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

GB/T 7251.5-2025

Replacing GB/T 7251.5-2017

**Low-voltage switchgear and controlgear assemblies - Part 5:
Assemblies for power distribution in public networks**

低压成套开关设备和控制设备 第5部分：公用电网电力配电成套设备

(English Translation)

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Foreword

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 5 of GB/T 7251 "Low-voltage switchgear and controlgear assemblies". GB/T 7251 has published the following...

part.

---Part 1: General Provisions;

---Part 2: Complete sets of power switchgear and control equipment;

- Part 3: Distribution Boards (DBOs) Operated by General Personnel;
- Part 4: Specific requirements for construction site complete sets of equipment (ACS);
- Part 5: Complete sets of power distribution equipment for public power grids;
- Part 6: Busbar Trunk System (Busway);
- Part 7: Complete sets of equipment for specific applications such as docks, campsites, market squares, and electric vehicle charging stations;
- Part 8: General Technical Requirements for Intelligent Complete Sets of Equipment;
- Part 10: Guidelines for complete sets of equipment.

This document replaces GB/T 7251.5-2017 "Low-voltage switchgear and controlgear assemblies - Part 5: Power distribution in public power grids".

Compared with GB/T 7251.5-2017, the main technical changes in "Complete Sets of Equipment" are as follows, except for structural adjustments and editorial modifications.

- The scope of the file has been changed to include applications for DC (see Chapter 1, Chapter 1 of the 2017 edition);
- The application of power generation sources and electric vehicle charging infrastructure in the assumed load factor has been increased (see Table 101);
- Added requirements for protection against mechanical impacts (IK code), stipulating that the mechanical impact test required in this document must be at least IK10.
(See 8.2.1);
- The special requirements for thermal stability and the dry heat test have been removed (sections 8.1.101 and 10.2.3.101 in the 2017 edition);
- Added more detailed descriptions of representative samples used in design validation (see 10.1);
- The impact resistance and corner impact resistance tests in the mechanical strength verification have been modified when the shell is made of metal.

The requirement to conduct mechanical tests at -25°C was omitted (see 10.2.101.5.1, 10.2.101.8, and 10.2 in the 2017 edition).

101.5.1 and 10.2.101.8);

- Added additional dielectric tests when using PENDA in distribution substations with separate high-voltage and low-voltage grounding (see 10.9).
2.101).

This document is equivalent to IEC 61439-5:2023 "Low-voltage switchgear and controlgear

assemblies - Part 5: Power distribution in public power grids".

Complete set of equipment.

The following minimal editorial changes have been made to this document.

---Incorporates amendments to IEC 61439-5:2023/COR1.2025; the relevant clauses are indicated by vertical margins.

The double lines (||) are marked;

---Changes to the notes in the "Terms and Definitions" element;

---Correction of typographical error. Chapter 1, "PENDA may include control and/or signaling devices associated with power distribution," has been updated to include...

Replace "/" with "and/or";

---Correction of printing error. In section 10.2.101.1, "except for the tests in section 10.2.101.8 of this part" is changed to "except for the tests in section 10.2.101.6 of this part".

Outside of the experiment;

---Corrected a printing error. Add "or DC 1500V" to the "Options listed in this document" section of the "Nominal Voltage (V)" row in Table BB.1.

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 was proposed by the China Electrical Equipment Industry Association.

This document is under the jurisdiction of the National Technical Committee on Standardization of Low-Voltage Switchgear and Control Equipment (SAC/TC266).

Introduction

GB/T 7251 adopts the IEC international standard to meet the needs of international trade, technology and economic exchanges.

This document is a product standard and should be used in conjunction with GB/T 7251.1.

GB/T 7251 is proposed to consist of nine parts.

---Part 1: General Provisions. This section aims to specify the general requirements for various types of complete sets of equipment standards.

---Part 2: Complete Assemblies of Electrical Switchgear and Control Systems. This section aims to specify the specific requirements and verification procedures for complete assemblies of electrical switchgear and control systems.

method.

---Part 3: Distribution Boards Operated by General Personnel (DBO). This section specifies the particular requirements for distribution boards operated by general personnel.

And verification methods.

---Part 4: Specific Requirements for Complete Sets of Equipment (ACS) for Construction Sites. This section aims to specify the specific requirements for complete sets of equipment for construction sites.

Requirements and verification methods.

---Part 5: Power Distribution Systems for Public Utility Networks. This section aims to specify the particular requirements for power distribution systems for public utility networks.

Verification method.

---Part 6: Busbar Trunk Systems (Bus Trunking). This section aims to specify the particular requirements and verification methods for bus trunking.

---Part 7: Complete sets of equipment for specific applications such as docks, campsites, market squares, and electric vehicle charging stations. This aims to specify specific applications...

Specific requirements and verification methods for the complete set of equipment used.

---Part 8: General Technical Requirements for Intelligent Complete Equipment. This section aims to specify the specific requirements for intelligent complete equipment, such as network connectivity.

Connection, remote sensing, remote control functions, and their verification methods.

---Part 10: Guidelines for Complete Systems. This section aims to provide application guidelines for users of complete systems.

Low-voltage switchgear and controlgear Part 5: Complete Power Distribution Equipment for Public Power Grids

1 Scope

This document specifies the requirements for Public Grid Distribution Equipment (PENDA).

PENDA meets the following requirements.

---For three-phase systems and DC systems with a rated voltage not exceeding AC 1000V (see typical distribution network in Figure 101) not exceeding DC 1500V power distribution;

---Fixed;

---Open-type complete sets of equipment are not included in this document;

---Suitable for installation in locations accessible only to skilled technicians; outdoor