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

GB/T 48012.2-2026

**Safety of power converters for use in photovoltaic power
systems - Part 2: Particular requirements for inverters**

光伏发电系统用功率转换设备安全性 第2部分：逆变器的特定要求

(English Translation)

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Foreword

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This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 2 of GB/T 48012 "Safety of Power Conversion Equipment for Photovoltaic Power Generation Systems". GB/T 48012 has been issued.

The following sections were laid out.

--Part 1: General Requirements;

--Part 2: Specific requirements for inverters.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document is under the jurisdiction of the National Technical Committee on Standardization of Solar Photovoltaic Energy Systems (SAC/TC 90).

Introduction

GB/T 48012 "Safety of Power Conversion Equipment for Photovoltaic Power Generation Systems" is a set of safety-related standards for power conversion equipment used in photovoltaic power generation systems.

The proposed general standard, GB/T 48012, consists of three parts.

--Part 1: General Requirements. The purpose is to specify the general requirements that power conversion equipment should meet, including but not limited to product specifications.

--Part 2: Inverter-Specific Requirements. This section specifies the requirements for grid-connected or stand-alone inverters.

--Part 3: Specific Requirements for Electronic Devices Connected to Photovoltaic Components. The purpose is to specify the requirements for electronic components and photovoltaic components or photovoltaic systems.

Products composed of components.

This document is Part 2 of GB/T 48012 "Safety of Power Conversion Equipment for Photovoltaic Power Generation Systems", which specifies the requirements for grid-connected photovoltaic systems and multi-generation systems.

Safety requirements for modular and stand-alone inverters. This equipment has potentially hazardous input power supplies and output circuits, internal components, and characteristics.

Regarding functions, this document makes different or additional provisions for the security requirements given in Part 1.

Safety of power conversion equipment used in photovoltaic power generation systems Part 2: Inverter-Specific Requirements

1 Scope

This document specifies the basic requirements and testing, labeling and documentation, environmental requirements and conditions, and protection against electric shock and energy hazards for photovoltaic inverters.

Protection, mechanical hazards, fire hazards, sound pressure hazard protection, liquid hazards, chemical hazards, physical requirements, component and performance safety.

Full-featured software and circuitry.

This document applies to photovoltaic inverters with input and output voltages not exceeding 1,500 V DC and 1,000 V AC.

This document does not apply to portable and handheld photovoltaic inverters.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 48012.1-2026 Safety of power conversion equipment for photovoltaic power generation systems - Part 1: General requirements Circuit breakers (Electrical accessories-Circuit-breakers for overcurrent protection for household and similar installations-Part 2: Circuit-breakers for AC and DC operation) Note. GB/T 10963.2-2020 Electrical accessories - Overcurrent protection circuit breakers for household and similar applications - Part 2: Circuit breaking for AC and DC applications Device (IEC 60898-2:2016, MOD) IEC 60269 (all parts) Low-voltage fuses Note. GB/T 13539 (all parts)

Low-voltage fuses [IEC 60269 (all parts)] IEC 60947-2 Low-voltage switchgear and controlgear - Part 2: Circuit breakers gear-Part 2: Circuit-breakers) Note. GB/T 14048.2-2020 Low-voltage switchgear and controlgear - Part 2: Circuit breakers (IEC 60947-2:2019, MOD) IEC 60947-6-1 Low-voltage switchgear and controlgear - Part 6-1.Multifunctional changeover devices (Low-volt-) age switchgear and controlgear-Part 6-1.Multiple function equipment-Transfer switching equipment) Note. GB/T 14048.11-2024 Low-voltage switchgear and controlgear - Part 6-1.Multifunctional electrical transfer switches (IEC 60947-6-1.

2021, MOD)

IEC 62310-1 Static transfer systems (STS) Part 1: General and safety requirements Part 1:General and safety requirements] Note. GB/T 34940.1-2017 Static Switching Systems (STS) Part 1: General and Safety Requirements (IEC 62310-1:2005, IDT) IEC 62991 Particular requirements for source switching equipment (SSE) ment (SSE)] Note. GB/T 47033-2026 Particular requirements for power switching equipment (SSE) (IEC 62991:2022, MOD) the terms and definitions defined in GB/T 48012.1-2026, as well as the following terms and definitions, apply to this document.