



BSI Standards Publication

## Small craft — Electrical systems — Alternating and direct current installations

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## National foreword

This British Standard is the UK implementation of EN ISO 13297:2021+A1:2022. It is identical to ISO 13297:2020+A1:2022. It supersedes BS EN ISO 13297:2018 and BS EN ISO 10133:2017, which are withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to ISO text carry the number of the ISO amendment. For example, text altered by ISO amendment 1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee GME/33, Small craft.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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#### **Amendments/corrigenda issued since publication**

Date	Text affected
30 November 2022	Implementation of ISO amendment 1:2022 with CEN endorsement A1:2022

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Supersedes EN ISO 10133:2017, EN ISO 13297:2018

English Version

## Small craft - Electrical systems - Alternating and direct current installations (ISO 13297:2020)

Petits navires - Installations électriques - Installations à courant alternatif et continu (ISO 13297:2020)

Kleine Wasserfahrzeuge - Elektrische Systeme - Wechselstrom- und Gleichstromanlagen (ISO 13297:2020)

This European Standard was approved by CEN on 6 July 2020.

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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN ISO 13297:2021) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with CCMC.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2021, and conflicting national standards shall be withdrawn at the latest by October 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 10133:2017 and EN ISO 13297:2018.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZA, which is an integral part of this document.

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## Endorsement notice

The text of ISO 13297:2020 has been approved by CEN as EN ISO 13297:2021 without any modification.

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## European foreword to Amendment 1

This document (EN ISO 13297:2021/A1:2022) has been prepared by Technical Committee ISO/TC 188 "Small craft" in collaboration with Technical Committee CEN/TC 464 "Small Craft" the secretariat of which is held by SIS.

This Amendment to the European Standard EN ISO 13297:2021 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2023, and conflicting national standards shall be withdrawn at the latest by April 2023.

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This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

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## Endorsement notice

The text of ISO 13297:2020/Amd 1:2022 has been approved by CEN as EN ISO 13297:2021/A1:2022 without any modification.

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## Annex ZA (informative)

### Relationship between this European Standard and the Essential Requirements of Directive 2013/53/EU aimed to be covered

This European Standard has been prepared under a Commission's standardization request M/542 C(2015) 8736 final to provide one voluntary means of conforming to Essential Requirements of Directive 2013/53/EU.

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

**Table ZA.1 — Correspondence between this European Standard and Directive 2013/53/EU**

Essential Requirements of Directive 2013/53/EU	Clause(s)/sub-clause(s) of this EN	Remarks/Notes
Annex I, Part A, 5.3 - Electrical systems	All clauses except Clause 26, Annex A	This standard does not deal with battery ventilation to prevent the accumulation of explosive gases or electric propulsion circuits.
Annex I, Part A, 5.6.1 - Fire protection; general	Clause 20.6	In respect of routing electrical conductors away from exhaust components and heat sources.
Annex I, Part A, 2.5 - Owner's manual	Clause 26, Annex B	Annex B specifies the information to be included in the owner's manual, it does specify the requirements for the owner's manual

**WARNING 1** — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

**WARNING 2** — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 188, *Small craft*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 464, *Small craft*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This fifth edition of ISO 13297 cancels and replaces ISO 13297:2014 and ISO 10133:2012, which have been technically revised.

The main changes compared to the previous editions are as follows:

- combined the standard for alternating current (ISO 13297:2014) and the standard for direct current (ISO 10133:2012) into a single marine electrical standard.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

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## 1 Scope

This document specifies the requirements for the design, construction and installation of the following types of DC and AC electrical systems, installed on small craft either individually or in combination:

- a) extra-low-voltage direct current (DC) electrical systems that operate at nominal potentials of 50 V DC or less;
- b) single-phase alternating current (AC) systems that operate at a nominal voltage not exceeding AC 250 V.

This document does not cover the following:

- electrical propulsion systems of direct current less than 1 500 V DC, single-phase alternating current up to 1 000 V AC, and three-phase alternating current up to 1 000 V AC, which are addressed by ISO 16315;
- any conductor that is part of an outboard engine assembly and that does not extend beyond the outboard engine manufacturers supplied cowling;
- three-phase AC installations that operate at a nominal voltage not exceeding 500 V AC, which are addressed by IEC 60092-507.

## 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.

ISO 7010:2019, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

ISO 8846:1990, *Small craft — Electrical devices — Protection against ignition of surrounding flammable gases*

A1 Text deleted. A1

A1 IEC 60309-2:2021, *Plugs, socket-outlets and couplers for industrial purposes — Part 2: Dimensional interchangeability requirements for pin and contact-tube accessories* A1

IEC 60529:1989, *Degrees of protection provided by enclosures (IP code)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>