

Australian/New Zealand Standard™

**Safety of power transformers, power
supply units and similar**

**Part 2.17: Particular requirements for
transformers for switch mode power
supplies
(IEC 61558-2-17:1997, MOD)**



Standards Australia



STANDARDS
NEW ZEALAND
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The following interests are represented on Committee EL/2:

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Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Canterbury Manufacturers Association New Zealand
Consumer Electronic Suppliers Association, Australia
Electrical regulatory authorities, Australia
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AS/NZS 61558.2.17:2001
(IEC 61558-2-17:1997, MOD)

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First edition AS/NZS 61558.2.17:2001

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PREFACE

This standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-002- Safety of Household and Similar Electrical Appliances and Small Power Transformers

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements for the design, manufacture and testing of transformers for switch mode power supplies which can form the basis for approval by regulatory authorities.

This Standard forms the first edition of AS/NZS 61558.2.17 *Safety of power transformers, power supply units and similar - Part 2.17: Particular requirements for transformers for switch mode power supplies*.

This Standard is an adoption with national modifications and contains the full text of the first edition of IEC 61558-2-17:1997, *Safety of power transformers, power supply units and similar - Part 2-17: Particular requirements for transformers for switch mode power supplies* and has been varied as indicated to take account of Australian and New Zealand conditions. It is to be used in conjunction with the latest edition of AS/NZS 61558.1 and its amendments. It was established on the basis of the first edition (2000) of that standard.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 61558.1 so as to convert it into the Australian/New Zealand Standard: *Safety requirements for transformers for switch mode power supplies*.

Where a particular subclause of part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. Where this Standard states "addition", "modification" or "replacement", the relevant text in part 1 is to be adapted accordingly.

NOTE 1 Subclauses, notes, tables and figures which are additional to those in part 1 are numbered starting from 101. Annexes, which are additional to those in part 1 are lettered AA, BB, etc.

Annex ZZ is for information only.

NOTE 2 In this Standard the following print types are used:

- requirements: in arial type;
- *test specifications: in italic type;*
- notes: in small arial type;

Words **in bold** in the text are defined in clause 3.

The numbering of clauses, subclauses, notes, tables, figures and annexes follows that of IEC 61558-2-17:1997. To allow for the introduction of additional material by the IEC, the numbers 101 to 200 have been reserved. To allow for additional material to be introduced by Australia and New Zealand, the numbers 201 to 300 are used to number further clauses, subclauses, notes, tables and figures in part 1. The numbers 301 to 400 are used to number further clauses, subclauses, notes, tables and figures in this part 2. Additional annexes are lettered ZA, ZB and so on.

This scheme has been introduced to reduce the likelihood of the IEC and Australia and New Zealand using the same identifier for different purposes.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number does not appear on each page of text and its identity is shown on the cover and title page only.

- (b) In the source text "this International Standard" should read "this Australian/New Zealand Standard".
- (c) A full point substitutes for a comma when referring to a decimal marker.

Variations to IEC 61558-2-17:1997 are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC tables, figures and passages of text which, for the purposes of this Australian/New Zealand standard are deleted. Where Australian/New Zealand tables, figures or passages of text are added, each is set in its proper place and identified by shading (~~example~~). Added figures are not themselves shaded, but are identified by a shaded border.

Variations made to IEC 61558-2-17:1997 form the Australian variations for the purposes of the IECEE scheme for recognition of testing to standards for safety of electrical equipment (the CB scheme). These variations have been incorporated in the body of the standard. They are listed in Annex ZZ for easy reference.

AUSTRALIA/NEW ZEALAND STANDARD

SAFETY OF POWER TRANSFORMERS, POWER SUPPLY UNITS AND SIMILAR –

Part 2.17: Particular requirements for transformers for switch mode power supplies (IEC 61558-2-17:1997, MOD)

1 Scope

Replacement:

This part 2 of ~~IEC 61558~~ AS/NZS 61558 applies to **associated power transformers** for **switch mode power supplies**, single-phase or polyphase, air-cooled:

- **separating transformers;**
- **isolating transformers;**
- **safety isolating transformers,**

having a **rated supply voltage** not exceeding 1000 V a.c. and a **rated frequency** of 500 Hz to 1 MHz, the **rated output** not exceeding:

- 10 kVA for single-phase transformers;
- 16 kVA for polyphase transformers.

NOTE 1 – For higher frequencies, this standard may be used as a guide.

The **no-load output voltage** or the **rated output voltage** do not exceed:

- 1000 V a.c. or 1 415 V ripple-free d.c for **separating transformers;**
- 500 V a.c. or 708 V ripple-free d.c for **isolating transformers.**

NOTE 2 – For **isolating transformers**, the **rated output voltage** may be up to 1000 V a.c. or 1415 V ripple-free d.c. in accordance with the national wiring rules or designed for special purposes.

- 50 V a.c. r.m.s. and/or 120 V ripple-free d.c for **safety isolating transformers.**

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

NOTES

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

4 In locations where special environmental conditions prevail, particular requirements may be necessary in accordance with IEC 60364-5-51.

5 For higher **output no-load voltages**, additional requirements are necessary but this section may be used as a guide.

2 Normative references

This clause of part 1 is applicable.