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High-current test techniques - Definitions and requirements for test currents and measuring systems

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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IEC 62475 has been prepared by IEC technical committee 42: High-voltage and high-current test techniques. It is an International Standard.

This second edition cancels and replaces the first 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) minor errors in edition 1 have corrected;
b) terms and definitions have been modified to achieve best possible adherence to IEC 60060-2:2025 and have been ascribed appropriate [SOURCE];
c) terms and definitions which in edition 1 were presented in clauses other than Clause 3 have been moved into Clause 3.

d) Annex B, Clause B.4 has been amended to provide an example of uncertainty calculation for the use of an approved measuring system;

e) Clause C.2 has been deleted since the definitions given there are not referred to, with the exception of the origin of the step, which is used in Annex D. The applicable information has been added to Annex D as Note 1.

f) Annex G, Clause G.8 has been amended to replace “peak factor” by “a factor”. Texts have been clarified. Equations for relation between factor κ and cos ϕ have been developed to a simplified form.

g) Annex G, Clause G.9 has been added.

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

Draft	Report on voting
42/472/FDIS	42/475/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.

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.

1 Scope

This document is applicable to high-current testing and measurements on both high-voltage and low-voltage equipment. It deals with steady-state and short-time direct current (as e.g. encountered in high-power DC testing), steady-state and short-time alternating current (as e.g. encountered in high-power AC testing), and impulse-current. In general, currents above 100 A are considered in this document, although currents less than this can occur in tests.

NOTE This document also covers fault detection during, for example, lightning impulse testing.

This document:

– defines the terms used;
– defines parameters and their tolerances;
– describes methods to estimate uncertainties of high-current measurements;
– states the requirements applicable to a complete measuring system;
– describes the methods for approving a measuring system and checking its components;
– describes the procedure by which the user shows that a measuring system meets the requirements of this document, including limits set for 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.

NOTE Informative references on subjects included in this document are given in the bibliography.

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