Trafode, reaktorite, elektritoiteplokkide ja nende kombinatsioonide ohutus. Osa 2-15: Erinõuded meditsiinipaikade kaitseeraldustrafodele ja nende katsetamine

Safety of transformers, reactors, power supply units and combinations thereof - Part 2-15: Particular requirements and tests for isolating transformers for the supply of medical locations

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 61558-2-15:2012 sisaldab Euroopa standardi EN 61558-2-15:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 61558-2-15:2012 consists of the English text of the European standard EN 61558-2-15:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.02.2012.	Date of Availability of the European standard is 03.02.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.180

EUROPEAN STANDARD

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Supersedes EN 61558-2-15:2001 + corr. Apr.2004

English version

Safety of transformers, reactors, power supply units and combinations thereof - Part 2-15: Particular requirements and tests for isolating transformers for the supply of medical locations

(IEC 61558-2-15:2011)

Sécurité des transformateurs, bobines d'inductance, blocs d'alimentation et des combinaisons de ces éléments - Partie 2-15: Règles particulières et essais pour les transformateurs de séparation de circuits pour locaux à usages médicaux (CEI 61558-2-15:2011)

Sicherheit von Transformatoren, Drosseln, Netzgeräten und entsprechenden Kombinationen - Teil 2-15: Besondere Anforderungen und Prüfungen an Trenntransformatoren zur Versorgung medizinischer Räume (IEC 61558-2-15:2011)

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 61558-2-15:2012 E

Foreword

The text of document 96/384/FDIS, future edition 2 of IEC 61558-2-15, 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 61558-2-15:2012.

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)	2012-09-27
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2014-12-27

This document supersedes EN 61558-2-15:2001 + corrigendum April 2004.

The main changes consist of updating EN 61558-2-15:2012 in accordance with EN 61558-1:2005.

This standard is to be used in conjunction with 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 isolating transformers for the supply of medical locations".

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.

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 61558-2-15:2011 was approved by CENELEC as a European Standard without any modification.

Addition *to Bibliography of EN 61558-1:2005:*

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

IEC 60364-1:2005	NOTE	Harmonized as HD 60364-1:2008 (modified).
IEC 60364-4-41:2005	NOTE	Harmonized as HD 60364-4-41:2007 (modified).

IEC 60364-7-710:2002 NOTE Harmonized as HD 60364-7-710:2012 (modified).

IEC 61557-8:2007 NOTE Harmonized as EN 61557-8:2007 (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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

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

Publication	Year	Title	EN/HD	Year
IEC 61558-1	2005	Safety of power transformers, power supplies,	EN 61558-1	2005
+ corr. March	2010	reactors and similar products -	+ corr. August	2006
+ corr. March	2008	Part 1: General requirements and tests		

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

Part 2-15: Particular requirements and tests for isolating transformers for the supply of medical locations

1 Scope

Replacement:

This part of IEC 61558 deals with safety aspects of **isolating transformers for the supply of medical locations**.

NOTE 1 Safety includes electrical, thermal and mechanical aspects.

Unless otherwise specified, from here onward, the term **transformer** covers **isolating transformers for the supply of medical locations**.

This part is applicable to **stationary**, single-phase or three-phase, air-cooled (natural or forced) **independent dry-type isolating transformers** for the supply of medical IT systems for group 2 medical locations, designed to be permanently connected to the fixed wiring and intended to form the IT power system on the secondary side. The windings may be encapsulated or non-encapsulated.

NOTE 2 IT power systems are defined in IEC 60364-1.

NOTE 3 The installation rules for medical IT systems for group 2 medical locations are covered by IEC 60364-7-710.

NOTE 4 **Transformers** covered by this standard are intended for the supply of medical locations. All other transformers or equipments connected downstream from the **transformer** are not covered by this Part 2.

The **rated supply voltage** does not exceed 1 000 V a.c. The **rated supply frequency** and **internal operational frequency** do not exceed 500 Hz.

The **rated output** does not be less than 0,5 kVA and does not exceed 10 kVA for single-phase and three-phase **transformers**.

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

NOTE 5 Transformers intended to supply power to distribution networks are not covered by this standard.

The **no-load output voltage** and the **rated output voltage** does not exceed 250 V a.c. for single-phase or three-phase **transformer** (phase-to-phase voltage).

This standard do not cover **power supply unit**.

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 in applications where **double or reinforced insulation** between circuits is required by the installation rules or by the appliance specification.

NOTE 6 Attention is drawn to the following:

– for **transformers** intended to be used in vehicles, on board ships, and aircraft, additional requirements (from other applicable standards, national rules, etc.) may be necessary;

– 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 **transformers** 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.

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
isolating transformer for the supply of medical locations
isolating transformer used for the supply of medical IT systems for group 2 medical locations, designed to be permanently connected and with **double** or **reinforced insulation** between each part of the transformer (body, screen, circuits, thermal sensitive device) except between the core and the **body**

3.4.101
functional screening
separation between two windings or between a winding and the core or shielding of a part or of the whole **transformer**, by means of a conductive material for functional reasons

3.5.101
rated input current
unput current, when the **transformer** is loaded with **rated output**

3.6.101
no-load input current
input current when the **transformer** is connected to the **rated supply voltage**, at the **rated frequency**, with no-load on the output

3.6.102
inrush current
the maximum instantaneous value of the **no-load input current** of the **transformer** (peak value) when is switched on at **rated supply voltage**

4 General requirements

This clause of Part 1 is applicable.