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

GB/T 22200.1-2025

Reliability of low-voltage apparatus - Part 1: General rules

低压电器可靠性 第1部分：通则

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 1 of GB/T 22200 "Reliability of Low-Voltage Electrical Appliances". GB/T 22200 has the following parts published.

- 1.General Rules;
- 2.Reliability Test Methods for Molded Case Circuit Breakers;
- 3.Reliability Test Methods for Overload Relays;
- 4.Reliability test methods for overcurrent protection circuit breakers used in household and similar applications;
- 5.Reliability Test Methods for Residual Current Operated Circuit Breakers for Household

and Similar Purposes;

6. Reliability Test Methods for Contactor Relays;

7. Test methods for contactor reliability. This document replaces GB /Z 32513-2016 "General Rules for Reliability of Low-Voltage Electrical Appliances". Compared with GB /Z 32513-2016, the main differences are in structural adjustments. Aside from editorial changes, the main technical changes are as follows:

---The term "success rate" has been changed (see 3.1.3, version.2016);

---Descriptions of reliability characteristics have been removed (see sections 4.1.1, 4.2.1, 4.3.1, 4.4.1, 4.4.2, and

4.5.1 in the.2016 version);

---The reliability metrics for residual current operated circuit breakers for residential and similar applications have been revised, adding "residual current protection success rate" and "loop" metrics. The "Residual Current Protection Success Rate after Environmental Testing" is merged into "Residual Current Protection Success Rate," "Short Circuit Protection Success Rate," and "Overload Protection Success Rate." The "overcurrent protection success rate" has been merged into "overcurrent protection success rate," and a "sub-level 5" rating for its operational failure rate has been added (see 4.1,.2016 version). (4.1)

---The reliability indicators for overcurrent protection circuit breakers used in residential and similar applications have been revised, including "short-circuit protection success rate" and "overload protection..." The "success rate" has been merged into "overcurrent protection success rate," and a "sub-level 5" rating for its operational failure rate has been added (see 4.2,.2016 version). 4.2);

1 Scope

GB/T 22200.1-2025 is the Chinese national standard covering the general rules for demonstrating the reliability of low-voltage switchgear and controlgear. This is the part the others are written against: it defines what counts as a failure, how the test is designed and how the result is expressed. The part fixes the test conditions and the operating cycles, the failure criteria, the sample size and the statistical treatment that turns a number of failures into a reliability figure with a confidence level attached. It is one of the parts of GB/T 22200 issued together, and it is a first edition. It was issued on 31 December 2025 and has been in force since 1 July 2026, as a first edition. The document is under the responsibility of the China Electrical Equipment Industry Association. This page is published from the official record of the 2025 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the reliability indicators, reliability test methods, reliability test plans and procedures for typical low-voltage electrical products. Inspection records. This document applies to molded case circuit breakers, overload relays, overcurrent protection circuit breakers for household and similar applications, and household and similar applications. Reliability regulations for residual current operated circuit breakers, contactor relays, and contactors.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 2900.18-2008 Electrical Engineering Terminology - Low-Voltage Electrical Appliances

GB/T 2900.99-2016 Reliability of Electrical Engineering Terminology

GB/T 5080 (All Parts) Equipment Reliability Testing

GB/T 10963.1-2020 Electrical accessories - Overcurrent protection circuit breakers for household and similar applications - Part

3 Terms, Definitions and Symbols

3.1 Terms and Definitions GB/T 2900.18-2008, GB/T 2900.99-2016, GB/T 5080 (all parts), GB/T 10963.1-2020, GB/T 10963.2-2020, GB/T 14048.1-2023, GB/T 14048.2-2020,

GB/T 14048.4-2020, The definitions in GB/T 14048.5-2017, GB/T 14048.6-2016, GB/T 16916.1-2014, and

GB/T 16917.1-2014, and...