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OF CHINA**

**中华人民共和国国家标准**

**GB/T 14048.3-2008/IEC 60947-3: 2005**

**Replace GB 14048.3-2002**

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**Low-voltage switchgear and controlgear - Part 3:  
Switches disconnectors switch-disconnectors  
and fuse-combination units**

**低压开关设备和控制设备**

**第 3 部分：开关、隔离器、隔离开关以及熔断器组合  
电器**

**(IEC 60947-3: 2005, IDT)**

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China**

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## Foreword

**The contents as specified in 4.3.6, 5.2. 1, 7.1.6, 7.2.3, 7.2.7 and 7. 3 are enforceable and other contents are informative.**

*Low-voltage switchgear and controlgear* is divided into 16 standards.

- GB 14048.1 Low-voltage switchgear and controlgear—Part 1:General rules
- GB 14048.2 Low-voltage switchgear and controlgear - Part 2: Circuit-breakers
- GB 14048.3 Low-voltage switchgear and controlgear - Part 3:Switches disconnectors switch-disconnectors and fuse-combination units
- GB 14048.4 Low-voltage switchgear and controlgear - Electromechanical contactors and motor-starters
- GB 14048.5 Low-voltage switchgear and controlgear - Part 5-1:Control circuit devices and switching element - Electromechanical control circuit devices
- GB 14048.6 Low-voltage switchgear and controlgear Contactors and motor-starters Section 2: AC semiconductor motor controllers and starters
- GB 14048.7 Low-voltage switchgear and controlgear Ancillary equipment Section 1: Terminal blocks for copper conductors
- GB 14048.8 Low-voltage switchgear and controlgear Ancillary equipment Section 2: Protective conductor terminal blocks for copper conductors
- GB 14048.9 Low-voltage switchgear and controlgear Multiple function equipment Section 2:Control and protective switching devices(or equipment)(CPS)
- GB 14048.10 Low-voltage switchgear and controlgear - Part 5-2: Control circuit devices and switching element - Proximtiy switches
- GB 14048.11 Low-voltage switchgear and controlgear--Part 6-1:Multiple function equipment--Automatic transfer switching equipment
- GB 14048.12 Low-voltage switchgear and controlgear - Part 4-3: Contactors and

motor-starters-AC semiconductor controllers and contactors for non-motor loads

—GB 14048.13 Low-voltage switchgear and controlgear - Part 5-3: Control circuit devices and switching elements - Requirements for proximity devices with defined behaviour under fault conditions (PDF)

—GB 14048.14 Low-voltage switchgear and controlgear - Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function

—GB 14048.15 Low-voltage switchgear and controlgear - Part 5-6: Control circuit devices and switching elements - DC interface for proximity sensors and switching amplifiers(NAMUR)

—GB 14048.16 Low-voltage switchgear and controlgear - Part 8: Control units for built-in thermal protection(PTC) for rotating electrical machines

This part is Part 3 of *Low-voltage Switchgear and Controlgear*, and is identical to IEC 60947-3:2005 *Low-voltage Switchgear and Controlgear-Part 3: Switches, Disconnectors, Switch-disconnectors and Fuse-combination Units* (edition 2.2).

This part replaces GB 14048.3-2002 *Low-voltage Switchgear and Controlgear-Part 3: Switches, Disconnectors, Switch-disconnectors and Fuse-combination Units*.

In terms of technical characteristics, this part has the following changes compared with GB 148048.3-2002:

—Add new definitions: multi-touch multi-contact system and unipolar operation triple-pole switch;

—The dielectric test in routine tests is changed from power frequency withstand voltage test to addition of power frequency withstand voltage test or to mixed test at alternating current;

—Procedure 1 make it clear that position indicator tests and actuator mechanisms are the constituent parts;

—The methods of verifying actuator mechanism strength and position indicator testing

- define the measurement of testing force  $F$  and the position of series or parallel touches;
- The temperature rise test in Procedure I can be clearly referred to only as a simplified test for different samples;
  - Temperature rise verification is added for the disconnectors, disconnector-fuse units and fuse disconnectors in Procedure I after being tested;
  - After making and breaking tests, the normal operating electric equipment after operating performance tests and short-circuit making capacity tests specifies the operating force shall not greater than the testing force given in Table 8 in the standard;
  - The short circuit withstand capacity of fuse protection makes it clear that manufacturers shall provide suitable fuses for testing, with details recorded in the test report and the testing voltage specified as  $1.05U_e$ ;
  - Procedure V: adds that temperature rise test for overload performance capacity can come after overload tests. The overload test duration shall be less than 1h and the fuse for test provided by the manufacturer shall be recorded in the test report. If the duration is 3min or 5min above 1h, the electric equipment should be manipulated one time, the operating force not more than the testing force given in Table 8 in the standard;
  - The making, breaking and operating performance tests for the electric equipment directly making or breaking a single motor in Annex A are changed from being done on different samples to be done on the same sample if the manufacturer agrees. The power frequency withstand voltage after electrical life tests is changed from being not less than 900V to being not less than 1000V;
  - Add triple pole switch for unipolar operation in Annex c and clearly define its functions and test methods.

The annex A and C are the Normative annex and the annex B is the informative annex.

This Part is proposed by China Electrical Equipment Industrial Association.

This Part is under the jurisdiction of National Technical Committee for standardization of low voltage electrical appliances (SAC/TC 189).

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The historical version replaced by this Part is as follows:

——GB 14048.3-1993, GB 14048.3-2002.

# Low-voltage switchgear and controlgear - Part 3: Switches disconnectors switch-disconnectors and fuse-combination units

## 1 Scope

The provisions of the general rules dealt with in GB 14048.1 are applicable to this part, where specifically called for. Clauses and subclauses, tables, figures and appendices of the general rules thus applicable are identified by reference GB 14048.1-2006, e.g., 4.3.4.1 of GB 14048.1-2006, Table 4 GB 14048.1-2006, or annex A of GB 14048.1-2006.

### 1.1 Scope and object

This part applies to switches, disconnectors, switch-disconnectors and fuse-combination units to be used in distribution circuits and motor circuits of which the rated voltage does not exceed 1 000 V a.c. or 1 500 V d.c.

The manufacturer shall specify the type, ratings and characteristics according to the relevant standard of any incorporated fuses.

This part does not apply to equipment coming within the scope of GB 14048.2, IEC GB 14048.4 and GB 14048.5; however, when switches and fuse-combination units coming into the scope of this part are normally used to start, accelerate and/or stop an individual motor they shall also comply with the additional requirements given in annex A.

The requirements for single pole operated three pole switches are included in Annex C.

Auxiliary switches fitted to equipment within the scope of this part shall comply with the requirements of GB 14048.5.

This part does not include the additional requirements necessary for electrical apparatus for explosive gas atmospheres.

NOTE 1 Depending on its design, a switch (or disconnector) can be referred to as "a rotary switch (disconnector)", "cam-operated switch (disconnector)", "knife-switch (disconnector)", etc.

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