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High-voltage insulation resistance meters

高压绝缘电阻表

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Foreword

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1 Scope

China's national standard for high-voltage insulation resistance meters. The instrument applies a direct voltage of hundreds or thousands of volts across an insulation and measures the resulting current, and it is the fundamental test of electrical equipment condition: cables, motor windings, transformers and switchgear are all assessed by it, before commissioning and periodically thereafter. The high test voltage is what distinguishes it from an ordinary ohmmeter and is what makes it meaningful, because insulation that is sound at low voltage can break down at working voltage, and only a test at a comparable stress reveals it. The measurements that matter are not the resistance alone but its behaviour over time - the polarisation index and the dielectric absorption ratio, which compare readings at one and ten minutes and reveal moisture and contamination that a single reading would miss.

This document specifies the functions and classifications, technical requirements, test methods, and inspection regulations of high-voltage insulation resistance meters (hereinafter referred to as "insulation meters"): The standard, marking, packaging, transportation and storage requirements, describes the test method: This document applies to the design, manufacture and type testing of insulation meters with rated voltages above 1500V:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 191 Packaging, storage and transportation pictorial mark

GB/T 4208-2017 Shell protection level (IP code)

GB 4793.1-2007 Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements

GB/T 6587-2012 General specifications for electronic measuring instruments

GB/T 9969 General Principles of Instructions for Use of Industrial Products

GB/T 17626.2-2018 Electromagnetic compatibility testing and measurement technology electrostatic discharge immunity test

GB/T 17626.3-2016 Electromagnetic compatibility testing and measurement technology Radio frequency electromagnetic field radiation immunity test

GB/T 17626.4-2018 Electromagnetic compatibility test and measurement technology Electrical fast transient burst immunity test

GB/T 17626.5-2019 Electromagnetic compatibility testing and measurement technology surge (impact) immunity test

GB/T 17626.6-2017 Electromagnetic compatibility test and measurement technology Conducted disturbance immunity induced by radio frequency fields GB/T 17626:

11 Electromagnetic compatibility testing and measurement technology Part 11: Equipment for each phase input current less than or equal to 16A Voltage sag, short interruption and voltage change immunity test of equipment

GB/T 18268.1-2010 Electromagnetic compatibility requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements JJG622-1997 Insulation resistance meter (megger)

3 Terms and definitions

The following terms and definitions apply to this document: 3:1 insulation resistanceinsulationresistance The ratio of the DC voltage applied between two electrodes of an insulating structure to the current flowing through that pair of electrodes: 3:

2 Measuring terminal testterminal The terminals used to connect the object under test in the insulation table are divided into line terminals L and ground terminals according to their connection parts with the object under test: E and shield terminal G: [Source:

JJG1005-2019, 3:2, modified]

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