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**Selective circuit breakers for overcurrent protection for  
household and similar installation**

家用及类似场所用带选择性的过电流保护断路器

**(English Translation)**

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### Foreword

All the technical contents of this standard is mandatory.

The standard reference GB 10963.1-2005 "electrical accessories for household and similar circuit breakers for overcurrent protection - Part 1.

Circuit breakers "and German standards EDINVDE0641-21.2008" in exchange for household and similar use with selective protection of the main circuit breaker (SH-breaker) "(in German) developed.

The standard in terms of operational performance, such as the use of the short-circuit capacity GB 10963.1-2005 "electrical accessories for household and similar uses Current protection circuit breakers - Part 1. For AC circuit breaker "in the corresponding requirements and test methods, but according to household and similar applications Scope and special protection requirements of selective overcurrent protection circuit breaker with selective (hereinafter referred SMCB) of this standard clear.

- 1) SMCB intended for use in pollution degree 3 environment;
- 2) the standard value SMCB rated impulse withstand voltage (Uimp) is 6kV;
- 3) SMCB time - current tripping characteristic of E characteristics and/or Cs properties.

This standard adds.

- 1) Verify SMCB selective protection related requirements and test methods (cascade with a life test under short circuit conditions, Selective short-circuit test);
- 2) with a front access fuse backup protection verification tests.

This standard GB/T 1.1-2000 be written.

The Standard Appendix B, Appendix C, Appendix D2, Appendix H, Appendix I are

normative appendices, Appendix A, Appendix D1, Appendix F, Appendix J is Informative appendix, Appendix E, Appendix G temporarily empty.

The standard proposed by China Electrical Equipment Industrial Association.

The low-voltage electrical standard by the National Standardization Technical Committee (SAC/TC189) centralized.

## 1 Scope

This standard specifies.

- a) SMCB characteristics;
- b) SMCB in the following areas shall comply with the conditions.
  - 1) SMCB running and working conditions during normal operation;
  - 2) SMCB running and working conditions when the overload;
  - 3) SMCB running and working conditions at the rated short-circuit capacity and under short circuit;
  - 4) SMCB dielectric properties;
  - 5) SMCB selectivity;
- c) the test method used to identify and test these conditions used to meet;
- d) data on SMCB flag;
- e) certification test program performed and the number of samples submitted (see Appendix C);
- f) under short-circuit conditions, SMCB connected in the same circuit, followed in line with GB 10963.1-2005, limiting class in accordance with Annex J recorded requested B, C and similar household characteristics for overcurrent protection circuit breaker (hereinafter referred to as MCB) complexes and its work as a condition;
- g) Routine tests (see Appendix I).

**Note:** The "normal conditions" meaning refers SMCB be used in accordance with the manufacturer's specifications.

This standard applies to AC 50Hz or 60Hz, rated voltage not exceeding 440V (phase), rated current not exceeding 125A, rated short Road capacity is not more than the 50000A SMCB.

These SMCB are used to protect buildings and line facilities cable overcurrent and similar purposes, they are designed for untrained the personnel, and no maintenance.

SMCB intended for use in pollution degree 3 environment.

SMCB suitable for isolation.

SMCB should be able to meet before and after class overcurrent protection device selectivity requirements under technical conditions specified in this standard.

It meets IEC 60364-4-473:1997 + A1:1998 requirements, the standard SMCB also suitable for use in IT systems.

For the IP20 degree of protection higher than GB of SMCB 4208-2008, often in harsh environments and spaces (for example. too wet, overheating, Cold or dust deposition) and in hazardous locations (for example. places prone to explosion) under these SMCB use may require special construction.

For vehicles equipped with residual current protection device (RCD) SMCB technical requirements are under consideration.

See SMCB fuse with Appendix Appendix D1 and D2.

This standard contains the type tests to ensure compliance with the operating characteristics of the characteristics of such devices must be required of all the technical requirements.

This standard also includes tests to ensure reproducible results necessary details of test requirements and test methods related.

## 2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 156-2007 standard voltage (IEC 60038:2002, MOD) GB/T 2900.18-2008  
Electrotechnical term low-voltage electrical GB/T 3398.2-2008 Plastics - Determination of hardness - Part 2. Rockwell hardness (ISO 2039-2. 1987, IDT) GB/T 4207-2003 solid insulating materials under moist conditions index tracking of the measuring method and the proof tracking index compared (IEC 60112. 1979, IDT) GB 4208-2008 housing protection (IP Code) (IEC 60529:2001, IDT) GB 5023 (all parts) rated voltage 450/750V and below PVC insulated cables (IEC 60227, IDT) GB/T 5169.10-2006 Fire hazard testing for electric and electronic products - Part 10. Glowing/hot wire based test methods for burning Hot wire apparatus and common test procedure (IEC 60695-2-10:2000, IDT) GB/T 5465.2-2008 Graphical symbols for electrical equipment - Part 2. Graphical symbols (IEC 60417DB.2007, IDT) GB 10963.1-2005 electrical accessories for household and similar

circuit breakers for overcurrent protection - Part 1. a communication break Circuit breaker (IEC 60898-1:2002, IDT) GB/T 16935.1-2008 within low-voltage systems Insulation coordination for equipment - Part 1. Principles, requirements and tests (IEC 60664-1. 2007, IDT)

GB/T 20000.1-2002 Guide for standardization - Part 1. General vocabulary of standardization and related activities (ISO/IEC refers South 2.1996, MOD) IEC 60050-441 International Electrotechnical Vocabulary Chapter 441. switch boards, switch gear and fuses IEC 60060-1. 1989 high-voltage test techniques - Part 1. General definitions and test requirements IEC 60364-4-473:1997 Electrical installations of buildings Part 4. Protection for safety Chapter 47. Application of security measures Section 473. overcurrent protection

### 3 Terms and Definitions

GB/T 2900.18-2008 established and the following terms and definitions apply to this standard.

#### 3.1 Electric

##### 3.1.1

For making and breaking one or more electrical circuits in current devices.

##### 3.1.2

With separable contacts to open or close one or more electrical circuit switching equipment.

##### 3.1.3

When the current exceeds a given value for a sufficient time to melt through one or more specially designed and proportionate melt off their access circuit and breaking current switching equipment.

##### 3.1.4

Can turn, carrying and breaking currents under normal circuit conditions and under specified abnormal circuit conditions such as short circuit current, but also to take Pass, carrying a certain time and breaking current automatic mechanical switching equipment.

##### 3.1.5

One kind of current-limiting circuit breaker. Can turn, carrying and breaking current in the circuit. In particular, it should be able to take place in the lower loop over separation Under the current circumstances, if the lower-level overcurrent protection device can cut off the current, limiting itself only and does not cut off the overcurrent. Meanwhile, in the present Under the conditions specified in the standard, it should be able to meet on the lower level overcurrent protection device selective protection requirements.