

<b>STN</b>	<b>Elektrické inštalácie nízkeho napätia Časť 7-722: Požiadavky na osobitné inštalácie alebo priestory Napájanie elektrických vozidiel</b>	<b>STN 33 2000-7-722</b>  33 2000
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Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/19

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HARMONIZATION DOCUMENT

**HD 60364-7-722**

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

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English Version

**Low-voltage electrical installations - Part 7-722: Requirements  
for special installations or locations - Supplies for electric  
vehicles  
(IEC 60364-7-722:2018 , modified)**

Installations électriques à basse tension - Partie 7-722:  
Exigences pour les installations et emplacements spéciaux  
- Alimentation des véhicules électriques  
(IEC 60364-7-722:2018 , modifiée)

Errichten von Niederspannungsanlagen - Teil 7-722:  
Anforderungen für Betriebsstätten, Räume und Anlagen  
besonderer Art - Stromversorgung von Elektrofahrzeugen  
(IEC 60364-7-722:2018 , modifiziert)

This Harmonization Document was approved by CENELEC on 2018-08-27. 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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**HD 60364-7-722:2018 (E)****European foreword**

The text of document 64/2285/FDIS, future edition 2 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 60364-7-722:2018.

A draft amendment, which covers common modifications to IEC 60364-7-722 (64/2285/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 this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-08-27
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2021-08-27

HD 60364-7-722:2018 supersedes HD 60364-7-722:2016.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60364-7-722:2018 are prefixed "Z".

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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.

## Endorsement notice

The text of the International Standard IEC 60364-7-722:2018 was approved by CENELEC as a European Standard with agreed common modifications.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60309-4:2006	NOTE	Harmonized as EN 60309-4:2007 (modified).
IEC 60364-5-51:2005	NOTE	Harmonized as HD 60364-5-51:2009 (modified).
IEC 60364-5-53	NOTE	Harmonized as HD 60364-5-53.
IEC 61557-9	NOTE	Harmonized as EN 61557-9.
ISO 17409:2015	NOTE	Harmonized as EN ISO 17409:2017 (not modified).

## COMMON MODIFICATION

### **722.53 Selection and erection of electrical equipment-Isolation, switching and control**

This title is modified as: *Selection and erection of electrical equipment – Switchgear and controlgear.*

#### **722.530.3 General and common requirements**

This subclause is renumbered as Subclause 722.530.4.

##### **722.530.3.101**

This subclause is renumbered as Subclause 722.530.4.101.

##### **722.530.3.102**

This subclause is renumbered as Subclause 722.530.4.102.

### **722.531 Devices for protection against indirect contact by automatic disconnection of supply**

This title is modified as: *Devices for protection against electric shock by automatic disconnection of the supply*

#### **722.531.2 Residual current protective devices**

This clause is renumbered as clause 722.531.3: and its title is modified as: *Residual current devices (RCDs)*

##### **722.531.2.101**

This subclause is renumbered as Subclause 722.531.3.101.

In the NOTE, replace 722.531.2.101 by 722.531.3.101.

##### **722.531.2.1.1**

This subclause is renumbered as Subclause 722.531.3.1.

Replace the contents of this subclause by:

*The first paragraph is replaced by:*

RCD shall disconnect all live conductors.

**HD 60364-7-722:2018 (E)****722.531.3 Insulation monitoring device**

This subclause is renumbered as Subclause 722.538.1: and its title is modified as: *Insulation monitoring devices for IT systems (IMD)*.

**722.531.3.101**

This subclause is renumbered as Subclause 722.538.1.101

**722.535 Co-ordination of various protective devices**

This subclause is renumbered as Subclause 722.536 and the title is modified as: *Coordination of electric equipment for protection, isolation, switching and control*.

**722.535.3 Discrimination between residual current protective devices**

This subclause is renumbered as Subclause 722.536.4.1.4.1, the title is modified as: *General requirements*.

Replace the contents of this subclause by:

*Add the following:*

Where required for service reasons, selectivity shall be maintained between the RCD protecting a connecting point and an RCD installed upstream

**722.551.7.2**

Replace the contents of this subclause by:

*Item ii) is replaced by*

ii) the socket-outlet or vehicle connector shall comply with EN 62196 series; and

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

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](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60269	series	Low-voltage fuses	HD 60269	series
IEC 60309-1	1999	Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements	EN 60309-1	1999
IEC 60309-2	-	Plugs, socket-outlets and couplers for industrial purposes - Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories	EN 60309-2	-
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60364-4-41 (mod)	2005	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	2017
	2017		+A11	2017
IEC 60364-8-2 <sup>1</sup>	-	Low-voltage electrical installations - Part 8-2: Prosumer's low-voltage electrical installations	HD 60364-8-2 <sup>2</sup>	-
IEC 60898	series	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations	-	-
IEC 60947-2	-	Low voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	-
IEC 60947-6-2	-	Low-voltage switchgear and controlgear - Part 6-2: Multiple function equipment - Control and protective switching devices (or equipment) (CPS)	EN 60947-6-2	-
IEC 61008-1	-	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCB's) - Part 1: General rules	EN 61008-1	-
IEC 61009-1	-	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules	EN 61009-1	-

<sup>1</sup> Under preparation. Stage at the time of publication IEC RFDIS 60364-8-2:2018.

<sup>2</sup> At draft stage.

**HD 60364-7-722:2018 (E)**

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 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	EN 61557-8	-
IEC 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	EN 61558-2-4	-
IEC 61851	series	Electric vehicle conductive charging system	EN 61851	series
IEC 61980	series	Electric vehicle wireless power transfer (WPT) systems	EN 61980/ CLC/TS 61980	series
IEC 62196	series	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles	EN 62196	series
IEC 62196-1	-	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements	EN 62196-1	-
IEC 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	EN 62196-2	-
IEC 62196-3	-	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers	EN 62196-3	-
IEC/TS 62196-4	-	Plugs, socket-outlets, vehicle connectors and vehicles inlet - Conductive charging of electric vehicles - Part 4: Dimensional compatibility and interchangeability requirements for d.c. pin and contact-tube accessories for class II or class III applications		-
IEC 62262	-	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	-
IEC 62423	-	Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses	EN 62423	-
IEC 62955	-	Residual direct current detecting device (RDC-DD) to be used for mode 3 charging of electric vehicles	-	-

## Annex ZB (normative)

### Special national conditions

**Special national condition:** National characteristic or practice that cannot be changed even over a long period, e.g. climatic conditions, electrical earthing conditions.

NOTE If it affects harmonization, it forms part of the Harmonization Document.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

<u>Clause</u>	<u>Special national condition</u>
722.1	<b>In Norway</b> , the requirements of this part of HD 60364 do not apply to circuits intended to supply energy to electric vehicles where the rated charging current is less or equal to 5 A.
722.3.3	<b>In Germany</b> , definition 722.3.3 is deleted
722.31	<b>In Germany</b> , following note apply  NOTE: In Germany see also the requirements of the DSO regarding unsymmetric load.
722.311	<b>In Germany</b> , the following note is deleted:  Note: For this application the demand factor of the final circuit supplying the connecting point (e.g. the socket-outlet) is equal to 1
722.314.101	<b>In Norway</b> , where a connecting point for private use shall be installed in an existing installation, e.g. for a dwelling or similar locations, an existing circuit may be used for such purpose, provided the risk is accepted by the installation owner.
722.415.2	<b>In France</b> , a new subclause is added:  For outdoor installations, this additional protection shall also be installed taking into account the risk of simultaneous access to extraneous exposed conductive parts.
722.512.2.101	<b>In Germany</b> , where the connection point is installed outdoors, the equipment shall be selected with a degree of protection of at least IPX4 in order to protect against water splashes
722.512.2.102	<b>In Germany</b> , Where the connecting point is installed outdoors, the equipment shall be selected or provided with a degree of protection of at least IP4X in order to protect against the ingress of small objects
722.512.2.103	<b>In Germany</b> , equipment installed in public areas and car park sites shall be protected against mechanical damage (impact of medium severity). Protection of the equipment shall be afforded by one or more of the following: <ul style="list-style-type: none"> <li>– the position or location shall be selected to avoid damage by any reasonably foreseeable impact;</li> <li>– local or general mechanical protection shall be provided.</li> </ul>
722.531.2.101	<b>In Norway</b> , RCDs protecting each connecting point in accordance to 722.411.3.3 shall comply at least with the requirements of RCD type B and a rated residual operating current not exceeding 30 mA.
722.55.101.1	<b>In Norway</b> , where the connecting point is a: <ul style="list-style-type: none"> <li>- socket-outlet, it shall be in accordance with EN 60309-2 or EN 62196-2, and</li> <li>- vehicle connector, it shall be in accordance EN 62196-1</li> </ul>



**HD 60364-7-722:2018 (E)**

<u>Clause</u>	<u>Special national condition</u>
722.55.101.1	<b>In Switzerland</b> , for charging currents of more than 8 A (2 kVA), the use of plugs and socket-outlets according to EN 60309-2 is recommended for Mode 1 and Mode 2 connections.
722.55.101.3	<b>In Germany</b> , 722.55.101.3 does not apply.
722.55.103	<b>In Norway</b> , EV charging stations shall be located in such a distance from any "Ex-zone" that charging cannot take place inside the EX-zone.
722.55.104	<b>In Norway</b> , where the connecting point is intended to be connected by an in-cable control box, the connection point shall be provided with means to fasten the in-cable control box in order to offload the mechanical stresses on the contacts in the socket-outlet due to the weight of the in-cable control box.

## Annex ZC (informative)

### A- deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC national member.

This Harmonization Document does not fall under any Directive of the EC.

In the relevant CENELEC countries these A-deviations are valid instead of the provisions of the Harmonization Document until they have been removed.

<u>Clause</u>	<u>Deviation</u>
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#### Austria

Regulations for electrical low voltage installations, statutory order BGBl. II/223/2010, issued 12. July 2010

722.411.3.3 See for AT Subclause 722.415.1.

722.415.1 To add the subclause and the following text

Except circuits protected by electrical separation (see 722.413), circuits supplying connection points shall be additionally protected by RCDs having a rated residual operating current not exceeding 30 mA. Devices selected shall disconnect all live conductors including the neutral (see 722.531.2). The function of fault protection for the circuit shall be fulfilled separately

722.512.2.101 To add the following text:

In case of the plug (according to national standards or IEC 60884-1) is plugged in and a degree of protection of IPX4 cannot be reached additional measures shall be provided to protect the connecting point against splashing water from all directions.

#### France

722 In France, special requirements apply (Décret n°2017-26 du 12 janvier 2017)

722.55.101.1 In France according "Décret 2017-26 du 12 Janvier 2017 » for each connecting point, related to the delivery point of a building, until 32A socket-outlet or vehicle connector shall be provided with shutter.

#### Spain

722 In Spain, according to the Royal Decree 1053/2014, special requirements apply to the electrical installations for the supply of electric vehicles.

722.443.4 In Spain, according to the Royal Decree 1053/2014, Clause 6.4 of the ITC-BT-52, all the circuits intended to supply energy to electric vehicles must be protected against transient and temporary overvoltages.



IEC 60364-7-722

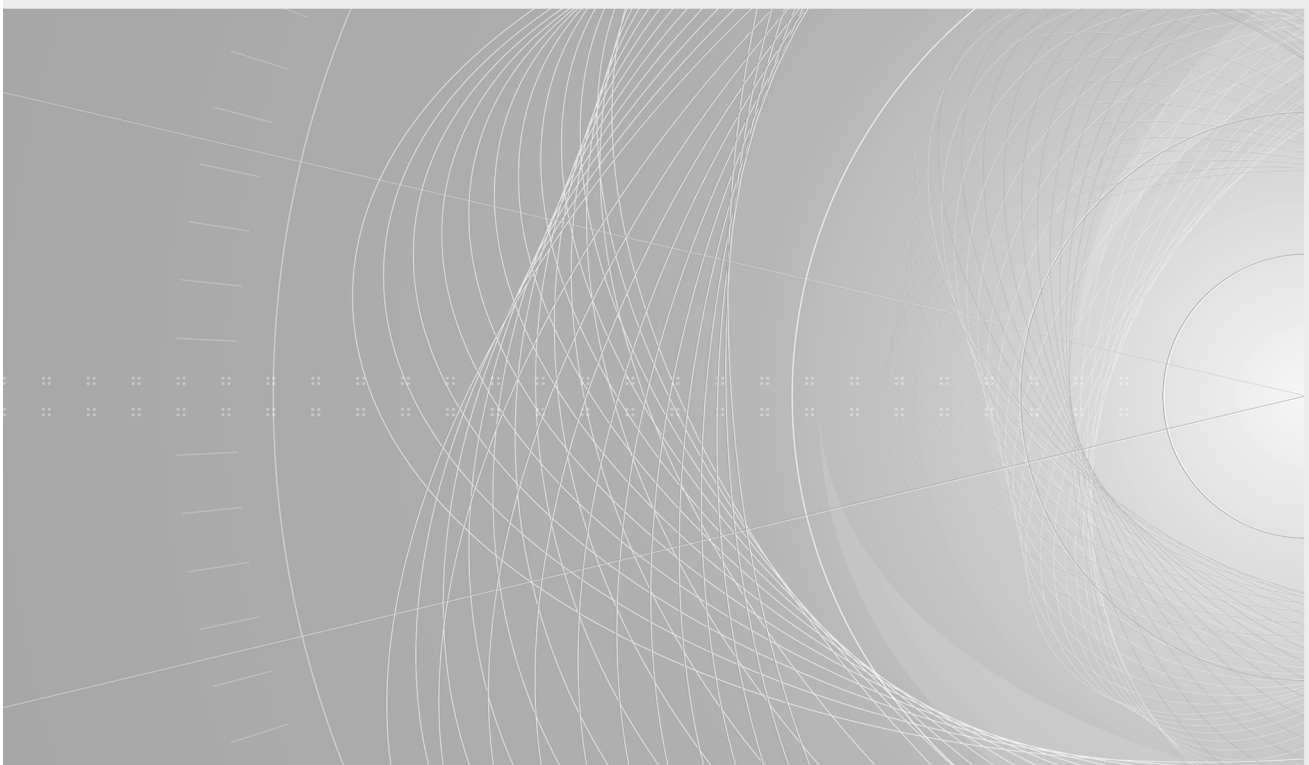
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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Low-voltage electrical installations –  
Part 7-722: Requirements for special installations or locations – Supplies for  
electric vehicles**

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





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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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**LOW-VOLTAGE ELECTRICAL INSTALLATIONS –****Part 7-722: Requirements for special installations or locations –  
Supplies for electric vehicles**

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International Standard IEC 60364-7-722 has been prepared by IEC technical committee 64: Electrical installations and protection against electric shock.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) introduction of requirements for electrical installations incorporating wireless power transfer systems;
- b) clarification of the requirements regarding the protective measure placing out of reach in order to allow the use of pantographs in areas accessible to the public;
- c) introduction of requirements covering the case where the EV may operate as a source in parallel with other sources.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
64/2285/FDIS	64/2318/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60364 series, published under the general title *Low voltage electrical installations*, can be found on the IEC website.

The reader's attention is drawn to the fact that Annex A lists all of the "in-some-country" clauses on differing practices of a less permanent nature relating to the subject of this standard.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.



## INTRODUCTION

For the purpose of this part of IEC 60364 (IEC 60364-7-722) the requirements of the general Parts 1 to 6 of IEC 60364 apply.

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

The particular requirements of this part of IEC 60364 supplement, modify or replace certain of the requirements of the general parts of IEC 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 IEC 60364. The numbers following the particular number of this part are those of the corresponding parts, or clauses of the other parts of the IEC 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 IEC 60364 series are needed, the numbering of such items appears as 722.101, 722.102, 722.103, etc.

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 722 may no longer align with the latest edition of the general part. Dated references should be observed.

## LOW-VOLTAGE ELECTRICAL INSTALLATIONS –

### Part 7-722: Requirements for special installations or locations – Supplies for electric vehicles

#### 722 Supplies for electric vehicles

##### 722.1 Scope

The particular requirements of this document apply to

- circuits intended to supply energy to electric vehicles, and
- circuits intended for feeding back electricity from electric vehicles.

Circuits covered by this document are terminated at the connecting point.

NOTE 1 The requirements for EV supply equipment for conductive charging and the relevant charging modes are described in IEC 61851 (all parts). The requirements for EV supply equipment for wireless power transfer are described in IEC 61980 (all parts).

NOTE 2 This document does not cover the assessment of the risk of explosion due to the possible production of hydrogen/other flammable gases during the battery recharging phase.

##### 722.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60269 (all parts), *Low voltage fuses*

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

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

IEC 60364 (all parts), *Low-voltage electrical installations*

IEC 60364-4-41:2005, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-41:2005/AMD1:2017

IEC 60364-8-2, *Low-voltage electrical installations – Part 8-2: Prosumer's low-voltage electrical installations<sup>1</sup>*

IEC 60898 (all parts), *Electrical accessories – Circuit-breakers for overcurrent protection for household and similar installations*

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

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<sup>1</sup> Under preparation. Stage at the time of publication IEC RFDIS 60364-8-2:2018.

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

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

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

IEC 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 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 61851 (all parts), Electric vehicle conductive charging system*

IEC 61980 (all parts), *Electric vehicle wireless power transfer (WPT) systems*

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

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

IEC 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 62196-3, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 3: Dimensional compatibility and interchangeability requirements for d.c. and a.c./d.c. pin and contact-tube vehicle couplers*

IEC TS 62196-4, *Plugs, socket-outlets, vehicle connectors and vehicles inlet – Conductive charging of electric vehicles – Part 4: Dimensional compatibility and interchangeability requirements for DC pin and contact-tube accessories for class II or class III applications<sup>2</sup>*

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

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

IEC 62955, *Residual direct current detecting device (RDC-DD) to be used for mode 3 charging of electric vehicle*

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**

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<sup>2</sup> Under preparation. Stage at the time of publication IEC TS BPUB 62196-4:2018.