

AS 61869.11:2021



STANDARDS
Australia



Instrument transformers

Part 11: Additional requirements for low-power passive voltage transformers (IEC 61869-11:2017 (ED 1.0) MOD)

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AS 61869.11:2021

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Preface

This Standard was prepared by the Standards Australia Committee EL-013, Measurement and Protection Transformers.

The objective of this document is to specify additional requirements for low-power passive voltage transformers (passive LPVT).

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.

Derivative output signals are not within the scope of this document.

This document is an adoption with national modifications, and has been reproduced from, IEC 61869-11:2017, *Instrument transformers — Part 11: Additional requirements for low power passive voltage transformers*.

The modifications are additional requirements and are set out in [Appendix ZZ](#), which has been added at the end of the source text.

[Appendix ZZ](#) lists the variation to IEC 61869-11:2017 for the application of this document in Australia.

As this document has been reproduced from an International Standard, the following applies:

- (a) In the source text “this part of 61869” should read “this document”.
- (b) A full point substitutes for a comma when referring to a decimal marker.

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The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

NOTES

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CONTENTS

| | |
|--|----|
| FOREWORD..... | 4 |
| INTRODUCTION..... | 7 |
| 1 Scope..... | 8 |
| 2 Normative references..... | 8 |
| 3 Terms and definitions..... | 8 |
| 3.1 General definitions..... | 8 |
| 3.2 Definitions related to dielectric ratings and voltages..... | 10 |
| 3.4 Definitions related to accuracy..... | 10 |
| 3.7 Index of abbreviations and symbols..... | 11 |
| 5 Ratings..... | 12 |
| 5.3 Rated insulation levels and voltages..... | 12 |
| 5.5 Rated output..... | 12 |
| 5.6 Rated accuracy class..... | 12 |
| 5.1101 Standard values of rated voltages..... | 15 |
| 5.1102 Standard values of rated voltage factor F_V | 15 |
| 6 Design and construction..... | 16 |
| 6.11 Electromagnetic compatibility (EMC)..... | 16 |
| 6.13 Markings..... | 16 |
| 6.601 Requirements for optical transmitting system and optical output link..... | 17 |
| 6.602 Requirements for electrical transmitting system and electrical wires for output link..... | 17 |
| 6.603 Signal-to-noise ratio..... | 17 |
| 6.604 Failure detection and maintenance announcement..... | 18 |
| 6.605 Operability..... | 18 |
| 6.606 Reliability and dependability..... | 18 |
| 6.1101 Transient response requirements..... | 18 |
| 6.1102 Voltage limitation device requirements..... | 18 |
| 7 Tests..... | 18 |
| 7.1 General..... | 18 |
| 7.2 Type tests..... | 20 |
| 7.3 Routine tests..... | 23 |
| 7.4 Special tests..... | 24 |
| 601 Information to be given with enquiries, tenders and orders..... | 26 |
| 601.1 Designation..... | 26 |
| 601.2 Dependability..... | 27 |
| Annex 11A (normative) Tests for impact of electric field from other phases..... | 28 |
| 11A.1 General..... | 28 |
| 11A.2 Test setup..... | 28 |
| 11A.3 Test procedure..... | 29 |
| Annex 11B (informative) Designation of accuracy class when using corrected transformation ratio and ratio correction factor..... | 30 |
| 11B.1 General..... | 30 |
| 11B.2 Designation of accuracy class based on rated transformation ratio..... | 31 |
| 11B.3 Designation of accuracy class based on individual ratio correction factor..... | 31 |
| Annex 11C (informative) Types of divider principles covered by this part of IEC 61869..... | 32 |
| Bibliography..... | 33 |

| | |
|--|----|
| Figure 1101 – General block diagram of a single-phase low-power passive voltage transformer | 7 |
| Figure 1102 – Terminal markings for passive LPVT | 16 |
| Figure 1103 – RC-divider with external low-voltage part outside the main housing | 22 |
| Figure 1104 – Connection for voltage withstand test of the external low-voltage part of a divider | 23 |
| Figure 1105 – Step response time of a passive LPVT | 26 |
| Figure 11A.1 – Test setup for LPVT used in air- insulated substations | 28 |
| Figure 11B.1 – Accuracy class designation improved, based on individual ratio correction factor CF_U | 31 |
| Figure 11C.1 – Divider principles | 33 |
| | |
| Table 1101 – Limits of ratio error and phase error for measuring LPVT | 13 |
| Table 1102 – Limits of ratio error and phase error for protection and multipurpose LPVT | 14 |
| Table 1103 – Standard values of rated voltage factors | 15 |
| Table 1104 – Pin assignment for RJ45 connectors used in passive LPVT | 17 |
| Table 10 – List of tests | 19 |
| Table 1105 – Burden values for basic accuracy tests | 21 |
| Table 1106 – Designation of a passive LPVT | 27 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS –

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

FOREWORD

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International Standard IEC 61869-11 has been prepared by IEC technical committee 38: Instrument transformers.

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 1997 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 |
| 38/549/FDIS | 38/552/RVD |

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.

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 1101 are additional to those in Part 1 and Part 6;
- additional annexes are lettered 11A, 11B, 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 | PRODUCTS | OLD STANDARD | |
|--|---|--|--|-------------|
| IEC 61869-1 GENERAL REQUIREMENTS | IEC 61869-2 | ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS | IEC 60044-1 IEC 60044-6 | |
| | 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 60044-4 |
| | | IEC 61869-8 | SPECIFIC REQUIREMENTS FOR ELECTRONIC CURRENT TRANSFORMERS | IEC 60044-8 |
| | | IEC 61869-9 | DIGITAL INTERFACE FOR INSTRUMENT TRANSFORMERS | |
| | | IEC 61869-10 | ADDITIONAL REQUIREMENTS FOR LOW-POWER PASSIVE CURRENT TRANSFORMERS | |
| | | IEC 61869-11 | ADDITIONAL REQUIREMENTS FOR LOW-POWER PASSIVE VOLTAGE TRANSFORMERS | IEC 60044-7 |
| | | IEC 61869-12 | ADDITIONAL REQUIREMENTS FOR COMBINED ELECTRONIC INSTRUMENT TRANSFORMER OR COMBINED LOW-POWER PASSIVE INSTRUMENT TRANSFORMERS | |
| | | IEC 61869-13 | STAND-ALONE MERGING UNIT | |
| | | IEC 61869-14 | ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS FOR DC APPLICATIONS | |
| | IEC 61869-15 | ADDITIONAL REQUIREMENTS FOR VOLTAGE TRANSFORMERS FOR DC APPLICATIONS | | |

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document 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.

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.

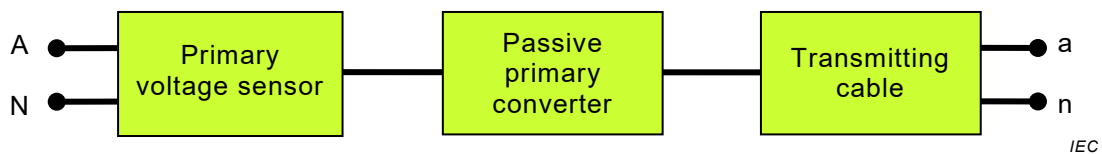


Figure 1101 – General block diagram of a single-phase low-power passive voltage transformer

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.