SLOVENSKI STANDARD
SIST EN 61869-2:2013

01-marec-2013

Nadomešča:
SIST EN 60044-6:2001

Instrumentni transformatorji - 2. del: Dodatne zahteve za tokovne transformatorje

Instrument transformers - Part 2: Additional requirements for current transformers

Messwandler - Teil 2: Zusätzliche Anforderungen für Stromwandler

Transformateurs de mesure - Partie 2: Exigences supplémentaires concernant les transformateurs de courant

Ta slovenski standard je istoveten z: EN 61869-2:2012

ICS:

17.220.20	Merjenje električnih in magnetnih veličin	Measurement of electrical and magnetic quantities

SIST EN 61869-2:2013 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61869-2

November 2012

ICS 17.220.20

Supersedes EN 60044-1:1999 + A1:2000 + A2:2003, EN 60044-6:1999

English version

Instrument transformers - Part 2: Additional requirements for current transformers (IEC 61869-2:2012)

Transformateurs de mesure -
Partie 2: Exigences supplémentaires concernant les transformateurs de courant
(CEI 61869-2:2012)

Messwandler -
Teil 2: Zusätzliche Anforderungen für Stromwandler
(IEC 61869-2:2012)

This European Standard was approved by CENELEC on 2012-10-23. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61869-2:2012 E

Foreword

The text of document 38/435/FDIS, future edition 1 of IEC 61869-2, prepared by IEC/TC 38, "Instrument transformers" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61869-2:2012.

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)	2013-07-23
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2015-10-23

This document supersedes EN 60044-1:1999 + A1:2000 + A2:2003 and EN 60044-6:1999.

Additionally it introduces technical innovations in the standardization and adaptation of the requirements for current transformers for transient performance.

This Part 2 is to be used in conjunction with, and is based on, EN 61869-1:2009, *General Requirements* – however the reader is encouraged to use its most recent edition.

This Part 2 follows the structure of EN 61869-1:2009 and supplements or modifies its corresponding clauses.

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

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

– clauses, subclauses, tables, figures and notes that are numbered starting from 201 are additional to those in Part 1;

– additional annexes are lettered 2A, 2B, etc.

Annex ZZ of EN 61869-1 is not applicable for this part of the series.

An overview of the planned set of standards at the date of publication of this document is given below. The updated list of standards prepared by IEC TC38 is available at the website: www.iec.ch; the updated list of standards prepared by IEC TC38 and approved by CENELEC is available at the website: www.cenelec.eu.

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Since the publication of EN 60044-6 (*Requirements for protective current transformers for transient performance*) in 1999, the area of application of this kind of current transformers has been extended. As a consequence, the theoretical background for the dimensioning according to the electrical requirements has become much more complex. In order to keep this standard as user-friendly as possible, the explanation of the background information will be transferred to the Technical Report IEC/TR 61869-100, which is now in preparation.

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 61869-2:2012 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.

Addition *to Annex ZA of EN 61869-1:2009:*

Publication	Year	Title	EN/HD	Year
IEC 61869-1 (mod)	2007	Instrument transformers - Part 1: General requirements	EN 61869-1	2009

IEC 61869-2

Edition 1.0 2012-09

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Instrument transformers –
Part 2: Additional requirements for current transformers

Transformateurs de mesure –
Partie 2: Exigences supplémentaires concernant les transformateurs de courant

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS –

Part 2: Additional requirements for current 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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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This International Standard IEC 61869-2 Ed.1.0 has been prepared by committee 38: Instrument transformers.

This first edition of IEC 61869-2 cancels and replaces the first edition of IEC 60044-1, published in 1996, and its Amendment 1 (2000) and Amendment 2 (2002), and the first edition of IEC 60044-6, published in 1992. Additionally it introduces technical innovations in the standardization and adaptation of the requirements for current transformers for transient performance.

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

FDIS	Report on voting
38/435/FDIS	38/437/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.

A list of all the parts in the IEC 61869 series, published under the general title *Instrument transformers*, can be found on the IEC website.

This Part 2 is to be used in conjunction with, and is based on, IEC 61869-1:2007, *General Requirements* – however the reader is encouraged to use its most recent edition.

This Part 2 follows the structure of IEC 61869-1:2007 and supplements or modifies its corresponding clauses.

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

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

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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.

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Since the publication of IEC 60044-6 (*Requirements for protective current transformers for transient performance*) in 1992, the area of application of this kind of current transformers has been extended. As a consequence, the theoretical background for the dimensioning according to the electrical requirements has become much more complex. In order to keep this standard as user-friendly as possible, the explanation of the background information will be transferred to the Technical Report IEC 61869-100 TR, which is now in preparation.

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 2: Additional requirements for Current Transformers

1 Scope

This part of IEC 61869 is applicable to newly manufactured inductive current transformers for use with electrical measuring instruments and/or electrical protective devices having rated frequencies from 15 Hz to 100 Hz.

2 Normative references

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions in IEC 61869-1:2007 apply with the following additions:

3.1 General definitions

3.1.201
current transformer
instrument transformer in which the secondary current, under normal conditions of use, is substantially proportional to the primary current and differs in phase from it by an angle which is approximately zero for an appropriate direction of the connections

[SOURCE: IEC 60050-321:1986, 321-02-01]

3.1.202
measuring current transformer
current transformer intended to transmit an information signal to measuring instruments and meters

[SOURCE: IEC 60050-321:1986, 321-02-18]

3.1.203
protective current transformer
a current transformer intended to transmit an information signal to protective and control devices

[SOURCE: IEC 60050-321: 1986, 321-02-19)

3.1.204
class P protective current transformer
protective current transformer without remanent flux limit, for which the saturation behaviour in the case of a symmetrical short-circuit is specified

3.1.205
class PR protective current transformer
protective current transformer with remanent flux limit, for which the saturation behaviour in the case of a symmetrical short-circuit is specified

3.1.206
class PX protective current transformer
protective current transformer of low-leakage reactance without remanent flux limit for which knowledge of the excitation characteristic and of the secondary winding resistance, secondary burden resistance and turns ratio, is sufficient to assess its performance in relation to the protective relay system with which it is to be used

3.1.207
class PXR protective current transformer
protective current transformer with remanent flux limit for which knowledge of the excitation characteristic and of the secondary winding resistance, secondary burden resistance and turns ratio, is sufficient to assess its performance in relation to the protective relay system with which it is to be used

Note 1 to entry: An increasingly number of situations occur where low DC currents are continuously flowing through current transformers. Therefore, in order to stop the current transformer from saturating, current transformers with air gaps, but with the same performance as Class PX, are used.

Note 2 to entry: The air gaps for remanence reduction do not necessarily lead to a high-leakage reactance current transformer (see Annex 2C).

3.1.208
class TPX protective current transformer for transient performance
protective current transformer without remanent flux limit, for which the saturation behaviour in case of a transient short-circuit current is specified by the peak value of the instantaneous error

3.1.209
class TPY protective current transformer for transient performance
protective current transformer with remanent flux limit, for which the saturation behaviour in case of a transient short-circuit current is specified by the peak value of the instantaneous error

3.1.210
class TPZ protective current transformer for transient performance
protective current transformer with a specified secondary time-constant, for which the saturation behaviour in case of a transient short-circuit current is specified by the peak value of the alternating error component

3.1.211
selectable-ratio current transformer
current transformer on which several transformation ratios are obtained by reconnecting the primary winding sections and / or by means of taps on the secondary winding

3.3 Definitions related to current ratings

3.3.201
rated primary current
I_{pr}
value of the primary current on which the performance of the transformer is based

[SOURCE: IEC 60050-321:1986, 321-01-11, modified title, synonym and definition]

3.3.202
rated secondary current
I_{sr}
value of the secondary current on which the performance of the transformer is based

[SOURCE: IEC 60050-321:1986, 321-01-15, modified title, synonym and definition]