SVENSK STANDARD SS-EN 62124

Fastställd	Utgåva	Sida	Ansvarig kommitté
2005-06-15	1	1 (1+41)	SEK TK 82

Solkraftverk – Typprovning av från elnätet fristående anläggningar

Photovoltaic (PV) stand alone systems – Design verification

Som svensk standard gäller europastandarden EN 62124:2005. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62124:2005.

Nationellt förord

Europastandarden EN 62124:2005[*)]

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 62124, First edition, 2004 - Photovoltaic (PV) stand alone systems - Design verification**

utarbetad inom International Electrotechnical Commission, IEC.

[*)] EN 62124:2005 ikraftsattes 2005-06-15 som SS-EN 62124 genom offentliggörande, d v s utan utgivning av något svenskt dokument.

ICS 27.160

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: SEK, Box 1284, 164 29 KISTA
Telefon: 08 - 444 14 00. *Telefax*: 08 - 444 14 30
E-post: sek@elstandard.se. *Internet*: www.elstandard.se

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

SEK Svensk Elstandard 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.

SEK Svensk Elstandard
Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

EUROPEAN STANDARD **EN 62124**

NORME EUROPÉENNE

EUROPÄISCHE NORM March 2005

ICS 27.160

English version

Photovoltaic (PV) stand-alone systems – Design verification
(IEC 62124:2004)

Systèmes photovoltaïques (PV) autonomes – Vérification de la conception (CEI 62124:2004)

Photovoltaische (PV)-Inselsysteme - Bauarteignung und Typprüfung (IEC 62124:2004)

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 62124:2005 E

SEK Svensk Elstandard

Foreword

The text of document 82/355/FDIS, future edition 1 of IEC 62124, prepared by IEC TC 82, Solar photovoltaic energy systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62124 on 2005-02-01.

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)	2005-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2008-02-01

Annex ZA has been added by CENELEC.

———————

Endorsement notice

The text of the International Standard IEC 62124:2004 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60721-2-1	NOTE	Harmonized as HD 478.2.1 S1:1989 (not modified).
IEC 61277	NOTE	Harmonized as EN 61277:1998 (not modified).
IEC 61724	NOTE	Harmonized as EN 61724:1998 (not modified).
IEC 61725	NOTE	Harmonized as EN 61725:1997 (not modified).
ISO/IEC 17025	NOTE	Harmonized as EN ISO/IEC 17025:2000 (not modified).

———————

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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

Publication	Year	Title	EN/HD	Year
IEC 60364-7-712	- [1)]	Electrical installations of buildings Part 7-712: Requirements for special installations or locations - Solar photovoltaic (PV) power supply systems	HD 60364-7-712	- [2)]
IEC 60904-1	- [1)]	Photovoltaic devices Part 1: Measurement of photovoltaic current-voltage characteristics	EN 60904-1	1993 [3)]
IEC 60904-2	- [1)]	Part 2: Requirements for reference solar cells	EN 60904-2	1993 [3)]
IEC 60904-5	1993	Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (PV) devices by the open-circuit voltage method	EN 60904-5	1995
IEC 61215	- [1)]	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	EN 61215	1995 [3)]
IEC 61646	- [1)]	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval	EN 61646	1997 [3)]
IEC 61730-1	- [1)]	Photovoltaic (PV) module safety qualification Part 1: Requirements for construction		
IEC 61730-2	- [1)]	Part 2: Requirements for testing	-	-
IEC 62093	- [2)]	Balance-of-system components for photovoltaic systems - Design qualification natural environments	-	-

1) Undated reference.

2) To be published.

3) Valid edition at date of issue.

CONTENTS

PHOTOVOLTAIC (PV) STAND-ALONE SYSTEMS – DESIGN VERIFICATION

1 Scope and object

The specifications, test methods and procedures included in this document cover stand-alone photovoltaic (PV) systems. It covers systems containing one or more PV modules, a support structure, storage batterie(s), a charge controller and typical DC loads such as lights, radio, television and refrigerators. AC loads with dedicated inverters are considered as DC loads. The load as specified by the manufacturer is an integral part of the PV system with regards to the design verification.

The focus of the test methods and procedures in this document is limited to system performance evaluation. Individual sub-systems and components may be monitored, but only to evaluate the performance of the overall system.

The results of this test are applicable to the exact components that are tested. Any changes in components or components' specifications require design verification.

NOTE An exception to this rule is the load. Retesting is not necessary, if the nominal power of the load and its characteristics are not altered, always provided that the new loads are also type tested (provided a type test is available) and the operation frequency of the loads electronics controller (if any) do not vary more than 50 % from the new one to the one tested and being replaced. Hence, the replacement of a pure ohmic load by lights using high frequency electronic ballasts would require retesting, but not the change from one electronic lighting product to another one.

The standard is valid for system testing both for outdoors in prevailing conditions and indoors under simulated conditions. The testing conditions are intended to represent the majority of climatic zones for which these systems are designed.

The object of this standard is to verify system design and performance of stand-alone photovoltaic systems. While individual components may be qualified to environmental and safety standards, the assembled system needs further verification, to ensure that the components operate properly together as specified by the system manufacturer. The performance test consists of a check of the functionality, the autonomy and ability to recover after periods of low state-of-charge of the battery, and hence gives reasonable assurance that the system will not fail prematurely.

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 60364-7-712*, Electrical installations of buildings – Part 7-712: Requirements for special installations or locations – Solar photovoltaic (PV) power supply systems*

IEC 60904-1, *Photovoltaic devices – Part 1: Measurement of photovoltaic current-voltage characteristics*

IEC 60904-2, *Photovoltaic devices – Part 2: Requirements for reference solar cells*

IEC 60904-5:1993, *Photovoltaic devices – Part 5: Determination of the equivalent cell temperature (ECT) of photovoltaic (PV) devices by the open-circuit voltage method*

IEC 61215, *Crystalline silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval*

IEC 61646, *Thin-film silicon terrestrial photovoltaic (PV) modules – Design qualification and type approval*

IEC 61730-1, *Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction*

IEC 61730-2, *Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing*

IEC 62093, *Balance-of-system components for photovoltaic systems – Design qualification* [1]

[1] To be published.