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

GB/T 14048.22-2022

Replacing GB/T 14048.22-2017

**Low-voltage switchgear and controlgear - Part 7-4: Ancillary
equipment - PCB terminal blocks for copper conductors**

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foreword

2.5 of the.2017 edition);

2010 and IEC 60947-1.2007/AMD2.2014 (see Chapter 1, Chapter 2, Chapter 4, 5.3.1, 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 7-4 of GB/T 14048. GB/T 14048 "Low-voltage switchgear and control equipment" has released 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;

--- Part 5-3. Proximity switches (PDDb) with deterministic functions under fault conditions for control circuit appliances and switching elements

Require;

- Part 5-4.Special test for performance evaluation methods of small-capacity contacts of control circuit appliances and switching elements;
- Part 5-5.Electrical emergency braking devices with mechanical latch function for control circuit appliances and switching elements;
- Part 5-6.Control circuit electrical appliances and switching elements DC interface for proximity sensors and switching amplifiers (NAMUR);
- Part 5-7.Requirements for control circuit appliances and switching elements for proximity devices with analog outputs;
- Part 5-8.Three-position enabling switches for control circuit electrical appliances and switching elements;
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- Part 6-1.Multifunctional electrical transfer switch electrical appliances;
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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 replaces GB/T 14048.22-2017 "Low-voltage switchgear and control equipment - Part 7-4.Auxiliary device copper conductors

Compared with GB/T 14048.22-2017, in addition to structural adjustment and editorial changes, the main technical changes are as follows.

--- Changed the minimum cross-sectional area of copper conductors applicable to this document from 0.05mm² to 0.08mm² (see Chapter 1, 5.3.5, Table 1 and

Table 2, Chapter 1, 4.3.5, Table 1 and Table 2 of the.2017 edition);

--- Changed the definition of the upper temperature limit (ULT) to clarify that the maximum temperature of the PCB terminal block is specified by the manufacturer (see 3.5,

2.5 of the.2017 edition);

--- Changed the structural requirements of the clamping parts, the contact pressure can be transmitted through the insulating material (see 8.1.1, 7.1.1 of the.2017 edition);

--- Added supplementary performance requirements and test methods for screwless PCB terminal blocks in the aging test (see 8.2.5.2,

9.4.7.2), supplementary performance requirements and test methods for PCB terminal blocks that transmit contact pressure through insulating materials (see

8.2.5.3, 9.4.7.3, Figure 5 and Figure 6);

--- Added the tightening torque requirements for a threaded type of PCB terminal block (see 9.3.2, Table 4);

--- Changed the test basis for verifying contact resistance (see 9.4.4, 8.4.4 of the.2017 edition);

--- Changed the base area requirements of the PCB terminal block test assembly in the temperature rise test (see 9.4.5, 8.4.5 of the.2017 edition);

--- Changed the test procedures and test product requirements for climate procedure tests and corrosion tests (see 9.4.7.1, Figure 4, 8.4.7 of the.2017 edition,

Figure 4).

This document is modified by IEC 60947-7-4.2019 "Low-voltage switchgear and controlgear-Part 7-4.Copper conductors for auxiliary devices

The PCB terminal block".

The technical differences between this document and IEC 60947-7-4.2019 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 1, Chapter 2, Chapter 4, 5.3.1, 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 the general requirements for dielectric properties (see 8.2.2);

* Changed the requirements for the launch test (see 8.3);

* Changed the verification requirements for the impulse withstand voltage of dielectric properties (see 9.4.2.2);

* Changed the general requirements for EMC testing (see 9.6.1).

--- Replace ISO 6988 with the normative reference GB/T 9789-2008 (see 9.4.7.1).

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, with products such as circuit breakers, isolators, isolating switches and fuses

Combined electrical appliances, contactors and starters are widely used in various fields such as machinery, electricity, electronics, etc., involving the control and distribution of electrical energy.

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

A series of standards, 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