Chinastandards.org

ICS 17.220.20

NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 18216.8-2015

Electrical safety in low voltage distribution systems up to 1 000 V a.c. and 1 500 V d.c. -- Equipment for testing, measuring or monitoring of protective measures -- Part 8: Insulation monitoring devices for IT systems

交流1000V和直流1500V以下低压配电系统电气安全 防护设施的试验、测量或监控设备 第8部份：IT系统中绝缘监控装置

(English Translation)

Issued on: December 10, 2015 **Implemented on: July 1, 2016**

Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC

Preview: page 1 of 5 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-18216-8-2015

Chinastandards.org

Table of Contents

Foreword
1 Scope
2 Normative references
3 Terms and definitions
4 Requirement
5 Signs and instructions for use
6 Test
Appendix A (Normative) Medical Insulation Monitoring Devices (IMDs)
Appendix B (informative) Monitoring of overload and high temperature
References

Foreword

GB/T 18216 "Test, measurement or test of electrical safety protection measures for low-voltage distribution systems with AC 1000V and DC 1500V below Monitoring Equipment is divided into 13 parts.

--- Part 1: General requirements;

--- Part 2: Insulation resistance;

--- Part 3: Loop impedance;

--- Part 4: Ground resistance and equipotential ground resistance;

--- Part 5: Resistance to ground;

--- Part 6: Residual current protection devices (RCD) in TT and TN systems;

--- Part 7: Phase sequence;

--- Part 8: Insulation monitoring devices in IT systems;

--- Part 9: Insulation fault location equipment in IT systems;

--- Part 10: Comprehensive detection or monitoring device for protective measures;

--- Part 11: Effectiveness of Class A and B residual current monitoring in TT, TN, IT systems;

--- Part 12: Performance Measurement and Monitoring Device (PMD);

Preview: page 2 of 5 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-18216-8-2015

--- Part 13: Hand-held current clamps and sensors for leakage current measurement in power distribution systems.

This part is Part 8 of GB/T 18216.

This section is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the translation method equivalent to the IEC 61557-8.:2007 "AC 1000V and DC 1500V low voltage power distribution system Testing, measuring or monitoring equipment for electrical safety protection measures-Part 8: Insulation monitoring devices in IT systems "(English version).

This section incorporates the contents of the technical corrigendum to IEC 61557-8.:2007.The clauses related to these amendments have been passed on its outer margin.

The vertical double line (|) in the white position is marked.

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this section are as follows.

--- GB 4793.1-2007 Safety requirements for electrical equipment for measurement, control and laboratory use-Part 1: General requirements (IEC 61010-1.:2001, IDT)

--- GB/T 4798.1-2005 Environmental conditions for the application of electric and electronic products Part 1: Storage (IEC 60721-3-1.:1997, MOD)

--- GB/T 4798.2-2008 Environmental conditions for the application of electric and electronic products Part 2: Transportation (IEC 60721-3-2.:1997, MOD)

--- GB/T 4798.3-2007 Environmental conditions for the application of electric and electronic products Part 3: Fixed use in weather-protected places (IEC 60721-3-3.:2002, MOD)

--- GB 9816-2008 Requirements and Application Guidelines for Thermal Links (IEC 60691.:2002, IDT)

--- GB 14048.5-2008 Low-voltage switchgear and control equipment Part 5-1.Control circuit appliances and switching element machines Electrical control circuit appliances (IEC 60947-5-1.:2003, MOD)

--- GB/T 14048.17-2008 Low-voltage switchgear and control equipment Part 5-4.Control circuit appliances and switchgear Special test for performance evaluation method of a small-capacity contact (IEC 60947-5-4.:2002, IDT)

--- GB 16895.24-2005 Building electrical installations Part 7-710.Requirements for special installations or locations-Medical facilities (IEC 60364-7-710.:2002, IDT)

--- GB/T 16935.1-2008 Insulation coordination for equipment in low-voltage systems Part 1: Principles, requirements and tests (IEC 60664-1.:2007, IDT)

Preview: page 3 of 5 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-18216-8-2015

--- GB/T 16935.3-2005 Insulation coordination for equipment in low-voltage systems Part 3: Use coating, canning and molding Antifouling protection (IEC 60664-3.:2003, IDT)

--- GB/T 18216.1-2012 Electrical safety protection measures for low-voltage distribution systems with AC 1000V and DC 1500V below Testing, measuring or monitoring equipment-Part 1: General requirements (IEC 61557-1.:2007, IDT)

--- GB/T 18268.24-2010 Requirements for electromagnetic compatibility of electrical equipment for measurement, control and laboratory use. Part 24: Special Special requirements for testing of insulation monitoring devices conforming to IEC 61557-8 and insulation fault locating equipment conforming to IEC 61557-9 Configuration, operating conditions and performance criteria (IEC 61326-2-4.:2006, IDT) The following editorial changes have been made in this section.

--- Replace IEC 61557-8.:2007 with this part of GB/T 18216;

--- In the Note 1 of Chapter 1 and references, GB 16895.21 is used instead of IEC 60364-4-41;

--- Decimal point symbol with "." Instead of ",".

3 Terms and definitions

The terms and definitions defined in IEC 61557-1 and the following apply to this document.

3.1 External DC voltage

A DC voltage (generated by a DC component) between an AC conductor and ground in an AC system.

3.2 Insulation resistance

The ground resistance of the monitored system, including the ground resistance of all connected equipment.

3.3 Specified response value

The insulation resistance value is fixed or adjustable on the insulation monitoring device, and it is monitored whether the insulation resistance drops below this limit.

3.4 Response value

Under specified conditions, the insulation resistance value of the insulation monitoring device responds.

Preview: page 4 of 5 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-18216-8-2015

3.5 Relative uncertainty

The response value is subtracted from the specified response value and then divided by the specified response value and multiplied by 100%, which is expressed as a percentage.

3.6 System leakage capacitance

The maximum allowable value of the total capacity of the monitored system to ground (including all electrical equipment connected to the system), below this value The device can work as specified.

3.7 Rated contact voltage

Rated voltage at which the relay contacts open and close under specified conditions.

3.8 Response time

The time required for the insulation monitoring device to respond under the conditions specified in 6.1.2.

3.9 Measuring voltage

The voltage appearing on the measurement terminal during measurement.

Note: Supplementary explanation to the definition given in IEC 61557-1, the measured voltage (Um) is the terminal of the monitored system and the protective conductor terminal without fault and no current The voltage that appears between.

3.10 Measuring current

The maximum current that can flow between the system and ground is limited by the internal resistance Ri of the measuring voltage source of the insulation monitoring device.

Note: The measured current is called injection current in IEC 60364-7-710.

3.11 Internal impedance

The total impedance of the insulation monitoring device measured at the nominal frequency (connected) between the terminal of the monitored system and the ground terminal.

3.12 DC internal resistance

Resistance (connection) between the terminal of the monitored system and the ground terminal on the insulation monitoring device.

Preview: page 5 of 5 shown, 15 in the full document. Complete English PDF, instant download:
https://chinastandards.org/standards/gb-t-18216-8-2015