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

GB/T 33588.1-2025

Replacing GB/T 33588.1-2020

**Lightning protection system components(LPSC) - Part 1:
Requirements for connection components
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is Part 1 of GB/T 33588 Lightning Protection System Components (LPSC). GB/T 33588 has been published as follows part.

- Part 1: Requirements for connectors;
- Part 2: Requirements for lightning arresters, down conductors and grounding electrodes;
- Part 3: Requirements for isolating spark gaps (ISGs);
- Part 4: Requirements for conductor fasteners;
- Part 5: Requirements for grounding electrode test boxes and grounding electrode seals;

- Part 6: Requirements for lightning strike counters (LSCs);
- Part 7: Requirements for grounding resistance reduction materials;
- Part 8: Requirements for isolation components of lightning protection systems.

This document replaces GB/T 33588.1-2020 "Lightning protection system components (LPSC) Part 1: Requirements for connectors" and Compared with GB/T 33588.1-2020, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added the terms "conductor", "connection", "exothermic connection", "soldering connection" and their definitions (see Chapter 3);
- b) The content classified by installation location has been changed (see 4.2, 4.2 of the 2020 edition);
- c) The contents of the documentation and installation instructions have been changed (see 5.2, 5.2 of the 2020 edition);
- d) Added identification content [see 5.3.1d)];
- e) Deleted the contents on the impact on conductors and metal devices, safety connection and terminals of equipotential bonding bars (see 5.8~2020 edition) 5.10);
- f) Added requirements for expansion joints (see 5.9);
- g) Added test requirements to simplify the test process (see 6.1);
- h) Added test methods for documents and installation instructions (see 6.2);
- i) Changed Figure 3, changing "Basic installation method of jumper sample" to "Basic installation method of telescopic connector or jumper sample".
(see Figure 3, Figure 3 of the 2020 edition);
- j) The test method for sample installation has been changed (see 6.4, 6.2 of the 2020 edition);
- k) Added the figure of "Basic installation method of steel bar clamp connection sample" (see Figure 5);
- l) Added the figure of "Basic installation method of steel bar fusion welding connection, brazing connection or exothermic connection sample" (see Figure 6);
- m) The environmental impact test has been changed (see 6.5, 6.3 of the 2020 edition);
- n) The qualification criteria for electrical tests have been changed (see 6.6.2 and 6.4 of the 2020 edition);
- o) The static mechanical stress tolerance test has been changed (see 6.7, 6.5 of the 2020

edition);

p) The test order in Appendix A was changed (see Appendix A, Appendix A of the 2020 edition);

q) Added the normative appendix "Simplified test procedure" (see Appendix E).

This document is equivalent to IEC 62561-1:2023 "Lightning protection system components (LPSC) Part 1: Requirements for connectors".

The following minimal editorial changes were made to this document.

--- Added notes to 6.1 to facilitate understanding and application;

--- Added notes in D.3 of Appendix D to facilitate understanding and application.

Introduction

GB/T 33588 "Lightning protection system components (LPSC)" aims to establish the lightning protection system components designed and installed according to the IEC 62305 series of standards.

The requirements and test methods for various components used in the life protection system (LPS) are intended to consist of eight parts.

--- Part 1: Requirements for connectors. The purpose is to establish the requirements and test methods for metal connectors in lightning protection systems.

--- Part 2: Requirements for lightning terminals, down conductors and grounding electrodes. The purpose is to establish the requirements for the metallic conductors that constitute lightning terminals and down conductors.

Requirements and test methods for metal grounding electrodes (non-natural conductors) and metal grounding electrodes that constitute the grounding system.

--- Part 3: Requirements for Isolating Spark Gaps (ISGs). The purpose is to establish the requirements for isolating spark gaps in lightning protection systems and test methods.

--- Part 4: Requirements for conductor fasteners. The purpose is to establish the metal fasteners used to fix and support air terminals, down conductors and grounding devices.

Requirements and test methods for fasteners for metal and non-metallic conductors.

--- Part 5: Requirements for grounding electrode detection boxes and grounding electrode seals. The purpose is to establish grounding electrode detection boxes installed underground Requirements and test methods for terminal boxes and earthing electrode seals.

--- Part 6: Requirements for lightning strike counters (LSCs). The purpose is to establish the requirements and test methods for lightning strike counters.

--- Part 7: Requirements for grounding resistance reduction materials. The purpose is to establish the requirements and tests for grounding resistance reduction materials in lightning protection systems method.

--- Part 8: Requirements for isolation components of lightning protection systems. The purpose is to establish the requirements for insulation supports and insulation down conductors and their special tight Requirements and test methods for firmware.

Lightning Protection System Components (LPSC) Part 1: Requirements for connectors

1 Scope

This document specifies the requirements for metallic connections in lightning protection systems (LPS) and describes the corresponding test methods.

The connectors include connectors, clamps, equipotential bonding bars and jumpers, telescopic connectors and test disconnect cards.

The connection methods of the connectors in this document include exothermic connection, brazing connection, welding connection, clamping connection, crimping, seaming, screws or bolts connect.

This document is not applicable to the testing of connections in explosive atmospheres.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 2423.18-2021 Environmental testing Part 2: Test methods Test Kb. Salt spray, alternating (sodium chloride solution) (IEC 60068-2-52:2017, IDT) rosionresistance) ISO 22479:2019 Corrosion of metals and alloys - Sulfur dioxide in humid air (fixed gas method) IEC 62561-2 Lightning protection system components (LPSC) Part 2: Requirements for lightning terminals, down conductors and earthing electrodes Note. GB/T 33588.2-2020 Lightning protection system components (LPSC) Part 2: Requirements for lightning terminals, down conductors and grounding electrodes (IEC 62561-2.

2018, IDT)

3 Terms and definitions

The following terms and definitions apply to this document.