60364-7-722:2016

Introduction

For the purpose of this part (HD 60364-7-722), the requirements of the general parts 1 to 6 of HD 60364 apply.

Parts 7XX of HD 60364 contain particular requirements for special installations or locations which are based on the requirements of the general parts of HD 60364 (Parts 1 to 6). Parts 7XX are considered in conjunction with the requirements of the general parts.

The particular requirements of this part of HD 60364 supplement, modify or replace certain of the requirements of the general parts of HD 60364 being valid at the time of publication of this part. The absence of reference to the exclusion of a part or a clause of a general part means that the corresponding clauses of the general part are applicable (undated reference).

Requirements of other 7XX parts being relevant for installations covered by this part also apply. This part may therefore also supplement, modify or replace certain of these requirements valid at the time of publication of this part.

The clause numbering of this part follows the pattern and corresponding references of HD 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of the other parts of the HD 60364 series, valid at the time of publication of this part, as indicated in the normative references of this document (dated reference).

If requirements or explanations additional to those of the other parts of the HD 60364 series are needed, the numbering of such items appears as 722.101, 722.102, 722.103 etc.

NOTE In the case where new or amended general parts with modified numbering were published after this part was issued, the clause numbers referring to a general part in this part of HD 60364 may no longer align with the latest edition of the general part. Dated references should be observed.

722 Supplies for electric vehicles

722.1 Scope

The particular requirements of this part of HD 60364 apply to:

- circuits intended to supply energy to electric vehicles;
- circuits intended for feeding back electricity from electric vehicles into the supply network.

NOTE The requirements for feeding back electricity from electric vehicles into the supply network are under consideration.

Inductive charging is not covered.

722.2 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.

EN 60269 / HD 60269 / CLC/TR 60269 (series), *Low-voltage fuses* (IEC 60269 series)

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

EN 60309-2, *Plugs, socket-outlets and couplers for industrial purposes – Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories* (IEC 60309-2)

HD 384 / HD 60364 (series), *Electrical installations of building / Low-voltage electrical installations* (IEC 60364 series)

EN 60898 (series), *Electrical accessories – Circuit breakers for overcurrent protection for household and similar installations* (IEC 60898 series)

EN 60947-2, *Low-voltage switchgear and controlgear – Part 2: Circuit-breakers* (IEC 60947-2)

EN 60947-6-2, *Low-voltage switchgear and controlgear – Part 6-2: Multiple function equipment – Control and protective switching devices (or equipment) (CPS)* (IEC 60947-6-2)

EN 61008-1, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) – Part 1: General rules* (IEC 61008-1)

EN 61009-1, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules* (IEC 61009-1)

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

EN 61557-8, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 8: Insulation monitoring devices for IT systems* (IEC 61557-8)

EN 61557-9, *Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. – Equipment for testing, measuring or monitoring of protective measures – Part 9: Equipment for insulation fault location in IT systems* (IEC 61557-9)

EN 61558-2-4, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers* (IEC 61558-2-4)

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EN 61851 (series), *Electric vehicle conductive charging system* (IEC 61851 series)

EN 62196 (series), *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles* (IEC 62196 series)

EN 62196-1, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements* (IEC 62196-1)

EN 62196-2, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories* (IEC 62196-2)

EN 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)* (IEC 62262)

EN 62423, *Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses* (IEC 62423)

722.3 Terms and definitions

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

722.3.1**electric vehicle**

EV

any vehicle propelled by an electric motor drawing current from a rechargeable storage battery or from other portable energy storage devices (rechargeable, using energy from a source off the vehicle such as a residential or public electricity service), which is manufactured primarily for use on public streets, roads or highways

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[SOURCE: EN 61851-1:2011, 3.8]
<https://standards.iteh.ai/catalog/standards/sist/af6f637c-1b04-4c2d-b4bd-f70835152560/sist-hd-60364-7-722-2016>

722.3.2**connecting point**

point where one electric vehicle is connected to the fixed installation

Note 1 to entry: The connecting point is a socket-outlet or a vehicle connector.

Note 2 to entry: The connecting point may be part of the fixed installed electric vehicle supply equipment in accordance with the EN 61851 series.

722.3.3**mode 1 charging**

connection of the EV to the a.c. supply network (mains) utilizing standardized socket-outlets not exceeding 16 A and not exceeding 250 V a.c. single-phase or 480 V a.c. three-phase, at the supply side, and utilizing the live and protective earth conductors

[SOURCE: EN 61851-1:2011, 6.2 "EV charging modes, mode 1 charging"]

722.3.4**mode 2 charging**

connection of the EV to the a.c. supply network (mains) utilizing standardized single-phase or three-phase socket-outlets not exceeding 32 A and not exceeding 250 V a.c. single-phase or 480 V a.c. three-phase, and utilizing the live and protective earth conductors together with a control pilot function and system of personnel protection against electric shock (RCD) between the EV and the plug or as a part of the in-cable control box

[SOURCE: EN 61851-1:2011, 6.2 "EV charging modes, mode 2 charging", modified]

722.3.5**mode 3 charging**

connection of the EV to the a.c. supply network (mains) utilizing dedicated electric vehicle supply equipment where the control pilot function extends to control equipment in the electric vehicle supply equipment permanently connected to the a.c. supply network (mains)

[SOURCE: EN 61851-1:2011, 6.2 "EV charging modes, mode 3 charging"]

722.3.6**mode 4 charging**

connection of the EV to the a.c. supply network (mains) utilizing an off-board charger where the control pilot function extends to equipment permanently connected to the a.c. supply

[SOURCE: EN 61851-1:2011, 6.2 "EV charging modes, mode 4 charging"]

722.3.7**demand factor**

ratio, expressed as a numerical value or as a percentage, of the maximum demand of a circuit or a group of circuits within a specified period, to the corresponding total installed load of the circuit(s)

Note 1 to entry: In using this term, it is necessary to specify to which level of the system it relates.

[SOURCE: IEC 60050-691:1973, 691-10-05, modified – the word "circuit" has replaced the word "installation"].

722.30 Assessment of general characteristics**722.31 Purposes, supplies and structure****722.311 Maximum demand and diversity**

Add the following:

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It shall be considered that in normal use each single connecting point is used at its rated current.

NOTE For this application the demand factor of the final circuit supplying the connecting point (e.g. the socket-outlet) is equal to 1.

Since all the connecting points of the installation can be used simultaneously, the diversity factor of the distribution circuit shall be taken as equal to 1. However, this factor may be reduced where load control is available.

722.312 Conductor arrangement and system earthing**722.312.2.1 TN systems**

Add the following:

In TN system, the final circuit supplying a connecting point shall be a TN-S system.

722.314 Division of installation

Add the following:

722.314.101 A dedicated circuit shall be provided for the connection to electric vehicles.