AS/NZS 4763:2011

Australian/New Zealand Standard™

Safety of portable inverters

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers. It was approved on behalf of the Council of Standards Australia on 4 April 2011 and on behalf of the Council of Standards New Zealand on 21 April 2011.
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The following are represented on Committee EL-002:

Association of Certification Bodies
Australian Industry Group
Australian Retailers Association
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical regulatory authorities, Australia
Electrical Compliance Testing Association
Electrical consultants
Engineers Australia
Ministry of Economic Development, New Zealand
New Zealand Electric Fence Energizer Manufacturers' Standards Group

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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.

Australian/New Zealand Standard™

Safety of portable inverters

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CONTENTS

AUSTRALIA/NEW ZEALAND STANDARD

SAFETY OF PORTABLE INVERTERS

FOREWORD

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 to supersede AS/NZS 4763 (Int):2006 and its amendments from the date of its publication.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements designed to give the user protection against hazards that might occur during normal operation and abnormal operation of an **inverter** and which may be used as the basis for approval for sale in Australia and New Zealand.

In converting the Interim edition of this Standard to a full joint Australia/New Zealand Standard, the opportunity has be taken update the normative references.

The essential safety requirements in AS/NZS 3820 that could be applicable to **portable inverters** have been taken into account in the drafting of this Standard. Furthermore, it has been assumed that the execution of its provisions is entrusted to appropriately qualified and experienced persons.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of this Standard.

The following print types are used:

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

Words in **bold** in the text are defined in clause 3. When a definition concerns an adjective, the adjective and associated noun are also in bold.

As this Standard follows the form of an International Standard, a full point substitutes for a comma when referring to a decimal marker.

AUSTRALIA/NEW ZEALAND STANDARD

SAFETY OF PORTABLE INVERTERS

1 Scope

This Standard applies to single-phase or polyphase, air-cooled (natural or forced) **portable inverters** having a **rated supply voltage** not exceeding 60 V ripple-free d.c. and an alternating current (a.c.) output where:

- the **rated output** does not exceed 3 kVA;
- the **rated output voltage** is within the range 50 – 500 V a.c;
- the **rated frequency** of the output is within the range 40 – 100 Hz.

NOTE 1 **Portable inverters** may be provided with facilities for fixing to a surface.

This Standard is applicable to **inverters** of the following types :

isolated inverters

equipotentialy bonded inverters

RCD protected inverters

These **inverters** are for

household and similar use,

use on construction sites, or

providing an independent supply to electrical installations in buildings, vehicles, caravans, boats and the like.

They may be fitted with terminals for the connection of d.c. supply or a **external flexible cord** fitted with battery clips or an automobile cigarette lighter plug or other d.c. plug.

NOTE 2 Examples of these types of **inverters** are

- **inverters** powered by a battery or other d.c. supply;
- **inverters** powered by a battery in a vehicle where the **body** of the vehicle is connected to the battery;
- **inverters** powered by a battery, where other circuits connected to the battery are accessible.

NOTE 3 Examples of devices excluded are

- AC semiconductor motor controllers and starters (IEC 60947-4-2)
- **inverters** used in an UPS system (IEC 62040 series);
- grid connected **inverters** (AS 4777.2);
- **inverters** in emergency escape lighting and exit signs for buildings; (AS 2293)
- electronic equipment used in power installations (IEC 62103)
- **inverter** - chargers

NOTE 4 This Standard is concerned only with the safety of **inverters**. It does not cover matters relating to **inverter** performance, efficiency, the output wave shape or prevention of electrolysis on steel hull boats

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply.