SVENSK STANDARD SS-EN 50329

Fastställd	Utgåva	Sida	Ingår i
2003-05-26	1	1 (1+35)	SEK Område 9

Svenska Elektriska Kommissionen, SEK

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Järnvägsanläggningar – Stationära transformatorer för banmatning

Railway applications – Fixed installations – Traction transformers

Som svensk standard gäller europastandarden EN 50329:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50329:2003.

Nationellt förord

Tidigare utgiven svensk standard SS 481 01 21, utgåva 1, 1993, gäller ej fr o m 2005-05-01.

SS-EN 60146-1-3, utgåva 1, 1993, gäller ej fr o m 2005-05-01, för de typer av transformatorer som omfattas av SS-EN 50329.

ICS 29.180; 29.280

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

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Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD **EN 50329**

NORME EUROPÉENNE

EUROPÄISCHE NORM March 2003

ICS 29.180; 29.280

Supersedes HD 591 S1:1993 and EN 60146-1-3:1993 (partly)

English version

Railway applications – Fixed installations – Traction transformers

Applications ferroviaires – Installations fixes – Transformateurs de traction

Bahnanwendungen – Ortsfeste Anlagen – Bahn-Transformatoren

This European Standard was approved by CENELEC on 2002-05-01. 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.

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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

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Ref. No. EN 50329:2003 E

Foreword

This European Standard was prepared by SC 9XC, Electric supply and earthing systems for public transport equipment and ancillary apparatus (fixed installations), of Technical Committee CENELEC TC 9X, Electrical and electronic applications for railways.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50329 on 2002-05-01.

This European Standard supersedes HD 591 S1:1993 and, for the transformers mentioned in the scope of this EN 50329, EN 60146-1-3:1993.

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) 2003-09-01

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-05-01

Annexes designated “normative” are part of the body of the standard.
Annexes designated “informative” are given for information only.
In this standard, Annexes B and C are normative and Annexes A, D, E and F are informative.

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Contents

Introduction

HD 591 S1 was prepared jointly by SC 9XC and TC 14 to face specific aspects of the transformers used in fixed installations of traction systems, which differ from other transformers. In effect transformer standards are mainly dealing with three-phase transformers or single-phase units assembled to a three-phase bank.

Application of such standards to single- or bi-phase transformers as used in traction systems is not evident.

Moreover, EN 61378-1 deals with converter transformers for industrial use which have loading characteristics different from traction transformers for converters.

Therefore HD 591 S1 and this document were set up to clarify such particular aspects.

HD 591 S1 was studied in early ‘90 and published in 1993 and experienced during the period 1993 to 1997. Then, having decided to convert the HD into an EN, the opportunity was taken to revise the document to introduce the improvements that have been found suitable during this trial period.

1 General

1.1 Scope

This European Standard covers specific characteristics of traction transformers as defined in 1.3.1, used in traction substation or along the track for the supply of power to a.c. and d.c. traction systems or to provide power to auxiliary services. Traction transformers are either

- single-phase traction transformers,
- single-, three- or poly-phase rectifier-transformers or converter/inverter-transformers for d.c. or a.c. contact line,
- single phase auto-transformers for traction power supply,
- single- or three-phase auxiliary transformers at traction supply voltage.

Transformers feeding a.c. contact lines are covered by EN 60076. Dry-type transformers are covered by HD 464. These standards are valid with the additional requirements given in this document.

For transformers feeding contact lines through static converters EN 61378-1 may assist, but modified or additional requirements are given in this document.

NOTE Transformers mounted on-board traction vehicles are covered by EN 60310 and are excluded from the scope of this document.

Electromagnetic compatibility is ruled by EN 60076-1 which states that a transformer may be considered a passive element in this respect.

Some accessories however are subject to EMC requirements and shall comply with EN 50121-5.

1.2 Normative references

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.

EN 50121-5	2000	Railway applications - Electromagnetic compatibility Part 5: Emission and immunity of fixed power supply installations and apparatus
EN 50122-1	1997	Railway applications - Fixed installations Part 1: Protective provisions relating to electrical safety and earthing
EN 50124-1	2001	Railway applications - Insulation coordination Part 1: Basic requirements - Clearances and creepage distances for all electrical and electronic equipment
EN 50125-2	2002	Railway applications - Environmental conditions for equipment Part 2: Fixed electrical installations
EN 50152-1	1997	Railway applications - Fixed installations - Particular requirements for a.c. switchgear Part 1: Single-phase circuit-breakers with Um above 1 kV
EN 50163	1995	Railway applications - Supply voltages of traction systems
EN 50327	2003	Railway applications - Fixed installations - Harmonisation of the rated values for converter groups and tests on converter groups
EN 50328	2003	Railway applications - Fixed installations - Electronic power converters for substations
EN 60076-1 + A11	1997 1997	Power transformers - Part 1: General (IEC 60076-1:1993, mod.)
EN 60076-2	1997	Power transformers - Part 2: Temperature rise (IEC 60076-2:1993, mod.)