ICS 47.020.60
CCS U61

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 12980-2025

Replacing GB/T 12980-1991

General technical requirements and test methods for marine low voltage power system

船舶低压供电系统通用技术要求和试验方法

Issued on: August 1, 2025 **Implemented on: February 1, 2026**

Issued by: State Administration for Market Regulation;
Standardization Administration of China

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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 is required. This document replaces GB/T 12980-1991 "General Technical Requirements and Test Methods for Ship Power Stations" and is consistent with GB/T 12980-1991. In addition to structural adjustments and editorial changes, the main technical changes are as follows: The scope of application has been changed (see Chapter 1, Chapter 1 of the.1991 edition);

a) Changed the term "Ship Emergency Power Station" to "Emergency Power Station", "Frequency Regulation Accuracy" to "Steady-State Frequency Fluctuation", and changed Corresponding definitions (see 3.4, 3.5, and

3.6 of the.1991 edition);

b) The term "system voltage static variation" and its definition (see

3.7 of the.1991 edition) have been deleted;

c) The classification of AC and DC power stations and the method for compiling codes for major power station equipment (see

4.3 of the.1991 edition) have been deleted;

d) Added power supply system components (see 5.1);

e) The DC system selection has been deleted (see

5.3.2 of the.1991 edition);

f) Use "Working mode", "General requirements for power supply reliability and continuity", "Basic power station" and units and main switchboard for self- The relevant requirements for circuit breakers with dynamic quasi-synchronous closing are combined and revised into "design" [see 5.4, 5.2, 5.5, 5.7,

g) Increased insulation resistance, starting time, no-load voltage and frequency regulation, steady-state voltage and speed regulation, and parallel operation performance requirements Request (see 5.6);

h) Changed "parallel operation" to "parallel operation performance" (see 5.6.6,

1 Scope

GB/T 12980-2025 is the Chinese national standard on general technical requirements and test methods for marine low voltage power system, in the field of shipbuilding and marine structures. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 1 August 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 February 2026. Classification: ICS 47.020.60, CCS U61. This

page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the classification, requirements and inspection rules of ship low voltage AC power supply system (hereinafter referred to as "power supply system"), and describes Corresponding test methods. This document applies to low voltage AC power stations with a rated voltage not exceeding 1000 V, which are composed of main power stations, emergency power stations and mooring power stations on steel ships. Design, production and testing of power supply systems.

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 latest version (including all amendments) applies to this document. In this document.

GB/T 3471 General rules for mooring and navigation tests of seagoing vessels
Classification Rules for Seagoing Steel Ships, China Classification Society

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 Main switchboard An electrical device that receives the electrical energy generated by the main generator and controls, distributes it and is equipped with measurement and protection.

3.2 emergency switchboard An electrical device that receives the electrical energy generated by the emergency generator and controls, distributes it and is equipped with measurement and protection.

3.3 ship main power station A power station consisting of main generator sets, main switchboards, ancillary facilities and control devices.

3.4 emergency power station A power station consisting of an emergency generator set, an emergency switchboard, and ancillary facilities and control devices.

3.5 Steady-state frequency fluctuation frequency tolerance The maximum permissible deviation of frequency from the nominal frequency during normal operation.

Note. Steady-state frequency fluctuation does not include transient frequency fluctuation and periodic frequency changes, and is expressed as a percentage of the nominal frequency.

3.6 Imbalance of AC load The difference between the actual load factor of each phase and the total average load factor.