SVENSK STANDARD SS-EN 62040-1-1

Fastställd	Utgåva	Sida	Ingår i
2003-04-24	1	1 (1+46)	SEK Område 108

Svenska Elektriska Kommissionen, SEK

Utrustning för avbrottsfri elförsörjning (UPS) – Del 1-1: Allmänna fordringar och säkerhetsfordringar för UPS i andra utrymmen än driftrum

Uninterruptible power systems (UPS) –
Part 1-1: General and safety requirements for UPS used in operator access areas

Som svensk standard gäller europastandarden EN 62040-1-1:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62040-1-1:2003.

Nationellt förord

Europastandarden EN 62040-1-1:2003

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62040-1-1, First edition, 2002 - Uninterruptible power systems (UPS) - Part 1-1: General and safety requirements for UPS used in operator access areas**

jämte

Corrigendum, December 2002

utarbetad inom International Electrotechnical Commission, IEC.

Standarden skall användas tillsammans med SS-EN 60950-1.

Tidigare utgiven svensk standard SS-EN 50091-1-1, utgåva 1, 1997, gäller ej fr o m 2005-11-01.

ICS 29.200

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

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

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 62040-1-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM January 2003

ICS 29.200 Supersedes EN 50091-1-1:1996

English version

Uninterruptible power systems (UPS)
Part 1-1: General and safety requirements for UPS used in operator access areas
(IEC 62040-1-1:2002 + corrigendum 2002)

Alimentations sans interruption (ASI)
Partie 1-1: Prescriptions générales
et règles de sécurité pour les ASI
utilisées dans des locaux
accessibles aux opérateurs
(CEI 62040-1-1:2002 + corrigendum 2002)

Unterbrechungsfreie
Stromversorgungssysteme (USV)
Teil 1-1: Allgemeine Anforderungen
und Sicherheitsanforderungen
an USV außerhalb abgeschlossener
Betriebsräume
(IEC 62040-1-1:2002 + Corrigendum 2002)

This European Standard was approved by CENELEC on 2002-11-01. 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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. EN 62040-1-1:2003 E

Foreword

The text of document 22H/22/FDIS, future edition 1 of IEC 62040-1-1, prepared by SC 22H, Uninterruptible power systems (UPS), of IEC TC 22, Power electronic systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62040-1-1 on 2002-11-01.

This European Standard supersedes EN 50091-1-1:1996.

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)	2003-08-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2005-11-01

Annexes designated "normative" are part of the body of the standard.
Annexes designated "informative" are given for information only.
In this standard, annexes L, M, N and ZA are normative and annexes H and X are informative.
Annex ZA has been added by CENELEC.

In this standard, the following print types are used:
- Requirements proper and normative annexes: in roman type;
- *Compliance statements and test specifications: in italic type;*
- Notes and other informative matter: in smaller roman type;
- Normative conditions within tables: in smaller roman type;
- Terms that are defined in clause 3: **bold.**

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Endorsement notice

The text of the International Standard IEC 62040-1-1:2002 and its corrigendum December 2002 was approved by CENELEC as a European Standard without any modification.

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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.

Publication	Year	Title	EN/HD	Year
IEC 60417	Series	Graphical symbols for use on equipment	EN 60417	Series
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC/TR 60755 A1 A2	1983 1988 1992	General requirements for residual current operated protective devices	-	-
IEC 60950-1 (mod)	2001	Information technology equipment - Safety Part 1: General requirements	EN 60950-1	2001
IEC 61000-2-2	2002	Electromagnetic compatibility (EMC) Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	EN 61000-2-2	2002
IEC 61008-1	1996 [1)]	Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) Part 1: General rules	-	-
IEC 61009-1	1996 [2)]	Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBO's) Part 1: General rules	-	-

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1) The European Standard EN 61008-1:1994 (IEC 61008-1:1990 + A1:1992, mod.) + corrigendum December 1997 + A2:1995 (IEC/A2:1995) + A11:1995 + A12:1998 + corrigendum April 1998 + A13:1998 + A14:1998 applies.

2) The European Standard EN 61009-1:1994 (IEC 61009-1:1991, mod.) + corrigendum December 1997 + A1:1995 (IEC/A1:1995) + A11:1995 + A2:1998 + A13:1998 + corrigendum April 1998 + A14:1998 + A15:1998 + A17:1998 applies.

Publication	Year	Title	EN/HD	Year
IEC 62040-1-2 + corr. December	2002 2002	Uninterruptible power systems (UPS) Part 1-2: General and safety requirements for UPS used in restricted access locations	EN 62040-1-2	2003
IEC 62040-2	1999	Part 2: Electromagnetic compatibility (EMC) requirements	-	-
IEC 62040-3 (mod)	1999	Part 3: Method of specifying the performance and test requirements	EN 62040-3	2001

CONTENTS

UNINTERRUPTIBLE POWER SYSTEMS (UPS) –

Part 1-1: General and safety requirements for UPS used in operator access areas

1 Scope and specific applications

1.1 Scope

This standard applies to electronic **uninterruptible power systems** (**UPS**) with an electrical energy storage device in the d.c. link. It is to be used with IEC 60950-1 which is referred to in this standard as "RD".

When any item is referred to by the phrase "The definitions or the provisions of item/RD apply", this phrase is intended to mean that the definitions or provisions in that item of IEC 60950-1 apply, except any which are clearly inapplicable to uninterruptible power systems. National requirements additional to those in IEC 60950-1 apply and are found as notes under relevant clauses of the RD.

The primary function of the **UPS** covered by this standard is to ensure continuity of an alternating power source. The **UPS** may also serve to improve the quality of the power source by keeping it within specified characteristics.

This standard is applicable to **UPS** which are movable, stationary, fixed or for building-in, for use on low-voltage distribution systems and intended to be installed in any **operator** accessible area. It specifies requirements to ensure safety for the **operator** and layman who may come into contact with the equipment and, where specifically stated, for the **service person**.

This standard is intended to ensure the safety of installed **UPS**, both as a single **UPS** unit or as a system of interconnected **UPS** units, subject to installing, operating and maintaining the **UPS** in the manner prescribed by the manufacturer.

This standard does not cover d.c. supplied electronic ballasts (IEC 60924 and IEC 60925), **UPS** intended to be installed in separated electrical locations and **UPS** based on rotating machines.

The relevant general and safety requirements for **UPS** installed in restricted access locations are given in IEC 62040-1-2; electromagnetic compatibility (EMC) requirements and definitions are given in IEC 62040-2.

1.2 Specific applications

Even if this standard does not cover all types of **UPS**, it may be taken as a guide for such equipment. Requirements additional to those specified in this standard may be necessary for specific applications, for example:

– **UPS** intended for operation while exposed, for example, to extremes of temperature; to excessive dust, moisture, or vibration; to flammable gases; to corrosive or explosive atmospheres;

– electromedical applications with the **UPS** located within 1,5 m from the patient contact area;

– for **UPS** subject to transient overvoltages exceeding those for Overvoltage Category II according to IEC 60664, additional protection might be necessary in the mains supply to the **UPS**;

– **UPS** intended for use where ingress of water and foreign objects are possible, additional requirements may be necessary; for guidance on such requirements and for relevant testing, see annex H;

– **UPS** with trapezoidal output waveforms and long run times (greater than 30 min) in addition to complying with 5.3.12 of IEC 62040-3 are subject to voltage distortion tests for the purpose of load compatibility.

NOTE For **UPS** intended to be used in vehicles, on board ships or aircraft, in tropical countries, or on elevations greater than 1 000 m, different requirements may be necessary.

2 Normative references

The following referenced documents are indispensable for the application 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.

IEC 60417 (all parts), *Graphical symbols for use on equipment*

IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*

IEC/TR 60755:1983, *General requirements for residual current operated protective devices*
Amendment 1 (1988)
Amendment 2 (1992)

IEC 60950-1:2001, *Information technology equipment – Safety – Part 1: General requirements*

IEC 61000-2-2:2002, *Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61008-1:1996, *Residual current operated circuit-breakers without integral overcurrent protection for household and similar uses (RCCBs) – Part 1: General rules*

IEC 61009-1:1996, *Residual current operated circuit-breakers with integral overcurrent protection for household and similar uses (RCBOs) – Part 1: General rules*

IEC 2040-1-2, *Uninterruptible power systems (UPS) – Part 1-2: General and safety requirements for UPS used in restricted access locations* [1)]

IEC 62040-2:1999, *Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements*

IEC 62040-3:1999, *Uninterruptible power systems (UPS) – Part 3: Method of specifying the performance and test requirements*

[redacted]

1) To be published.