



NSAI
Standards

Irish Standard
I.S. EN 61869-1:2009

Instrument transformers -- Part 1: General requirements (IEC 61869 -1:2007 (EQV))

I.S. EN 61869-1:2009

Incorporating amendments/corrigenda issued since publication:

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 61869-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2009

ICS 17.220.20

English version

**Instrument transformers -
Part 1: General requirements
(IEC 61869-1:2007)**

Transformateurs de mesure -
Partie 1: Exigences générales
(CEI 61869-1:2007)

Messwandler -
Teil 1: Allgemeine Anforderungen
(IEC 61869-1:2007)

This European Standard was approved by CENELEC on 2009-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 38/360/FDIS, future edition 1 of IEC 61869-1, prepared by IEC TC 38, Instrument transformers, was submitted to the IEC-CENELEC parallel vote and, together with a number of editorial modifications drafted by the Technical Committee CENELEC TC 38X, Instrument transformers, to answer the EMC Consultant's remarks, it was approved by CENELEC as EN 61869-1 on 2009-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2010-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2012-07-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/108/EC. See Annex ZZ.

IEC 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 EN 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.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61869-1:2007 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

6 Design and construction

6.11.1 **Replace** the second paragraph by:

For instrument transformers the following EMC requirements and tests are specified:

- requirements for emission, Radio Interference Voltage (RIV) included for high voltage parts of the equipment.;
- requirements for immunity, only applicable to electronic parts of the equipment;
- requirements for transmitted overvoltages.

6.11.2 **Delete** the note.

6.11.3 **Replace** the second paragraph by:

Refer to specific product standards for details.

7 Tests

7.2.5.2 **Replace** the text of this subclause by:

Refer to specific product standards for details.

Bibliography

Add the following notes for the standards indicated:

IEC 60038	NOTE Harmonized as HD 472 S2:1989 (modified), with the following title " <i>Nominal voltages for low-voltage public electricity supply systems</i> "
IEC 60068-2	NOTE Harmonized in EN 60068-2 series (not modified).
IEC 60071-2	NOTE Harmonized as EN 60071-2:1997 (not modified).
IEC 60255-22-1	NOTE Harmonized as EN 60255-22-1:2008 (not modified).
IEC 60565	NOTE Harmonized as EN 60565:2007 (not modified).
IEC 60599	NOTE Harmonized as EN 60599:1999 (not modified).
IEC 60660	NOTE Harmonized as EN 60660:1999 (not modified).
IEC 60664-1	NOTE Harmonized as EN 60664-1:2007 (not modified).
IEC 60869	NOTE Harmonized in EN 60869 series (not modified).
IEC 61000	NOTE Harmonized in EN 61000 series (modified).
IEC 61109	NOTE Harmonized as EN 61109:2008 (not modified).
IEC 61161	NOTE Harmonized as EN 61161:2007 (not modified).
IEC 61181	NOTE Harmonized as EN 61181:2007 (not modified).
IEC 62271-100	NOTE Harmonized as EN 62271-100:2009 (not modified).
CISPR 11	NOTE Harmonized as EN 55011:2007 (modified).
CISPR 16-1-1	NOTE Harmonized as EN 55016-1-1:2007 (not modified).
ISO 9001	NOTE Harmonized as EN ISO 9001:2008 (not modified).



INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Instrument transformers –
Part 1: General requirements**

**Transformateurs de mesure –
Partie 1: Exigences générales**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE **XB**
CODE PRIX

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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.

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I.S. EN 61869-1:2009

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- 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*

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