



CSA C61869-11:20

Instrument transformers — Part 11: Additional requirements for low-power passive voltage transformers

(IEC 61869-11:2017, MOD)

CSA C61869-11:20

Transformateurs de mesure — Partie 11 : Exigences supplémentaires pour les transformateurs de tension passifs de faible puissance

(IEC 61869-11:2017, MOD)



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CSA C61869-11:20

Instrument transformers — Part 11: Additional requirements for low-power passive voltage transformers (IEC 61869-11:2017, MOD)

*Prepared by
International Electrotechnical Commission*



Reviewed by



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*Published in May 2020 by CSA Group
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*ICS 17.220.20
ISBN 978-1-4883-2761-2*

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CSA Preface

This is the first edition of CSA C61869-11, *Instrument transformers — Part 11: Additional requirements for low-power passive voltage transformers*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Standard 61869-11 (first edition, 2017-12). 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 C61869-11” 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); and CSA C61869-6:20, *Instrument transformers — Part 6: Additional general requirements for low-power instrument transformers* (adopted IEC 61869-6:2016, 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 justified 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 61869-11, 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 C61869-11 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 11: Additional requirements for low-power passive voltage transformers**

**Transformateurs de mesure –
Partie 11: Exigences supplémentaires pour les transformateurs de tension
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**Instrument transformers –
Part 11: Additional requirements for low-power passive voltage transformers**

**Transformateurs de mesure –
Partie 11: Exigences supplémentaires pour les transformateurs de tension
passifs de faible puissance**

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INSTRUMENT TRANSFORMERS –

Part 11: Additional requirements for low-power passive voltage transformers

FOREWORD

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This first edition of IEC 61869-11, together with IEC 61869-1 and IEC 61869-6, cancels and replaces the relevant clauses or subclauses of the first edition of IEC 60044-7, published in 1999 and the first edition of IEC 60044-8, published in 2002¹. This edition constitutes a technical revision.

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

The text of this International Standard is based on the following documents:

FDIS	Report on voting
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Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard is Part 11 of IEC 61869, published under the general title *Instrument transformers*.

This Part 11 is to be read in conjunction with, and is based on, IEC 61869-1:2007, *General requirements* and IEC 61869-6:2016, *Additional general requirements for low-power instrument transformers* – however, the reader is encouraged to use the most recent edition of these documents.

This Part 11 follows the structure of IEC 61869-1:2007 and IEC 61869-6:2016 and supplements or modifies the corresponding clauses.

When a particular subclause of Part 1 or Part 6 is not mentioned in this part Part 11, that subclause applies. When this standard states “addition”, “modification” or “replacement”, the relevant text in Part 1 or Part 6 is to be adapted accordingly.

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	IEC 61869-3	ADDITIONAL REQUIREMENTS FOR INDUCTIVE VOLTAGE TRANSFORMERS	IEC 60044-2	
	IEC 61869-4	ADDITIONAL REQUIREMENTS FOR COMBINED TRANSFORMERS	IEC 60044-3	
	IEC 61869-5	ADDITIONAL REQUIREMENTS FOR CAPACITIVE VOLTAGE TRANSFORMERS	IEC 60044-5	
	IEC 61869-6 ADDITIONAL GENERAL REQUIREMENTS FOR LOW-POWER INSTRUMENT TRANSFORMERS	IEC 61869-7	ADDITIONAL REQUIREMENTS FOR ELECTRONIC VOLTAGE TRANSFORMERS	IEC 60044-7
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		IEC 61869-9	DIGITAL INTERFACE FOR INSTRUMENT TRANSFORMERS	
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		IEC 61869-12	ADDITIONAL REQUIREMENTS FOR COMBINED ELECTRONIC INSTRUMENT TRANSFORMER OR COMBINED LOW-POWER PASSIVE INSTRUMENT TRANSFORMERS	
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INTRODUCTION

Low-power passive voltage transformers are based on the voltage divider principle. They can be built for example as resistive dividers, capacitive dividers or resistive-capacitive dividers. Annex 11C shows the schematic diagram of the different dividers.

According to a general block diagram given in Figure 601 of IEC 61869-6:2016, the low-power passive voltage transformers do not use an active primary converter (i.e. without any active electronic component); therefore, there is no need for primary power supply. Additionally, neither the secondary converter nor the secondary power supply is used.

The general block diagram of a low-power passive voltage transformer is given in Figure 1101.

The applied technology decides which part is necessary for the realization of a low-power passive voltage transformer, i.e. it is not necessary that the transmitting cable or primary converter described in Figure 1101 be included in the low-power passive voltage transformer.

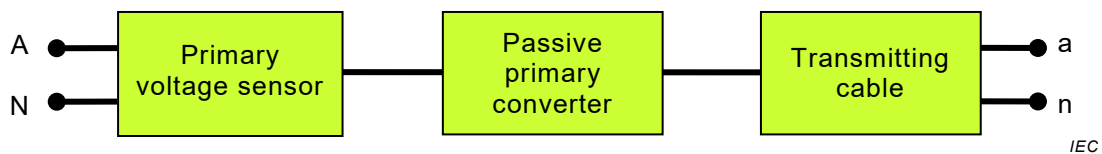


Figure 1101 – General block diagram of a single-phase low-power passive voltage transformer

INSTRUMENT TRANSFORMERS –

Part 11: Additional requirements for low-power passive voltage transformers

1 Scope

This part of IEC 61869 is a product standard and covers only additional requirements for low-power passive voltage transformers (passive LPVT). The product standard for low-power passive voltage transformers is composed of IEC 61869-1, along with IEC 61869-6 and this document with specific requirements.

This document is applicable to newly manufactured low-power passive voltage transformers with analogue output having rated frequencies from 15 Hz to 100 Hz for use with electrical measuring instruments or electrical protective devices.

This document covers low-power passive voltage transformers used for measurement or protection and low-power passive voltage transformers used for both measurement and protection.

Low-power passive voltage transformers have analogue output only (for digital output or for technology using any kind of active electronic components refer to future IEC 61869-7²). Such low-power passive voltage transformers can include the secondary signal cable (transmitting cable). The secondary voltage of the low-power passive voltage transformer is proportional to the primary voltage. Derivative output signals are not within the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

Clause 2 of IEC 61869-6:2016 is applicable with the following additions:

IEC 61869-6:2016, *Instrument transformers – Part 6: Additional general requirements for low-power instrument transformers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61869-1 and IEC 61869-6 apply with the following additions and modifications:

3.1 General definitions

3.1.613 transmitting system

Definition 3.1.613 of IEC 61869-6:2016 is applicable with the following addition:

² Under preparation.