AS 60270—2001
IEC 60270:2000

Australian Standard™

High-voltage test techniques—Partial discharge measurements

Standards Australia

This Australian Standard was prepared by Committee EL-007, Power Switchgear. It was approved on behalf of the Council of Standards Australia on 20 August 2001 and published on 28 September 2001.

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Australian British Chamber of Commerce

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Australian Standard™

High-voltage test techniques—Partial discharge measurements

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-007, Power Switchgear to supersede AS 1018—1985.

The objective of this Standard is to define the terms used, relevant quantities to be measured, and to describe test and measuring circuits and procedures for the measurement of partial discharges in electrical equipment.

This Standard is identical with and has been reproduced from IEC 60270:2000, *High-voltage test techniques—Partial discharge measurements*.

This Standard differs from AS 1018—1985 in the following areas:

(a) Definitions for partial discharge pulses and quantities related to partial discharge pulses, measuring systems and their characteristics and digital partial discharge instruments.

(b) Test circuits and measuring systems.

(c) Calibration of a measuring system in the complete test circuit and calibrators.

(d) Tests and test procedures.

(e) Measurement of uncertainty and sensitivity.

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (example). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

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(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘this standard’ should read ‘this Australian Standard’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the annex to which they apply. A normative annex is an integral part of a Standard, whereas an informative annex is only for information and guidance.

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Any IEC table, figure or passage of text that is struck-through is not part of this Standard. Any Australian table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 Scope

This International Standard is applicable to the measurement of **partial discharges** which occur in electrical apparatus, components or systems when tested with alternating voltages up to 400 Hz or with direct voltage.

This standard

– defines the terms used;
– defines the quantities to be measured;
– describes test and measuring circuits which may be used;
– defines analogue and digital measuring methods required for common applications;
– specifies methods for calibration and requirements of instruments used for calibration;
– gives guidance on test procedures;
– gives some assistance concerning the discrimination of **partial discharges** from external interference.

The provisions of this standard should be used in the drafting of specifications relating to **partial discharge** measurements for specific power apparatus. It deals with electrical measurements of impulsive (short-duration) **partial discharges**, but reference is also made to non-electrical methods primarily used for **partial discharge** location (see annex F).

Diagnosis of the behaviour of specific power apparatus can be aided by digital processing of **partial discharge** data (see annex E) and also by non-electrical methods that are primarily used for **partial discharge** location (see annex F).

This standard is primarily concerned with electrical measurements of **partial discharges** made during tests with alternating voltage, but specific problems which arise when tests are made with direct voltage are considered in clause 11.

The terminology, definitions, basic test circuits and procedures often also apply to tests with other frequencies, but special test procedures and measuring system characteristics, which are not considered in this standard, may be required.

Annex A provides normative requirements for performance tests on calibrators.