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

GB/T 22381-2017

**Cable connections between gas-insulated metal-enclosed switchgear for rated
voltages equal to and above 72.5 kV and fluid-filled and extruded insulation
power cables -- Fluid-filled and dry type cable-terminations**

(English Translation)

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Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009.

The standard instead of GB/T 22381-2008 "rated voltage 72.5kV and above gas-insulated metal-enclosed switchgear and filling fluid and Extruded insulated power cables connected to the filling fluid and dry cable terminal ", compared with GB/T 22381-2008, the main technical changes are as follows.

- removed the rated voltage of 800kV, 1100kV of the relevant provisions;
- rated current increased to 3150A;
- the term "cable system" has been added to terms and definitions;
- "the number of phases in a shell" is removed from the rating;
- Remove the "air pressure limit of the cable terminal insulation test in Table 1".

This standard adopts the re-drafting method to modify the use of IEC 62271-209.:2007

"High-voltage switchgear and control equipment Part 209.

The connection of the gas-insulated metal-enclosed switchgear with a voltage of 52kV or higher and the charging and extruded insulated power cables.

Cable terminal "

The technical differences between this standard and IEC 62271-209.:2007 are as follows.

--- on the normative reference documents, this standard has made a technical differences in the adjustment to meet China's technical conditions, adjust the situation the situation is reflected in the 1.2 "normative reference document", the specific adjustments are as follows.

- Replacement of IEC 62271-203.:2003 (see 4.3, 4.4, 4.6, 4.7, 4.8, 6.2.2, 9);

Replace IEC 60141-1.:1993 (see 6.1) with GB/T 9326.1-2008 using the revised international standard;

Replace IEC 60141-1.:1993 (see Chapter 9) with GB/T 9326.2-2008 for non-equivalent international standards;

Replace IEC 60840.:2011 (see 6.1) with GB/T 11017.1-2014 with international standard modification;

- Replacement of IEC 62271-1.:2007 with GB/T 11022-2011 with international standard modification (see Chapter 7, Chapter 8, Chapter 10, Chapter 11, Chapter 12);

Replace IEC 62067.:2011 (see 6.1) with GB/T 18890.1 with international standard modification;

Replace IEC 62067.:2006 (see 6.1) with GB/T 22078.1-2008 with international standard modification;

- Added references to GB/T 9326.3-2008, GB/T 11017.2-2014, GB/T 11017.3-2014, GB/T 18890.2, GB/T 18890.3, GB/T 22078.2-2008, GB/T 22078.3-2008 (see Chapter 9).

- Added Chapter 2 normal and special conditions of use;

--- Rated voltage. Remove the rated voltage value independent of our grid, according to GB/T 11022 (or GB 156) listed in the voltage Give

--- increased the three-phase cable terminal insulation test requirements;

In order to ensure the sealing performance, the surface roughness of the sealing surface in Figures A.2 and A.4 is changed from the maximum Rmax6.3 to Rmax3.2.

Compared with IEC 62271-209.:2007, this standard has been modified as follows.

- change the rated voltage in IEC 62271-209.:2007 from "above 52kV" to "72.5kV and above";

- the scope of Chapter 1 of IEC 62271-209.:2007 and the reference standard in Chapter 2 as the scope of 1.1 and 1.2 of this standard reference materials;
- Chapter 5 of IEC 62271-209.:2007 is listed in Chapter 4 of this standard;
- Chapter 4 of the IEC 62271-209.:2007 supplier boundaries and Figure 2, Figure 3, Figure 4, Figure 5 editorial in the additional Appendix A (Normative) the boundaries of the supplier;
- Chapter 6 Design and Structure of IEC 62271-209.:2007 and Chapter 7 Standard Size Editing are listed in Chapter 5 of this standard Design and structure;
- Chapter 6 of the IEC 62271-209.:2007 trial editorial is listed in Chapter 6 of this standard;

The tables in Figures 2, 3, 4 and 5 of IEC 62271-209.:2007 are arranged separately according to the customary form of our standard.

Table A.1, Table A.2, Table A.3, Table A.4.

- Editorial changes to Figures 2, 3, 4 and 5 of IEC 62271-209.:2007, according to our mechanical drawing standards.

1.1 Scope

This standard specifies the rated voltage 72.5kV and above, rated frequency of 50Hz gas insulated metal-enclosed switchgear and recharge Body and crowded insulated power cable connection of the filling fluid and dry cable terminal rating, design and structure, standard size, test and supply side Boundaries and other requirements.

This standard applies to the rated voltage 72.5kV and above, rated frequency of 50Hz gas-insulated metal-enclosed switch equipment recharge Body and crowded cable connection device, in a single-phase or three-phase arrangement of the cable terminal for the filling or dry. In the cable insulation and switching equipment the insulation of the gas is separated by an insulating cone.

This standard is intended to establish the electrical and mechanical interchangeability of cable terminals and gas-insulated metal-enclosed switchgear connections and to determine should be the boundary.

In order to facilitate the use of this standard, the term "switchgear" is used to describe "gas insulated metal-enclosed switchgear".

In addition to gas-insulated metal-enclosed switchgear, this standard does not apply to other cable terminals that are directly installed in the switchgear.

1.2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 7674-2008 Gas-insulated metal-enclosed switchgear with rated voltages up to and including 72.5 kV (IEC 62271-203.:2003, MOD) GB/T 9326.1-2008 AC 500kV and below paper or polypropylene composite paper insulated metal sets of oil-filled cables and accessories Part. test (IEC 60141-1.:1993, MOD) GB/T 9326.2-2008 AC 500kV and below paper or polypropylene composite paper insulated metal sets of oil-filled cables and accessories Part. AC 500kV and below paper insulated lead oil-filled cable (IEC 60141-1.:1993, NEQ) GB/T 9326.3-2008 AC 500kV and below paper or polypropylene composite paper insulated metal sleeve oil-filled cable and accessories 3rd Part. terminal GB/T 11017.1-2014 Rated voltage 110kV ($U_m = 126\text{kV}$) XLPE insulated power cable and its accessories Section. Test methods and requirements (IEC 60840.:2011, MOD) GB/T 11017.2-2014 Rated voltage 110kV ($U_m = 126\text{kV}$) XLPE insulated power cable and its accessories Part. cable GB/T 11017.3-2014 Rated voltage 110kV ($U_m = 126\text{kV}$) XLPE insulated power cable and its accessories 3rd Part. cable accessories GB/T 11022-2011 Common technical requirements for high voltage switchgear and control equipment (IEC 62271-1.:2007, MOD) GB/T 18890.1 Rated voltage 220 kV ($U_m = 252\text{ kV}$) XLPE insulated power cables and their accessories - Part 1.

Test methods and requirements (GB/T 18890.1-2015, IEC 62067.:2011, MOD) GB/T 18890.2 Rated voltage 220 kV ($U_m = 252\text{ kV}$) XLPE insulated power cables and their accessories - Part 2.