NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 7251.2-2023

Low-voltage switchgear and controlgear assemblies - Part 2: Power switchgear and controlgear assemblies

低压成套开关设备和控制设备 第2部分：成套电力开关和控制设备

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part

1.Rules for the Structure and Drafting of Standardizing Documents. This Document is Part 2 of GB/T 7251 Low-Voltage Switchgear and Controlgear Assemblies. GB/T 7251 has published the following parts.

1.General rules;

2.Power switchgear and controlgear assemblies;

3.Distribution boards intended to be operated by ordinary persons (DBO);

4.Particular requirements for assemblies for construction sites (ACS);

5.Particular requirements for assemblies for power distribution in public networks;

6.Busbar trunking systems (busways);

7.Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicles charging stations;

8.General technical requirements for intelligent assembly;

10.Guidance to specifying assemblies. This Document replaced GB/T 7251.12-2013

Low-Voltage Switchgear and Controlgear Assemblies - Part

2.Power Switchgear and Controlgear Assemblies. Compared with GB/T 7251.12-2013, the technical changes of this Document are as follows besides the structural adjustments and editorial modifications.

--- Add requirements for photovoltaic installation assemblies (see Annexes DD, EE and FF of this Edition);

--- Change the requirements for the internal isolation form. When the isolation form is greater than 1, when the functional unit is turned off, the protection level of all still running components between the functional units shall be at least IPXXB (see

1 Scope

GB/T 7251.2-2023 is Part 2 of the Chinese series on low-voltage switchgear and controlgear assemblies, and covers power switchgear and controlgear assemblies - the main distribution boards of buildings, plants and substations. The assembly is not simply a box of certified components: what determines whether it survives a short circuit is the assembly itself, its bracing, its busbar supports and its enclosure, which is why the standard rests on design verification of the whole rather than on the ratings of the parts. It sets the interface characteristics, the information to be provided, the service conditions, the constructional requirements and the performance requirements, then the design verification and the routine verification that every assembly must pass before it leaves the works. It took effect on 1 March 2024.

This Document defines the specific requirements for the power switchgear and controlgear assembly (abbreviated 'PSC-assembly' throughout this Document see 3.1.101) as follows:

--- assemblies for which the rated voltage does not exceed 1 000 V AC or 1 500 V DC;

--- assemblies designed for a nominal frequency of the incoming supply or supplies not exceeding 1 000 Hz;

2 Normative References

The provisions in following documents become the essential provisions of this Document through reference in this Document. For the dated documents, only the versions with the dates indicated are applicable to this Document; for the undated documents, only the latest version (including all the amendments) is applicable to this Document. Clause 2 of

GB/T 7251.1-2023 is applicable in addition to the following. Addition.

GB/T 5226.1-2019 Electrical safety of machinery-Electrical equipment of machines - Part

3 Terms and Definitions

For the purposes of this Document, the terms and definitions given in GB/T 7251.1-2023 and the following apply. Electric circuit intended to supply directly electric current to current using equipment or socket outlets. Clearance between open contacts of withdrawable parts meeting the safety requirements specified for disconnectors.

4 Symbols and Abbreviations

Clause 4 of GB/T 7251.1-2023 is applicable.

5 Interface Characteristics

Clause 5 of GB/T 7251.1-2023 is applicable, except as follows: In the absence of an agreement between the assembly manufacturer and the user concerning the actual load currents, the assumed loading of the outgoing circuits of the assembly or group of outgoing circuits may be based on the values in Table 101. For a motor or electric actuator circuit, the assumed load current is the rated current of the motor multiplied with the loading factor of Table 101.If only the rated voltage and rated power of the motor is provided, then the rated current of the motor can be taken from IEC 60947-4-1.2018, Annex G.

6 Information

Clause 6 of GB/T 7251.1-2023 is applicable, except as follows: Replacement of the title and item g). A PSC-assembly that can be energized from more than one source shall carry a warning label indicating that the assembly is energized from more than one source, and that parts inside the assembly can still be live unless all supplies are isolated.

7 Service Conditions

Clause 7 of GB/T 7251.1-2023 is applicable.

8 Constructional Requirements

Clause 8 of GB/T 7251.1-2023 is applicable, except as follows: Where a degree of protection (IK code) provided by a PSC-assembly enclosure against mechanical impact is declared by the original manufacturer, this shall be verified in accordance with 10.2.6.

9 Performance Requirements

Clause 9 of GB/T 7251.1-2023 is applicable, except as follows: NOTE

3.For guidance on performance of a PSC-assembly under condition of internal arc-faults, see IEC TR 61439-