

Australian Standard[®]

Standard voltages



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 - Australian Industry Group
 - Australian Information Industry Association
 - Bureau of Steel Manufacturers of Australia
 - Consumer Electronics Suppliers Association
 - Consumers Federation of Australia
 - Electrical Regulatory Authorities Council
 - Electricity Engineers Association, New Zealand
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 - New Zealand Coordinating Committee on Power & Telecommunication Systems
 - New Zealand Electric Fence Energiser Manufacturers Standards WG
 - Telstra Corporation
 - University of Canterbury, New Zealand
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-

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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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 60038—2000, *Standard voltages*. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify standard voltage values which are intended to serve as preferential values for the nominal voltage of electrical supply systems, and as reference values for equipment and system design.

This Standard does not apply to voltages representing or transmitting signals or measured values, standard voltages of components and parts used within electrical devices or items of equipment.

This Standard is an adoption with national modifications and has been reproduced from IEC 60038, Ed.7.0 (2009), *IEC standard voltages*.

Variations to IEC 60038:2009 are indicated at the appropriate places throughout this Standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purpose of this Australian Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example).

There are mandatory footnotes (footnote b) and c)) applicable to Table 2, d.c. and a.c. traction systems.

Additional information on highest and lowest voltage values according to IEC and ANSI is given in Appendix ZZ.

AS 61000.3.100, *Electromagnetic compatibility (EMC)—Limits—Steady state voltage limits in public electricity systems*, describes how to monitor power systems and apply the limits set in AS 60038 (this Standard).

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

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text ‘this publication’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

The term ‘informative’ has been used in this Standard to define the application of the Annex or Appendix to which it applies. An ‘informative’ Annex/Appendix is only for information and guidance.

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AUSTRALIAN STANDARD

Standard voltages**1 Scope**

This publication applies to

- a.c. transmission, distribution and utilization systems and equipment for use in such systems with standard frequencies 50 Hz and 60 Hz having a nominal voltage above 100 V;
- a.c. and d.c. traction systems;
- a.c. and d.c. equipment having nominal voltages below 120 V a.c. or below 750 V d.c., the a.c. voltages being intended (but not exclusively) for 50 Hz and 60 Hz applications; such equipment covers batteries (from primary or secondary cells), other power supply devices (a.c. or d.c.), electrical equipment (including industrial and communication), and appliances.

This publication does not apply to voltages representing or transmitting signals or measured values.

This publication does not apply to standard voltages of components and parts used within electrical devices or items of equipment.

This publication specifies standard voltage values which are intended to serve

- as preferential values for the nominal voltage of electrical supply systems, and
- as reference values for equipment and system design.

NOTE 1 Two main reasons have led to the values specified in this standard:

The values of nominal voltage (or highest voltage for equipment) specified in this standard are mainly based on the historical development of electrical supply systems throughout the world, since these values turned out to be the most common ones, and have achieved worldwide recognition;

The voltage ranges mentioned in this standard have been recognized to be the most appropriate ones as a basis for design and testing of electrical equipment and systems.

NOTE 2 It is nevertheless the task of system and product standards to define appropriate testing values, testing conditions and acceptance criteria.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading.

~~IEC 60364-5-52: Electrical installations of buildings — Part 5-52: Selection and erection of electrical equipment — Wiring systems~~

AS/NZS 3000, *Electrical Installations* (Known as the Australian/New Zealand Wiring Rules)