SLOVENSKI STANDARD
SIST HD 554 S1:1995

01-oktober-1995

Voltage transformers (IEC 186:1987 + A1:1988, modified)

Voltage transformers

Spannungswandler

Transformateurs de tension

Ta slovenski standard je istoveten z: **HD 554 S1:1992**

ICS:

29.200	Usmerniki. Pretvorniki. Stabilizirano električno napajanje	Rectifiers. Convertors. Stabilized power supply

SIST HD 554 S1:1995 **en**

HARMONIZATION DOCUMENT

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

HD 554 S1

September 1992

UDC 621.314.21

Descriptors: Instrument transformer, voltage transformer, specification, test, marking

ENGLISH VERSION

Voltage transformers
(IEC 186:1987 + A1:1988, modified)

Transformateurs de tension
(CEI 186:1987 + A1:1988, modifiée)

Spannungswandler
(IEC 186:1987 + A1:1988, modifiziert)

This Harmonization Document was approved by CENELEC on 1992-03-24. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

Up-to-date lists and bibliographical references concerning national implementation may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Ref. No. HD 554 S1:1992 E

FOREWORD

CENELEC 53rd Technical Board decided the issue of a primary questionnaire on IEC Publication 186:1987 and its amendment 1:1988. Based on the comments received from National Committees, 56 BT set up a task force (BTTF 56-3) to prepare common modifications. These modifications were discussed on 1988-11-24 and the voting procedure was started on 1990-02-08. The vote had a positive result for EEC Committees but, taking into account some negative votes received, 65 BT committed BTTF 56-3 to prepare a final text with some improvements, basically of editorial nature, before ratification. BTTF 56-3 finalized the text on 1990-10-23 for submission to 66 BT, which accepted it of submission to a second vote.

The text of this draft was approved by CENELEC as HD 554 S1 on 24 March 1992.

The following dates were fixed:

- latest date of announcement of the HD at national level	(doa)	1992-12-01
- latest date of publication of a harmonized national standard	(dop)	1993-06-01
- latest date of withdrawal of conflicting national standards	(dow)	1993-06-01

For products which have complied with the relevant national standard before 1993-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1998-06-01.

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative and annex ZB is informative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 186:1987 and its amendment 1:1988 was approved by CENELEC as a Harmonization Document with agreed common modifications as given below.

COMMON MODIFICATIONS

Contents Editorial modification of the French text only.

1 **Scope**

Replace the note by:

Note.- Requirements specific to three-phase voltage transformers are not included in this standard.

3 **Service conditions**

3.1 Ambient air temperature

Replace by:

- maximum	40 °C
- daily mean, not exceeding	30 °C
- minimum, for indoor type transformers	-5 °C
- minimum, for class -25 outdoor type transformers	-25 °C
- minimum, for class -40 outdoor type transformers	-40 °C

In extreme cases, for outdoor transformers, lower minimum ambient temperatures (i.e. -50 °C) may be required.

4 **Definitions**

4.4 Replace the definition by:

A single-phase voltage transformer which is intended to have one end of its primary winding directly earthed.

4.11 Editorial modification of the French text only.

4.17.2 Editorial modification of the French text only.

4.18 Add "(Um)" in the title.

COMMON MODIFICATIONS

5 **Standard values of rated voltages**

5.1 Delete "of three-phase transformers and" in the first line.

5.2 Replace the first paragraph by:

The rated secondary voltage shall be chosen according to the practice at the location where the transformer is to be used. The values given below are considered standard values for single-phase transformers in single-phase systems or connected line-to-line in three phase systems:

100 V and 110 V;

200 V for extended secondary circuits.

Delete b).

6 **Standard values of rated output**

Delete the second sentence of the second paragraph.

8 **Limits of temperature rise**

Editorial modification of the French text only.

9 **Insulation requirements**

9.1.1 Replace "Tables IIIA or IIIB" by "Table IIIA".

To Table IIIA, add the value Um = 100 kV with the following withstand voltages:

Highest voltage for equipment Um (r.m.s.)	Rated lightning-impulse withstand voltage (peak)	Rated power-frequency short-duration withstand voltage (r.m.s.)
kV	kV	kV
100	380	150
	450	185

Delete Table IIIB.

Move the note under Table IIIE to subclause 9.2.3.

COMMON MODIFICATIONS

9.2.4 Replace the text by:

If additionally specified, the primary windings shall also be capable of withstanding chopped lightning-impulse voltages as per clause 18.

18 **Chopped lightning-impulse test on primary windings**

Modify the value of the chopped impulses as follows:

a) Windings having Um < 300 kV
- one 100 % full impulse
- two 115 % chopped impulses
- fourteen 100 % full impulses

b) Windings having Um ≥ 300 kV
- one 100 % full impulse
- two 115 % chopped impulses
- two 100 % full impulses

Add:

Other test voltage values may be agreed upon between purchaser and manufacturer.

19 **Rating plate markings**

Editorial modification of the French text only.

20 **General**

Replace the text by:

These markings are applicable to single-phase voltage transformers, and also to sets of single-phase voltage transformers assembled as one unit and connected as a three-phase voltage transformer.

21 **Markings**

21.1 Add at the end :

Other terminal markings may be used when specified in national standards.

24 - 37 Editorial modifications of the French text only.

Figures Delete figure 10.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
28	1925	International standard of resistance for copper	-	-
38, mod	1983	IEC Standard voltages !	HD 472 S1	1989
44-4	1980	Instrument transformers Part 4: Measurement of partial discharges	-	-
50(321)	1986	International Electrotechnical Vocabulary (IEV) Chapter 321: Instrument transformers	-	-
60	-	High-voltage test techniques	-	-
60-1	1973*	High-voltage test techniques Part 1: General definitions and test requirements	-	-
71	Series	Insulation co-ordination	HD 540	Series
85	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990
358	1971	Coupling capacitors and capacitor	-	-
507	1975	Artificial pollution tests on high-voltage insulators to be used on a.c. systems (Report)	-	-

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! The title of HD 472 S1 is: Nominal voltages for low voltages public electricity supply systems

* IEC 60-1:1989 was harmonized as HD 588 S1:1991

ANNEX ZB (informative)

B-deviations

B-deviation: National deviation from an HD due to particular technical requirements, permitted for a specified transitional period.

Clause	Deviation	Latest date for removal
	SWEDEN	1997-03-31
3	Add a new subclause: 3.5 Mechanical strength The manufacturer shall state the highest permissible force which may be applied to a primary terminal in a direction along its axis and in an arbitrary direction in a plane perpendicular to the terminal axis.	
25	For classes 0,1 to 0,5 the voltage error and phase displacement at rated frequency shall not exceed the values given in Table V when the secondary burden is any value from 1 VA to 100 % of the rated burden at a power factor of 0,8 lagging and for burdens not above 100 VA.	
53	For class 0,2 the test in equivalent circuits is not allowed.	

NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
186

Deuxième éditi
Second edition
1987

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

Transformateurs de tension

Voltage transformers

Bureau Central de la Commission Electrotechnique Internationale · 3, rue de Varembé Genève, Suisse

Code prix 44
Price code

Pour prix, voir catalogue en vigueur
For price, see current catalogue

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CHAPTER III: ADDITIONAL REQUIREMENTS FOR SINGLE-PHASE PROTECTIVE VOLTAGE TRANSFORMERS

CHAPTER IV: ADDITIONAL REQUIREMENTS FOR CAPACITOR VOLTAGE TRANSFORMERS

SECTION TWENTY-SIX — MARKING

INTERNATIONAL ELECTROTECHNICAL COMMISSION

VOLTAGE TRANSFORMERS

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

4) The IEC has not laid down any procedure concerning marking as an indication of approval and has no responsibility when an item of equipment is declared to comply with one of its recommendations.

PREFACE

This standard has been prepared by IEC Technical Committee No. 38: Instrument Transformers.

This second edition replaces the first edition of IEC Publication 186(1969) as well as Supplements A (1970) and B (1981) and Amendments No. 1 (1978) and No. 2 (1980).

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

Six Months' Rule	Report on Voting	Two Months' Procedure	Report on Voting
38(CO)69	38(CO)71	38(CO)73	38(CO)76

Further information can be found in the relevant Reports on Voting indicated in the table above.

The following IEC publications are quoted in this standard:

Publications Nos. 28 (1925): International Standard of Resistance for Copper.
38 (1983): IEC Standard Voltages.
44-4 (1980): Instruments Transformers, Part 4: Measurement of Partial Discharges.
50(321) (1986): International Electrotechnical Vocabulary (IEV), Chapter 321: Instrument Transformers.

60: High-Voltage Test Techniques.
60-1 (1973): High-Voltage Test Techniques, Part 1: General Definitions and Test Requirements.
71: Insulation Co-ordination.
85 (1984): Thermal Evaluation and Classification of Electrical Insulation.
358 (1971): Coupling Capacitors and Capacitor Dividers.
507 (1975): Artificial Pollution Tests on High-Voltage Insulators to be Used on A.C. Systems.