

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

**Part 3.2: Limits –
Limits for harmonic current emissions
(equipment input current less than or
equal to 16 A per phase)**

AS/NZS 61000.3.2:2003

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-034, Power Quality. It was approved on behalf of the Council of Standards Australia on 14 February 2003 and on behalf of the Council of Standards New Zealand on 24 January 2003. It was published on 3 March 2003.

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Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 3.2: Limits— Limits for harmonic current emissions (equipment input current less than or equal to 16 A per phase)

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality, to supersede AS/NZS 61000.3.2:1998.

The objective of this Standard is to provide manufacturers and suppliers of electricity and users of electrical equipment intended for connection to an electrical network with limits for voltage disturbances and harmonics produced by that equipment and the methods for ascertaining compliance to them in order to maintain electromagnetic compatibility within the electrical network.

This Standard is identical with and has been reproduced from IEC 61000-3-2, Edition 2.1:2001, *Electromagnetic compatibility (EMC) Part 3.2: Limits—Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*.

Some minor errors were detected in the IEC text. After consultation with the IEC the text was amended and indicated by shading.

This Standard is Part 3.2 of a series, which, when complete, will consist of the following:

AS/NZS

- 61000 Electromagnetic compatibility (EMC)
- 61000.1.1 Part 1.1: General—Application and interpretation of fundamental definitions and terms
- 61000.2.2 Part 2.2: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems
- 61000.2.3 Part 2.3: Environment—Description of the environment—Radiated and non-network-frequency-related conducted phenomena
- 61000.2.5 Part 2.5: Environment—Classification of electromagnetic environments
- 61000.2.12 Part 2.12: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems
- 61000.3.2 Part 3.2: Limits—Limits for harmonic current emissions (equipment input current less than or equal to 16 A per phase) (this Standard)
- 61000.3.3 Part 3.3: Limits—Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current less than or equal to 16 A
- 61000.3.5 Part 3.5: Limits—Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current greater than 16 A
- 61000.3.6 Part 3.6: Limits—Assessment of emission limits for distorting loads in MV and HV power systems
- 61000.3.7 Part 3.7: Limits—Assessment of emission limits for fluctuating loads in MV and HV power systems
- 61000.3.11 Part 3.11: Limits—Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems—Equipment with rated current less than or equal to 75A and subject to conditional connection
- 61000.3.12 Part 3.12: Limits—Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A
- 61000.4.1 Part 4.1: Testing and measurement techniques—Overview of immunity tests
- 61000.4.2 Part 4.2: Testing and measurement techniques—Electrostatic discharge immunity test
- 61000.4.3 Part 4.3: Testing and measurement techniques—Radiated radio-frequency electromagnetic field immunity test

- 61000.4.5 Part 4.5: Testing and measurement techniques—Surge immunity test
- 61000.4.6 Part 4.6: Testing and measurement techniques—Immunity to conducted disturbances, induced by radio-frequency fields
- 61000.4.7 Part 4.7: Testing and measurement techniques—General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto
- 61000.4.8 Part 4.8: Testing and measurement techniques—Power frequency magnetic field immunity test
- 61000.4.16 Part 4.16: Testing and measurement techniques—Test for immunity to conducted common mode disturbances in the frequency range 0 Hz to 150 kHz
- 61000.6.2 Part 6.2: Generic standards—Immunity for industrial environments

This Standard specifies limits for harmonic components of the input current which may be produced by equipment such as motor driven appliances, lighting equipment and electronic equipment with input currents less than or equal to 16 A per phase when tested under specified conditions. The tests and conditions are included.

This Standard should be read in conjunction with the regulations, service rules and installation rules of the supply authority approving the connection.

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (**example**). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

In this Standard, the following print types are used:

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

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 only on the cover and title page.
- (b) In the source text ‘this standard’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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Australian/New Zealand Standard**Electromagnetic compatibility (EMC)****Part 3.2: Limits –****Limits for harmonic current emissions (equipment input current less than or equal to 16 A per phase)**

1 Scope

This part of AS/NZS 61000 deals with the limitation of harmonic currents injected into the public supply system.

It specifies limits of harmonic components of the input current which may be produced by equipment tested under specified conditions.

Harmonic components are measured according to annexes A and B.

This part of AS/NZS 61000 is applicable to electrical and electronic equipment having an input current up to and including 16 A per phase, and intended to be connected to public low-voltage distribution systems.

Arc welding equipment which is not professional equipment, with input current up to and including 16 A per phase, is included in this standard.

Arc welding equipment intended for professional use, as specified in IEC 60974-1, is excluded from this standard and may be subject to installation restrictions as indicated in IEC 61000-3-4.

NOTE 1 It is intended to replace technical report IEC 61000-3-4 by an international standard, IEC 61000-3-12 (under consideration).

The tests according to this standard are type tests. Test conditions for particular equipment are given in annex C.

For systems with nominal voltages less than 220 V (line-to-neutral), the limits have not yet been considered.

NOTE 2 The words apparatus, appliance, device and equipment are used throughout this standard. They have the same meaning for the purpose of this standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of AS/NZS 61000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of AS/NZS 61000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

References to International Standards that are struck through in this Clause are replaced by references to equivalent Australian or Australian/New Zealand Standards that are listed