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

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**Compact switchgear assemblies for rated voltages of 72.5 kV
and above**

额定电压72.5 kV及以上紧凑型成套开关设备

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1.1 Scope

The standard applies to compact switchgear assemblies in which at least one switching device is connected directly to one or more other devices, or shares components with them, so that the separate devices interact functionally. Such an assembly is made up of the devices identified in 1.1.101 and is designed, tested and supplied for use as a single unit.

Interaction between the devices may be caused by their proximity to one another, by shared components, or by a combination of the two. The assembly may contain only air-insulated switchgear (AIS) components, or a combination of AIS and gas-insulated switchgear (GIS); it is therefore called mixed technology switchgear (MTS) and may be transported completely pre-assembled or partly assembled.

The standard cannot determine every possible arrangement of a compact switchgear assembly. Four examples are therefore given for information in Annex A.

These compact switchgear assemblies are indoor and/or outdoor installations in power systems with a nominal voltage of 66 kV and above and an operating frequency of 50 Hz.

The standard covers the effect that interaction between the devices inside a compact switchgear assembly has on performance, and it determines the ratings and the test procedures for such assemblies.

Unless otherwise specified, GB/T 11022-1999 applies. The standard does not apply to switchgear assemblies (GIS) covered only by GB 7674.

1.1.101 Objective

The objective of the standard is to answer the growing use of compact switchgear assemblies that carry out the functions of a large number of separate components and their control equipment. Many arrangements are possible, and the standard gives guidance on the basic types of assembly that may have to be dealt with.

Because devices inside such an assembly may interact with one another, it is necessary to standardize the requirements for the assembly taken as a whole.

The switching devices that may form part of a compact switchgear assembly are listed as circuit-breakers (GB 1984), disconnectors and earthing switches (GB 1985), switches (GB/T 14810) and disconnecting circuit-breakers (GB/T 27747).

The other devices listed are instrument transformers - current transformers (GB 1208, GB/T 20840.8), voltage transformers (GB 1207, GB/T 4703, GB/T 20840.7) and combined transformers (GB 17201) - surge arresters (GB 11032), bushings (GB/T 4109), insulators (GB/T 21429, GB/T 23752), cable connections (GB/T 22381) and transformer connections (GB/T 22382).

Every switching device, every other device and its control equipment forming part of a compact switchgear assembly has to satisfy its own relevant standard. Where part of the compact switchgear assembly is metal-enclosed switchgear, the requirements of GB 7674 apply.

A compact switchgear assembly as defined in the standard is a single product with a single works number (serial number) and one set of documentation.

1.2 Normative references

The listed documents are indispensable for the application of the standard. For dated references only the edition cited applies; for undated references the latest edition, including all amendments, applies.

The references given are: GB 1207-2006 Electromagnetic voltage transformers; GB 1208-2006 Current transformers; GB 1984-2003 High-voltage alternating-current circuit-breakers; GB 1985 High-voltage alternating-current disconnectors and earthing switches; GB/T 2900.20-1994 Electrotechnical terminology - High-voltage switchgear; GB/T 4109-2008 Insulating bushings for alternating voltages above 1 000 V; GB/T 4703-2007 Capacitive voltage transformers; GB 7674-2008 Gas-insulated metal-enclosed switchgear for rated voltages of 72.5 kV and above; GB/T 11022-1999 Common technical requirements for high-voltage switchgear and controlgear standards; GB 11032-2010 Metal-oxide surge arresters without gaps for a.c. systems; GB/T 14810-1993 Alternating-current high-voltage switches for 110 kV and above; GB 17201-2007 Combined transformers; GB/T 20840.7-2007 Instrument transformers - Part 7: Electronic voltage transformers; GB/T 20840.8-2007 Instrument transformers - Part 8: Electronic current transformers; GB/T 21429-2008 Hollow composite insulators for outdoor and indoor electrical equipment - Definitions, test methods, acceptance criteria and design recommendations; GB/T 22381-2008 Connection between gas-insulated metal-enclosed switchgear for rated voltages of 72.5 kV and above and fluid-filled and extruded-insulation power cables - Fluid-filled and dry-type cable terminations; GB/T 22382-2008 Direct connection between gas-insulated metal-enclosed switchgear for rated voltages of 72.5 kV and above and power transformers; GB/T 23752-2009 Pressurized and unpressurized hollow ceramic and glass insulators for electrical equipment with rated voltages above 1 000 V; GB/T 27747 Alternating-current disconnecting circuit-breakers for rated voltages of 72.5 kV and above; and IEC 61936-1 Power installations exceeding 1 kV a.c. - Part 1: Common rules.

2 Normal and special service conditions

The requirements of clause 2 of GB/T 11022-1999 apply.

Relationship to IEC 62271-205:2008