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

GB/T 22200.2-2025

**Reliability of low-voltage apparatus - Part 2: Reliability test
method for moulded case circuit-breakers**

低压电器可靠性 第2部分：塑料外壳式断路器可靠性试验方法

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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 2 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 supersedes GB /Z 22074-2016 "Reliability Test Methods for Molded Case Circuit Breakers" and is consistent with GB /Z 22074-2016. Aside from structural adjustments and editorial changes, the main technical changes are as follows:

---The reliability metrics have been changed, merging "short-circuit protection success rate" and "overload protection success rate" into "overcurrent protection success rate" (see [link]). 4.1 (

4.1 in the 2016 version);

---A "sub-level 5" operational failure rate rating has been added (see 4.2);

---The requirement for the number of tests in the overcurrent protection reliability test method has been added (see 5.3.2);

---The test cutoff time (tz) for the specimen in the operational failure rate verification test procedure has been changed (see 6.3.1, 2016 version of 6.3.1);

1 Scope

GB/T 22200.2-2025 is the Chinese national standard covering the reliability of a moulded case breaker - the device that sits closed for years and must open on the day there is a fault, tested for both its mechanical endurance and its ability to still trip after that endurance. Part 2 of the series, first edition, with the other GB/T 22200 parts. 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, and reliability parameters for molded case circuit breakers (hereinafter referred to as "molded case circuit breakers"). Verification test plan and procedures, test records, reliability test methods and steps under live operation, and electromagnetic environment effects on molded case circuit breakers. The impact on the reliability of the device. This document applies to reliability testing of molded case circuit breakers conforming to GB/T 14048.2 and with a rated current not exceeding 250A. Reliability testing of molded case circuit breakers with a rated current of 250A or higher shall be conducted in accordance with this document.

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 14048.1-2023 Low-voltage switchgear and controlgear - 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 14048.1-2023, The terms and definitions defined in GB/T 14048.2-2020 and GB/T 22200.1-2025, as well as the following terms and definitions, apply to this document.

3.1.1 Reliable life The amount of time required to reduce the reliability of a product to a given value.

Note. For molded case circuit breakers, reliable life is expressed as the number of operating cycles.

3.1.2 average life The average lifespan of a batch of products. For irreparable products, it refers to the average operating time before the irreparable product fails.

3.1.3 Expiration time From the first use until the end of the working time.