SLOVENSKI STANDARD
SIST EN IEC 61851-1:2019

01-september-2019

Nadomešča:
SIST EN 61851-1:2011

Sistem za napajanje električnih vozil prek kabla - 1. del: Splošne zahteve

Electric vehicle conductive charging system - Part 1: General requirements

Système de charge conductive pour véhicules électriques - Partie 1: Règles générales

Ta slovenski standard je istoveten z: **EN IEC 61851-1:2019**

ICS:

43.120	Električna cestna vozila	Electric road vehicles

SIST EN IEC 61851-1:2019 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN IEC 61851-1

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English Version

Electric vehicle conductive charging system - Part 1: General requirements (IEC 61851-1:2017)

Système de charge conductive pour véhicules électriques - Partie 1: Exigences générales (IEC 61851-1:2017)

Konduktive Ladesysteme für Elektrofahrzeuge - Teil 1: Allgemeine Anforderungen (IEC 61851-1:2017)

This European Standard was approved by CENELEC on 2017-03-14. 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.

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

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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CENELEC

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 61851-1:2019 E

European foreword

The text of document 69/436/FDIS, future edition 3 of IEC 61851-1, prepared by IEC/TC 69 "Electric road vehicles and electric industrial trucks" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61851-1:2019.

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) 2020-01-05
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-07-05

This document supersedes EN 61851-1:2011.

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

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 61851-1:2017 was approved by CENELEC as a European Standard without any modification.

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

IEC 62053-21:2003	NOTE Harmonized as EN 62053-21:2003 (not modified)
ISO 4628-3:2016	NOTE Harmonized as EN ISO 4628-3:2016 (not modified)
IEC 60063:2015	NOTE Harmonized as EN 60063:2015 (not modified)
IEC 60068-2-2	NOTE Harmonized as EN 60068-2-2
IEC 60068-2-5:2010	NOTE Harmonized as EN 60068-2-5:2011 (not modified)
IEC 60068-2-6:2007	NOTE Harmonized as EN 60068-2-6:2008 (not modified)
IEC 60068-2-14:2009	NOTE Harmonized as EN 60068-2-14:2009 (not modified)
IEC 60068-2-27:2008	NOTE Harmonized as EN 60068-2-27:2009 (not modified)
IEC 60068-2-52:1996	NOTE Harmonized as EN 60068-2-52:1996 (not modified)
IEC 60068-2-53:2010	NOTE Harmonized as EN 60068-2-53:2010 (not modified)
IEC 60068-2-75	NOTE Harmonized as EN 60068-2-75
IEC 60364-6:2016	NOTE Harmonized as HD 60364-6:2016 (not modified)
IEC 60947-1:2007	NOTE Harmonized as EN 60947-1:2007 (not modified)

IEC 60947-1:2007/A1:2010	NOTE Harmonized as EN 60947-1:2007/A1:2011 (not modified)
IEC 60947-1:2007/A2:2014	NOTE Harmonized as EN 60947-1:2007/A2:2014 (not modified)
IEC 60947-6-1:2005	NOTE Harmonized as EN 60947-6-1:2005 (not modified)
IEC 61140	NOTE Harmonized as EN 61140
IEC 61439-1:2011	NOTE Harmonized as EN 61439-1:2011 (not modified)
IEC 61540	NOTE Harmonized as HD 639 S1
IEC 61558-1:2005	NOTE Harmonized as EN 61558-1:2005 (not modified)
IEC 61558-1:2005/A1:2009	NOTE Harmonized as EN 61558-1:2005/A1:2009 (not modified)
IEC 61558-2-4:2009	NOTE Harmonized as EN 61558-2-4:2009 (not modified)
IEC 61558-2-12:2011	NOTE Harmonized as EN 61558-2-12:2011 (not modified)
IEC 61558-2-16:2009	NOTE Harmonized as EN 61558-2-16:2009 (not modified)
IEC 61558-2-16:2009/A1:2013	NOTE Harmonized as EN 61558-2-16:2009/A1:2013 (not modified)
IEC 61851-21-2	NOTE Harmonized as EN 61851-21-2[1]
IEC 61980-1	NOTE Harmonized as EN 61980-1[2]
IEC 62262:2002	NOTE Harmonized as EN 62262:2002 (not modified)
ISO/IEC 15118 (series)	NOTE Harmonized as EN ISO 15118 (series)
ISO 13849-1:2015	NOTE Harmonized as EN ISO 13849-1:2015 (not modified)
ISO 15118-3	NOTE Harmonized as EN ISO 15118-3

[1] Under preparation. Stage at time of publication: FprEN 61851-21-2

[2] Under preparation. Stage at time of publication: prEN 61980-1

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 Where 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.

Publication	Year	Title	EN/HD	Year
IEC 60038 (mod)	-	IEC standard voltages	EN 60038	2011
IEC 60068-2-1	-	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-78	-	Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady state	EN 60068-2-78	2013
IEC 60309-1	-	Plugs, socket-outlets and couplers for industrial purposes - Part 1: General requirements	EN 60309-1	1999
			+ A1 (mod)	2007
			+ A2	2012
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	1999
			+ A1 (mod)	2007
			+ A2	2012
IEC 60364-4-41 (mod)	-	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	2017
			+ A11	2017
IEC 60364-5-54	-	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	2011
			+ A11	2017
IEC 60529	2013[3]	Degrees of protection provided by enclosures (IP Code)	-	-

[3] Dated as no equivalent European standard exists.

Publication	Year	Title	EN/HD	Year
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60884-1	2002[3]	Plugs and socket-outlets for household and similar purposes -- Part 1: General requirements	-	-
IEC 60898	series	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations	EN 60898	series
IEC 60898-1 (mod)	-	Electrical accessories - Circuit-breakers for overcurrent protection for household and similar installations - Part 1: Circuit-breakers for a.c. operation	EN 60898-1	2019
IEC 60947-2	-	Low-voltage switchgear and controlgear - Part 2: Circuit-breakers	EN 60947-2	2017
IEC 60947-3	-	Low-voltage switchgear and controlgear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units	EN 60947-3	2009
			+ A1	2012
			+ A2	2015
IEC 60947-4-1	-	Low-voltage switchgear and controlgear - Part 4-1: Contactors and motorstarters - Electromechanical contactors and motor-starters	EN IEC 60947-4-1	2019
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	2003
			+ A1	2007
IEC 60950-1 (mod)	2005	Information technology equipment - Safety - Part 1: General requirements	EN 60950-1	2006
-	-		+ A11	2009
-	-		+ A12	2011
-	-		+ AC	2011
IEC 60990	-	Methods of measurement of touch current and protective conductor current	EN 60990	2016
IEC 61008-1 (mod)	-	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) - Part 1: General rules	EN 61008-1	2012
			+ A1 (mod)	2014
			+ A2 (mod)	2014
			+ A11	2015
			+ A12	2017

Publication	Year	Title	EN/HD	Year
IEC 61009-1 (mod)	-	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) - Part 1: General rules	EN 61009-1	2012
			+ A1 (mod)	2014
			+ A2 (mod)	2014
			+ A11	2015
			+ A12	2016
IEC 61180	-	High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment	EN 61180	2016
IEC 61316	1999	Industrial cable reels	EN 61316	1999
IEC/TS 61439-7	2014	Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicles charging stations	-	-
IEC 61508	series	Functional safety of electrical/electronic/programmable electronic safety-related systems	EN 61508	series
IEC 61558-1	-	Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests	EN 61558-1[4]	—
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	2009
IEC 61810-1	-	Electromechanical elementary relays - Part 1: General and safety requirements	EN 61810-1	2015
IEC 61851	series	Electric vehicle conductive charging system	EN IEC 61851	series
IEC 61851-23	2014	Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station	EN 61851-23	2014
IEC 61851-24	2014	Electric vehicle conductive charging system - Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging	EN 61851-24	2014
IEC 62196	series	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles	EN 62196	series

[4] Under preparation. Stage at time of publication: FprEN 61558-1:2017

Publication	Year	Title	EN/HD	Year
IEC 62196-1 (mod)	2014	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements	EN 62196-1	2014
IEC 62196-2	2016	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	2017
IEC 62196-3	2014	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	2014
IEC 62262	-	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)	EN 62262	2002
IEC 62423 (mod)	-	Type F and type B residual current operated circuit-breakers with and without integral overcurrent protection for household and similar uses	EN 62423	2012
IEC 62752	-	In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD)	EN 62752	2016
ISO 17409	2015	Electrically propelled road vehicles - Connection to an external electric power supply - Safety requirements	EN ISO 17409	2017

Annex ZZ
(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 — Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / subclause(s) of this EN	Remarks / Notes
1. General Conditions		
(a) the essential characteristics, the recognition and observance of which will ensure that electrical equipment will be used safely and in applications for which it was made, shall be marked on the electrical equipment, or, if this is not possible, on an accompanying document	1 Scope 2 Normative References 3 Terms and Definitions 5 Classification 17 Marking and instructions	
(b) the electrical equipment, together with its component parts, shall be made in such a way as to ensure that it can be safely and properly assembled and connected	4 General requirement 6.3.1.2 Continuous continuity checking of the protective conductor 6.3.1.3 Verification that the EV is properly connected to the EV supply equipment 6.3.2.3 Intentional and unintentional disconnection of the vehicle connector and/or the EV plug 9 Conductive electrical interface requirements 10 Requirements for adaptors 1 Cable assembly requirements (incl. chapter12)	

Safety objectives of Directive 2014/35/EU	Clause(s) / subclause(s) of this EN	Remarks / Notes
(c) the electrical equipment shall be so designed and manufactured as to ensure that protection against the hazards set out in points 2 and 3 is assured, providing that the equipment is used in applications for which it was made and is adequately maintained	Details see points 2 and 3	
2. Protection against hazards arising from the electrical equipment		
(a) persons and domestic animals are adequately protected against the danger of physical injury or other harm which might be caused by direct or indirect contact	8 Protection against electric shock 9 Conductive electrical interface requirements 13.4 IP Degree 13.6 Touch current 15 Automatic reclosing of protective devices	
(b) temperatures, arcs or radiation which would cause a danger, are not produced	6.3.2.3 Intentional and unintentional disconnection of the vehicle connector and/or the EV plug 9 Conductive electrical interface requirements 13 EV supply equipment constructional requirements and tests 14 Overload and short-circuit protection	
(c) persons, domestic animals and property are adequately protected against non-electrical dangers caused by the electrical equipment which are revealed by experience	13 EV supply equipment constructional requirements and tests	
(d) the insulation is suitable for foreseeable conditions	13.5 Insulation resistance 13.7 Dielectric withstand voltage	
3. Protection against hazards which may be caused by external influences on the electrical equipment		
(a) meets the expected mechanical requirements in such a way that persons, domestic animals and property are not endangered	4 General requirements 13.11 Mechanical strength	

Safety objectives of Directive 2014/35/EU	Clause(s) / subclause(s) of this EN	Remarks / Notes
(b) is resistant to non-mechanical influences in expected environmental conditions, in such a way that persons, domestic animals and property are not endangered	13.3 Clearances and creepage distances 13.4 IP degrees 13.6 Touch current 13.7 Dielectric withstand voltage 13.8 Temperature rise 13.9 Damp heat functional test 13.10 Minimum temperature functional test	
(c) does not endanger persons, domestic animals and property in foreseable conditions of overload	11 Cable assembly requirements 14 Overload and short-circuit protection 14.2 Overload protection of the cable assembly 14.3 Short-circuit protection of the charging cable	

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

IEC 61851-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Electric vehicle conductive charging system – Part 1: General requirements

Système de charge conductive pour véhicules électriques – Partie 1: Exigences générales

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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