

AS/NZS IEC 62196.6:2023
IEC 62196-6:2022



Australian/New Zealand Standard™

Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles

Part 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



AS/NZS IEC 62196.6:2023

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- Australian Industry Group
- Better Regulation Division (Fair Trading, SafeWork NSW, TestSafe)
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- International Accreditation New Zealand
- Joint Accreditation System of Australia & New Zealand
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Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-004, Electrical Accessories.

The objective of this document is to specify requirements for vehicle connectors, vehicle inlets and cable assemblies for electric vehicle (EV) intended for use in conductive charging systems which incorporate control means, with a rated operating voltage up to 120 V DC and rated current up to 100 A.

These accessories are intended to be used for a DC interface of the conductive charging system according to IEC 61851-25:2020.

This document applies to accessories and cable assemblies to be used in an ambient temperature of between -30 °C and +40 °C.

The vehicle connector and vehicle inlets are intended to be connected only to cables with copper or copper-alloy conductors.

The essential safety requirements in AS/NZS 3820, *Essential safety requirements for electrical equipment*, which could be applicable to plugs, socket-outlets, vehicle connectors and vehicle inlets for conductive charging of electric vehicles, are covered by this document, taken in conjunction with any other relevant requirements affecting safety.

This document is identical with, and has been reproduced from, IEC 62196-6:2022, *Plugs, socket-outlets, vehicle connectors and vehicle inlets — Conductive charging of electric vehicles — Part 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*.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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International Standard IEC 62196-6 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.

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

Draft	Report on voting
23H/501/FDIS	23H/505/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.

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.

This document is to be read in conjunction with IEC 62196-1:2022. The clauses of the particular requirements in Part 6 supplement or modify the corresponding clauses in Part 1. Where the text indicates "addition" to or "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 this standard. Where no change is necessary, the words "Clause X of IEC 62196-1:2022 is applicable" are used.

Subclauses, figures or tables which are additional to those in IEC 62196-1:2022 are numbered starting from 601.

In this standard, 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 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

With the continued development and expansion of the use of electric power into other classes of electric vehicles (EV) and hybrid electric vehicles, the introduction and commercialization of electric powered two or three wheelers (hereafter e-PTWs) are being accelerated in the global market and responding to the global concerns on CO₂ reduction and energy saving.

In comparison with the passenger cars, e-PTWs have a shorter range per charge and need more charging possibilities, especially public DC charging stations. This document provides general and basic requirements for a compact interface for small sized DC EV supply equipment, which could be installed in various places such as convenience stores, newspaper stands, lottery shops, etc., and could help the diffusion of e-PTWs.

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

Part 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

1 Scope

This part of IEC 62196 is applicable to vehicle connectors, vehicle inlets and cable assemblies for electric vehicle (EV), intended for use in conductive charging systems which incorporate control means, with a rated operating voltage up to 120 V DC and rated current up to 100 A.

These accessories are intended to be used for a DC interface of the conductive charging system according to IEC 61851-25:2020.

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

The vehicle connector and vehicle inlets 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:

Addition:

IEC 61851-25:2020, *Electric vehicle conductive charging system – Part 25: DC EV supply equipment where protection relies on electrical separation*

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

3 Terms and definitions

Clause 3 of IEC 62196-1:2022 applies.

4 General

Clause 4 of IEC 62196-1:2022 applies, except as follows:

4.1 General requirements

Replacement of the first paragraph:

The accessories covered by this document shall only be used with DC EV supply equipment that complies with the requirements of IEC 61851-25.