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

GB/T 18802.22-2019

Replacing GB/T 18802.22-2008

**Low-voltage surge protective devices -- Part 22: Surge
protective devices connected to telecommunications and
signalling networks -- Selection and application principles**

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2015 and GB/T 21714.4-2015.

5 .2014, IDT).

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3.1 Terms and definitions

Foreword

GB/T 18802 consists of the following parts.

--- GB/T 18802.1 Low-voltage surge protector (SPD) Part 1. Performance requirements of surge protectors for low-voltage power distribution systems

And test methods;

--- GB/T 18802.12 Low voltage surge protector (SPD) Part 12. Surge protector selection and

Use guidelines;

--- GB/T 18802.21 Low-voltage surge protector Part 21. Performance requirements of surge protectors (SPD) for telecommunications and signal networks

Summation test method;

--- GB/T 18802.22 Low-voltage surge protector Part 22. Selection and use of surge protectors for telecommunications and signal networks

Guidelines;

--- GB/T 18802.31 Surge protectors for special applications (including DC) for low-voltage surge protectors. Part 31. For photovoltaics

System surge protector (SPD) performance requirements and test methods;

--- GB/T 18802.311 Low-voltage surge protector components-Part 311. Performance requirements and testing of gas discharge tubes (GDT)

Circuit

--- GB/T 18802.312 Low-voltage surge protector components Part 312. Selection and use of gas discharge tubes (GDT)

Guidelines;

--- GB/T 18802.321 Low-voltage surge protector components-Part 321. Avalanche breakdown diode (ABD) specification;

--- GB/T 18802.331 Low-voltage surge protector element Part 331. Specification for metal oxide varistor (MOV);

--- GB/T 18802.341 Low-voltage surge protector components-Part 341. Surge suppression thyristor (TSS) specification;

--- GB/T 18802.351 Low-voltage surge protector elements-Part 351. Surge isolation transformers for telecommunications and signal networks

(SIT) performance requirements and test methods.

This part is Part 22 of GB/T 18802.

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

This section replaces GB/T 18802.22-2008 "Low-voltage surge protectors-Part 22. Surge protectors for telecommunications and signal networks

(SPD) Guidelines for Selection and Use, compared with GB/T 18802.22-2008, the main technical changes are as follows.

--- Increased the term reference of "multifunctional SPD" (see Chapter 1).

--- Revised "normative references" (see Chapter 2, Chapter 2 of the.2008 edition).

* Change GB/T 17626.5-2008, GB 18802.1-2002 and GB/T 18802.21-2004 to IEC 61000-4-5, IEC 61643-11 and GB/T 18802.21-2016;

* Removed GB/T 19271.1-2003, GB/T 19271.2-2005 and ITU-TK.31..1993;

* Added 18802.12-2014, GB/T 21714.1-2015, GB/T 21714.2-2015, GB/T 21714.3-

2015 and GB/T 21714.4-2015.

--- Revised the definition of "endurance", modified the term "multi-channel SPD" to "multi-function surge protector" and added the abbreviation

Table (see Chapter 3, Chapter 3 of the.2008 edition).

--- Increased the "air pressure and altitude", modified the "ambient temperature" and "relative humidity" range, added the "abnormal use environment" said

Ming (see Chapter 5, Chapter 5 of the.2008 edition).

--- Amended the content of Table 1 "Responsibility for the division of labor of protection measures", and added Figure 2 "Measurement and Control Network" (see Chapter 6, 2008 Chapter 6 of the edition).

--- Deleted Table 3 "SPD amount for protection zone interface according to GB/T 19271.1-2003 and GB/T 17626.5-1999

The recommended range of surge values in the "Recommended shape modeling". Added "IEC 61643-11 and GB/T 18802.21-2016

SPD classification comparison "(see Chapter 7, Chapter 7 of the 2008 edition).

--- Added the features and application notes of multi-function SPD (see Chapter 8).

--- Added Appendix F, Appendix G, Appendix H, Appendix I, Appendix J and Appendix K.

This section uses the translation method equivalent to IEC 61643-22:2015 "Low-voltage surge protectors-Part 22. Telecommunications and signal networks

Guidelines for Selecting and Using Surge Protectors.

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this section are as follows.

--- GB/T 17626.5-2019 electromagnetic compatibility test and measurement technology surge (shock) immunity test (IEC 61000-4-

5 .2014, IDT).

Please note that some elements of this document may involve patents. The issuer of this document is not responsible for identifying these patents.

This section is proposed by China Electrical Equipment Industry Association.

This part is under the jurisdiction of the National Lightning Arrester Standardization Technical Committee (SAC/TC81).

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Introduction

This part of GB/T 18802 is the telecommunication and signal SPD, and the combination of them with the SPD of the power line in the same housing

Product (referred to as multifunctional SPD) guidelines for the application of telecommunications and signal lines. Definitions, requirements and test methods for these SPDs

GB/T 18802.21-2016. Whether or not to use SPD can be determined based on a risk analysis of the network or system under consideration. Because of telecommunications

And signal systems may require long distance lines, whether underground or overhead lines, may suffer from lightning and power line failures

And over-voltage caused by the opening and closing operation of power lines or load lines. If these lines are not protected,

Technical equipment (ITE) poses serious risks. Other factors that may influence the decision to use SPD include industry regulations and insurance terms. This

Part of the SPD demand assessment, selection, installation and specification of SPD, and between SPD and SPD and installation in telecommunications and signaling

Guidance is provided, for example, on the coordination of information technology equipment on the line.

The cooperation of SPD is to ensure the positive interaction between SPDs and between SPDs and the information technology equipment being protected. SPD

The cooperation requires that the voltage protection level (UP) and allowable current (IP) of the former SPD do not exceed the tolerance of the latter SPD or information technology equipment

ability.

Generally, the SPD closest to the source of the surge discharges most of the surge, and the downstream SPD will release the residual surge. SPD in the system

Coordination is affected by the operation of the SPD and the protected equipment, and the characteristics of the system connected to the SPD.

Generally, to achieve the proper fit, check.

- the waveform of the surge (pulse or AC);
- The ability of the equipment to withstand overvoltage/overcurrent without damage;
- Installation conditions, such as the distance between SPDs or between SPDs and information technology equipment;
- SPD voltage protection level.