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NORME INTERNATIONALE

High-voltage test techniques – Part 2: Measuring systems

Techniques des essais à haute tension – Partie 2: Systèmes de mesure



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High-voltage test techniques – Part 2: Measuring systems

Techniques des essais à haute tension – Partie 2: Systèmes de mesure

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HIGH-VOLTAGE TEST TECHNIQUES –

Part 2: Measuring systems

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IEC 60060-2 has been prepared by IEC technical committee 42: High-voltage and high current test techniques. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) The general layout and text has been updated and improved to make the standard easier to use.
b) This document has been revised to align it with the fourth edition of IEC 60060-1.
c) The treatment of measurement uncertainty estimation has been expanded.

d) This document is now applicable to measuring systems used in testing at all standard insulation levels specified in IEC 60071-1.

e) The measurement uncertainty requirement for the front time of the standard lighting impulse voltage has been changed from 10 % to 15 %, for testing at all standard insulation levels specified in IEC 60071-1.

f) The parameter "time-to-peak" of the switching impulse defined in the third edition of IEC 60060-1:2010 has been replaced by "front time" in the fourth edition of IEC 60060-1. Necessary changes have been made in this document to accommodate this change in IEC 60060-1.

g) Clause 10, Measurement of combined voltages and Clause 11, Measurement of composite voltages have been added.

h) Clause B.1 has been significantly revised to align more closely with the provisions of Clause 5, including using the same nomenclature.

The text of this International Standard is based on the following documents:

Draft	Report on voting
42/443/FDIS	42/447/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 60060 series, published under the general title *High-voltage test techniques*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

HIGH-VOLTAGE TEST TECHNIQUES –

Part 2: Measuring systems

1 Scope

This part of IEC 60060 is applicable to complete measuring systems and to their components, used for the measurement of high voltages during laboratory and factory tests with direct voltage, alternating voltage and lightning and switching impulse voltages and combined and composite voltages as specified in IEC 60060-1. For measurements during on-site tests, see IEC 60060-3.

The limits on uncertainties of measurements stated in this document apply to test levels stated in IEC 60071-1. The principles of this document apply also to higher levels but the uncertainty can be greater.

This document:

- defines the terms used;
- describes methods to estimate the uncertainties of high-voltage measurements;
- states the requirements that apply to measuring systems;
- describes the methods for approving a measuring system and checking its components;
- describes the procedures by which the user demonstrates that a measuring system meets the requirements of this document, including the limits set for the uncertainty of measurement.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60052, *Voltage measurement by means of standard air gaps*

IEC 60060-1, *High-voltage test techniques – Part 1: General terminology and test requirements*

IEC 61083 (all parts), *Instruments and software used for measurements in high-voltage and high-current tests*

IEC 61083-1*, Instruments and software used for measurements in high-voltage and high-current tests – Part 1: Requirements for instruments for impulse tests*

IEC 61083-2*, Instruments and software used for measurement in high-voltage and high-current tests – Part 2: Requirements for software for tests with impulse voltages and currents*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM: 1995)*