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

GB/T 18802.11-2020

Replacing GB/T 18802.1-2011

**Low-voltage surge protective devices (SPD) - Part 11: Surge
protective devices connected to low-voltage power systems -
Requirements and test methods**

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Foreword

GB/T 18802 consists of the following parts:

- Low-voltage surge protector (SPD) Part 11: Performance requirements and test methods of surge protectors for low-voltage power systems;
- Low-Voltage Surge Protector (SPD) Part 12: Guide for Selection and Use of Surge Protector for Low-Voltage Distribution System;
- Low-voltage surge protective devices Part 21: Performance requirements and test methods for surge protective devices (SPD) for telecommunications and signal networks;
- Low-voltage surge protectors Part 22: Guidelines for the selection and use of surge protectors for telecommunications and signal networks;
- Low-voltage surge protectors for special applications (including DC) surge protectors: Part 31: Surge protectors for photovoltaic systems (SPD) performance requirements and test methods;
- Low-voltage surge protector components Part 311: Performance requirements and test circuits for gas discharge tubes (GDT);
- Low-voltage surge protector components Part 312: Guidelines for the selection and use

of gas discharge tubes (GDT);

--- Low-voltage surge protector components Part 321: Avalanche breakdown diode (ABD) specification;

--- Low-voltage surge protector components Part 331: Metal oxide varistor (MOV) specification;

--- Low-voltage surge protector components Part 341: Surge suppression thyristor (TSS) specification;

--- Low-voltage surge protector components: Part 351: Performance requirements and requirements for surge isolation transformers (SIT) for telecommunications and signal networks

experiment method:

This part is Part 11 of GB/T 18802:

This section was drafted in accordance with the rules given in GB/T 1:1-2009:

This part replaces GB/T 18802:1-2011 "Low-Voltage Surge Protector (SPD) Part 1: Surge Protection of Low-Voltage Distribution System

Compared with GB/T 18802:1-2011, the main technical changes are as follows:

---Modified the scope (see Chapter 1, 1:1 of the:2011 edition);

---Modified the normative references (see Chapter 2, 1:2 of the:2011 edition);

---Modified and added some terms and definitions (see Chapter 3, Chapter 3 of the:2011 edition);

---Modified the frequency range, altitude range, humidity range in the use conditions, and increased the pressure range (see Chapter 4, :2011 edition

chapter 2);

---Deleted part of the three-level headings and four-level headings in the classification, revised the corresponding content of the Type I, Type II and Type III tests in Table 2, and changed

Easy to reach is changed to reachable, the temperature range is changed to temperature and humidity range, the classification of overcurrent protection and the power system are deleted

In the relevant part of DC and DC, the failure mode of SPD has been added (see Chapter 5);

---Merge the relevant content of the safety requirements in the technical requirements into electrical performance requirements, mechanical performance requirements and

environmental requirements, and add special features

Additional requirements for special SPD design and additional requirements that can be declared by the manufacturer (see Chapter 7);

---Modified the SPD type test requirements table in the general test procedure, the definition of the impulse discharge current used in the I test and its parameters

Number tolerance, 8/20 current waveform, the percentage of the current value of any polarity reversal after the current drops to zero, increasing the thin paper and

The requirements for the use of metal screen grids, the general qualification criteria table for type testing, the qualification criteria and the cross-reference table for type testing:

Alternative test circuit for decoupling network to limit voltage test, delete 8/20 current and 1:2/50 voltage test measurement accuracy

Requirements (see 8:2, 7:1 of the:2011 edition);

---Added an alternative to the durability test of the logo (see 8:3);

---Modified the test method of residual current (residual current) IPE (see 8:4:2, 7:7:5 of the:2011 edition);

---The method for determining U_{max} in the limit voltage has been added (see 8:4:3);

---Modified the flow chart of the action load test, the action load test of category II and III, the interval time between the two groups of impacts (see

8:4:4, 7:6 of the:2011 edition);

---Modified the requirements of thermal stability test sample preparation and SPD test procedures of only limited pressure components (see 8:4:5:2,:2011 edition

7:7:2:2);

---In the short-circuit current characteristic test and the characteristic under temporary overvoltage (TOV), the test voltage UCS is replaced by URF, and the thin paper and

Gauze coverage requirements (see 8:4:5:3), the short-circuit current characteristic test deletes the SPD whose I_{fi} is lower than the declared short-circuit withstand capability

Supplementary test for simulating SPD failure mode has been added (see 8:4:5:3:2);

---Added the zero-loss test method in the TOV test caused by the low-voltage system failure (see 8:4:8:1);

---Added the flat quick connect terminal of screw terminal (see 8:5:2:5) and pigtail connection (flying wire) (see 8:5:2:6);

---The specified values for the verification of electrical clearance and creepage distance