



Irish Standard
I.S. EN 61558-2-26:2013

Safety of transformers, reactors, power supply units and combinations thereof
-- Part 2-26: Particular requirements and tests for transformers and power supply units for saving energy and other purposes (IEC 61558-2-26:2013 (EQV))

I.S. EN 61558-2-26:2013

Incorporating amendments/corrigenda issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61558-2-26

September 2013

ICS 29.180

English version

Safety of transformers, reactors, power supply units and combinations thereof -

Part 2-26: Particular requirements and tests for transformers and power supply units for saving energy and other purposes
(IEC 61558-2-26:2013)

Sécurité des transformateurs, bobines d'inductance, blocs d'alimentation et des combinaisons de ces éléments -
Partie 2-26: Règles particulières et essais pour les transformateurs et les blocs d'alimentation entièrement destinés à l'économie d'énergie et à d'autres fins
(CEI 61558-2-26:2013)

Sicherheit von Transformatoren, Drosseln, Netzgeräten und deren Kombinationen -
Teil 2-26: Besondere Anforderungen und Prüfungen für Transformatoren und Netzgeräte zur Energieeinsparung sowie für andere Zwecke
(IEC 61558-2-26:2013)

This European Standard was approved by CENELEC on 2013-08-14. 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.

CENELEC

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

Foreword

The text of document 96/400/FDIS, future edition 1 of IEC 61558-2-26, prepared by IEC TC 96 "Transformers, reactors, power supply units and combinations thereof" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61558-2-26:2013.

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) 2014-05-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-08-14

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.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD - 2006/95/EC).

Endorsement notice

The text of the International Standard IEC 61558-2-26:2013 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 60076 series | NOTE | Harmonised in EN 60079 series. |
| IEC 61558-2-1 | NOTE | Harmonised as EN 61558-2-1. |
| IEC 61558-2-4 | NOTE | Harmonised as EN 61558-2-4. |
| IEC 61558-2-6 | NOTE | Harmonised as EN 61558-2-6. |

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

Addition to the Annex ZA of EN 61558-1:2005:

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|---|----------------|-------------|
| IEC 61558-1 | 2005 | Safety of power transformers, power supplies, reactors and similar products - | EN 61558-1 | 2005 |
| + corr. March | 2008 | | + corr. August | 2006 |
| + corr. March | 2010 | Part 1: General requirements and tests | | |
| + corr. April | 2011 | | | |
| IEC 61558-2-13 | - | Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-13: Particular requirements and tests for auto transformers and power supply units incorporating auto transformers | EN 61558-2-13 | - |
| IEC 61558-2-14 | - | Safety of transformers, reactors, power supply units and combinations thereof - Part 2-14: Particular requirements and test for variable transformers and power supply units incorporating variable transformers | EN 61558-2-14 | - |
| IEC 61558-2-16 | - | Safety of transformers, reactors, power supply units and similar products for voltages up to 1 100 V - Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units | EN 61558-2-16 | - |

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY OF TRANSFORMERS, REACTORS, POWER SUPPLY UNITS AND COMBINATIONS THEREOF –

Part 2-26: Particular requirements and tests for transformers and power supply units all for saving energy and other purposes

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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- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International standard IEC 61558-2-26 has been prepared by IEC technical committee 96: Transformers, reactors, power supply units and combinations thereof.

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

| | |
|-------------|------------------|
| FDIS | Report on voting |
| 96/400/FDIS | 96/404/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.

This part is intended to be used in conjunction with the latest edition of IEC 61558-1 and its amendments. It is based on the second edition (2005) of that standard.

This part supplements or modifies the corresponding clauses in IEC 61558-1, so as to convert that publication into the IEC standard: *Particular requirements and tests for transformers and power supply units all for saving energy and other purposes.*

A list of all parts of the IEC 61558 series, under the general title: *Safety of transformers, reactors, power supply units and combination thereof*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

Where a particular subclause of Part 1 is not mentioned in this part that subclause applies as far as is reasonable. Where this part states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

In this part the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type:

In the text of this part, the words in **bold** are defined in Clause 3.

Subclauses, notes, figures and tables additional to those in Part 1 are numbered starting from 101; supplementary annexes are entitled AA, BB, etc.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site 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.

NOTE The attention of National Committees is drawn to the fact that equipment manufacturers and testing organizations may need a transitional period following publication of a new, amended or revised IEC publication in which to make products in accordance with the new requirements and to equip them for conducting new or revised tests.

It is the recommendation of the committee that the content of this publication be adopted for implementation nationally not earlier than 12 months from the date of publication.

SAFETY OF TRANSFORMERS, REACTORS, POWER SUPPLY UNITS AND COMBINATIONS THEREOF –

Part 2-26: Particular requirements and tests for transformers and power supply units all for saving energy and other purposes

1 Scope

Replacement:

This part of IEC 61558 deals with the safety of **transformers, power supply units and switch mode power supply units all for saving energy** and other purposes in electrical installations by adjusting the output voltage and/or other electrical characteristics on the output circuits without interruption affected by the **transformers, power supply unit and switch mode power supply unit**.

NOTE 1 Safety includes electrical, thermal and mechanicals aspects.

The saving of energy is obtained by voltage stabilization and/or voltage adjusting of the electrical installation. This standard may also be used for **power supply units and switch mode power supply units** intended to be used where adjusting of the voltage or other electrical characteristics is required by the final application.

NOTE 2 An example of electrical installation is lighting installations, outdoor or indoor.

NOTE 3 In special applications the reduction of the output voltage may affect the safety and the performance of the supplied equipment.

This part applies to single-phase or three-phase **transformers, power supply units and switch mode power supply units all for saving energy** which are air-cooled (natural or forced), **independent** or **incorporated** and containing **transformers** and/or **power supply units** from the following parts of the IEC 61558 series:

Part 2-1: Particular requirements and tests for separating transformers and power supplies incorporating separating transformers for general applications.

Part 2-4: Particular requirements and tests for isolating transformers and power supply units incorporating isolating transformers.

Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers.

Part 2-13: Particular requirements and tests for auto transformers and power supply units incorporating auto transformers.

Part 2-14: Particular requirements and tests for variable transformers and power supply units incorporating variable transformers.

Part 2-16: Particular requirements and tests for switch mode power supply units and transformers for switch mode power supply units.

The **rated supply voltage** does not exceed 1 000 V a.c., and the **rated supply frequency** does not exceed 500 Hz.

This standard is applicable to **linear powers supply units** with **internal operational frequency** not exceeding 500 Hz.

This standard in combination with part 2-16 is also applicable to **switch mode power supply unit** and **transformer** all for saving energy with internal operating frequency higher than 500 Hz.

For specific application corresponding to the other parts 2 of IEC 61558 series, the necessary requirements of the relevant parts 2 are applicable. In addition, the requirements listed in this part apply.

When two requirements are in conflict, the most severe take precedence.

The **rated output** does not exceed:

- 150 kVA for single-phase **transformer, power supply unit and switch mode power supply unit all for saving energy**;
- 400 kVA for three-phase **transformer, power supply unit and switch mode power supply unit all for saving energy**.

This part is also applicable to **transformer, power supply unit and switch mode power supply unit all for saving energy** without limitation of the **rated output** subject to an agreement between the purchaser and the manufacturer.

The standard is also not applicable to external circuits and their components intended to be connected to the input terminals and/or output terminals of the **transformer, power supply unit and switch mode power supply unit all for saving energy**.

This standard is not applicable to other devices having similar functions, for example double level control gears, electronic control gears and specific dimmers covered by other standards.

Measures to protect the **enclosure** and components inside the **enclosure** against external influences such as fungus, vermin, termites, solar-radiation, and icing shall also be considered.

The different conditions for transportation, storage, and operation of the **transformer, power supply unit and switch mode power supply unit all for saving energy** shall also be considered.

Additional requirements in accordance with other appropriate standards and national rules may be applicable to **transformer, power supply unit and switch mode power supply unit all for saving energy** intended for use in special environments, such as tropical environment.

2 Normative references

This clause of Part 1 is applicable, except as follows.

Addition:

IEC 61558-1:2005, *Safety of power transformers, power supplies, reactors and similar products – Part 1: General requirements and tests*

IEC 61558-2-13, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-13: Particular requirements and tests for auto transformers and power supply units incorporating auto transformers*

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