

FINAL VERSION

**Charging cables for electric vehicles for rated voltages up to and including
0,6/1 KV –
Part 1: General requirements**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CHARGING CABLES FOR ELECTRIC VEHICLES
OF RATED VOLTAGES UP TO AND
INCLUDING 0,6/1 kV –****Part 1: General requirements**

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IEC 62893-1 edition 1.1 contains the first edition (2017-11) [documents 20/1761/FDIS and 20/1772/RVD] and its amendment 1 (2020-11) [documents 20/1916/CDV and 20/1933/RVC].

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 62893-1 has been prepared by IEC technical committee 20: Electric cables.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62893 series, published under the general title *Charging cables for electric vehicles of rated voltages up to and including 0,6/1 kV*, can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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- withdrawn,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

CHARGING CABLES FOR ELECTRIC VEHICLES OF RATED VOLTAGES UP TO AND INCLUDING 0,6/1 kV –

Part 1: General requirements

1 Scope

This part of IEC 62893 specifies construction, dimensions and test requirements for cables with extruded insulation and sheath having a voltage rating of up to and including 0,6/1 kV AC or up to and including 1 500 V DC for flexible applications under harsh conditions for the power supply between the electricity supply point of the charging station and the electric vehicle (EV).

The EV charging cable is intended to supply power and, if needed, communication (for details see the IEC 62196 series and IEC 61851-1) to an EV or plug-in hybrid vehicle (PHEV). The charging cables are applicable for charging modes 1 to 4 of IEC 61851-1. Ordinary duty cables with rated voltage 300/500 V are only permitted for charging mode 1 of IEC 61851-1. Maximum conductor temperature for the cables in this part of IEC 62893 is 90 °C.

The particular types of cables are specified in IEC 62893-3 (modes 1 to 3 for AC charging) and in the future IEC 62893-4 (mode 4 for DC charging).

These parts are collectively referred to hereafter as “the particular specifications”.

The test methods specified are given in IEC 62893-2, IEC 60245-2, IEC 60332-1-2, IEC 62821-1:2015, Annex B, and in the relevant parts of IEC 60811, as listed in the normative references.

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 60245-2:2004, *Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 2: Test methods*

IEC 60228:2004, *Conductors of insulated cables*

IEC 60332-1-2:2004, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

IEC 60332-1-2:2004/AMD1:2015

IEC 60811-401, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 401: Miscellaneous tests – Thermal ageing methods – Ageing in an air oven*

IEC 60811-403, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 403: Miscellaneous tests – Ozone resistance test on cross-linked compounds*