

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles –  
Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers**

**Fiches, socles de prise de courant, prises mobiles de véhicule et socles de connecteurs de véhicule – Charge conductive des véhicules électriques –  
Partie 3: Exigences dimensionnelles de compatibilité pour les prises de courant de véhicule à broches et alvéoles pour courant continu et pour courants alternatif et continu**



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COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PLUGS, SOCKET-OUTLETS, VEHICLE CONNECTORS AND VEHICLE  
INLETS – CONDUCTIVE CHARGING OF ELECTRIC VEHICLES –****Part 3: Dimensional compatibility requirements  
for DC and AC/DC pin and contact-tube vehicle couplers**

## FOREWORD

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IEC 62196-3 has been prepared by subcommittee 23H: Plugs, socket-outlets, and couplers for industrial and similar applications, and for electric vehicles, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2014. This edition constitutes a technical revision.

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

- a) interchangeability requirements have been removed from the title of Part 3;
- b) increased ratings for all configurations;
- c) reference to new tests in IEC 62196-1 (Clauses 34, 35, 36 and 37).

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

Draft	Report on voting
23H/500/FDIS	23H/504/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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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

This document is to be read in conjunction with IEC 62196-1:2022. The clauses of the particular requirements in this document supplement or modify the corresponding clauses in IEC 62196-1:2022. Where the text indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of IEC 62196-1:2022, these changes are made to the relevant text of IEC 62196-1:2022, which then becomes part of this document. Where no change is necessary, the words "Clause X of IEC 62196-1:2022 is applicable" are used.

Subclauses, figures, tables, or notes which are additional to those in IEC 62196-1:2022 are numbered starting from 301.

In this document, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type*;
- notes: in smaller roman type.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](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

IEC 61851 (all parts) specifies requirements for electric vehicle (EV) conductive supply equipment.

IEC 62196 (all parts) specifies the requirements for plugs, socket-outlets, vehicle connectors, vehicle inlets and cable assemblies as described in IEC 61851 (all parts).

Charging using off-board DC charging equipment can be achieved by the direct connection of an electric vehicle to DC EV supply equipment incorporating control and communication circuits.

To support the connection of DC power for such vehicles, this document provides the standard interface configurations of DC vehicle couplers and accessories to be used in conductive charging of electric vehicles, taking the most frequent charging situations into consideration.

IEC 62196 is divided into several parts as follows:

- Part 1: General requirements, comprising clauses of a general character.
- Part 2: Dimensional compatibility requirements for AC pin and contact-tube accessories.
- Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers.
- Part 3-1: Vehicle connector, vehicle inlet and cable assembly intended to be used with a thermal management system for DC charging.
- Part 4: Dimensional compatibility requirements for DC pin and contact-tube accessories for Class II or Class III applications.
- Part 6: Dimensional compatibility requirements for DC pin and contact-tube couplers for applications using a system of protective electrical separation.



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

## Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers

### 1 Scope

This part of IEC 62196 is applicable to vehicle couplers with pins and contact tubes of standardized configuration, herein also referred to as "accessories", intended for use in electric vehicle conductive charging systems which incorporate control means, with rated operating voltage and current in accordance with IEC 62196-1:2022.

This document applies to high power DC interfaces and combined AC/DC interfaces of vehicle couplers that are intended for use in conductive charging systems for circuits specified in IEC 61851-1:2017 and IEC 61851-23:—<sup>1</sup>.

The DC vehicle connectors and inlets covered by this document are used only in charging mode 4, according to IEC 61851-1:2017, 6.2.4, and case C, as shown in IEC 61851-1:2017, Figure 3.

These vehicle couplers are intended to be used for circuits specified in IEC 61851-23:— which operate at different voltages, and which can include ELV and communication signals.

This document applies to the vehicle couplers to be used in an ambient temperature between –30 °C and +40 °C.

NOTE 1 In some countries, other requirements may apply.

NOTE 2 In the following country, –35 °C applies: SE.

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

### 2 Normative references

Clause 2 of IEC 62196-1:2022 applies, except as follows.

*Additional normative references:*

IEC 60364-5-54:2011, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*

IEC 62196-1:2022, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements*

IEC 62196-2:2022, *Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 2: Dimensional compatibility requirements for AC pin and contact-tube accessories*

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<sup>1</sup> Second edition under preparation. Stage at the time of publication: IEC PRVC 61851-23:2022.