SLOVENSKI STANDARD
SIST EN IEC 61851-23-1:2026

01-oktober-2026

Sistem kabelskega napajanja električnih vozil - 23-1. del: Oprema za napajanje električnih vozil z enosmernim tokom - Avtomatski sklopni sistem (IEC 61851-23-1:2026)

Electric vehicle conductive charging system - Part 23-1: DC electric vehicle supply equipment - Automated connection device (IEC 61851-23-1:2026)

Konduktive Ladesysteme für Elektrofahrzeuge – Teil 23-1: Gleichstromladen mit einer automatischen Kontaktvorrichtung (IEC 61851-23-1:2026)

Système de charge par conduction pour véhicules électriques - Partie 23-1: Système d'alimentation en courant continu pour véhicules électriques - Dispositif de connexion automatique (IEC 61851-23-1:2026)

Ta slovenski standard je istoveten z: **EN IEC 61851-23-1:2026**

ICS:

43.120	Električna cestna vozila	Electric road vehicles

SIST EN IEC 61851-23-1:2026 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61851-23-1

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English Version

Electric vehicle conductive charging system - Part 23-1: DC electric vehicle supply equipment - Automated connection device (IEC 61851-23-1:2026)

Système de charge par conduction pour véhicules électriques - Partie 23-1: Système d'alimentation en courant continu pour véhicules électriques - Dispositif de connexion automatique
(IEC 61851-23-1:2026)

Konduktive Ladesysteme für Elektrofahrzeuge - Teil 23-1: Gleichstromversorgungseinrichtungen für Elektrofahrzeuge - Automatische Anschlussvorrichtung
(IEC 61851-23-1:2026)

This European Standard was approved by CENELEC on 2026-07-23. 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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 61851-23-1:2026 E

European foreword

The text of document 69/1127/FDIS, future edition 1 of IEC 61851-23-1, prepared by TC 69 "Electrical power/energy transfer systems for electrically propelled road vehicles and industrial trucks" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61851-23-1:2026.

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) 2027-08-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2029-08-31

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 is read in conjunction with EN IEC 61851-23:2026 and EN IEC 61851-1:2019.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61851-23-1:2026 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 standard indicated:

IEC 61140:2016	NOTE	Approved as EN 61140:2016 (not modified)
IEC 61496-1:2020	NOTE	Approved as EN IEC 61496-1:2020 (not modified)
IEC 61643-41:2025	NOTE	Approved as EN IEC 61643-41:2025 (not modified) + A11:2025
IEC 61851-21-2:2018	NOTE	Approved as EN IEC 61851-21-2:2021 (not modified)
IEC 62196-2	NOTE	Approved as EN IEC 62196-2
IEC 62196-3:2022	NOTE	Approved as EN IEC 62196-3:2022 (not modified)
IEC 62305 (series)	NOTE	Approved as EN IEC 62305 (series)

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.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
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
+ A1	2017		-	-
-	-		+ A11	2017
-	-		+ A12	2019
IEC 60364-5-53	2019	Low-voltage electrical installations -- Part 5-53: Selection and erection of electrical equipment - Protection, isolation, switching, control and monitoring	HD 60364-5-53	2022
+ AMD 2	2024		-	-
IEC 60479-1	2018	Effects of current on human beings and livestock - Part 1: General aspects	-	-
IEC 60479-2	2019	Effects of current on human beings and livestock - Part 2: Special aspects	-	-
IEC 60529	-	Degrees of protection provided by enclosures (IP Code)	EN 60529	-
IEC 61496	series	Safety of machinery - Electro-sensitive protective equipment	EN IEC 61496	series
IEC 61643	series	Low-voltage surge protective devices	EN 61643	series
IEC 61643-11	-	Low-voltage surge protective devices - Part 11: Surge protective devices connected to AC low-voltage power systems - Requirements and test methods	EN IEC 61643-11	-
IEC 61643-21	-	Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks - Requirements and test methods	EN IEC 61643-21	-
IEC 61851-1	2017	Electric vehicle conductive charging system - Part 1: General requirements	EN IEC 61851-1	2019

Publication	Year	Title	EN/HD	Year
IEC 61851-23	2023	Electric vehicle conductive charging system - Part 23: DC electric vehicle supply equipment	EN IEC 61851-23	2026
IEC 61851-24	2023	Electric vehicle conductive charging system - Part 24: Digital communication between a DC EV supply equipment and an electric vehicle for control of DC charging	EN IEC 61851-24	2024
IEC 62368-1	2023	Audio/video, information and communication technology equipment - Part 1: Safety requirements	EN IEC 62368-1	2024
ISO 5474-3	2024	Electrically propelled road vehicles - Functional and safety requirements for power transfer between vehicle and external electric circuit - Part 3: DC power transfer	-	-
ISO 6469-3	2021	Electrically propelled road vehicles - Safety specifications - Part 3: Electrical safety	-	-

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Part 23-1: DC electric vehicle supply equipment - Automated connection device

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Electric vehicle conductive charging system - Part 23-1: DC electric vehicle supply equipment - Automated connection device

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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9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 61851-23-1 has been prepared by IEC technical committee 69: Electric power/energy transfer systems for electrically propelled road vehicles and industrial trucks. It is an International Standard.

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

Draft	Report on voting
69/1127/FDIS	69/1133/RVD

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

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This document is to be read in conjunction with IEC 61851-23:2023 and IEC 61851-1:2017.

The clauses of particular requirements in this document supplement or modify the corresponding clauses in IEC 61851-23:2023 and IEC 61851-1:2017. Where the text of subsequent clauses indicates an "addition", an "amendment" to or a "replacement" of the relevant requirement, test specification or explanation of IEC 61851-23:2023 or IEC 61851-1:2017, these changes are made to the relevant text of IEC 61851-23:2023 or IEC 61851-1:2017, which then becomes part of this document. Where no change is necessary, the words " IEC 61851-23:2023, [clause], is applicable " are used. The new clauses which are not included in IEC 61851-23:2023 have a clause number starting from 201, for example 3.201, 201.2, etc. Replaced tables and figures are numbered starting from 201. The new annexes of this document are numbered using triple-alphabet, for example Annex AAA to avoid confusion with the annexes of IEC 61851-23:2023. If the text in this document is to be read with IEC 61851-23:2023 and IEC 61851-1:2017, the following terms are replaced:

– "vehicle coupler", as defined by IEC 61851-1:2017, with "automatic coupler" as defined in Clause 3,
– "vehicle connector", as defined by IEC 61851-1:2017, with "part of the automatic coupler mounted on the EV supply equipment", and
– "vehicle inlet", as defined by IEC 61851-1:2017, with "part of the automatic coupler mounted on the EV".

In this document, the following print types are used:

– *test specifications: italic type.*
– notes: smaller roman type.

A list of all parts in the IEC 61851 series, published under the general title *Electric vehicle conductive charging system*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under https://webstore.iec.ch/?ref=menu in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

The introduction and commercialisation of electric vehicles have been accelerated in the global market, responding to the global concerns on CO_2 reduction and energy security. Concurrently, the development of charging infrastructure for electric vehicles has also been expanding. As a complement to the DC EV supply equipment with a vehicle connector, DC supply equipment using an automated connection device is recognized as an alternative solution for electric vehicles, for example buses and trucks.

The international standardization of charging infrastructure with an automated connection device is indispensable for the diffusion of electric vehicles, and this document is developed for the manufacturers' convenience by providing general and basic requirements for DC EV supply equipment using an automatic conductive connection to the vehicle.

1 Scope

This part of IEC 61851 provides the requirements for DC EV supply equipment with an automated connection device (ACD) for conductive connection to the vehicle, with a rated maximum voltage at side A of up to 1 000 V AC or up to 1 500 V DC and a rated maximum voltage at side B up to 1 500 V DC.

NOTE 1 This document includes information on EV for conductive connection but limited to the necessary content for describing the power and signalling interface.

This document specifies the DC EV supply equipment with an automated connection device based on

– system B described in IEC 61851-23:2023, Annex BB, and
– system C described in IEC 61851-23:2023, Annex CC.

The requirements for reverse power transfer (RPT) and bidirectional power transfer (BPT) are under consideration and are not specified in this document.

EMC requirements for DC EV supply equipment are defined in IEC 61851-21-2:2018.

This document provides the general requirements for the control communication between a DC EV supply equipment and an EV.

The requirements for digital communication between DC EV supply equipment and electric vehicle for control of DC energy transfer are defined in ISO 15118-20:2022 and IEC 61851-24:2023.

This document only applies to automatic couplers of category 2, i.e. using an electro-mechanical interface: automatic coupler for an automated charging system according to IEC 63407.

This document does not apply to automatic coupler of category 1 as described in IEC TS 61851-27.

This document does not apply to automatic coupler of category 3 as described in IEC TS 61851-26.

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

Requirements for systems not providing simple separation or protective separation between side A and side B are under consideration.

Requirements for EV supply equipment without control of current, voltage or power are under consideration.

EV supply equipment in compliance with this document are not intended to provide energy transfer to a single EV with

– multiple vehicle connectors of the same EV supply equipment, or
– multiple EV supply equipment.

NOTE 2 Requirements for EVs mated to an EV supply equipment are specified in the ISO 5474 series.