Irish Standard
I.S. EN 61869-4:2014

Instrument transformers - Part 4: Additional requirements for combined transformers

I.S. EN 61869-4:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61869-4

June 2014

ICS 17.220.20

Supersedes EN 60044-3:2003

English Version

Instrument transformers - Part 4: Additional requirements for combined transformers (IEC 61869-4:2013)

Transformateurs de mesure - Partie 4: Exigences supplémentaires concernant les transformateurs combinés (CEI 61869-4:2013)

Messwandler - Teil 4: Zusätzliche Anforderungen an kombinierte Wandler (IEC 61869-4:2013)

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61869-4:2014 E

Foreword

The text of document 38/468/FDIS, future edition 1 of IEC 61869-4, prepared by IEC/TC 38 "Instrument transformers" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61869-4:2014.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2014-12-06
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-12-24

This document supersedes EN 60044-3:2003.

This Part 4 is to be read in conjunction with, and is based on, EN 61869-1:2009, *General requirements*, EN 61869-2:2012, *Additional requirements for current transform*, and EN 61869-3:2011, *Additional requirements for inductive voltage transformers*. However, the reader is encouraged to use the most recent edition of these documents.

This Part 4 follows the structure of EN 61869-1, EN 61869-2 and EN 61869-3 and supplements or modifies its corresponding clauses.

When a particular subclause of Part 1, 2 or 3 is not mentioned in this Part 4, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1, 2 or 3 is to be adapted accordingly.

For additional clauses, subclauses, figures, tables, annexes or notes, the following numbering system is used:

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 61869-4:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Clause 2 of EN 61869-1:2009 is applicable with the following modifications:

Publication	Year	Title	EN/HD	Year
Addition:				
IEC 60028	-	International standard of resistance for copper	-	-
IEC 60038	-	IEC standard voltages	EN 60038	-
IEC 61869-1 (mod)	2007	Instrument transformers - Part 1: General requirements	EN 61869-1	2009
IEC 61869-2	2012	Instrument transformers - Part 2: Additional requirements for current transformers	EN 61869-2	2012
IEC 61869-3	2011	Instrument transformers - Part 3: Additional requirements for inductive voltage transformers	EN 61869-3	2011

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IEC 61869-4

Edition 1.0 2013-11

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Instrument transformers –
Part 4: Additional requirements for combined transformers

Transformateurs de mesure –
Partie 4: Exigences supplémentaires concernant les transformateurs combinés

IEC 61869-4:2013

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IEC 61869-4

Edition 1.0 2013-11

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS –

Part 4: Additional requirements for combined transformers

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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This International Standard IEC 61869-4 has been prepared by IEC technical committee 38: Instrument transformers.

This standard replaces IEC 60044-3: Combined transformers.

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

FDIS	Report on voting
38/468/FDIS	38/472/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.

This standard is Part 4 of IEC 61869, published under the general title *Instrument transformers*.

This Part 4 is to be read in conjunction with, and is based on, IEC 61869-1 *General Requirements* – first edition (2007), IEC 61869-2, *Additional requirements for current transformers* first edition (2012) and IEC 61869-3, *Additional requirements for inductive voltage transformers* first edition (2011) – however, the reader is encouraged to use the most recent edition of these documents.

This Part 4 follows the structure of IEC 61869-1, IEC 61869-2 and IEC 61869-3 and supplements or modifies its corresponding clauses.

When a particular subclause of Part 1, 2 or 3 is not mentioned in this Part 4, that subclause applies as far as is reasonable. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1, 2 or 3 is to be adapted accordingly.

For additional clauses, subclauses, figures, tables, annexes or notes, the following numbering system is used:

– clauses, subclauses, tables and figures that are numbered starting from 401 are additional to those in Part 1, 2 or 3;

– additional annexes are lettered 4A, 4B, etc.

An overview of the planned set of standards at the date of publication of this document is given below. The updated list of standards issued by IEC TC38 is available at the website: www.iec.ch

PRODUCT FAMILY STANDARDS		PRODUCT STANDARD	PRODUCTS	OLD STANDARD
		61869-2	ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS	60044-1 60044-6
		61869-3	ADDITIONAL REQUIREMENTS FOR INDUCTIVE VOLTAGE TRANSFORMERS	60044-2
		61869-4	ADDITIONAL REQUIREMENTS FOR COMBINED TRANSFORMERS	60044-3
		61869-5	ADDITIONAL REQUIREMENTS FOR CAPACITIVE VOLTAGE TRANSFORMERS	60044-5
61869-1 GENERAL REQUIREMENTS FOR INSTRUMENT TRANSFORMERS	**61869-6** ADDITIONAL GENERAL REQUIREMENT FOR LOW POWER INSTRUMENT TRANSFORMERS	**61869-7**	ADDITIONAL REQUIREMENTS FOR ELECTRONIC VOLTAGE TRANSFORMERS	60044-7
		61869-8	ADDITIONAL REQUIREMENTS FOR ELECTRONIC CURRENT TRANSFORMERS	60044-8
		61869-9	DIGITAL INTERFACE FOR INSTRUMENT TRANSFORMERS	
		61869-10	ADDITIONAL REQUIREMENTS FOR LOW-POWER STAND-ALONE CURRENT SENSORS	
		61869-11	ADDITIONAL REQUIREMENTS FOR LOW POWER STAND ALONE VOLTAGE SENSORS	60044-7
		61869-12	ADDITIONAL REQUIREMENTS FOR COMBINED ELECTRONIC INSTRUMENT TRANSFORMER OR COMBINED STAND ALONE SENSORS	
		61869-13	STAND ALONE MERGING UNIT	
		61869-14	ADDITIONAL REQUIREMENTS FOR DC CURRENT TRANSFORMERS	
		61869-15	ADDITIONAL REQUIREMENTS FOR DC VOLTAGE TRANSFORMERS	

The committee has decided that the contents of this publication will remain unchanged until the stability 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 4: Additional requirements for combined transformers

1 Scope

This part of IEC 61869 applies to newly-manufactured combined transformers for use with electrical measuring instruments and electrical protective devices at frequencies from 15 Hz to 100 Hz.

The requirements and tests of this standard, in addition to the requirements and tests of IEC 61869-1, IEC 61869-2 and IEC 61869-3 cover current and inductive voltage transformers that are necessary for combined instrument transformers.

2 Normative references

Clause 2 of IEC 61869-1:2007 is applicable with the following modifications:

Addition:

IEC 60028, *International Standard of resistance for copper*

IEC 60038, *IEC standard voltages*

IEC 61869-1:2007, *Instrument Transformers – Part 1: General requirements*

IEC 61869-2:2012, *Instrument Transformers – Part 2: Additional requirements for current transformers*

IEC 61869-3:2011, *Instrument Transformers – Part 3: Additional requirements for inductive voltage transformers*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in IEC 61869-1:2007, IEC 61869-2:2012 and IEC 61869-3:2011, as well as the following apply.

3.1 General definitions

3.1.401
combined instrument transformer
instrument transformer consisting of a current and a voltage transformer in the same enclosure

3.1.402
error of voltage transformer
ε_v
ratio error of voltage transformer determined with disconnected current transformer