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

GB/T 7260.3-2024

Replacing GB/T 7260.3-2003

**Uninterruptible power systems (UPS) - Part 3: Method of
specifying the performance and test requirements
(English Translation)**

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1 Scope

This document specifies the performance and test requirements for portable, immovable and fixed electronic uninterruptible power supply systems (UPS).

The UPS used has the following features.

- Powered by an AC voltage not exceeding 1000V;
- Provide an AC output voltage not exceeding 1000V;
- Energy storage device containing a DC voltage not exceeding 1500V;
- The main function is to ensure the continuity of load power.

This document specifies the performance and test requirements for the complete UPS and, where applicable, the individual UPS functional units.

Requirements for individual UPS functional units in IEC publications apply to the extent not inconsistent with this document.

UPS has a wide power range, from less than 100 watts to several megawatts, to meet the requirements of various loads for power availability and quality.

Information on typical UPS configurations and topologies is provided in Appendices A and B.

This document also specifies the performance and test methods related to UPS switches, which are used in conjunction with UPS functional units to ensure Fault load power continuity.

This document does not cover.

--- Conventional AC and DC distribution boards and their associated switches;

--- Independent static switching systems covered by GB/T 34940.3;

--- Rotary uninterruptible power supplies covered by GB/T 2820.11; and

--- GB/T 7260.503 covers DC output uninterruptible power supplies.

NOTE 1: This document considers that maintaining power continuity for information technology (IT) equipment is the primary application of a UPS. Therefore, the UPS output characteristics specified in this document are also Designed to ensure compatibility with the requirements of information technology equipment, including requirements for steady-state and transient voltage variations, and with linear and nonlinear load characteristics.

The power supply requirements of information technology equipment are limited by the manufacturer's declaration.

NOTE 2 The test loads specified in this document simulate linear and nonlinear load characteristics and are used to verify the performance claimed by the manufacturer, reducing the complexity of the test process.

and energy consumption is reduced to a minimum.

Note 3: This document is intended for applications at 50 Hz and 60 Hz, but does not exclude applications at other frequencies within the scope of IEC 60196. The resulting special Requirements are to be negotiated between the manufacturer and the buyer.

2 Normative references

The contents of the following documents constitute 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.

GB/T 156-2017 Standard Voltage (IEC 60038:2009, MOD) GB/T 2423.1-2008
Environmental testing for electric and electronic products Part 2: Test methods Test A. Low temperature (IEC 60068-2-1.

2007, IDT)

GB/T 2423.2-2008 Environmental testing for electric and electronic products Part 2: Test methods Test B. High temperature (IEC 60068-2-2.

2007, IDT)

GB/T 2423.3-2016 Environmental testing Part 2: Test method Test Cab. Steady state damp

heat test (IEC 60068-2-78:2012,IDT) GB/T 2423.5-2019 Environmental testing Part 2: Test method Test Ea and guidance. Impact (IEC 60068-2-27.

2008, IDT)

GB/T 2820.11 Reciprocating internal combustion engine driven AC generator sets Part 11: Rotating uninterruptible power supply performance requirements and Test method (GB/T 2820.11-2012, IEC 88528-11:2004, IDT) GB/T 3767-2016 Acoustics - Determination of sound power level and sound energy level of noise source by sound pressure method - Approximate free field above reflecting surface Process method (ISO 3744:2010, IDT) GB/T 3768-2017 Acoustics Sound Pressure Method for Determination of Sound Power Level and Sound Energy Level of Noise Source Using Envelope Measurement Surface Above Reflecting Surface Simple method (ISO 3746:2010, IDT) GB/T 3859.1-2013 General requirements for semiconductor converters and grid-commutated converters Part 1-1.Basic requirements specification (IEC 60146-1-1:2009,MOD) GB/T 3859.4-2004 Semiconductor converters including semiconductor self-commutated converters for direct current converters (IEC 60146-2.

1999,IDT)

GB/T 7260.1-2023 Uninterruptible power supply system (UPS) Part 1: Safety requirements (IEC 62040-1:2022, IDT) GB/T 7260.503 Uninterruptible power supply system (UPS) Part 5-3.DC output UPS performance and test requirements (GB/T 7260.503-2020,IEC 62040-5-3:2016,IDT) GB/T 16895.6-2014 Low voltage electrical installations Part 5-52.Selection and installation of wiring systems for electrical equipment (IEC 60364-5-52:2009,IDT) GB/T 16935.1-2023 Insulation coordination for equipment in low voltage power supply systems Part 1: Principles, requirements and tests (IEC 60664-1.

2020, IDT)

GB 17625.1 Electromagnetic compatibility limits Part 1: Harmonic current emission limits (equipment input current per phase $\leq 16\text{A}$) (GB/T 17625.1-2022,IEC 61000-3-2:2020,MOD) GB/Z 17625.6 Electromagnetic compatibility limits for harmonic currents generated by equipment with a rated current greater than 16A in low-voltage power supply systems Flow restrictions (GB/Z 17625.6-2003, IEC TR61000-3-4:1998, IDT) GB/T 20159.3 Classification of environmental conditions Relationship between environmental condition classification and environmental testing and conversion guide Climate protection Fixed use in place (GB/T 20159.3-2011, IEC/T R60721-4-3.2003, IDT) GB/T 34940.3 Static switching system (STS) Part 3: Methods for determining performance and test requirements (GB/T 34940.3-2017,IEC 62310-3:2008,MOD) IEC 60364-1 Low-voltage electrical installations Part 1: Basic principles, general characteristics evaluation and definitions (Low-voltageelectri-Note. GB/T 16895.1-2008 Low voltage electrical installations Part 1: Basic principles, general characteristics evaluation and definitions (IEC 60364-1:2005, IDT) IEC 60664-1 Insulation coordination for equipment in

low-voltage supply systems Part 1: Principles, requirements and tests Note. GB/T 16935.1-2023 Insulation coordination for equipment in low-voltage power supply systems Part 1: Principles, requirements and tests (IEC 60664-1:2020, IDT) IEC 61000-2-2:2002 Electromagnetic compatibility (EMC) Part 2-2.Environmental public low-voltage power supply system low-frequency conducted disturbances and signal Note. GB/T 18039.3-2017 Electromagnetic compatibility environment Compatibility level of low-frequency conducted disturbances and signal transmission of public low-voltage power supply systems (IEC 61000-2-2:2002,IDT) IEC 61000-3-12 Electromagnetic compatibility (EMC) Part 3-12.Limits Input current per phase greater than 16A and less than or equal to 75A withinputcurrent >16Aand<=75Aperphase] Note. GB/T 17625.8-2015 Electromagnetic compatibility limit value for equipment connected to a public low voltage system with an input current of more than 16A and less than or equal to 75A per phase Harmonic current limit (IEC 61000-3-12:2004, IDT) IEC 62040-2 Uninterruptible power supply systems (UPS) Part 2: Electromagnetic compatibility (EMC) requirements Note. GB/T 7260.2-2009 Uninterruptible power supply (UPS) Part 2: Electromagnetic compatibility (EMC) requirements (IEC 62040-2:2005, IDT) ISO 4180:2019 General rules for the preparation of performance test plans for intact, filled transport packages (Packaging-Note. GB/T 4857.17-2017 Basic tests for packaging and transport packages Part 17: General rules for preparing performance test outlines (ISO 4180.

2009,MOD)

4.1 General

The UPS shall be rated for operation in the environment pollution degree 2 defined in IEC 60664-1 and under normal conditions specified in 4.2.

Other conditions may be negotiated between the manufacturer/supplier and the buyer.

NOTE 1 Pollution degree is a characteristic of the environment and is described in detail in IEC 60664-1, from which the following conclusions are drawn.

---Pollution degree 1.Applicable to environments with no pollution or only dry, non-conductive pollution.

---Pollution degree 2.Applicable to environments where there is only non-conductive pollution, but temporary conductive pollution may occur due to occasional condensation.

---Pollution level 3.Applicable to equipment with conductive pollution, or equipment where dry non-conductive pollution may become conductive pollution due to expected condensation Internal environment.

---Pollution degree 4.Applicable to environments with continuous conductive pollution (such as caused by conductive dust or rain and snow).

NOTE 2 Applicable safety and electromagnetic compatibility (EMC) conformity assessments are