

ICS 29.120.40

CCS K31



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

GB/T 14048.2-2020

**Low-voltage switchgear and controlgear-Part 2:
Circuit-breakers**

低压开关设备和控制设备 第2部分：断路器

(English Translation)

Issued on: September 29, 2020

Implemented on: April 1, 2021

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

1 General	1
2 Definition	3
3 Category	6
Characteristics of the circuit breaker 7	4
5 Product Data and information	12
6 normal operation, installation and transport conditions	13
7 Structure and Performance Requirements	13
8 Test	18

Foreword

This section provisions mandatory standards. This section

7.1.3,7.1.4,7.2.1,7.2.3,7.3,8.3.3.2,8.3.3.8,8.3.5

8.4 and Appendix B, Appendix F, Appendix J and Appendix N mandatory, the rest are recommended. With an electronic overcurrent protection circuit breaker electronic

Control means EMC test is important, the electronic control unit must be manufacturers of EMC test products, such as circuit breakers factory option

EMC tests have been conducted with electronic products, and has a test report, you do not have to repeat the test.

This part is the "low-voltage switchgear and control equipment" Part 2, product standards, which includes the basic requirements of the circuit breaker and test

method. General requirements for circuit breakers, such as general terminology, test circuits, methods prescribed in Part 1.This section must

Part 1 using the binding. "Low-voltage switchgear and control equipment" includes.

--- GB 14048.1 low-voltage switchgear and control equipment - Part 1.General

--- GB 14048.2 low-voltage switchgear and control equipment Part 2.Circuit Breaker

--- GB 14048.3 low-voltage switchgear and control equipment - Part 3.Switches, disconnectors, switch and fuse combination

Electric

--- GB 14048.4 low-voltage switchgear and control equipment, electromechanical contactors and motor starters

--- GB 14048.5 low-voltage switchgear and control equipment Part 5-1. Control circuit devices and switching elements - Electromechanical control

Electrical circuit

--- GB 14048.6 low-voltage switchgear and control equipment, contactors and motor starters Section 2. AC semiconductor power

Motor controller and starters

--- GB/T 14048.7 low-voltage switchgear and control equipment - Part 7-1. Ancillary equipment - Terminal blocks for copper conductors

--- GB/T 14048.8 low-voltage switchgear and control equipment Part 7-2. Protective conductor terminal auxiliary electrical copper conductors

Terminal block

--- GB 14048.9 low-voltage switchgear and control equipment Part 6-2. Multiple function equipment (equipment) electrical control and protection switch

Device (equipment) (CPS)

--- GB/T 14048.10 voltage switchgear and control equipment Part 5-2. Control circuit devices and switching elements proximity

switch

--- GB/T 14048.11 voltage switchgear and control equipment Part 6-1. Multiple function equipment - Transfer switching equipment

--- GB/T 14048.12 voltage switchgear and control equipment Part 4-3. Contactors and motor starters --- non-electric

Motivation load AC semiconductor controllers and contactors

--- GB/T 14048.13 voltage switchgear and control equipment Part 5-3. Control circuit devices and switching elements in ---

Proximity switches with defined behavior under fault conditions (PDF) requirements

--- GB/T 14048.14 voltage switchgear and control equipment Part 5-5. Control circuit devices and switching elements having ---

Mechanical latching function electrical emergency braking device

--- GB/T 14048.15 voltage switchgear and control equipment Part 5-6. Control circuit devices and switching elements connected ---

Proximity sensor and switching amplifier DC Interface (NAMUR)

--- GB/T 14048.16 voltage switchgear and control equipment - Part 8. rotary motor control

with built - in thermal protection (PTC)

Unit

This section identical with IEC 60947-2:2006 "low-voltage switchgear and control equipment Part 2.Circuit Breaker" (fourth edition in English).

This part of IEC 60947-2:2006 Differences.

--- 1.1 on rated voltage, IEC defined as no more than 1000V, 1140V for AC rated voltage of the circuit breaker can be

Refer to this standard, performance and other requirements relating to the circuit breaker by the manufacturer and user consultation;

GB 14048.2-2008/IEC 60947-2:2006

--- Taking into account national circumstances, Chapter 3, "category" in the "open style" is not reasonable, still using the usual term "universal" type, plastic shell type, also known as "Molded case" or "MCCB";

--- 8.1.2 Type tests on location, IEC regulations in the workshop or any other suitable test chamber factory was when my

Otherwise provided by national laws and regulations, in accordance with relevant regulations.

--- 8.3.3.3.2c) 2) regarding the maximum rated control supply voltage, IEC original 30%, the suspect is wrong, change it to 35%;

--- L. 1 CBI does not provide circuit protection, especially of overload.

This Part replaces GB 14048.2-2001 "Low-voltage switchgear and control equipment low voltage circuit breakers."

This section of the main differences with GB 14048.2-2001.

--- Clearly breaker shall be published impulse withstand voltage U_{imp} ;

--- Clear insulating material resistant to abnormal heat and fire requirements.

Fixed to the main circuit conductor insulation material 960 °C;

Other Insulation Materials 650 °C.

Inter, but not more than 1h. Breakers should not be moved during this time, in the time trial reset switch on at least every other 1min;

--- Higher demands for electromagnetic compatibility.

In addition to electronic overcurrent protection circuit breakers, but its auxiliary components, such as. undervoltage release, shunt trip, closing coil, remote

Status indicators provides electromagnetic compatibility requirements, specified in Appendix N;

--- In the type test, the electromagnetic and electronic trip unit verification discrimination (see 8.3.3.1.2);

--- Increase in Appendix L, Appendix M, Appendix N, Appendix O.

Appendix L, Appendix M, Appendix O specifies the requirements and test methods for three new products.

Appendix L requirements without over-current protection circuit breaker, referred to CBI;

Appendix M of Residual Current Devices (Without Internal Current Breaking Device), referred MRCD;

Appendix O instantaneous trip circuit breakers, Acronym ICB;

Appendix N --- EMC is not included in the additional requirements and test Annex B, Appendix F and Appendix M of the Annex.

This section of the Appendix A, Appendix B, Appendix C, Appendix F, Appendix G, Appendix H, Appendix J, Appendix L, Appendix M, N and Appendices Appendix O

Normative annex, appendix E and K are informative appendix.

This part is proposed by the China Electrical Equipment Industrial Association.

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

This part by the Shanghai Electrical Apparatus Research Institute (Group) Co., Ltd. is responsible for drafting.

Participated in the drafting of this section. Changshu Switchgear Manufacturing Co., Ltd., Tianjin Baili Electric Co., Ltd., Shanghai People's electrical plant, Schneider

Electric (China) Investment Co., Ltd., Hangzhou, the switch Co., Ltd., Zhejiang Chint Electric Co., Ltd., Suzhou Wanlong Group has

Ltd., Delixi Electric Co., Ltd. Shanghai Siemens low-voltage circuit breakers, Tengen Group Co., Limited Huatong Electrical Group

The company, Tianshui Electric Co., Ltd. ????? intelligent electrical switches, electrical switch Ltd. Zhejiang, Shanghai Liang letter

Electric Co., General Electric (China) Research and Development Center Co., Ltd., Zhejiang People Electric Co., Ltd., Ningbo Liaoyuan Electric Set

Group Co., Ltd. People Electric Group Co., Ltd., Beijing People's electrical plant, Universal Holdings Limited.