

AS 61869.1:2021



Instrument transformers

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



AS 61869.1:2021

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- Australian Industry Group
- Energy Networks Australia
- Engineers Australia
- National Measurement Institute
- 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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Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

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

CONTENTS

FOREWORD.....	6
1 Scope.....	9
2 Normative references	9
3 Terms and definitions	10
3.1 General definitions	11
3.2 Definitions related to dielectric ratings.....	11
3.3 Definitions related to current ratings.....	13
3.4 Definitions related to accuracy	13
3.5 Definitions related to other ratings.....	14
3.6 Definitions related to gas insulation.....	14
3.7 Index of abbreviations	15
4 Normal and special service conditions.....	15
4.1 General.....	15
4.2 Normal service conditions	16
4.2.1 Ambient air temperature	16
4.2.2 Altitude.....	16
4.2.3 Vibrations or earth tremors.....	16
4.2.4 Other service conditions for indoor instrument transformers	16
4.2.5 Other service conditions for outdoor instrument transformers	17
4.3 Special service conditions	17
4.3.1 General	17
4.3.2 Altitude.....	17
4.3.3 Ambient temperature	17
4.3.4 Vibrations or earth tremors.....	17
4.3.5 Earthquakes	17
4.4 System earthing	18
5 Ratings.....	18
5.1 General.....	18
5.2 Highest voltage for equipment.....	18
5.3 Rated insulation levels	20
5.3.1 General	20
5.3.2 Rated primary terminal insulation level	20
5.3.3 Other requirements for primary terminals insulation.....	20
5.3.4 Between-section insulation requirements.....	21
5.3.5 Insulation requirements for secondary terminals.....	21
5.4 Rated frequency.....	21
5.5 Rated output	21
5.6 Rated accuracy class	21
6 Design and construction	21
6.1 Requirements for liquids used in equipment	21
6.1.1 General	21
6.1.2 Liquid quality.....	21
6.1.3 Liquid level device.....	21
6.1.4 Liquid tightness	21
6.2 Requirements for gases used in equipment.....	21

6.2.1	General	21
6.2.2	Gas quality	22
6.2.3	Gas monitoring device	22
6.2.4	Gas tightness	22
6.2.5	Pressure relief device	23
6.3	Requirements for solid materials used in equipment	23
6.4	Requirements for temperature rise of parts and components	23
6.4.1	General	23
6.4.2	Influence of altitude on temperature-rise	24
6.5	Requirements for earthing of equipment	25
6.5.1	General	25
6.5.2	Earthing of the enclosure	25
6.5.3	Electrical continuity	25
6.6	Requirements for the external insulation	25
6.6.1	Pollution	25
6.6.2	Altitude	26
6.7	Mechanical requirements	27
6.8	Multiple chopped impulse on primary terminals	28
6.9	Internal arc fault protection requirements	28
6.10	Degrees of protection by enclosures	29
6.10.1	General	29
6.10.2	Protection of persons against access to hazardous parts and protection of the equipment against ingress of solid foreign objects	29
6.10.3	Protection against ingress of water	29
6.10.4	Indoor instrument transformers	30
6.10.5	Outdoor instrument transformers	30
6.10.6	Protection of equipment against mechanical impact under normal service conditions	30
6.11	Electromagnetic Compatibility (EMC)	30
6.11.1	General	30
6.11.2	Requirement for Radio Interference Voltage (RIV)	30
6.11.3	Requirements for immunity	31
6.11.4	Requirement for transmitted overvoltages	31
6.12	Corrosion	32
6.13	Markings	33
6.14	Fire hazard	33
7	Tests	33
7.1	General	33
7.1.1	Classification of tests	33
7.1.2	List of tests	34
7.1.3	Sequence of tests	35
7.2	Type tests	35
7.2.1	General	35
7.2.2	Temperature-rise test	36
7.2.3	Impulse voltage withstand test on primary terminals	37
7.2.4	Wet test for outdoor type transformers	38
7.2.5	Electromagnetic Compatibility (EMC) tests	38
7.2.6	Test for accuracy	40
7.2.7	Verification of the degree of protection by enclosures	40

7.2.8	Enclosure tightness test at ambient temperature	41
7.2.9	Pressure test for the enclosure	41
7.3	Routine tests	41
7.3.1	Power-frequency voltage withstand tests on primary terminals	41
7.3.2	Partial discharge measurement	42
7.3.3	Power-frequency voltage withstand tests between sections	44
7.3.4	Power-frequency voltage withstand tests on secondary terminals	44
7.3.5	Test for accuracy	44
7.3.6	Verification of markings	44
7.3.7	Enclosure tightness test at ambient temperature	45
7.3.8	Pressure test for the enclosure	45
7.4	Special tests	45
7.4.1	Chopped impulse voltage withstand test on primary terminals	45
7.4.2	Multiple chopped impulse test on primary terminals	46
7.4.3	Measurement of capacitance and dielectric dissipation factor	47
7.4.4	Transmitted overvoltage test	47
7.4.5	Mechanical tests	49
7.4.6	Internal arc fault test	50
7.4.7	Enclosure tightness tests at low and high temperatures	51
7.4.8	Gas dew point test	52
7.4.9	Corrosion test	52
7.4.10	Fire hazard test	52
7.5	Sample tests	52
8	Rules for transport, storage, erection, operation and maintenance	53
9	Safety	53
10	Influence of products on the natural environment	53
Annex A (normative) Identification of test specimen		54
Annex B (informative) Rules for transport, storage, erection, operation and maintenance		55
Annex C (informative) Fire hazard		60
Annex D (informative) Sample test		61
Bibliography		62
Figure 1 – Altitude correction factor for the temperature rise		25
Figure 2 – Altitude correction factor		27
Figure 3 – Transmitted overvoltages measurement: Test impulse waveforms		32
Figure 4 – RIV measuring circuit		39
Figure 5 – Test circuit for partial discharge measurement		42
Figure 6 – Alternative circuit for partial discharge measurement		42
Figure 7 – Example of balanced test circuit for partial discharge measurement		43
Figure 8 – Example of calibration circuit for partial discharge measurement		43
Figure 9 – Transmitted overvoltages measurement: general test configuration		48
Figure 10 – Transmitted overvoltages measurement: test circuit and GIS Test configuration (CT)		48

Table 1 – Temperature categories	16
Table 2 – Rated primary terminal insulation levels for instrument transformers	19
Table 3 – Partial discharge test voltages and permissible levels	20
Table 4 – Permissible temporary leakage rates for gas systems	22
Table 5 – Limits of temperature rise for various parts, materials and dielectrics of instrument transformers	24
Table 6 – Creepage distances	26
Table 7 – Static withstand test loads	28
Table 8 – Arc fault duration and performance criteria	29
Table 9 – Transmitted over voltage limits	31
Table 10 – List of tests	34
Table 11 – Gas type and pressure during type, routine and special tests	35
Table 12 – Modalities of application of the test loads to be applied to the line primary terminals	50
Table C.1 – Fire hazard of electro technical products	60

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*