NSAI Standards

Irish Standard
I.S. EN 61558-2-8:2010

Safety of transformers, reactors, power supply units and combinations thereof -- Part 2-8: Particular requirements and tests for transformers and power supply units for bells and chimes (IEC 61558-2-8:2010 (EQV))

I.S. EN 61558-2-8:2010

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

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EN 61558-2-8

August 2010

ICS 29.180

Supersedes EN 61558-2-8:1998

English version

Safety of transformers, reactors, power supply units and combinations thereof - Part 2-8: Particular requirements and tests for transformers and power supply units for bells and chimes

(IEC 61558-2-8:2010)

Sécurité des transformateurs, bobines d'inductance, blocs d'alimentation et des combinaisons de ces éléments - Partie 2-8: Règles particulières et essais pour les transformateurs et blocs d'alimentation pour sonneries et carillons (CEI 61558-2-8:2010)

Sicherheit von Transformatoren, Drosseln, Netzgeräten und entsprechende Kombinationen - Teil 2-8: Besondere Anforderungen und Prüfungen an Transformatoren und Netzgeräten für Klingeln und Läutewerke (IEC 61558-2-8:2010)

This European Standard was approved by CENELEC on 2010-07-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61558-2-8:2010 E

Foreword

The text of document 96/354/FDIS, future edition 2 of IEC 61558-2-8, 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 61558-2-8 on 2010-07-01.

This European Standard supersedes EN 61558-2-8:1998.

The main changes consist of updating this part in accordance with EN 61558-1:2005.

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*.

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

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)	2011-04-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-07-01

This part is intended to be used in conjunction with the latest edition of EN 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 EN 61558-1, so as to convert that publication into the EN standard: *Particular requirements and tests for transformers and power supply units for bell and chime*.

A list of all parts of the EN 61558 series, under the general title: *Safety of transformers, reactors, power supply units and combinations thereof*, can be found on the CENELEC 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 adopted accordingly.

In this part, the following print types are used:

– requirements proper: in roman type;

– *test specifications: in italic type*;

– explanatory matters: 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.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2006/95/EC.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61558-2-8:2010 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 61558-2-16:2009 NOTE Harmonized as EN 61558-2-8:2009 (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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Annex ZA of Part 1 is applicable except as follows:

Addition:

Publication	Year	Title	EN/HD	Year
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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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2-8: Particular requirements and tests for transformers and power supply units for bells and chimes

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.
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 61558-2-8 has been prepared by IEC technical committee 96: Transformers, reactors, power supply units and combinations thereof.

This second edition cancels and replaces the first edition published in 1998. It constitutes a technical revision. The main changes consist of updating this part in accordance with IEC 61558-1:2005.

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
96/354/FDIS	96/361/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 for bell and chime.*

A list of all parts of the IEC 61558 series, under the general title: *Safety of transformers, reactors, power supply units and combinations 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 adopted accordingly.

In this part, the following print types are used:

– requirements proper: in roman type;
– *test specifications: in italic type*;
– explanatory matters: in smaller roman type.

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

Subclauses 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 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 COMBINATIONS THEREOF –

Part 2-8: Particular requirements and tests for transformers and power supply units for bells and chimes

1 Scope

Replacement:

This part of IEC 61558 deals with the safety of **bell and chime transformers** and **power supply units** incorporating **bell and chime transformers. 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 **bell and chime transformers** and **power supply units** incorporating **bell and chime transformers**.

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

This standard is applicable to **transformers** and **power supply** (linear).

This standard used in combination with part 2-16 for **switch mode power supply** (**SMPS**) units is also applicable to power supplies with internal operating frequencies higher than 500 Hz. Where the two requirements are in conflict, the most severe takes precedence.

The **rated supply voltage** does not exceed 250 V a.c., and the **rated supply frequency** and does not exceed 500 Hz. This standard is applicable to **transformers** and linear **power supply** units with internal operating frequency not exceeding 500 Hz.

The **rated output** shall not exceed 100 VA.

The **no-load output voltage** does not exceed 33 V a.c. or 46 V ripple-free d.c., and the **rated output voltage** does not exceed 24 V a.c., or 33 V ripple-free d.c.

Bell and chime transformers are generally intended to supply domestic sound signalling equipment and other similar devices where the load is applied for short periods of time.

NOTE 2 A partial load may be applied for illumination purposes.

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 **double or reinforced insulation** between circuits is required by the installation rules or by the end product standard.

NOTE 3 Normally, the **transformers** are intended to be used with equipment to provide voltages different from the supply voltage for the functional requirements of the equipment. The protection against electric shock may be provided (or completed) by other features of the equipment, such as the **body**. Parts of **output circuits** may be connected to the **input circuits** or to protective earth.

This part is applicable to **transformers** associated with specific equipment, to the extent decided upon by the relevant IEC technical committees.

NOTE 4 Attention is drawn to the following:

- measures to protect the **enclosure** and the components inside the **enclosure** against external influences such as fungus, vermin, termites, solar-radiation, and icing should also be considered;
- the different conditions for transportation, storage, and operation of the **transformer** should also be considered;
- additional requirements in accordance with other appropriate standards and national rules may be applicable to **transformers** intended for use in special environments, such as tropical environment.

NOTE 5 Future technological development of **transformers** may necessitate a need to increase the upper limit of the frequencies, until then this part may be used as a guidance document.

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*

3 Terms and definitions

This clause of Part 1 is applicable except as follows:

Addition:

3.1.101
bell and chime transformer
single-phase **safety isolating transformer** specifically intended to supply household sound signalling equipment and other similar devices

4 General requirements

This clause of Part 1 is applicable.

5 General notes on tests

This clause of Part 1 is applicable.

6 Ratings

Replacement:

6.101 The **rated output voltage** shall not exceed 24 V a.c. or 33 V ripple-free d.c..

For **independent transformers**, this **output voltage** limitation applies even when **output windings**, not intended for interconnection, are connected in series.

6.102 The **rated output** shall not exceed 100 VA.