

AS 61869.1:2021



STANDARDS
Australia



Instrument transformers

Part 1: General requirements (IEC 61869-1:2007 (ED.1.0) MOD)

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AS 61869.1:2021

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The following are represented on Committee EL-013:

Australian Industry Group
Energy Networks Australia
Engineers Australia
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University of South Australia

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Preface

This Standard was prepared by the Standards Australia Committee EL-013, Measurement and Protection Transformers.

The objective of this document is to apply to newly manufactured instrument transformers with analogue or digital output for use with electrical measuring instruments or electrical protective devices having rated frequencies from 15 Hz to 100 Hz.

This document is a product family Standard and covers general requirements only. For each kind of instrument transformer, the product Standard is composed by this document and the relevant specific Standard.

This document is an adoption with national modifications, and has been reproduced from, IEC 61869-1:2007, *Instrument transformers — Part 1: General requirements*.

The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variation to IEC 61869-1:2007 for the application of this document in Australia.

As this document has been reproduced from an International Standard, the following applies:

- (a) In the source text “this International Standard” should read “this document”.
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The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

NOTES

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS –

Part 1: General requirements

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61869-1 has been prepared by IEC technical committee 38: Instrument transformers.

TC 38 decided to restructure the whole set of stand-alone Standards in the IEC 60044 series and transform it into a new set of standards composed of general requirements documents and specific requirements documents.

This Standard is the first issue of this new series and can be regarded as a Product Family Standard. It contains the general requirements for instrument transformers and shall be read in conjunction with the relevant specific requirements standard for the instrument transformer concerned.

An overview of the planned set of standards is given below:

PRODUCT FAMILY STANDARDS	PRODUCT STANDARD	PRODUCTS	OLD STANDARD	
61869-1 GENERAL REQUIREMENTS FOR INSTRUMENT TRANSFORMERS	61869-2	CURRENT TRANSFORMERS	60044-1	
	61869-3	INDUCTIVE VOLTAGE TRANSFORMERS	60044-2	
	61869-4	COMBINED TRANSFORMERS	60044-3	
	61869-5	CAPACITIVE VOLTAGE TRANSFORMERS	60044-5	
	61869-6	CURRENT TRANSFORMERS FOR TRANSIENT PERFORMANCE	60044-6	
	61869-9 ADDITIONAL REQUIREMENTS AND DIGITAL INTERFACE FOR ELECTRONIC INSTRUMENT TRANSFORMERS	61869-7	ELECTRONIC VOLTAGE TRANSFORMERS	60044-7
		61869-8	ELECTRONIC CURRENT TRANSFORMERS	60044-8
		61869-10	LOW-POWER STAND- ALONE CURRENT SENSORS	

This Standard covers all general requirements formerly found in the stand-alone standards of the IEC 60044 series. Additionally, it introduces some technical innovations:

- requirements for gas-insulated instrument transformers
- additional special tests
- requirements for internal arc fault protection
- requirements for degrees of protection by enclosure
- requirements for resistance to corrosion
- requirements for safety and environmental concerns

The text of this standard is based on the following documents:

FDIS	Report on voting
38/360/FDIS	38/364/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

INSTRUMENT TRANSFORMERS –

Part 1: General requirements

1 Scope

This International Standard is applicable to newly manufactured instrument transformers with analogue or digital output for use with electrical measuring instruments or electrical protective devices having rated frequencies from 15 Hz to 100 Hz.

This standard is a product family standard and covers general requirements only. For each kind of instrument transformer the product standard is composed by this standard and the relevant specific standard.

2 Normative references

The following referenced documents are essential for the application 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 60060-1: *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-2-11: *Basic environmental testing procedures – Part 2: Tests – Test Ka: Salt mist*

IEC 60068-2-17: *Basic environmental testing procedures – Part 2: Tests - Test Q: Sealing*

IEC 60068-2-75: *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests.*

IEC 60071-1: *Insulation co-ordination – Part 1: Definitions, principles and rules*

IEC 60085: *Electrical insulation – Thermal classification*

IEC 60270: *High-voltage test techniques – Partial discharge measurements*

IEC 60296: *Fluids for electrotechnical applications – Unused mineral insulating oils for transformers and switchgear*

IEC 60376: *Specification of technical grade sulfur hexafluoride (SF₆) for use in electrical equipment*

IEC 60417: *Graphical symbols for use on equipment*

IEC 60455 (all parts): *Resin based reactive compounds used for electrical insulation*

IEC 60480: *Guidelines for the checking and treatment of sulphur hexafluoride (SF₆) taken from electrical equipment and specification for its re-use*

IEC 60529: *Degrees of protection provided by enclosures (IP code)*

IEC 60567: *Oil-filled electrical equipment – Sampling of gases and of oil for analysis of free and dissolved gases – Guidance*