

Safety of power transformers, power supply units and similar devices —

Part 2-12: Particular requirements for constant voltage transformers

The European Standard EN 61558-2-12:2001 has the status of a
British Standard

ICS 29.180; 13.260

National foreword

This British Standard is the official English language version of EN 61558-2-12:2001. It is identical with IEC 61558-2-12:2001.

The UK participation in its preparation was entrusted to Technical Committee PEL/96, Small transformers, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 2 November 2001

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Safety of power transformers, power supply units and similar devices
Part 2-12: Particular requirements for constant voltage transformers
(IEC 61558-2-12:2001)

Sécurité des transformateurs, blocs
d'alimentation et dispositifs analogues
Partie 2-12: Règles particulières pour
les transformateurs à tension constante
(CEI 61558-2-12:2001)

Sicherheit von Transformatoren,
Netzgeräten und dergleichen
Teil 2-12: Besondere Anforderungen an
magnetische Spannungsconstanthalter
(IEC 61558-2-12:2001)

This European Standard was approved by CENELEC on 2001-09-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 96/168/FDIS, future edition 1 of IEC 61558-2-12, prepared by IEC TC 96, Small power transformers, reactors and power supply units: Safety requirements, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61558-2-12 on 2001-09-01.

This part 2-12 is to be used in conjunction with EN 61558-1:1997.

This part 2-12 supplements or modifies the corresponding clauses of EN 61558-1. When a particular subclause of part 1 is not mentioned in this part 2-12, that subclause applies as far as is reasonable. Where this part 2-12 states "addition", "modification" or "replacement", the relevant text of part 1 is to be adapted accordingly.

In this standard, the following print types are used:

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

The words in **bold** in the text of the standard are defined in clause 3.

Subclauses which are additional to those in part 1 are numbered starting from 101.

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) 2002-06-01 |
| – latest date by which the national standards conflicting
with the EN have to be withdrawn | (dow) 2004-09-01 |

Endorsement notice

The text of the International Standard IEC 61558-2-12:2001 was approved by CENELEC as a European Standard without any modification.

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SAFETY OF POWER TRANSFORMERS, POWER SUPPLY UNITS AND SIMILAR DEVICES –

Part 2-12: Particular requirements for constant voltage transformers

1 Scope

Replacement:

This International Standard deals with all aspects of safety such as electrical, thermal and mechanical.

This part of IEC 61558 applies to **stationary** or **portable**, single-phase or polyphase, air-cooled (natural or forced), **associated** or **independent**:

- **constant voltage auto-transformers**
- **constant voltage separating transformers**
- **constant voltage isolating transformers**
- **constant voltage safety isolating transformers**

having a **rated supply voltage** not exceeding 1 000 V a.c., a **rated frequency** not exceeding 500 Hz, an **internal operational frequency** not exceeding 30 kHz and no limitation of the **rated output**.

NOTE 1 The technological development of transformers might imply a need to increase the higher limit of the **internal operational frequency**; until such time, this standard may be used as a guide.

Constant voltage independent auto-transformers

- have a **no-load output voltage** and a **rated output voltage** exceeding 50 V a.c. or 120 V ripple-free d.c. and not exceeding 1 000 V a.c. or 1 415 V ripple-free d.c.;
- are used where no insulation between circuits is required by the installation rules or by the equipment specification.

Constant voltage associated auto-transformers

- have a **no-load output voltage** and a **rated output voltage** not exceeding 1 000 V a.c. or 1 415 V ripple-free d.c.

Constant voltage independent separating transformers

- have a **no-load output voltage** and a **rated output voltage** exceeding 50 V a.c. or 120 V ripple-free d.c. and not exceeding 1 000 V a.c. or 1 415 V ripple-free d.c.;
- are used where **double** or **reinforced insulation** between circuits is not required by the installation rules or by the appliance specification.

Constant voltage associated separating transformers

- have a **no-load output voltage** and a **rated output voltage** not exceeding 1 000 V a.c. or 1 415 V ripple-free d.c.

Constant voltage isolating transformers

- have a **no-load output voltage** and/or a **rated output voltage** exceeding 50 V a.c. or 120 V ripple-free d.c. and not exceeding 500 V a.c. or 708 V ripple-free d.c.; the **no-load output voltage** and the **rated output voltage** may exceed these limits in order to be in accordance with the national wiring rules or special purposes; however, they shall not exceed 1 000 V a.c. or 1 415 V ripple-free d.c.;
- are used where **double** or **reinforced insulation** between circuits is required by the installation rules or by the appliance specification.

Constant voltage safety isolating transformers

- have a **no-load output voltage** and a **rated output voltage** not exceeding 50 V a.c. or 120 V ripple-free d.c.;
- are used where **double** or **reinforced insulation** between circuits is required by the installation rules or by the appliance specification.

This standard is applicable to **dry-type constant voltage transformers**. The windings may be encapsulated or non-encapsulated.

NOTE 2 For **constant voltage transformers** filled with liquid dielectric or pulverized material, such as sand, additional requirements are under consideration.

NOTE 3 Attention is drawn to the fact that

- for transformers intended to be used in tropical countries, special requirements may be necessary;
- in locations where special environmental conditions prevail, particular requirements may be necessary.

NOTE 4 For higher **no-load output voltages** or circuit voltages, additional requirements are necessary but this standard may be used as a guide.

2 Normative references

This clause of part 1 is applicable.

3 Definitions

This clause of part 1 is applicable except as follows:

Addition:

3.101

constant voltage transformer

transformer intended to limit the influence of the input voltage variations

NOTE This type of transformer may also limit the influence of transients.

3.102

regulation tolerance

deviation in per cent of the **rated output voltage** when the **constant voltage transformer** is supplied within the **rated supply voltage** variation

3.103

internal operational frequency

frequency produced within a constant voltage transformer, for example, operating in secondary switch mode