



**CSA C61869-6:20**

**Instrument transformers — Part 6: Additional general requirements for low-power instrument transformers**  
(IEC 61869-6:2016, MOD)

**CSA C61869-6:20**

**Transformateurs de mesure — Partie 6 : Exigences générales supplémentaires concernant les transformateurs de mesure de faible puissance**  
(IEC 61869-6:2016, MOD)

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*CSA C61869-6:20*

## ***Instrument transformers — Part 6: Additional general requirements for low- power instrument transformers (IEC 61869-6:2016, MOD)***

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# CSA C61869-6:20

## ***Instrument transformers — Part 6: Additional general requirements for low- power instrument transformers (IEC 61869-6:2016, MOD)***

### ***CSA Preface***

This is the first edition of CSA C61869-6, *Instrument transformers — Part 6: Additional general requirements for low-power instrument transformers*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Standard 61869-6 (first edition, 2016-04). It replaces relevant parts of CAN/CSA-C60044-7:07 (adopted IEC 60044-7:1999), *Instrument transformers — Part 7: Electronic voltage transformers*, and of CAN/CSA-C60044-8:07 (adopted IEC 60044-8:2002), *Instrument transformers — Part 8: Electronic current transformers*. It is part of the CSA C61869 series of Standards on instrument transformers, which consists of adoptions with Canadian deviations of the IEC 61869 series of Standards.

For brevity, this Standard will be referred to as “CSA C61869-6” throughout.

This Standard is intended to be used in conjunction with CAN/CSA-C61869-1:14, *Instrument transformers — Part 1: General requirements* (adopted IEC 61869-1:2007, with Canadian deviations).

Requirements common to all instrument transformer types are grouped in CAN/CSA-C61869-1. Requirements specific to conventional instrument transformer types are grouped in CAN/CSA-C61869-2, CAN/CSA-C61869-3, CAN/CSA-C61869-4, and CAN/CSA-C61869-5. Those CSA Group Standards present many inherited Canadian deviations identified by the specific conditions, practices, and regulations in Canada.

Requirements common to low-power instrument transformers (LPIT) used for ac applications having rated frequencies from 15 Hz to 100 Hz covering MV, HV, and EHV or used for dc applications are grouped in CSA C61869-6.

The remaining Standards in the series state requirements for specific types of instrument transformers.

Canada has actively participated in the development of IEC 61869-6, in order to enforce specific Canadian conditions. It should be noted that Parts 6 to 13 of the IEC 61869 series specify the requirements for ac LPIT as well as the interfaces necessary to implement the LPIT into an integrated system for protection and measurement. Such a system uses a universal digital transmission protocol compatible with IEC 61850, and has a digital output. In order to ensure full interoperability, Canadian deviations in CSA C61869-6 are minimal.

This Standard was reviewed for Canadian adoption by the CSA Technical Committee on Instrument Transformers, under the jurisdiction of the CSA Strategic Steering Committee on Power Engineering and Electromagnetic Compatibility, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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

**Transformateurs de mesure –  
Partie 6: Exigences générales supplémentaires concernant les transformateurs  
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## NORME INTERNATIONALE



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**Transformateurs de mesure –  
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## INSTRUMENT TRANSFORMERS –

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

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<sup>1</sup> 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.

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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.

The French version of this standard has not been voted upon.

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](http://www.iec.ch).

PRODUCT FAMILY STANDARDS		PRODUCT STANDARD IEC	PRODUCTS	OLD STANDARD IEC
<b>IEC 61869-1</b> GENERAL REQUIREMENTS FOR INSTRUMENT TRANSFORMERS		<b>61869-2</b>	ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS	60044-1 60044-6
		<b>61869-3</b>	ADDITIONAL REQUIREMENTS FOR INDUCTIVE VOLTAGE TRANSFORMERS	60044-2
		<b>61869-4</b>	ADDITIONAL REQUIREMENTS FOR COMBINED TRANSFORMERS	60044-3
		<b>61869-5</b>	ADDITIONAL REQUIREMENTS FOR CAPACITOR VOLTAGE TRANSFORMERS	60044-5
	<b>IEC 61869-6</b> ADDITIONAL GENERAL REQUIREMENTS FOR LOW-POWER INSTRUMENT TRANSFORMERS	<b>61869-7</b>	ADDITIONAL REQUIREMENTS FOR ELECTRONIC VOLTAGE TRANSFORMERS	60044-7
		<b>61869-8</b>	ADDITIONAL REQUIREMENTS FOR ELECTRONIC CURRENT TRANSFORMERS	60044-8
		<b>61869-9</b>	DIGITAL INTERFACE FOR INSTRUMENT TRANSFORMERS	
		<b>61869-10</b>	ADDITIONAL REQUIREMENTS FOR LOW-POWER PASSIVE CURRENT TRANSFORMERS	
		<b>61869-11</b>	ADDITIONAL REQUIREMENTS FOR LOW-POWER PASSIVE VOLTAGE TRANSFORMERS	60044-7
		<b>61869-12</b>	ADDITIONAL REQUIREMENTS FOR COMBINED ELECTRONIC INSTRUMENT TRANSFORMER OR COMBINED PASSIVE TRANSFORMERS	
		<b>61869-13</b>	STAND ALONE MERGING UNIT	
		<b>61869-14</b>	ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS FOR DC APPLICATIONS	
		<b>61869-15</b>	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.

**IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.**

# 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.

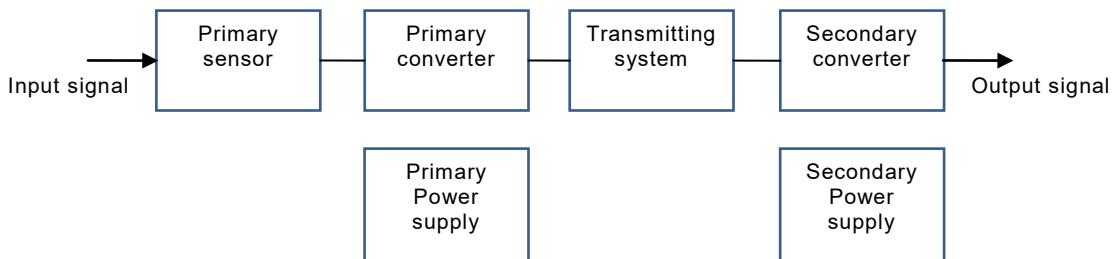
This part of IEC 61869 defines the errors in case of analogue or digital output. The other characteristics of the digital interface for instrument transformers are standardised in IEC 61869-9 as an application of the standards, the IEC 61850 series, which details layered substation communication architecture.

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.



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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.