AS/NZS IEC 61000.6.7:2015
IEC 61000-6-7, Ed. 1.0 (2014)

AS/NZS IEC 61000.6.7:2015

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 6.7: Generic standards—Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations

STANDARDS Australia

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee TE-003, Electromagnetic Compatibility. It was approved on behalf of the Council of Standards Australia on 26 October 2015 and on behalf of the Council of Standards New Zealand on 22 October 2015.
This Standard was published on 16 December 2015.

The following are represented on Committee TE-003:

Australian Communications and Media Authority
Australian Industry Group
Australian Information Industry Association
Consumer Electronics Supplier Association
Curtin University of Technology
Department of Defence (Australian Government)
Electrical Compliance Testing Association
EMC Society of Australia
Energy Networks Association
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Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

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For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS IEC 61000.6.7:2015.

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First published as AS/NZS IEC 61000.6.7:2015.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140.

ISBN 978 1 76035 338 4

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Compatibility.

The objective of this Standard is to define immunity test requirements for equipment in relation to continuous and transient conducted and radiated disturbances, including electrostatic discharges. These requirements apply only to functions intended for use in functional safety applications.

This Standard is identical with, and has been reproduced from IEC 61000-6-7, Ed. 1.0 (2014), *Electromagnetic compatibility (EMC)*, Part 6-7: *Generic standards—Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations*.

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

(a) In the source text 'this part of IEC 61000' should read 'this Australian/New Zealand Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS/NZS IEC	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-4-2	Part 4-2: Testing and measurement techniques—Electrostatic discharge immunity test	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	61000.4.3	Part 4.3: Testing and measurement techniques—Radiated, radio-frequency, electromagnetic field immunity test
61000-4-4	Part 4-4: Testing and measurement techniques—Electrical fast transient/burst immunity test	61000.4.4	Part 4.4: Testing and measurement techniques—Electrical fast transient/burst immunity test
		AS/NZS	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-4-5	Part 4-5: Testing and measurement techniques—Surge immunity test	61000.4.5	Part 4.5: Testing and measurement techniques—Surge immunity test
		AS/NZS IEC	
61000-4-6	Part 4-6: Testing and measurement techniques—Immunity to conducted disturbances, induced by radio-frequency fields	61000.4.6	Part 4.6: Testing and measurement techniques—Immunity to conducted disturbances, induced by radio-frequency fields

IEC		AS/NZS	
61000-4-8	Part 4-8: Testing and measurement techniques—Power frequency magnetic field immunity test	61000.4.8	Part 4.8: Testing and measurement techniques—Power frequency magnetic field immunity test
61000-4-11	Part 4-11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests	61000.4.11	Part 4.11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11, Ed. 2.0 (2004) MOD)
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	61000.4.16	Part 4.16: Testing and measurement techniques—Test for immunity to conducted, common mode disturbances in the frequency range 0 Hz to 150 kHz
61000-4-34	Part 4-34: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16 A per phase	61000.4.34	Part 4.34: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16 A per phase
		AS	
61508	Functional safety of electrical/electronic/programmable electronic safety-related systems (series)	61508	Functional safety of electrical/electronic/programmable electronic safety-related systems (series)

Only normative references that have been adopted as Australian or Australian/New Zealand Standard have been listed.

The term ‘informative’ has been used to define the application of the annex to which it applies. An ‘informative annex’ is only for information and guidance.

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INTRODUCTION

IEC 61000 is published in separate parts according to the following structure:

Part 1: General

General considerations (introduction, fundamental principles)

Definitions, terminology

Part 2: Environment

Description of the environment

Classification of the environment

Compatibility levels

Part 3: Limits

Emission limits

Immunity limits (insofar as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

Measurement techniques

Testing techniques

Part 5: Installation and mitigation guidelines

Installation guidelines

Mitigation methods and devices

Part 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as International Standards or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and completed by a second number identifying the subdivision (example: IEC 61000-3-11).

AUSTRALIAN/NEW ZEALAND STANDARD

Electromagnetic compatibility (EMC)

Part 6.7:
Generic standards—Immunity requirements for equipment intended to perform functions in a safety-related system (functional safety) in industrial locations

1 Scope and object

This part of IEC 61000 is intended to be used by suppliers when making claims for the immunity of equipment intended for use in safety-related systems against electromagnetic disturbances.

This standard should also be used by designers, integrators, installers, and assessors of safety-related systems to assess the claims made by suppliers. It provides guidance to product committees.

This part of IEC 61000 applies to electrical and electronic equipment intended for use in safety-related systems and that is

- intended to comply with the requirements of IEC 61508 and/or other sector-specific functional safety standards, and
- intended to be operated in industrial locations as described in 3.1.15.

NOTE 1 The final safety-related system is designed by a system integrator (or equivalent) that has the responsibility to assess the adequacy of the equipment for the particular application. This process is described in Annex D of IEC/TS 61000-1-2:2008.

The object of this standard is to define immunity test requirements for equipment in relation to continuous and transient, conducted and radiated disturbances, including electrostatic discharge. These requirements apply only to functions intended for use in functional safety applications. Test requirements are specified for each port considered.

NOTE 2 The immunity requirements of this standard do not, however, cover extreme cases, which can occur at any location, but with an extremely low probability of occurrence. In consequence, a designer of a safety-related system checks whether the requirements of this standard cover the expected electromagnetic phenomena within the intended application.

2 Normative references

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.

IEC 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at www.electropedia.org)

IEC/TS 61000-1-2:2008, *Electromagnetic compatibility (EMC) – Part 1-2: General – Methodology for the achievement of functional safety of electrical and electronic systems including equipment with regard to electromagnetic phenomena*

IEC 61000-1-6:2012, *Electromagnetic compatibility (EMC) – Part 1-6: General – Guide to the assessment of measurement uncertainty*