



NSAI
Standards

Irish Standard
I.S. EN 61558-2-13:2009

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 (IEC 61558-2
-13:2009 (EQV))

I.S. EN 61558-2-13:2009

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61558-2-13

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Supersedes EN 61558-2-13:2000

English version

**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
(IEC 61558-2-13:2009)**

Sécurité des transformateurs, bobines
d'inductance, blocs d'alimentation
et produits analogues pour des tensions
d'alimentation jusqu'à 1 100 V -
Partie 2-13: Règles particulières et essais
pour les autotransformateurs et les blocs
d'alimentation incorporant
des autotransformateurs
(CEI 61558-2-13:2009)

Sicherheit von Transformatoren, Drosseln,
Netzgeräten und dergleichen
für Versorgungsspannungen bis 1 100 V -
Teil 2-13: Besondere Anforderungen
und Prüfungen an Spartransformatoren
und Netzgeräte die Spartransformatoren
enthalten
(IEC 61558-2-13:2009)

This European Standard was approved by CENELEC on 2009-03-01. 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: avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 96/318/FDIS, future edition 2 of IEC 61558-2-13, prepared by IEC TC 96, Transformers, reactors, power supply units and similar products for low voltage up to 1 100 V, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61558-2-13 on 2009-03-01.

This European Standard supersedes EN 61558-2-13:2000.

The main changes consist of updating this part in accordance with EN 61558-1:2005, and increasing the supply voltages up to 1 100 V to be in line with the standards of TC 14.

This part is intended to be used in conjunction with the latest edition of EN 61558-1 and its amendments. It is based on EN 61558-1:2005.

This part supplements or modifies the corresponding clauses in EN 61558-1, so as to convert that publication into the European Standard: *Particular requirements and tests for auto transformers and power supply units incorporating auto transformers*.

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.

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) | 2009-12-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2012-03-01 |

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.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61558-2-13:2009 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

| | | |
|----------------|------|--|
| IEC 61558-2-16 | NOTE | Harmonized as EN 61558-2-16:200X (not modified). |
|----------------|------|--|

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

Addition to Annex ZA of EN 61558-1:

| <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 - Part 1: General requirements and tests | EN 61558-1 + corr. August | 2005 2006 |

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IEC 61558-2-13

Edition 2.0 2009-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION

PUBLICATION GROUPEE DE SÉCURITÉ

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

Sécurité des transformateurs, bobines d'inductance, blocs d'alimentation et produits analogues pour des tensions d'alimentation jusqu'à 1 100 V –

Partie 2-13: Règles particulières et essais pour les autotransformateurs et les blocs d'alimentation incorporant des autotransformateurs



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IEC 61558-2-13

Edition 2.0 2009-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

GROUP SAFETY PUBLICATION

PUBLICATION GROUPEE DE SÉCURITÉ

Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V –

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CONTENTS

| | |
|--|----|
| FOREWORD..... | 4 |
| 1 Scope..... | 6 |
| 2 Normative references | 7 |
| 3 Terms and definitions | 7 |
| 4 General requirements | 8 |
| 5 General notes on tests | 8 |
| 6 Ratings..... | 8 |
| 7 Classification..... | 9 |
| 8 Marking and other information | 9 |
| 9 Protection against electric shock | 10 |
| 10 Change of input voltage setting | 10 |
| 11 Output voltage and output current under load | 10 |
| 12 No-load output voltage | 10 |
| 13 Short-circuit voltage | 11 |
| 14 Heating | 11 |
| 15 Short-circuit and overload protection | 11 |
| 16 Mechanical strength | 11 |
| 17 Protection against harmful ingress of dust, solid objects and moisture..... | 11 |
| 18 Insulation resistance, dielectric strength and leakage current | 11 |
| 19 Construction..... | 12 |
| 20 Components | 12 |
| 21 Internal wiring..... | 13 |
| 22 Supply connection and other external flexible cable or cords | 13 |
| 23 Terminals for external conductors..... | 13 |
| 24 Provisions for protective earthing | 13 |
| 25 Screws and connections..... | 13 |
| 26 Creepage distances, clearances and distances through insulation..... | 13 |
| 27 Resistance to heat, fire and tracking..... | 13 |
| 28 Resistance to rusting..... | 13 |
| Annexes | 14 |
| Annex C Creepage distances (cr), clearances (cl) and distances through insulation (dti) Material group II ($400 \leq \text{CTI} < 600$) | 14 |
| Annex D Creepage distances (cr), clearances (cl) and distances through insulation (dti) Material group I ($\text{CTI} \geq 600$)..... | 14 |
| Annex R Explanations of the application of 4.2 of IEC 60664-1:2007 (see IEC 61558-1 Subclause 26.2)..... | 14 |
| Bibliography..... | 15 |
| Figure 101 – Windings | 8 |
| Figure 102 – Tappings | 8 |
| Figure 103 – Windings separated by functional isolation | 8 |

| | |
|---|----|
| Table 101 – Output voltage difference | 11 |
|---|----|

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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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International standard IEC 61558-2-13 has been prepared by IEC technical committee 96: Transformers, reactors, power supply units and similar products for low voltages up to 1 100 V.

This second edition cancels and replaces the first edition published in 1999. It constitutes a technical revision. The main changes consist of updating this part in accordance with Part 1 (2005), and increasing the supply voltages up to 1 100 V to be in line with the standards of TC 14.

This part has the status of a group safety publication in accordance with IEC Guide 104: (1997): *The preparation of safety publications and the use of basic safety publications and group safety publications*.

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

| | |
|-------------|------------------|
| FDIS | Report on voting |
| 96/318/FDIS | 96/323/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 auto transformers and power supply units incorporating auto transformers*.

A list of all parts of the IEC 61558 series can be found on the IEC website under the title: *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V*.

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 maintenance result 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 themselves 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 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

1 Scope

Replacement:

This part of IEC 61558 deals with the safety of **auto transformers** for general applications and **power supply units** incorporating **auto transformers** for general applications. **Transformers** incorporating **electronic circuits** are also covered by this standard.

NOTE 1 Safety includes electrical, thermal and mechanical aspects.

Unless otherwise specified, from here onward, the term **transformer** covers **auto transformers** for general applications and **power supply units** incorporating **auto transformers** for general applications.

NOTE 2 : For **power supply units** (linear) this part is applicable. For **switch mode power supply units**, IEC 61558-2-16 is applicable together with this part.

This part is applicable to **stationary** or **portable**, single-phase or polyphase, air-cooled (natural or forced) **independent** or **associated dry- type transformers**. The windings may be encapsulated or non-encapsulated.

The **rated supply voltage** does not exceed 1 100 V a.c., and the **rated supply frequency** and the **internal operating frequencies** do not exceed 500 Hz.

The **core power** does not exceed:

- 2 kVA for single-phase **transformers**;
- 10 kVA for polyphase **transformers**.

The **rated output** does not exceed:

- 40 kVA for single-phase **transformers**;
- 200 kVA for polyphase **transformers**.

This part is applicable to **transformers** without limitation of the **core power** and the **rated output** both being subject to an agreement between the purchaser and the manufacturer.

Where applicable, the **no-load output voltage** or the **rated output voltage** does not exceed 1 000 V a.c. or 1 415 V ripple-free d.c., and for **independent transformers**, the **no-load output voltage** and the **rated output voltage** exceeds 50 V a.c., or 120 V ripple-free d.c.

This part is not applicable to external circuits and their components intended to be connected to the input terminals and output terminals of the **transformers**.

Transformers covered by this part are used only in applications where no **insulation** between circuits is required by the installation rules or by the end product standard.

NOTE 3 Attention is drawn to the following:

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