SLOVENSKI STANDARD

SIST EN 61851-21:2002

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september 2002

Electric vehicle conductive charging system - Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply (IEC 61851-21:2001)

ICS 43.120

Referenčna številka
SIST EN 61851-21:2002(en)

EUROPEAN STANDARD **EN 61851-21**

NORME EUROPÉENNE

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ICS 43.120

English version

Electric vehicle conductive charging system Part 21: Electric vehicle requirements for conductive connection to an a.c/d.c. supply

(IEC 61851-21:2001)

Système de charge conductive pour véhicules électriques Partie 21: Exigences concernant le véhicule électrique pour la connexion conductive à une alimentation en courant alternatif ou continu (CEI 61851-21:2001)

Konduktive Ladesysteme für Elektrofahrzeuge Teil 21: Anforderung eines Elektrofahrzeuges für konduktive Verbindung an AC/DC-Versorgung (IEC 61851-21:2001)

This European Standard was approved by CENELEC on 2001-12-04. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61851-21:2002 E

Foreword

The text of document 69/128/FDIS, future edition 1 of IEC 61851-21, prepared by IEC TC 69, Electric road vehicles and electric industrial trucks, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61851-21 on 2001-12-04.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2002-10-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-01-01

This European Standard shall be read in conjunction with EN 61851-1.

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61851-21:2001 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 60065	NOTE	Harmonized as EN 60065:1998 (modified).
IEC 60245-1	NOTE	In Europe, HD 22.1 S3:1997 applies.
IEC 60245-2	NOTE	In Europe, HD 22.2 S3:1997 applies.
IEC 60245-3	NOTE	In Europe, HD 22.3 S3:1995 + A1:1999 applies.
IEC 60245-4	NOTE	Harmonized as HD 22.4 S3:1995 (modified) + A1:1999.
IEC 60309-1	NOTE	Harmonized as EN 60309-1:1999 (not modified).
IEC 60364-1	NOTE	Harmonized as HD 384.1 S2:2001 (modified).
IEC 60364-4-41	NOTE	Harmonized as HD 384.4.41 S2:1996 (modified).
IEC 60529	NOTE	Harmonized as EN 60529:1991 (not modified).
CISPR 11	NOTE	Harmonized as EN 55011:1998 (modified) + A1:1999 (not modified).
CISPR 22	NOTE	Harmonized as EN 55022:1998 (modified) + A1:2000 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60038 (mod)	1983	Nominal voltages for low-voltage public electricity supply systems	HD 472 S1 + A1	1989 1995
IEC 60364-4-43 (mod)	1977	Electrical installations of buildings Part 4: Protection for safety -- Chapter 43: Protection against overcurrent	HD 384.4.43 S2 [1)]	2001
IEC 60364-4-443 (mod)	1995	Part 4: Protection for safety -- Chapter 44: Protection against overvoltages Section 443: Protection against overvoltages of atmospheric origin or due to switching	HD 384.4.443 S1	2000
A1	1998		-	-
IEC 60364-5-54 (mod)	1980	Part 5: Selection and erection of electrical equipment -- Chapter 54: Earthing arrangements and protective conductors	HD 384.5.54 S1	1988
A1	1982		-	-
IEC 60664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. November	1996 1996
IEC 60950 (mod) + corr. January	1999 2000	Safety of information technology equipment	EN 60950	2000
IEC 61000-2-2	1990	Electromagnetic compatibility (EMC) Part 2: Environment -- Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	-	-

1) HD 384.4.43 S2 includes A1:1997 to IEC 60364-4-43.

Publication	Year	Title	EN/HD	Year
IEC 61000-3	Series	Part 3: Limits	EN 61000-3	Series
IEC 61000-3-2 (mod)	2000	Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)	EN 61000-3-2	2000
IEC 61000-4	Series	Part 4: Testing and measurement techniques	EN 61000-4	Series
IEC 61000-4-1	2000	Part 4-1: Testing and measurement techniques - Overview of IEC 61000-4 series	EN 61000-4-1	2000
IEC 61000-4-2	1995	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
A1	1998		A1	1998
A2	2000		A2	2001
IEC 61000-4-3 (mod)	1995	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996
A1	1998		A1	1998
A2	2000		A2	2001
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995
A1	2000		A1	2001
IEC 61000-4-5	1995	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995
IEC 61000-4-11	1994	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
IEC 61180-1	1992	High-voltage test techniques for low-voltage equipment Part 1: Definitions, test and procedure requirements	EN 61180-1	1994
CISPR 14	Series	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus	EN 55014	Series
CISPR 16	Series	Specification for radio disturbance and immunity measuring apparatus and methods	-	-

NORME INTERNATIONALE
INTERNATIONAL STANDARD

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61851-21

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Système de charge conductive pour véhicules électriques –

Partie 21:
Exigences concernant le véhicule électrique pour la connexion conductive à une alimentation en courant alternatif ou continu

Electric vehicle conductive charging system –

Part 21:
Electric vehicle requirements for conductive connection to an a.c./d.c. supply

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRIC VEHICLE CONDUCTIVE CHARGING SYSTEM –

Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.

3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.

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

International Standard IEC 61851-21 has been prepared by IEC technical committee 69: Electric road vehicles and electric industrial trucks.

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

FDIS	Report on voting
69/128/FDIS	69/130/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 3.

This standard shall be read in conjunction with IEC 61851-1.

This standard is published in separate parts under the general title *Electric vehicle conductive charging system* and includes:

Part 1: General requirements

Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply

Part 22: AC electric vehicle charging station

Part 23: DC electric vehicle charging station (under consideration)

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

ELECTRIC VEHICLE CONDUCTIVE CHARGING SYSTEM –

Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply

1 Scope

This part of IEC 61851 together with part 1 gives the electric vehicle requirements for conductive connection to an a.c. or d.c. supply, for a.c. voltages according to IEC 60038 up to 690 V and for d.c. voltages up to 1 000 V, when the electric vehicle is connected to the supply network.

This standard does not cover class II vehicles.

NOTE Class II vehicles are not excluded, but the lack of information on this type of vehicle means that the requirements for the standard are unavailable at present.

This standard does not cover all safety aspects related to maintenance.

This standard is not applicable to trolley buses, rail vehicles, industrial trucks and vehicles designed primarily to be used off-road.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61851. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61851 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 60038:1983, *IEC standard voltages*

IEC 60364-4-43:1977, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 43: Protection against overcurrent*

IEC 60364-4-443:1995, *Electrical installations of buildings – Part 4: Protection for safety – Chapter 44: Protection against overvoltages – Section 443 – Protection against overvoltages of atmospheric origin or due to switching* [1)]
Amendment 1 (1998)

IEC 60364-5-54:1980, *Electrical installations of buildings – Part 5: Selection and erection of electrical equipment – Chapter 54: Earthing arrangements and protective conductors*
Amendment 1 (1982)

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

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1) There exists a consolidated edition 2.1 (1999) that includes IEC 60364-4-443 (1995) and its amendment 1 (1998).