

SVENSK STANDARD SS-EN 60044-2

2000-12-22

Handläggande organ Fastställd Utgåva Sida Ingår i

Svenska Elektriska Kommissionen, SEK

1 1 (1+40)

SEK Översikt 38 Reg 427 08 02

© Copyright SIS. Reproduction in any form without permission is prohibited.

Mättransformatorer– Del 2: Induktiva spänningstransformatorer

Instrument transformers – Part 2: Inductive voltage transformers

Som svensk standard gäller europastandarden EN 60044-2:1999. Den svenska standarden innehåller den officiella engelska språkversionen av EN 60044-2:1999.

Nationellt förord

Europastandarden EN 60044-2:1999

består av:

- europastandardens ikraftsättningsdokument, utarbetat inom CENELEC
- IEC 60044-2, First edition, 1997 Instrument transformers Part 2: Inductive voltage transformers
 utarbetad inom International Electrotechnical Commission, IEC.

Tidigare utgiven svensk standard SS 427 08 13, utgåva 1, 1994, gäller ej fr o m 2002-01-01.

EUROPEAN STANDARD

EN 60044-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1999

ICS 29.180

Supersedes HD 554 S1:1992

English version

Instrument transformers Part 2: Inductive voltage transformers

(IEC 60044-2:1997, modified)

Transformateurs de mesure Partie 2: Transformateurs inductifs de tension (CEI 60044-2:1997, modifiée) Meßwandler Teil 2: Induktive Spannungswandler (IEC 60044-2:1997, modifiziert)

This European Standard was approved by CENELEC on 1999-01-01. 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.

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

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, 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

Foreword

The text of the International Standard IEC 60044-2:1997, prepared by IEC TC 38, Instrument transformers, together with common modifications prepared by the Technical Committee CENELEC TC 38X, Instrument transformers, was submitted to the formal vote and was approved by CENELEC as EN 60044-2 on 1999-01-01.

This European Standard supersedes HD 554 S1:1992.

The following dates were fixed:

 latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement

(dop) 2000-01-01

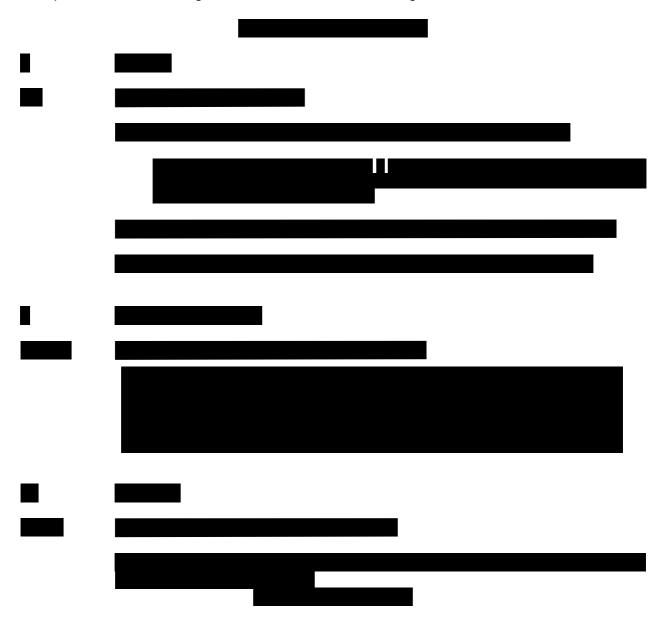
 latest date by which the national standards conflicting with the EN have to be withdrawn

(dow) 2002-01-01

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative. Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60044-2:1997 was approved by CENELEC as a European Standard with agreed common modifications as given below.



Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
IEC 60028	1925	International standard of resistance for copper	-	-
IEC 60038 (mod)	1983	IEC standard voltages ¹⁾	HD 472 S1	1989
IEC 60050(321)	1986	International electrotechnical vocabulary Chapter 321: Instrument transformers	-	-
IEC 60060-1 + corr. March	1989 1990	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1	1991
IEC 60071-1	1993	Insulation co-ordination Part 1: Definitions, principles and rules	EN 60071-1	1995
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990
IEC 60270	1981	Partial discharge measurements	-	-
IEC 60721	series	Classification of environmental conditions	EN 60721 HD 478	series series
IEC 60815	1986	Guide for the selection of insulators in respect of polluted conditions	-	-
-	-	Instruments transformers - Three-phase voltage transformers for voltage levels having Um up to 52 kV	HD 587 S1	1993

¹⁾ The title of HD 472 S1 is: Nominal voltages for low-voltage public electricity supply systems.

CONTENTS

Cla	ıse					
1	Gen	General				
	1.1 1.2	Scope Normative references				
2	Defir	nitions				
	2.1	General definitions				
	2.2	Additional definitions for single-phase inductive protective voltage transformers				
3	3 General requirements					
4	Norn	Normal and special service conditions				
	4.1	Normal service conditions				
	4.2	Special service conditions				
	4.3	System earthing				
5	Ratir	Ratings				
	5.1	Standard values of rated voltages				
	5.2	Standard values of rated output				
	5.3	Standard values of rated voltage factor				
	5.4	Limits of temperature rise				
6	Desi	gn requirements				
	6.1	Insulation requirements				
	6.2	Short-circuit withstand capability				
	6.3	Mechanical requirements				
7	Clas	sification of tests				
	7.1	Type tests				
	7.2	Routine tests				
	7.3	Special tests				
8	Туре	tests				
	8.1	Temperature-rise test				
	8.2	Short-circuit withstand capability test				
	8.3	Impulse test on primary winding				
	8.4	Wet test for outdoor type transformers				
9	Rout	ine tests				
	9.1	Verification of terminal markings				
	9.2	Power-frequency withstand tests on primary windings and partial discharge measurement				
	9.3	Power-frequency withstand tests between sections and on secondary windings				

Clau	ise		Page	
10	Special tests			
	10.1	Chopped impulse test on primary winding	24	
	10.2	Measurement of capacitance and dielectric dissipation factor	25	
	10.3	Mechanical tests	25	
11	Mark	Markings		
	11.1	Rating plate markings	27	
	11.2	Terminal markings	27	
12	Accu	racy requirements for single-phase inductive measuring voltage transformers	28	
	12.1	Accuracy class designation for measuring voltage transformers	28	
	12.2	Limits of voltage error and phase displacement for measuring voltage		
		transformers	28	
	12.3	Type tests for accuracy of measuring voltage transformers	28	
	12.4	Routine tests for accuracy of measuring voltage transformers	29	
	12.5	Marking of the rating plate of a measuring voltage transformer	29	
13	Addit	ional requirements for single-phase inductive protective voltage transformers	29	
	13.1	Accuracy class designation for protective voltage transformers	29	
	13.2	Limits of voltage error and phase displacement for protective voltage transformers	29	
	13.3	Rated voltages for secondary windings intended to produce a residual voltage	30	
	13.4	Output for secondary windings intended to produce a residual voltage	30	
	13.5	Accuracy class for secondary windings intended to produce a residual voltage	31	
	13.6	Type tests for protective voltage transformers	31	
	13.7	Routine tests for protective voltage transformers	31	
	13.8	Marking of the rating plate of a protective voltage transformer	31	
Fig	ıres		63	

INSTRUMENT TRANSFORMERS -

Part 2: Inductive voltage transformers

1 General

1.1 Scope

This part of IEC 44 applies to new inductive voltage transformers for use with electrical measuring instruments and electrical protective devices at frequencies from 15 Hz to 100 Hz

Although this standard relates basically to transformers with separate windings, it is also applicable, where appropriate, to auto-transformers. This standard does not apply to transformers for use in laboratories.

NOTE – Requirements specific to three-phase voltage transformers are not included in this standard but, so far as they are relevant, the requirements in clauses 3 to 11 apply to these transformers and a few references to them are included in those clauses (e.g. see 2.1.4, 5.1.1, 5.2, and 11.2).

Clause 13 covers the requirements and tests, in addition to those in clauses 3 to 12, that are necessary for single-phase inductive protective voltage transformers. The requirements of clause 13 apply particularly to transformers which are required to have sufficient accuracy to operate protective systems at voltages that occur under fault conditions.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 44. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 44 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 28: 1925, International standard of resistance for copper

IEC 38: 1983, IEC standard voltages

IEC 50(321): 1986, International Electrotechnical Vocabulary – Chapter 321: Instrument transformers

IEC 60-1: 1989, High-voltage test techniques – Part 1: General definitions and test requirements

IEC 71-1: 1993, Insulation co-ordination – Part 1: Definitions, principles and rules

IEC 85: 1984, Thermal evaluation and classification of electrical insulation

IEC 270: 1981, Partial discharge measurements

IEC 721: Classification of environmental conditions

IEC 815: 1986, Guide for the selection of insulators in respect of polluted conditions