



SLOVENSKI STANDARD
SIST EN IEC 61869-15:2019

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Instrumentni transformatorji - 15. del: Posebne zahteve za napetostne transformatorje (IEC 61869-15:2018)

Instrument Transformers - Part 15: Specific Requirements for DC Voltage Transformers (IEC 61869-15:2018)

Messwandler - Teil 15: Besondere Anforderungen für Gleichspannungswandler (IEC 61869-15:2018)

Transformateurs de mesure - Part 15: Exigences supplémentaires concernant les transformateurs de tension pour CC (IEC 61869-15:2018)

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Ta slovenski standard je istoveten z: EN IEC 61869-15:2019

ICS:

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

EN IEC 61869-15

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2019

ICS 17.220.20

English Version

Instrument transformers - Part 15: Additional requirements for voltage transformers for DC applications (IEC 61869-15:2018)

Transformateurs de mesure - Partie 15: Exigences
supplémentaires concernant les transformateurs de tension
pour application en courant continu
(IEC 61869-15:2018)

Messwandler - Teil 15: Besondere Anforderungen für
Gleichspannungswandler
(IEC 61869-15:2018)

This European Standard was approved by CENELEC on 2018-08-21. 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.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN IEC 61869-15:2019 (E)**European foreword**

The text of document 38/561/FDIS, future edition 1 of IEC 61869-15, prepared by IEC/TC 38 "Instrument transformers" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61869-15:2019.

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) 2020-01-05
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-07-05

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The text of the International Standard IEC 61869-15:2018 was approved by CENELEC as a European Standard without any modification.

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In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60358-1:2012 NOTE Harmonized as EN 60358-1:2012 (not modified)

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 60815-4	2019	Selection and dimensioning of high-voltage - insulators intended for use in polluted conditions - Part 4: Insulators for d.c. systems		-
IEC/TS 61245:2015	2015	Artificial pollution tests on high-voltage - ceramic and glass insulators to be used on d.c. systems		-
IEC 61869-1 (mod)	2007	Instrument transformers - Part 1: General requirements	EN 61869-1	2009
IEC 61869-6	2016	Instrument transformers - Part 6: Additional general requirements for low-power instrument transformers	EN 61869-6	2016
IEC 61869-9	2016	Instrument transformers - Part 9: Digital interface for instrument transformers	EN IEC 61869-9	2019

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IEC 61869-15

Edition 1.0 2018-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Instrument transformers – **STANDARD PREVIEW**
Part 15: Additional requirements for voltage transformers for DC applications
(standards.iteh.ai)

Transformateurs de mesure – **SIST EN IEC 61869-15:2019**
Partie 15: Exigences supplémentaires concernant les transformateurs de
tension pour application en courant continu (standards.iteh.ai)

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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	6
1 Scope.....	8
2 Normative references	8
3 Terms, definitions, abbreviated terms and symbols.....	8
5 Ratings.....	12
6 Design and construction	15
7 Tests	20
Annex 15A (informative) Proposed rated insulation level applicable to voltage transformers for DC application.....	34
Bibliography.....	35
Figure 1501 – Position of the DCVT's in the DC scheme.....	6
Figure 1502 – Typical step responses of a system	10
Figure 1503 – Accuracy limits of a DCVT	14
Figure 1504 – RC divider with low-voltage part outside the main housing	25
Figure 1505 – Connection for voltage withstand test of the external low voltage part of a DCVT.....	26
Figure 1506 – Polarity reversal test profile.....	27
Figure 1507– Measurement of the step response time	29
Table 1501 – Voltage on DCVT's.....	6
Table 3 – Partial discharge test voltages and permissible levels	13
Table 1502 – Limits of ratio error for DCVT (classes from 0,1 to 3).....	14
Table 7 – Static withstand test loads.....	16
Table 8 – Arc fault duration and performance criteria	17
Table 1503 – Markings of terminals	18
Table 1504 – Rating plate marking for common rating plate	19
Table 1505 – Rating plate marking for each secondary converter	19
Table 1506 – Rating plate marking for auxiliary power supply	20
Table 10 – List of tests.....	21
Table 15A.1 – Proposed rated primary terminal insulation levels for voltage transformers for DC application.....	34

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INSTRUMENT TRANSFORMERS –

Part 15: Additional requirements for
voltage transformers for DC applications

FOREWORD

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International Standard IEC 61869-15 has been prepared by IEC technical committee 38: Instrument transformers.

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

FDIS	Report on voting
38/561/FDIS	38/566/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.

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 15 is to be used in conjunction with 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.

This Part 15 follows the structure of IEC 61869-1:2007 and IEC 61869-6:2016 and supplements or modifies their corresponding clauses.

When a subclause of Part 1 or Part 6 is not mentioned in this Part 15, 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 1501 are additional to those in Part 1 and Part 6;
- additional annexes are lettered 15A, 15B, 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.

iTeh STANDARD PREVIEW

PRODUCT FAMILY STANDARDS	PRODUCT STANDARD	PRODUCTS	OLD STANDARD	
61869-1 GENERAL REQUIREMENTS	61869-2	ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS	60044-1 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 CAPACITIVE VOLTAGE TRANSFORMERS	60044-5	
	61869-6 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 LOW-POWER PASSIVE TRANSFORMERS	
		61869-13	STAND ALONE MERGING UNIT	
		61869-14	ADDITIONAL REQUIREMENTS FOR CURRENT TRANSFORMERS FOR DC APPLICATIONS	
		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.

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INTRODUCTION

This document applies to voltage transformers (VT) intended to be used in DC applications with the following functions:

- measure DC voltage (with significant harmonics);
- withstand DC voltage.

Two main technologies of DC converters exist today: LCC and VSC

- Line-commutated converters (LCC) are based on thyristor converters. They are characterized by a single direction of current flow, and a voltage polarity reversal possibility. Significant voltage and current harmonics exist up to frequencies of about 3 kHz to 4 kHz.
- Voltage source converters (VSC) are based on transistor converters. They are characterized by a bi-directional current flow and a single voltage polarity. Voltage and current harmonics exist up to frequencies of about 20 kHz.

The position of the DCVTs on the DC system is illustrated in Figure 1501.

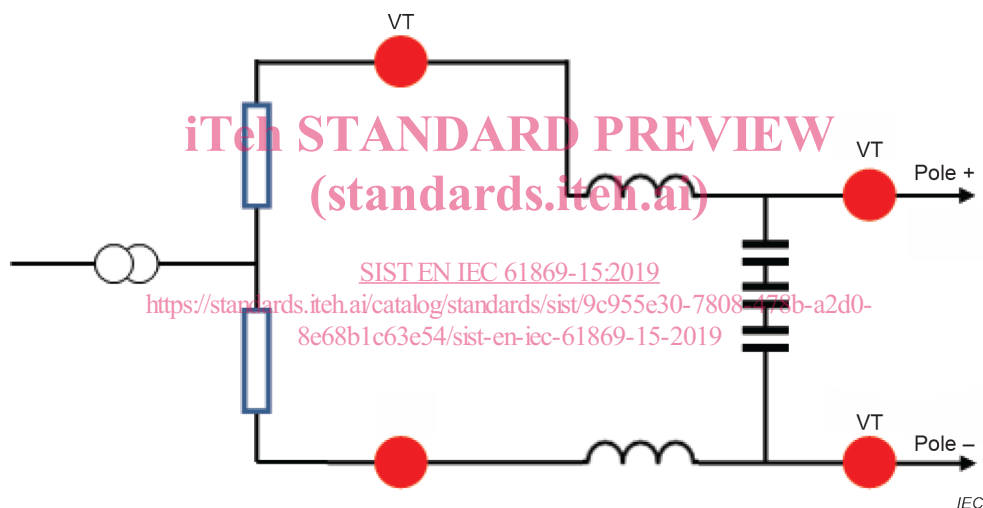
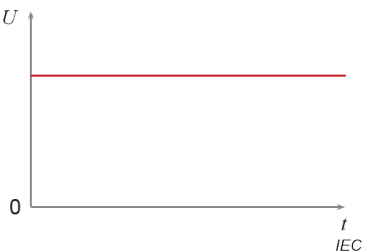


Figure 1501 – Position of the DCVT's in the DC scheme

Table 1501 gives an overview of the voltage waveshape as well as the main characteristics of the VT.

Table 1501 – Voltage on DCVT's

Voltage	Characteristics
	<ul style="list-style-type: none"> Pure DC application High-accuracy measurement Harmonics measurement Metering, control and protection purpose

The actual technology used for DCVT's are resistive voltage dividers (with or without additional capacitance). However, other technologies could be used in the future (for example, optical voltage sensors).

This document includes some specific requirements applicable to resistive voltage dividers, but can be applied to any technology.

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