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

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**Instruments and software used for measurements in high-voltage and
high-current tests - Part 3: Requirements for hardware for tests with
alternating and direct voltages and currents**

(English Translation)

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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 for standardization documents" Drafting.

This document is Part 3 of GB/T 16896 "Instruments and software for high voltage and high current test and measurement". GB/T 16896 has been the following parts were published.

--- Part 1: Requirements for impact test instruments;

--- Part 2: Requirements for impulse voltage and impulse current test software;

--- Part 3: Hardware requirements for DC voltage and current tests.

This document is equivalent to IEC 61083-3:2020 "Instruments and software for high voltage and high current tests and measurements - Part 3: Measurement of AC and DC Requirements for hardware used in voltage and current tests.

Introduction

Digital recording instrument is an important part of AC/DC voltage (current) measurement system, which can convert AC/DC voltage (current) into digital data.

The analog signal is converted into a digital signal, and the data is stored and processed. Its measurement accuracy directly affects the measurement performance of the entire measurement system.

Digital recording instruments are widely used in electrical equipment manufacturers, colleges and universities, power grid companies, testing and inspection institutions and other units.

It has the characteristics of multiple fields, large demand and high performance requirements.

GB/T 16896 "Instruments and software for high voltage and high current test and measurement" is planned to consist of four parts.

--- Part 1: Requirements for instruments used in impulse tests. The purpose is to specify the requirements for measuring instruments used in impulse high voltage and impulse high current tests.

Performance requirements and calibration methods for digital recorders.

--- Part 2: Requirements for impulse voltage and impulse current test software. The purpose is to specify high voltage and high current impulse test Software requirements.

--- Part 3: Requirements for hardware for AC and DC voltage and current tests. The purpose is to specify the requirements for AC and DC high voltage and high current tests.

Measurement characteristics and calibration requirements for digital recording instruments used for measurements during testing.

--- Part 4: Requirements for software used in AC and DC tests. The purpose is to specify the requirements for AC and DC high voltage and high current tests.

Requirements for measurement software.

The formulation of this document is conducive to ensuring the consistency of the performance evaluation results of digital recording instruments at home and abroad, and to

achieving the goal of improving the testing capabilities of my country's testing institutions.

It is conducive to strengthening and improving the special requirements for the performance of digital recording instruments in China through modification and reference, which is convenient for future reference.

Continue to formulate and revise international standards; it is conducive to eliminating trade barriers and creating favorable conditions for Chinese digital recording instrument manufacturers to open up the international market.

condition.

Instruments and software for high voltage and high current test and measurement Part 3: Tests on AC and DC voltage and current Hardware requirements

1 Scope

This document is applicable to digital recording instruments used for measurement in AC and DC high voltage and high current tests.

Measurement characteristics and calibration requirements to meet relevant standards (such as IEC 60060-1, IEC 60060-2, IEC 60060-3, IEC 62475, IEC 61180) specifies the measurement uncertainty and procedure requirements.

This document applies to digital recording instruments designed and type tested in accordance with this document.

This document.

--- Determine the performance requirements for digital recording instruments when performing alternating current (AC) or direct current (DC) voltage and current tests;

---Specifies the necessary requirements that digital recording instruments must meet to ensure their use under relevant standards;

--- Describes the test methods and procedures for digital recording instruments;

--- Defines the relevant terms for digital recording instruments with recording functions and the function of obtaining raw data.

NOTE: Appendix D lists examples of relevant AC and DC voltages and currents that need to be measured.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date