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

GB/T 10963.1-2020

Replacing GB/T 10963.1-2005

**Electrical accessories. Circuit-breakers for overcurrent
protection for household and similar installations - Part 1:
Circuit-breakers for a. c. operation**

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Foreword

GB/T 10963 "Overcurrent protective circuit breakers for electrical accessories household and similar places" is divided into the following three parts:

---Part 1: Circuit breakers used for AC;

---Part 2: Circuit breakers for AC and DC;

---Part 3: Circuit breakers for DC:

This part is Part 1 of GB/T 10963:

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

This part replaces GB/T 10963:1-2005 "Electrical accessories for household and similar places with overcurrent protective circuit breakers-Part 1:

Compared with GB/T 10963:1-2005, the main technical changes are as follows:

---Added 5:2:5 Single-pole rated making and breaking capacity (I_{cn1}) rated value requirements (see 5:2:5);

---Added the single-pole rated making and breaking capacity (I_{cn1}) marking requirements (see Chapter 6);

---Increase the electrical clearance between the live parts of different poles and the live

parts and some non-contact surfaces after installation can be reduced

Small, but need corresponding test verification (see 8:1:3);

---Added a description between the live parts of different poles "The electrical clearance of the metal parts in the arc extinguishing chamber can be less than 1mm, and the total distance is large:

The provisions of item 1 in Table 4" (see Table 4);

---The rated voltage in the third column under "Minimum Electrical Clearance" is modified to "230/400V, 230V, 400V" (see Table 4);

---Added a description, when ferroalloy or suitably coated ferroalloy is used, it is verified by the test of 9:16 (see 8:1:4:4);

---Added that the circuit breaker should also have the wiring terminals specified in Appendix L (see 8:1:5:2);

---The power consumption requirements are added to the structure and performance requirements (see 8:13);

--- It is stipulated that various forms of wires, hard wires (single core or stranded) and soft wires, shall be tested, and the type of wires shall be specified

The cross-sectional area range of the corresponding test wire (see 9:5:2);

---Added the insulation resistance measurement of the specified auxiliary circuit, and modified the test voltage requirements (see 9:7:4);

--- The 9:7:5 test voltage value is deleted, and its content is specified in 9:7:3 and 9:7:4 respectively (see 9:7:3, 9:7:4,:2005 edition

9:7:5);

---Adjust the structure of 9:7:5, including test general requirements, impulse withstand voltage, leakage current between open contacts and insulation of open contacts

The impulse voltage withstand capability of the edge and basic insulation (see 9:7:5);

--- The number of impulse withstand voltage applications is modified to "5 positive impacts and 5 negative impacts" (see 9:7:5:1);

--- If only one breakdown occurs, the number of additional shocks is modified to "10 additional shocks can be applied" (see 9:7:5:2);

---Verification of the leakage current between the open contacts has been added to verify the leakage current requirements after the test of 9:12:11:4:4 (see 9:7:5:3);

---Increase the requirement to verify the free trip function; for different trip types of circuit breakers, the upper limit value is for each pole current, and the lower limit value is for

All poles connected in series conduct current (see 9:10:3);

---Add 9:12:11:4:4 "Multi-pole circuit breaker single-pole making and breaking capacity test" in the short-circuit test (see 9:12);

---For circuit breakers with rated voltage of 120V or 120/240V, the resistance of the resistor R' is changed from "7:5ohm" to "0:75ohm"

(See 9:12:9:2);

--- In the resistance to abnormal heat and flame test, the parts that do not need to be tested and the parts where the glow wire cannot be directly applied are added

(See 9:15);

---Updated the short circuit test circuit diagram (see Figure 3, Figure 4 and Figure 5);

---Added the graphic logo in Figure 17 (see Figure 17);

---Updated Appendix B (see Appendix B);

--- 9:15 Abnormal heat resistance and flame resistance test are independent of program A2, update test program B according to the latest 9:7, add E3 multi-pole disconnect

The single-pole making and breaking capacity test of the device (see Appendix C):

The translation method used in this section is equivalent to the IEC 60898-1:2015

``Overcurrent protective circuit breakers for electrical accessories household and similar places

Part 1: Circuit Breakers Used for AC":

The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows:

---GB/T 2900 (all parts) Electrical terminology [IEC 60050 (all parts)];

---GB/T 4208-2017 enclosure protection level (IP code) (IEC 60529:2013, IDT);

---GB/T 5023 (all parts) PVC insulated cables with rated voltages of 450/750V and below [IEC 60227 (all parts)

Minute)];

---GB/T 5169:10-2017 Fire hazard test for electric and electronic products Part 10: Glow wire/hot wire basic test method

Method glow wire device and general test method (IEC 60695-2-10:2013, IDT);

---GB/T 5169:11-2017 Fire hazard test for electrical and electronic products Part 11: Glow wire/hot wire basic test method

Method of Glow Wire Flammability Test Method (GWEPT) (IEC 60695-2-11:2014, IDT) of

finished products;

---GB/T 5465:1-2009 Graphical symbols for electrical equipment Part 1: Overview and classification (IEC 60417 Database:

2007-01, MOD);

---GB/T 13539 (all parts) low voltage fuse [IEC 60269 (all parts)];

---GB/T 14048:1-2012 Low-voltage switchgear and control equipment Part 1: General (IEC 60947-1:2011,

MOD);

---GB/T 32499-2016 Aluminium wire for connecting devices for clamping parts of any material and copper wires for aluminum-based clamping parts

Connection device (IEC 61545:1996, MOD):

This section has made the following editorial changes:

--- Delete the notes in 5:2:5 that are irrelevant to this part;

--- 9:10:2:2 The disconnection time is consistent with Table 7;

--- Revise Figure 6, the original Figure 6 is missing some content;

--- Deleted the abolished international standard numbers in J:10 and updated the references:

This part was proposed by China Electrical Equipment Industry Association:

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