SVENSK STANDARD SS-EN 61180

Fastställd	Utgåva	Sida	Ansvarig kommitté
2016-12-14	1	1 (1+51)	SEK TK 42

Högspänningsprovning av lågspänningsutrustningar – Definitioner, provning, provningsförhållanden och provningsutrustning

High-voltage test techniques for low-voltage equipment – Definitions, test and procedure requirements, test equipment

Som svensk standard gäller europastandarden EN 61180:2016. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61180:2016.

Nationellt förord

Europastandarden EN 61180:2016

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC
– **IEC 61180, First edition, 2016 - High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61180-1, utgåva 1, 1995 och SS-EN 61180-2, utgåva 1, 1995, gäller ej fr o m 2019-07-29.

ICS 19.080.00

Denna standard är fastställd av SEK Svensk Elstandard,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
Postadress: Box 1284, 164 29 KISTA
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar 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.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61180

October 2016

ICS 19.080

Supersedes EN 61180-1:1994, EN 61180-2:1994

English Version

High-voltage test techniques for low-voltage equipment - Definitions, test and procedure requirements, test equipment (IEC 61180:2016)

Techniques des essais à haute tension pour matériel à basse tension - Définitions, exigences et modalités relatives aux essais, matériel d'essai
(IEC 61180:2016)

Hochspannungs-Prüftechnik für Niederspannungsgeräte - Begriffe, Prüfung und Prüfbedingungen, Prüfgeräte
(IEC 61180:2016)

This European Standard was approved by CENELEC on 2016-07-29. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 61180:2016 E

SEK Svensk Elstandard

European foreword

The text of document 42/341/FDIS, future edition 1 of IEC 61180, prepared by IEC/TC 42 "High-voltage and high-current test techniques" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61180:2016.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-04-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-07-29

This document supersedes EN 61180-1:1994 and EN 61180-2:1994.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61180:2016 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 61000-4-5:2014	NOTE	Harmonized as EN 61000-4-5:2014 (not modified).
IEC 61010-1	NOTE	Harmonized as EN 61010-1.
IEC 61010-2-030:2010	NOTE	Harmonized as EN 61010-2-030:2010 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 60060-1	2010	High-voltage test techniques - Part 1: General definitions and test requirements	EN 60060-1	2010
IEC 60060-2	2010	High-voltage test techniques - Part 2: Measuring systems	EN 60060-2	2011
IEC 60068-1	2013	Environmental testing - Part 1: General and guidance	EN 60068-1	2014
IEC 60335	series	Household and similar electrical appliances - Safety	EN 60335	series
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 61083-1	2001	Instruments and software used for measurement in high-voltage impulse tests - Part 1: Requirements for instruments	EN 61083-1	2001
IEC 61083-2	2013	Instruments and software used for measurement in high-voltage and high-current tests - Part 2: Requirements for software for tests with impulse voltages and currents	EN 61083-2	2013
ISO/IEC Guide 98-3	2008	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HIGH-VOLTAGE TEST TECHNIQUES FOR LOW-VOLTAGE EQUIPMENT –

Definitions, test and procedure requirements, test equipment

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
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International Standard IEC 61180 has been prepared by IEC technical committee 42: High-voltage and high-current test techniques.

This 1st edition of IEC 61180 cancels and replaces the 1st edition of IEC 61180-1, issued in 1992, and the 1st edition of IEC 61180-2, issued in 1994.

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

FDIS	Report on voting
42/341/FDIS	42/342/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

HIGH-VOLTAGE TEST TECHNIQUES FOR LOW-VOLTAGE EQUIPMENT –

Definitions, test and procedure requirements, test equipment

1 Scope

This International Standard is applicable to:

– dielectric tests with direct voltage;
– dielectric tests with alternating voltage;
– dielectric tests with impulse voltage;
– test equipment used for dielectric tests on low-voltage equipment.

This standard is applicable only to tests on equipment having a rated voltage of not more than 1 kV a.c. or 1,5 kV d.c.

This standard is applicable to type and routine tests for objects which are subjected to high voltage tests as specified by the technical committee.

The test equipment comprises a voltage generator and a measuring system. This standard covers test equipment in which the measuring system is protected against external interference and coupling by appropriate screening, for example a continuous conducting shield. Therefore, simple comparison tests are sufficient to ensure valid results.

This standard is not intended to be used for electromagnetic compatibility tests on electric or electronic equipment

NOTE Tests with the combination of impulse voltages and currents are covered by IEC 61000-4-5.

This standard provides the relevant technical committees as far as possible with:

– defined terms of both general and specific applicability;
– general requirements regarding test objects and test procedures;
– methods for generation and measurement of test voltages;
– test procedures;
– methods for the evaluation of test results and to indicate criteria for acceptance;
– requirements concerning approved measuring devices and checking methods;
– measurement uncertainty.

Alternative test procedures may be required and these should be specified by the relevant technical committees.

Care should be taken if the test object has voltage limiting devices, as they may influence the results of the test. The relevant technical committees should provide guidance for testing objects equipped with voltage limiting devices.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For

undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60060-2:2010, *High-voltage test techniques – Part 2: Measuring systems*

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60335(all parts): *Household and similar electrical appliances – Safety*

IEC 60664-1:2007, *Insulation co-ordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 61083-1:2001, *Instruments and software used for measurement in high-voltage impulse test – Part 1: Requirements for instruments*

IEC 61083-2:2013, *Instruments and software used for measurement in high-voltage and high-current tests – Part 2: Requirements for software for tests with impulse voltages and currents*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurements (GUM)*