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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18814-2024

**Small craft - Electrical systems - Alternating and direct current
installations**

小艇 电气系统 交流和直流装置

(English Translation)

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Reference

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 18814-2002 "Small boat electrical system AC installation" and GB/T 19311-2003 "Small boat electrical system AC installation" this document is based on GB/T 18814-2002 and integrates the contents of GB/T 19311-2003.

Compared with GB/T 18814-2002, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added general requirements for DC and AC systems, DC systems and AC systems (see Chapters 4 to 6);
- b) The symbols and warning signs in "Signs, communication systems" have been changed (see 7.2, 5.2 of GB/T 18814-2002);
- c) Added battery electrical insulation range diagram and battery installation requirements (see 8.7, 8.9);
- d) Added the content of "Inverter and Charger, AC System" (see Chapter 11);
- e) Added the prerequisite for the use of reverse polarity indicator (see 13.3.2);
- f) Changed the AC power supply ground leakage protection requirements in "Ground Fault Protection/Earth Leakage Protection" (see 14.2, GB/T 18814-2002, 8.2);
- g) Added warning label (see 16.4);
- h) Added requirements for sockets and plugs for shore power equipment (see 23.1).

This document is equivalent to ISO 13297:2020 "Small craft electrical systems - AC and DC installations".

The following minimal editorial changes were made to this document.

--- Added examples in 3.5 and notes to 3.11 and 3.18 in Terms and Definitions.

1 Scope

This document specifies the design, manufacture and installation requirements for the following DC and AC electrical systems installed on board a boat, either alone or in combination.

- a) Extra low voltage DC electrical systems using a nominal voltage of 50 V or less;
- b) Single-phase AC electrical system with a nominal voltage not exceeding 250V.

This document does not apply to the following.

---Comply with ISO 16315 requirements for DC voltage not exceeding 1500V, single-phase AC voltage not exceeding 1000V and three-phase AC voltage Electric propulsion systems with a voltage not exceeding 1000V;

--- all wires that are part of the outboard engine assembly and do not extend beyond the fairing provided by the outboard engine manufacturer;

--- Three-phase AC devices with a nominal voltage not exceeding 500V as specified in IEC 60092-507.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

ISO 7010:2019 Graphical symbols - Safety colors and safety signs Registered safety signs
ISO 8846:1990 Small craft electrical installations to prevent ignition of surrounding flammable gases
ISO 10240:2022 Smallcraft- Owner's manual
IEC 60309-2:2021 Industrial plugs, fixed or mobile sockets and appliance inlets Part 2: Contact pins and contact tubes

1) The 1999 edition of the ISO original text has been abolished and the referenced content has no difference with the latest edition.

IEC 60529:1989 Degrees of protection provided by enclosures (IP code)
enclosures(IPcode)] the following terms and definitions apply to this document.

craft's ground/earth

Protective ground

For safety purposes, a "ground" is formed by connecting a wire to a common "ground" (having the potential of the earth's surface).

Designed to place various exposed conductive parts of DC electrical equipment at substantially the same potential as external conductive parts, and to carry no current