

ICS 29.120; 29.120.50
CCS K 31



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

GB/T 22794-2017

**Type F and type B residual current operated circuit-breakers
with and without integral overcurrent protection for household
and similar uses**

家用和类似用途的不带和带过电流保护的F型和B型剩余电流动作断路器
(English Translation)

Issued on: December 29, 2017

Implemented on: July 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine**

Table of Contents

Foreword...	3
Introduction...	6
1 Scope...	7
2 Normative References...	8
3 Terms and Definitions...	8
4 Classification...	9
5 Characteristics...	10
6 Marking and Other Product Information...	12
7 Standard Conditions for Operation in Service and for Installation...	12
8 Conditions for Construction and Operation...	13
9 Tests...	15

Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009.

This Standard replaced GB/T 22794-2008 Type B Residual Current Operated Circuit-Breakers with and without Integral Overcurrent Protection for Household and Similar Uses (Type B RCCBs and Type B RCBOs). Compared with GB/T 22794-2008, this Standard has the major changes as follows.

- Modified the introduction.
- Modified the scope, this standard covers Type F RCD.
- Added the definition of Type F residual current device in 3.2.
- Supplemented the according to behavior in presence of d.c. components in 4.1.
- Supplemented the characteristics of Type F residual current device in 5.1.
- Modified and supplemented the characteristics of Type B residual current device in 5.2.
- Added Type F RCD sign in 6.1.
- Modified Type B RCD sign in 6.2.
- Added Type F and Type B RCD requirements in 8.1.

- Supplemented the characteristics of three-pole and four-pole Type B RCD in the case of two-pole power supply only in 8.2.1.7.
 - Added the RCD performance under the role of surge residual current in 8.3.1; the RCD performance under the role of in-rush residual current in 8.3.2; the performance when pulsating direct residual current superimposes 10mA continuous smooth direct residual current in 8.3.3.
 - Added Type F and Type B RCD tests in 9.1.
 - Supplemented the correct operation of three-pole and four-pole Type B RCD when only powered by two-pole in 9.2.3.
 - Added an example of a test circuit to verify proper operation when single-phase supply motor speed control device generates residual sinusoidal AC current with multiple frequency components in Figure 1.
 - Added a test circuit to verify RCD performance when in-rush current occurs in Figure 2.
 - Added Appendix A Quantity of Specimens and Test Procedures for Type F RCCB Compliance Verification; and Appendix B Quantity of Specimens and Test Procedures for Type F RCBO Compliance Verification.
 - Modified Appendix C Quantity of Specimens and Test Procedures for Type B RCCB Compliance Verification; and Appendix D Quantity of Specimens and Test Procedures for Type B RCBO Compliance Verification.
 - Modified Appendix E Type F and Type B RCD Routine Tests.
- The translation method of this Standard equivalently adopts IEC 62423.2009 Type F and Type B Residual Current Operated Circuit-breakers with and without Integral Overcurrent Protection for Household and Similar Uses.
- The Chinese document that are consistent with the corresponding international documents that are normative references in this Standard are as follows.
- GB/T 13870.1-2008 Effects of Current on Human Beings and Livestock - Part 1. General Aspects (IEC/TS 60479-1.2005, IDT)

--- GB/T 13870.2-2016 Effects of Current on Human Beings and Livestock - Part 2.
Special Aspects (IEC/TS 60479-2.2007, IDT)

--- GB/T 16916.1-2014 Residual Current Operated Circuit-Breakers without Integral
Overcurrent Protection for Household and Similar Uses (RCCB) - Part 1.General
Rules (IEC 61008-1.2012, MOD)

--- GB/T 16917.1-2014 Residual Current Operated Circuit-Breakers with Integral
Overcurrent Protection for Household and Similar Uses (RCBOs) - Part 1.
General Rules (IEC 61009-1.2012, MOD)

This Standard was proposed by China Electrical Equipment Industrial Association.

This Standard shall be under the jurisdiction of National Technical Committee for
Standardization of Low-Voltage Electrical Appliance (SAC/TC 189).

Drafting organizations of this Standard. Shanghai Electrical Apparatus Research
Institute, Shanghai Dianke Electric Appliance Technology Co., Ltd., Zhejiang Chint
Electrics Co., Ltd., Shanghai Liangxin Electrical Co., Ltd., Shanghai Siemens Circuit
Protection Systems Ltd., Schneider Electric (China) Co., Ltd., Zhongshan Kaper
Electrical Co., Ltd., Wuxi Legrand Low Voltage Electrical Co., Ltd., Foretech Elec. App.
(Jiangsu) Co., Ltd., Beijing Abb Low-voltage Installation Materials Co., Ltd., Sassin
International Electric Shanghai Co., Ltd., China Electric power Research Institute,
Hangzhou Qianlong Electronic Co., Ltd., Zhejiang Fang Yuan Electric Equipment Test
Co., Ltd., General Electric Enterprise Development (Shanghai) Co., Ltd., Shanghai
Jingyi Electric Apparatus Factory Co., Ltd., People Electric Appliance Group Co., Ltd.,
Changan Group Co., Ltd., Zhejiang Qianlong Technology Co., Ltd., and Yuyao Jiarong
Electronic & Electric Appliance Co., Ltd.

Chief drafting staffs of this Standard. Zhou Jigang, Liu Jinyan, Ge Weijun, Fan Jianguo,
Xiong Houyu, Zhou Lei, Zou Jianhua, Si Yingge, Fu Kai, Xue Han, Jiang Wei, Su Hanlin,
Han Shaigen, Zhong Fangqiang, Wang Guozhogn, Zou Xiping, Gu Dekang, Bao
Zhizhou, Wang Xuchuan, Lu Yueyou, and Qian Jiaocan.

The historical editions replaced by this Standard are as follows.

--- GB 22794-2008, GB/T 22794-2008.

1 Scope

The scope of IEC 61008-1 and IEC 61009-1 applies with the following additions.

This Standard specifies requirements and tests for Type F and Type B RCDs (Residual Current Devices). Requirements and tests given in this Standard are supplemented the requirements of Type A residual current devices. This Standard can only be used together with IEC 61008-1 and IEC 61009-1.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

IEC/TS 60497-1 Effects of Current on Human Beings and Livestock - Part 1.

General Aspects

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

residual current device for which tripping is ensured as for Type F according to this Standard and in addition.

4 Classification

According to IEC 61008-1 or IEC 61009-1, as applicable with the following addition.

5 Characteristics

Residual current device for which tripping is ensured as for Type F and in addition.

6 Marking and Other Product Information

Add the following symbol adjacent to the symbol for Type A, e.g.

; alternatively, the following symbol may be used.