

AS/NZS 5033:2014
(Incorporating Amendment Nos 1 and 2)

AS/NZS 5033:2014

Australian/New Zealand Standard™

**Installation and safety requirements for
photovoltaic (PV) arrays**



AS/NZS 5033:2014

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-042, Renewable Energy Power Supply Systems and Equipment. It was approved on behalf of the Council of Standards Australia on 29 September 2014 and on behalf of the Council of Standards New Zealand on 4 September 2014. This Standard was published on 6 November 2014.

The following are represented on Committee EL-042:

ACT Planning and Land Authority
Australasian Fire and Emergency Service Authorities Council
Australian Energy Market Operator
Australian Industry Group
Australian PV Association
Australian Solar Council
Clean Energy Council
Clean Energy Regulator
Consumer Electronics Suppliers Association
CSIRO Energy Technology
Electrical Regulatory Authorities Council
Electrical Safety Organisation, New Zealand
Electricity Engineers Association, New Zealand
ElectroComms and Energy Utilities Industries Skills Council
Energy Networks Association
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-042, Renewable Energy Power Supply Systems and Equipment, to supersede AS/NZS 5033:2012.

This Standard incorporates Amendment No. 1 (June 2018) and Amendment No. 2 (June 2018). The changes required by the Amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected. This consolidated version has been prepared 12 months after the publication of Amendment No. 2, therefore the struck through text in the following paragraph is no longer relevant. It has been struck through for clarity.

~~AS/NZS 5033:2014 incorporating Amendment No. 1 will remain current for 12 months from the date of publication of this document. After this time, it will be superseded by AS/NZS 5033:2014 incorporating Amendment No. 1 and Amendment No. 2.~~ Regulatory authorities that reference this Standard in regulation may apply these requirements at a different time. Users of this Standard should consult with these authorities to confirm their requirements.

The objective of this Standard is to maintain and improve the safety of PV arrays. Committee EL-042 constantly strives to implement new methods of achieving safe PV arrays and systems.

At the time of publication there was very limited technology for arc detection and prevention in PV arrays and there were limited standards for arc signatures. When this technology is more fully developed there will be a revision of this Standard, which will require the use of this technology for PV arrays.

Many new protection features for arrays when used in grid connected applications will be implemented in inverter systems and are required by the International Standard for inverters—IEC 62109-2, Ed. 1.0 (2011), *Safety of power converters for use in photovoltaic power systems*, Part 2: *Particular requirements for inverters*. Both this Standard and AS 4777, *Grid connection of energy systems via inverters* (series) require inverters that comply with IEC 62109-2 for grid connected PV systems.

There are a number of changes in requirements in this revision. They include but are not limited to—

- (a) change in the scope of this Standard with respect to power limit;
- (b) additions of provisions relating to d.c. conditioning units applied at the module level;
- (c) revisions to small micro inverter and a.c. module installation requirements;
- (d) differentiation of Australian and New Zealand disconnecter requirements;
- (e) requirements for PV cables, cable protection and conduit; connector requirements; and
- (f) new signs and commissioning requirements.

Amendment 2 to this Standard includes additional requirements for d.c. isolators/disconnectors and their installation. This amendment is published to address fire risk issues and applies sound engineering principles and improved design and installation practices.

Amendment 1 to this Standard includes additional requirements for d.c. isolators/disconnectors and their installation. This amendment is published to address fire risk issues and applies sound engineering principles and improved design and installation practices.

This Standard necessarily deals with existing types of systems, but is not intended to discourage innovation or to exclude materials equipment and methods that may be developed in the future. Revisions will be made from time to time in view of such developments, and amendments to this edition will be made when necessary.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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