

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

Part 2-23: Particular requirements for transformers for construction sites

The European Standard EN 61558-2-23:2000 has the status of a
British Standard

ICS 29.180; 29.260.10

National foreword

This British Standard is the official English language version of EN 61558-2-23:2000. It is identical with IEC 61558-2-23:2000 and it supersedes BS 3535-2:1990.

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 international/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.

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Cross-references

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 19 and a back cover.

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Amendments issued since publication

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Safety of power transformers, power supply units and similar devices
Part 2-23: Particular requirements for transformers for construction sites
(IEC 61558-2-23:2000)

Sécurité des transformateurs, blocs
d'alimentation et dispositifs analogues
Partie 2-23: Règles particulières pour
les transformateurs pour chantiers
(CEI 61558-2-23:2000)

Sicherheit von Transformatoren,
Netzgeräten und Dergleichen
Teil 2-23: Besondere Anforderungen
an Transformatoren für Baustellen
(IEC 61558-2-23:2000)

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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.

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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 96/144/FDIS, future edition 1 of IEC 61558-2-23, 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 61558-2-23 on 2000-08-01.

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) 2001-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2003-08-01

This part 2-23 is to be used in conjunction with EN 61558-1:1997, Safety of power transformers, power supply units and similar -- Part 1: General requirements and tests.

This part 2-23 supplements or modifies the corresponding clauses of EN 61558-1.

Where a particular clause or subclause of part 1 is not mentioned in this part 2-23, that clause or subclause applies as far as is reasonable. Where this part 2-23 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:

- requirement: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

In the text of this standard, the words in **bold** are defined in clause 3.

Subclauses, tables and figures which are additional to those in part 1 are numbered starting from 101.

Annexes designated "normative" are part of the body of the standard.

In this standard, annex ZA is normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61558-2-23:2000 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 2-23: Particular requirements for transformers for construction sites

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 poly-phase air-cooled (natural or forced) independent or associated, **isolating** or **safety isolating transformers** intended for use on construction sites, having a **rated supply voltage** not exceeding 1 000 V a.c., and a **rated frequency** not exceeding 500 Hz.

The **rated output** should not exceed:

- 25 kVA for single-phase transformers;
- 40 kVA for poly-phase transformers.

Isolating transformers for construction sites should have a **no-load output voltage** and a **rated output voltage** exceeding 50 V a.c. and not exceeding 250 V a.c.

Safety isolating transformers for construction sites should have a **no-load output voltage** and a **rated output voltage** not exceeding 50 V a.c.

NOTE This standard is applicable to transformers for the supply of electricity in locations as specified in IEC 60364-7-704. The latter also specifies the protection by using an earthed midpoint or starpoint of the output winding.

Transformers for construction sites are to be used when required by the installation rules or by the appliance specification for protection purposes.

When the transformers are incorporated into **low-voltage switchgear and controlgear assemblies for construction sites** as specified in IEC 60439-4, the additional requirements of IEC 60439-4 will apply to the assembly.

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

NOTE 1 For transformers filled with liquid dielectric or pulverized material, such as sand, additional requirements are under consideration.

NOTE 2 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.

This standard also applies to transformers incorporating electronic circuits. This standard does not apply to external circuits and their components intended to be connected to the input and output terminals or socket-outlets of the transformer.

2 Normative references

This clause of part 1 is applicable except as follows:

Addition:

IEC 60068-2-27:1987, *Environmental testing – Part 2: Tests – Test Ea and guidance: Shock*

IEC 60364-7-704:1989, *Electrical installations of buildings – Part 7: Requirements for special installations – Section 704: Construction and demolition site installations*

IEC 60439-4:1990, *Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS)*

3 Definitions

This clause of part 1 is applicable except as follows:

Addition:

3.101

low-voltage switchgear and controlgear assembly for construction sites (ACS)

combination of one or several transforming or switching devices with associated control, measuring, signalling, protective and regulating equipment complete with all their internal electrical and mechanical connections and structural parts, designed and built for use on all construction sites, indoors or outdoors

4 General requirements

This clause of part 1 is applicable.

5 General notes on tests

This clause of part 1 is applicable.

6 Ratings

This clause of part 1 is applicable except as follows:

Addition:

6.101 The **rated output voltage** shall not exceed

- 250 V a.c. for **isolating transformers** with a non-earthed midpoint (single-phase) or a non-earthed starpoint (three-phase) or delta connection (three-phase);
- 110 V a.c. for **isolating transformers** with a midpoint (single-phase) earthed in the construction or a starpoint (three-phase) earthed in the construction;
- 50 V a.c. for **safety isolating transformers**.