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# INTERNATIONAL STANDARD

**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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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# 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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IEC 62196-2 has been prepared by IEC 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 fourth edition cancels and replaces the third edition published in 2022. This edition constitutes a technical revision.

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

a) addition of new tests for latching devices;
b) corrections to standard sheets.

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

| Draft | Report on voting |
|---|---|
| 23H/580/FDIS | 23H/587/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/standardsdev/publications.

This document is to be read in conjunction with IEC 62196-1:2025. The clauses of the particular requirements in this document supplement or modify the corresponding clauses in IEC 62196-1:2025. Where the text indicates an "addition" to or a "replacement" of the relevant requirement, test specification or explanation of IEC 62196-1:2025, these changes are made to the relevant text of IEC 62196-1:2025, which then becomes part of this document. Where no change is necessary, the words " IEC 62196-1:2025, Clause X, applies" are used.

Subclauses, figures, tables, or notes which are additional to those in IEC 62196-1:2025 are numbered starting from 201. Additional annexes are lettered AA, BB, etc.

In this document, the following print types are used:

– requirements proper: in roman type;

– *test specifications: in italic type;*

– notes: in smaller roman type.

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.

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 in the data related to the specific document. At this date, the document will be

– reconfirmed,

– withdrawn, or

– revised.

# INTRODUCTION

The IEC 61851 series specifies requirements for electric vehicle (EV) conductive supply equipment.

The IEC 62196 series specifiy the requirements for plugs, socket-outlets, vehicle connectors, vehicle inlets and cable assemblies as described in the IEC 61851 series and in IEC 62752.

Some charging using on-board vehicle chargers can be achieved by direct connection from an electric vehicle to an AC supply network using common socket-outlets or by the use of equipment incorporating control and communication circuits.

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

The IEC 62196 series consists of the following parts:

– IEC 62196-1: General requirements, comprising clauses of a general character;
– IEC 62196-2: Dimensional compatibility requirements for AC pin and contact-tube accessories;
– IEC 62196-3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers;
– IEC TS 62196-4: Dimensional compatibility and interchangeability requirements for DC pin and contact-tube accessories for class II or class III applications;
– IEC 62196-6: Dimensional compatibility requirements for DC pin and contact-tube vehicle couplers intended to be used for DC EV supply equipment where protection relies on electrical separation;
– IEC TS 62196-7[1]: Vehicle adapter.

[1] Under preparation. Stage at the time of publication: IEC TS/ADTS 62196-7:2025.

## 1 Scope

This part of IEC 62196 applies to EV plugs, EV socket-outlets, vehicle connectors and vehicle inlets with pins and contact-tubes of standardized configurations, herein referred to as "accessories". These accessories have a nominal rated operating voltage not exceeding 480 V AC, 50 Hz to 60 Hz, and a rated current not exceeding 63 A three phase or 70 A single phase, for use in conductive charging of electric vehicles.

This document covers the basic interface accessories for vehicle supply as specified in IEC 62196-1:2025.

NOTE 1 The term "electric road vehicles (EV)" comprises all road vehicles, including plug-in hybrid road vehicles (PHEV) that derive all or part of their energy from the rechargeable energy storage systems (RESS).

These accessories are intended to be used for circuits specified in IEC 61851-1 and IEC 62752, which operate at different voltages and frequencies, and which can include extra-low voltage (ELV) and communication signals.

The use of these accessories for bidirectional power transfer is under consideration.

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

NOTE 2 In the following country, other requirements regarding the lower temperature can apply: NO.

NOTE 3 In the following country, −40 °C applies: SE.

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

Vehicle inlets and vehicle connectors described in this document are intended to be used for charging in modes 1, 2 and 3, cases B and C. The EV socket-outlets and EV plugs covered by this document are intended to be used for charging mode 3 only, case A and B.

The modes and permissible connections are specified in IEC 61851-1.

## 2 Normative references

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.

IEC 61851-1:2017, *Electric vehicle conductive charging system - Part 1: General requirements*

IEC 62196-1:2025, *Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements*