# IEC 61869-6

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# INTERNATIONAL STANDARD

colour inside

## Instrument transformers –
## Part 6: Additional general requirements for low-power instrument transformers

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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# INSTRUMENT TRANSFORMERS –

# Part 6: Additional general requirements for low-power instrument transformers

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International Standard IEC 61869-6 has been prepared by IEC technical committee 38: Instrument transformers.

This first edition of IEC 61869-6 cancels and replaces the relevant parts of IEC 60044-7, published in 1999, and of IEC 60044-8, published in 2002[1].



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1 IEC 60044-7 and IEC 60044-8 will eventually be replaced by the IEC 61869 series, but until all the relevant parts will be published, these two standards are still in force.

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

| FDIS | Report on voting |
|---|---|
| 38/501/FDIS | 38/507/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 parts in the IEC 61869 series, published under the general title *Instrument transformers*, can be found on the IEC website.

This Part 6 is to be read 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 6 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 6, that clause/subclause applies. 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 601 are additional to those in Part 1;
– additional annexes are lettered 6A, 6B, 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 TC 38 is available at the website: www.iec.ch.

| PRODUCT FAMILY STANDARDS | | PRODUCT STANDARD IEC | PRODUCTS | OLD STANDARD IEC |
|---|---|---|---|---|
| **IEC 61869-1**<br>GENERAL REQUIREMENTS FOR INSTRUMENT TRANSFORMERS | | **61869-2** | ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS | 60044-1<br>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 CAPACITOR VOLTAGE TRANSFORMERS | 60044-5 |
| | **IEC 61869-6**<br>ADDITIONAL GENERAL REQUIREMENTS 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 PASSIVE CURRENT TRANSFORMERS | |
| | | **61869-11** | ADDITIONAL REQUIREMENTS FOR LOW-POWER PASSIVE VOLTAGE TRANSFORMERS | 60044-7 |
| | | **61869-12** | ADDITIONAL REQUIREMENTS FOR COMBINED ELECTRONIC INSTRUMENT TRANSFORMER OR COMBINED PASSIVE TRANSFORMERS | |
| | | **61869-13** | STAND ALONE MERGING UNIT | |
| | | **61869-14** | ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS FOR DC APPLICATIONS | |
| | | **61869-15** | ADDITIONAL REQUIREMENTS FOR DC VOLTAGE TRANSFORMERS FOR DC APPLICATIONS | |

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.

A bilingual version of this publication may be issued at a later date.

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# INSTRUMENT TRANSFORMERS –

# Part 6: Additional general requirements for low-power instrument transformers

## 1 Scope

This part of IEC 61869 is a product family standard and covers only additional general requirements for low-power instrument transformers (LPIT) used for a.c. applications having rated frequencies from 15 Hz to 100 Hz covering MV, HV and EHV or used for d.c. applications. This product standard is based on IEC 61869-1:2007, in addition to the relevant product specific standard.

This part of IEC 61869 does not cover the specification for the digital output format of instrument transformers.

This part of IEC 61869 defines the errors in case of analogue or digital output. The other characteristics of the digital interface for instrument transformers are standardised in IEC 61869-9 as an application of the standards, the IEC 61850 series, which details layered substation communication architecture.

This part of IEC 61869 considers additional requirements concerning bandwidth. The accuracy requirements on harmonics and requirements for the anti-aliasing filter are given in the normative Annex 6A.4.

The general block diagram of single-phase LPITs is given in Figure 601.

According to the technology, it is not absolutely necessary that all parts described in Figure 601 are included in the instrument transformer.

As an example, for low-power passive transformers (LPITs without active electronic components) the blocks are composed only with passive components and there is no power supply.

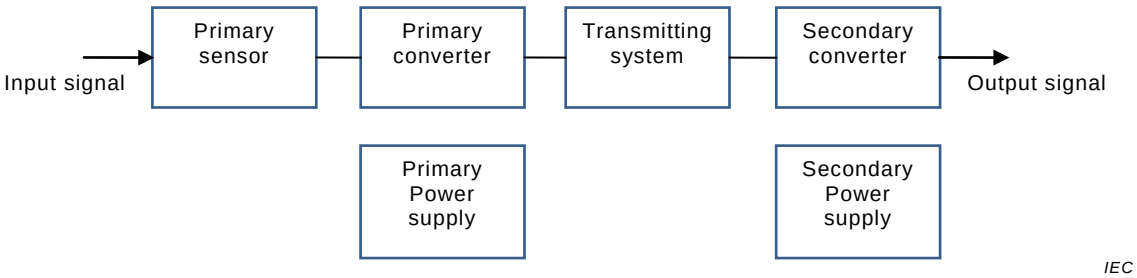


**Figure 601 – General block diagram of a single-phase LPIT**

## 2 Normative reference

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.