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

GB/T 14048.23-2022

**Low-voltage switchgear and controlgear - Part 9-1: Active
arc-fault mitigation systems - Arc quenching devices**

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foreword

2010 and IEC 60947-1.2007/AMD2.2014 (see Chapter 2, Chapter 3, 5.1~5.3, 6.1, 6.3, Chapter 7~9

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 9-1 of GB/T 14048 "Low-voltage switchgear and controlgear". GB/T 14048 has issued the following

part.

--- Part 1. General;

--- Part 2. Circuit breakers;

--- Part 3. Switches, isolators, isolating switches and fuse combinations;

--- Part 4-1. Contactors and motor starters Electromechanical contactors and motor starters (including motor protectors);

--- Part 4-2. Contactors and motor starters Semiconductor controllers and starters for AC motors (including soft starters);

--- Part 4-3. AC semiconductor controllers and contactors for contactors and motor starters for non-motor loads;

--- Part 5-1. Control circuit appliances and switching elements electromechanical control circuit appliances;

--- Part 5-2. Control circuit electrical appliances and switching elements proximity switches;

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- Part 5-4.Special test for performance evaluation methods of small-capacity contacts of control circuit appliances and switching elements;
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- Part 5-6.Control circuit electrical appliances and switching elements DC interface for proximity sensors and switching amplifiers (NAMUR);
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- Part 7-1.Terminal blocks for copper conductors of auxiliary devices;
- Part 7-2.Protective conductor terminal block for copper conductors of auxiliary devices;
- Part 7-3.Safety requirements for auxiliary device fuse terminal blocks;
- Part 7-4.PCB terminal block for copper conductors of auxiliary devices;
- Part 8.Built-in thermal protection (PTC) control unit for rotating electrical machines;
- Part 9-1.Arc-fault active suppression system arc extinguishing appliances.

This document is modified to adopt IEC 60947-9-1.2019 "Low-voltage switchgear and controlgear - Part 9-1.Active suppression of arc faults"

System Arc Extinguisher.

The technical differences between this document and IEC 60947-9-1.2019 and their reasons are as follows.

---Replace IEC 60947-1.2007, IEC 60947-1.2007/AMD1 with normative reference IEC 60947-1.2020.

2010 and IEC 60947-1.2007/AMD2.2014 (see Chapter 2, Chapter 3, 5.1~5.3, 6.1, 6.3, Chapter 7~9

Chapter), the reason is to be consistent with the latest edition of IEC 60947-1, and thus

refer to the relevant IEC 60947-1:2020

The following technical differences arise in the terms.

- * Changed terms and definitions (see Chapter 3);
- * Added relevant requirements for deactivation and disassembly (see 6.3);
- * Added requirements for insulating cooperating spacers for creepage distances, insulating cooperating spacers for electrical clearances, and continuity of protective grounding and test requirements (see 8.1 and 9.2);
- * Added DC withstand voltage requirements for dielectric properties (see 8.2, 9.3.1.2.6, 9.3.1.3.5 and 9.3.1.3.7);
- * Changed the launch test requirements (see 8.3 and 9.3.2.2);
- * Added modification of special test (see 9.1).

--- Replaced CISPR11:2015 and CISPR11:2015/AMD1:2016 with normatively cited CISPR11:2019 (see

Chapter 2, 9.3.2.2), the reason is for consistency with the latest version of CISPR11, and is hereby referenced in CISPR11:2019

The following technical differences have arisen in the relevant provisions of.

- * Added the applicable equipment for the limit requirements of low-voltage DC power supply ports;
- * Added the measurement requirements for the medium and low voltage DC power supply ports in the conducted disturbance limit.

The following editorial changes have been made to this document.

--- Change IEC 60417 in Chapter 2 to IEC 60417:2002, which is consistent with the standard cited in Chapter 6 of the original text;

--- Number all the formulas in Appendix A, and explain the contents of the formulas.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Low-voltage switchgear and control equipment is a large-scale and wide-ranging industry. The products involve circuit breakers, isolators, isolating switches and fuse sets

It is widely used in various fields such as machinery, electricity, electronics, etc., involving the control, distribution and other aspects of electric energy.

noodle. GB/T 14048 "Low-voltage switchgear and control equipment" is an important system for guiding low-voltage switchgear and control equipment related products in my country.

The column standard is to be composed of 25 parts.

--- Part 1.General. The purpose is to specify general requirements for low-voltage switchgear and controlgear.

--- Part 2.Circuit breakers. The purpose is to specify product-related requirements such as performance requirements and test methods of circuit breakers.

--- Part 3.Switches, isolators, isolating switches and fuse combinations. The purpose is to specify switches, isolators, isolating switches

And the performance requirements and test methods of fuse combination electrical appliances and other product-related requirements.

--- Part 4-1.Contactors and motor starters Electromechanical contactors and motor starters (including motor protectors). target

The purpose is to specify the performance requirements and test methods of electromechanical contactors and motor starters (including motor protectors) off requirements.

--- Part 4-2.Contactors and motor starters Semiconductor controllers and starters (including soft starters) for AC motors.

The purpose is to specify the performance requirements and test methods of semiconductor controllers and starters (including soft starters) for AC motors. product related requirements.

--- Part 4-3.AC semiconductor controllers and contactors for contactors and motor starters for non-motor loads. aim at

It specifies product-related requirements such as performance requirements and test methods for AC semiconductor controllers and contactors for non-motor loads.

--- Part 5-1.Control circuit appliances and switching elements Electromechanical control circuit appliances. The purpose is to specify electromechanical control

Product-related requirements such as performance requirements and test methods of electrical appliances.

--- Part 5-2.Control circuit electrical appliances and switching elements proximity switches. The purpose is to specify the performance requirements and test of the proximity switch.

Test methods and other product-related requirements.