SIST

SLOVENSKI STANDARD
SIST EN 62196-1:2012

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Nadomešča:

SIST EN 62196-1:2004

Vtiči, vtičnice, konektorji in uvodnice na vozilih - Kabelsko napajanje električnih vozil - 1. del: Splošne zahteve (IEC 62196-1:2011)

Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements (IEC 62196-1:2011)

Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker - Konduktives Laden von Elektrofahrzeugen - Teil 1: Allgemeine Anforderungen (IEC 62196-1:2011)

Prises de courant et connecteurs de véhicule - Charge conductive de véhicules électriques - Partie 1: Règles générales (CEI 62196-1:2011)

Ta slovenski standard je istoveten z: **EN 62196-1:2012**

ICS:

29.120.30	Vtiči, vtičnice, spojke	Plugs, socket-outlets, couplers
43.120	Električna cestna vozila	Electric road vehicles

SIST EN 62196-1:2012 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62196-1

May 2012

ICS 29.120.30; 43.120

Supersedes EN 62196-1:2003

English version

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

(IEC 62196-1:2011)

Fiches, socles de prise de courant, prises mobiles et socles de connecteur de véhicule - Charge conductive des véhicules électriques - Partie 1: Règles générales (CEI 62196-1:2011)

Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker - Konduktives Laden von Elektrofahrzeugen - Teil 1: Allgemeine Anforderungen (IEC 62196-1:2011)

This European Standard was approved by CENELEC on 2012-02-01. 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.

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 62196-1:2012 E

Foreword

The text of document 23H/266/FDIS, future edition 2 of IEC 62196-1, prepared by SC 23H, "Industrial plugs and socket-outlets", of IEC TC 23, "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62196-1:2012.

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)	2012-11-01
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-02-01

This document supersedes EN 62196-1:2003.

EN 62196-1:2012 includes the following significant technical changes with respect to EN 62196-1:2003:

– increase in d.c.voltage for accessories;

– permitted use of accessories with vehicles complying with 7.2.3.1 of EN 61851-1:2011;

– minor changes to definitions;

– additional voltage and current ratings (Clause 5) and test values (Clauses 12 and 13) ;

– removal of markings to identify generic types of vehicle inlets and connectors;

– addition of a “high power d.c.” to the type of accessories covered by the Standard;

– modification of the description of “universal” and “basic” interfaces based on changes to EN 61851-1:2011;

– simplification of the marking requirements (Clause 8);

– additional requirements for accessories with shutters;

– division of Clause 9 to create Clauses 9 and 11;

– Clause 9: specific requirements for inlet, plug and socket–outlet;

– Clause 11: EVSE (Electric Vehicle Supply Equipment) requirements: the basic generic requirements for charging stations;

– renumbering of annexes.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

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.

Endorsement notice

The text of the International Standard IEC 62196-1:2011 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 60068-2-75:1997	NOTE	Harmonized as EN 60068-2-75:1997 (not modified).
IEC 60309-1	NOTE	Harmonized as EN 60309-1.
IEC 61008-1	NOTE	Harmonized as EN 61008-1.
IEC 61009-1	NOTE	Harmonized as EN 61009-1.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60112 + corr. October + corr. June + A1	2003 2003 2003 2009	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112 + A1	2003 2009
IEC 60227	Series	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	-	-
IEC 60228	2004	Conductors of insulated cables	EN 60228 + corr. May	2005 2005
IEC 60245-4 (mod) + A1 + A2	1994 1997 2003	Cables of rated voltages up to and including 450/750 V and having cross-linked insulation - Part 4: Cords and flexible cables	HD 22.4 S3[1)] + A1 + A2	1995 1999 2002
IEC 60269-1 + A1	2006 2009	Low-voltage fuses - Part 1: General requirements	EN 60269-1 + A1	2007 2009
IEC 60269-2 (mod)	2010	Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Examples of standardized systems of fuses A to J	HD 60269-2	2010
IEC 60309-4	-	Plugs, socket-outlets and couplers for industrial purposes - Part 4: Switched socket-outlets and connectors with or without interlock	EN 60309-4	-
IEC 60529 + A1	1989 1999	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May + A1	1991 1993 2000
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	2003	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
IEC 60695-2-11 + corr. January	2000 2001	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products	EN 60695-2-11	2001
IEC 60695-10-2	-	Fire hazard testing - Part 10-2: Abnormal heat - Ball pressure test	EN 60695-10-2	-

[1)] HD 22.4 S3 is superseded by HD 22.4 S4:2004.

Publication	Year	Title	EN/HD	Year
IEC 60947-1	-	Low-voltage switchgear and controlgear - Part 1: General rules	EN 60947-1	-
IEC 60999-1	1999	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)	EN 60999-1	2000
IEC 60999-2	2003	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)	EN 60999-2	2003
IEC 61851-1	2010	Electric vehicle conductive charging system - Part 1: General requirements	EN 61851-1	2011
ISO 1456	-	Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium	EN ISO 1456	-
ISO 2081	-	Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel	EN ISO 2081	-
ISO 2093	-	Electroplated coatings of tin - Specification and test methods	-	-

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 European Standard / Harmonization Document.

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

Clause	Special national condition
1	**Finland**
	In Finland, accessories and cable assemblies according to this standard are to be used in an ambient temperature between –35 °C and +50 °C.
1	**United Kingdom**
	Mode 1 is considered unsafe and will not be used in the United Kingdom.
26.1	**Finland**
	In Finland, a temperature of a chamber is (–35 ± 2) °C.

IEC 62196-1

Edition 2.0 2011-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

Fiches, socles de prise de courant, prises mobiles et socles de connecteur de véhicule – Charge conductive des véhicules électriques – Partie 1: Règles générales

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PLUGS, SOCKET-OUTLETS, VEHICLE CONNECTORS AND VEHICLE INLETS – CONDUCTIVE CHARGING OF ELECTRIC VEHICLES –

Part 1: General requirements

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

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

International Standard IEC 62196-1 has been prepared by IEC subcommittee 23H: Industrial plugs and socket-outlets, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 2003 and constitutes a technical revision. The main changes from the previous edition are as follows:

– increase in d.c.voltage for accessories;
– permitted use of accessories with vehicles complying with Subclause 7.2.3.1 of 61851-1:2010;
– minor changes to definitions;
– additional voltage and current ratings (Clause 5) and test values (Clause 12, 13,) ;
– removal of markings to identify generic types of vehicle inlets and connectors;
– addition of a "high power d.c." to the type of accessories covered by the Standard;

- modification of the description of “universal” and “basic” interfaces based on changes to 61851-1:2010;
- simplification of the marking requirements (Clause 8);
- additional requirements for accessories with shutters;
- division of Clause 9 to create Clauses 9 and 11;
- Clause 9: specific requirements for inlet, plug and socket–outlet;
- Clause 11: EVSE (Electric Vehicle Supply Equipment) requirements: the basic generic requirements for charging stations;
- renumbering of annexes.

The text of this standard is based on the following documents:

FDIS	Report on voting
23H/266/FDIS	23H/269/RVD

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

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

A list of all the parts in the IEC 62196 series, under the general title *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles*, can be found on the IEC website.

In this standard, the following print types are used:

- *compliance statements: in italic type.*

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

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

INTRODUCTION

IEC 61851-1:2010 specifies Electric Vehicle Conductive Charging Equipment. This International Standard, referred to as IEC 62196 series in IEC 61851-1:2010, specifies the requirements for plugs, socket-outlets, vehicle connectors, vehicle inlets and cable assemblies as described in IEC 61851-1:2010. Some charging can be achieved by direct connection from an electric vehicle to common mains socket-outlets. Some modes of charging require a dedicated supply and charging equipment incorporating control and communication circuits. This standard covers the mechanical, electrical and performance requirements for dedicated plugs, socket outlets, vehicle connectors and vehicle inlets for interfacing between such dedicated charging equipment and the electric vehicle.

This standard may be divided into several parts as necessary, as follows:

– Part 1: General requirements, comprising clauses of a general character.

Subsequent parts: Particular requirements dealing with particular types of accessories. The clauses of these particular requirements supplement or modify the corresponding clauses in Part 1. Where the text of subsequent parts indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of Part 1, these changes are made to the relevant text of Part 1, which then becomes part of the standard. Where no change is necessary, the words "This clause of Part 1 is applicable" are used.

– Part 2: Dimensional compatibility and interchangeability requirements for a.c. pin and contact-tube accessories.
– Part 3: Dimensional compatibility and interchangeability requirements for pin and contact-tube accessories for dedicated d.c. charging or for combined a.c./d.c. charging (under consideration)

PLUGS, SOCKET-OUTLETS, VEHICLE CONNECTORS AND VEHICLE INLETS – CONDUCTIVE CHARGING OF ELECTRIC VEHICLES –

Part 1: General requirements

1 Scope

This part of IEC 62196 is applicable to plugs, socket-outlets, connectors, inlets and cable assemblies for electric vehicles (EV), herein referred to as “accessories”, intended for use in conductive charging systems which incorporate control means, with a rated operating voltage not exceeding

– 690 V a.c. 50 Hz – 60 Hz, at a rated current not exceeding 250 A,

– 1 500 V d.c. at a rated current not exceeding 400 A.

These accessories and cable assemblies are intended to be used for circuits specified in IEC 61851-1:2010 which operate at different voltages and frequencies and which may include ELV and communication signals.

The accessories covered by this standard are intended only to be used with vehicles that comply with the requirements of 7.2.3.1 of IEC 61851-1:2010.

These accessories and cable assemblies are to be used in an ambient temperature of between –30 °C and +50 °C.

NOTE In some countries, other requirements may apply.

These accessories are intended to be connected only to cables with copper or copper-alloy conductors.

The accessories covered by this standard are for use in certain modes of charging EVs. These modes are defined in IEC 61851-1:2010. These definitions and a description of the types of connection (cases A, B and C), also described in IEC 61851-1:2010, are reproduced herein as Annex A.

NOTE In the following country, Mode 1 will not be allowed: UK.

This standard does not apply to those standardised accessories used in charging systems where the use of such accessories constructed to the requirements of other standards is permitted (e.g. in mode 1 and mode 2). Such standardized accessories may be used for those situations (mode and case) identified in IEC 61851-1:2010.

This standard can be used as a guide for accessories with a lesser number of contacts and lower ratings for use with light duty vehicles.

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.