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

GB/T 18216.6-2022

**Electrical safety in low voltage distribution systems up to 1000V a. c. and 1500V
d. c. - Equipment for testing, measuring or monitoring of protective measures -
Part 6: Effectiveness of residual current devices(RCD) in TT, TN and IT systems**

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Standardization Administration**

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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 GB/T 18216 "AC 1000V and DC 1500V and below low-voltage power distribution system electrical safety protection measures.

Test, Measuring or Monitoring Equipment, Part 6. GB/T 18216 has published the following parts.

- Part 1. General requirements;
- Part 2. Insulation resistance;
- Part 3. Loop impedance;
- Part 4. Grounding resistance and equipotential grounding resistance;
- Part 5. Resistance to ground;
- Part 6. Effectiveness of residual current devices (RCDs) in TT, TN and IT systems;
- Part 8. Insulation monitoring devices in IT systems;
- Part 9. Equipment for locating insulation faults in IT systems;
- Part 10. Combined measuring equipment for testing, measuring or monitoring protective measures;
- Part 12. Performance measurement and monitoring device (PMD).

This document is equivalent to IEC 61557-6:2019 "Electrical safety of low-voltage power distribution systems of AC 1000V and DC 1500V and below"

Test, measuring or monitoring equipment for full protection - Part 6. Effectiveness of residual current devices (RCD) in TT, TN and IT systems

sex".

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

Introduction

IEC 60364-6 specifies the initial testing, continuous monitoring and adjustment of electrical installations in TN, TT or IT systems.

Standardized conditions for post-conditioning experiments. In addition to specifying general standards for carrying out these tests, IEC 60364-6 also covers the need to pass measurements

to verify the requirements. Only in a few cases, such as when measuring insulation resistance, does IEC 60364-6 cover the measuring equipment used.

set feature details. Circuit diagrams given as examples in IEC 60364-6 and referenced in the text of the document are generally not applicable to actual use.

Conducting tests in electrical installations can easily lead to accidental outside. Therefore, in addition to simplifying the measurement, technicians need to rely on the measurement device to ensure the safety of the measurement method.

The application of the general safety rules for electrical and electronic measuring devices (IEC 61010-1) for testing of protective measures is not sufficient in itself. exist

Measurements in electrical installations are not only harmful to technicians, but also to third parties due to different measurement methods.

Also, in order to obtain an objective judgement about the equipment, for example periodic testing after equipment handover, continuous insulation monitoring or

In the case of performance assurance, an important prerequisite is to obtain reliable and comparable measurement results using measuring devices from different manufacturers.

The purpose of formulating GB/T 18216 is to specify uniform principles consistent with the above characteristics, these principles apply to nominal voltage AC

Measuring and monitoring equipment for electrical safety testing and performance testing in systems of 1000V and DC 1500V and below. GB/T 18216

It consists of ten parts.

--- Part 1. General requirements. The purpose is to establish a low-voltage power distribution system with a nominal voltage of AC 1000V and DC 1500V and below.

General requirements for test equipment used in electrical safety measurement and monitoring systems.

--- Part 2. Insulation resistance. The purpose is to establish that the measurement is suitable for the insulation of equipment and electrical installations in the non-excited state

Requirements for resistive devices.

--- Part 3. Loop impedance. The purpose is to establish between the measuring line conductor and the protective conductor, between the line conductor and the neutral conductor or between the two conductors.

Requirements related to loop impedance equipment between line conductors.

--- Part 4. Grounding resistance and equipotential grounding resistance. The purpose is to establish the grounding conductor, protective grounding conductor and

and related technical requirements for the resistance of equipotential bonding conductors.

--- Part 5. Resistance to ground. The purpose is to establish the requirements for measuring equipment that uses AC voltage to measure resistance to earth.

--- Part 6. Effectiveness of residual current devices (RCDs) in TT, TN and IT systems. The purpose is to establish a test for TT,

Requirements for measuring equipment for the effectiveness of protective measures for residual current devices in TN and IT systems.

--- Part 8. Insulation monitoring devices in IT systems. The purpose is to establish the relevant requirements for insulation monitoring devices in IT systems.

--- Part 9. Insulation fault location equipment in IT systems. The purpose is to establish the phase of insulation fault location equipment in IT system.

off requirements.

--- Part 10. Combined measuring equipment for testing, measuring or monitoring protective measures. The purpose is to establish within a device

A combined measuring device that combines several measuring functions or test methods for testing, measuring or monitoring in accordance with the various parts of IEC 61557

prepared requirements.

--- Part 12. Performance measurement and monitoring device (PMD). The purpose is to establish a comprehensive system for measuring and monitoring electrical parameters in power distribution systems.

meet the relevant requirements for performance measurement and monitoring devices.

AC 1000V and DC 1500V and below low voltage

Test of electrical safety protection measures for power distribution system,

Measuring or monitoring equipment part 6.TT, TN and

Effectiveness of residual current devices (RCDs) in IT systems

1 Scope

This document specifies requirements for measuring equipment for testing the effectiveness of protective measures for residual current devices in TT, TN and IT systems.

The purpose of this document is not to validate RCDs against their product standards.

Note. See Table A.1 in Appendix A for the time and current tripping tests applicable to RCDs.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 18216.1-2021 Electrical safety protection measures for AC 1000V and DC 1500V and below low-voltage power distribution systems

Testing, measuring or monitoring equipment - Part 1.General requirements (IEC 61557-1.2019, IDT)

IEC 61010-1.2010 AMD1.2016 Safety requirements for electrical equipment for measurement, control and laboratory use Part 1.General

Part 1.Generalrequirements)

Note 1.GB 4793.1-2007 Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use Part 1.General Requirements (IEC 61010-1.2001, IDT).

IEC 61010-2-030.2017 Safety requirements for electrical equipment for measurement, control and laboratory use Part 2-030.Tests for circuits)

IEC 61010-031 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 031.Electrical testing and measuring hands

Note 2.GB 4793.5-2008 Safety Requirements for Electrical Equipment for Measurement,