AS 62040.3—2002
IEC 62040-3:1999
(Incorporating Amendment No. 1)

Australian Standard™

Uninterruptible power systems (UPS)

Part 3: Method of specifying the performance and test requirements

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This Australian Standard was prepared by Committee EL-027, Power Electronics. It was approved on behalf of the Council of Standards Australia on 15 November 2002 and published on 17 December 2002.

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This Standard was issued in draft form for comment as DR 02438.

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First published as AS 62040.3—2002.
Reissued incorporating Amendment No. 1 (August 2003).

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Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 4955 0

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-027, *Power Electronics*.

*This Standard incorporates Amendment No. 1 (*August 2003*). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

The objective of this Standard is to provide manufacturers, designers and users with a means of specifying uninterruptible power supply systems.

This Standard has been reproduced from, and is technically identical to, IEC 62040-3:1999, *Uninterruptible power systems (UPS) Part 3: Method of specifying the performance and test requirements*.

A1 IEC 62040-3:1999 contained errors in Figures 4 and F.3 and Annex E and, after consultation with the IEC Committee, these errors have been corrected. In addition, notes have been added to some clauses to assist users of this Standard.

Variations to IEC 62040-3:1999 are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes 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). Added figures are not themselves shaded, but are identified by a shaded border.

The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

In this Standard, the following print types are used:

– requirements proper: in arial 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 international standard' should read 'this Australian Standard'.

(c) A full point should be substituted for a comma when referring to a decimal marker.

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Australian Standard

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Any IEC table, figure or passage of text that is struck-through is not part of this Standard. Any Australian table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 Scope and object

This standard applies to electronic indirect a.c. converter systems with electrical energy storage means in the d.c. link. The primary function of the uninterruptible power system (UPS) covered by this standard is to ensure continuity of an alternating power source. The uninterruptible power system may also serve to improve the quality of the power source by keeping it within specified characteristics.

A variety of uninterruptible power systems have been developed to meet consumers' requirements for continuity and quality of power for different types of loads over a wide range of power, from less than 100 W to several megawatts. Refer to annexes A and B for information on some of the types available.

This standard applies to electronic uninterruptible power systems (UPS):

a) delivering single- or three-phase fixed frequency a.c. output voltage;

b) with energy storage device in the d.c. link if not otherwise specified;

c) with rated voltage not exceeding 1 000 V a.c.;

d) movable, stationary and/or fixed equipment.

This standard also includes the method of specifying all power switches that form integral parts of a UPS and are associated with its output.

Included are interrupters, bypass switches, isolating switches, load transfer switches and tie switches. These switches interact with other functional units of the UPS to maintain continuity of load power.

This standard does not refer to conventional mains distribution boards, rectifier input switches or d.c. switches (for example for batteries, rectifier output or inverter input, etc.), or UPS based on rotating machines.

NOTE 1 This standard recognizes that the major market usage with the UPS ratings within its scope is in conjunction with information technology equipment.

Under current technology, the majority of UPS load equipment employs power supplies which present a non-linear load to the UPS and can be tolerant of non-sinusoidal voltage waveforms for a limited time duration. UPS output ratings are specified to be compatible with non-linear loading and linear loading, subject to manufacturers' declaration if different.

References within this standard to linear loading are retained for test method reasons, or validation of manufacturers' additional declaration.

NOTE 2 – For use of UPS with a non-sinusoidal output voltage waveform, beyond the stored-energy time recommended in this standard, the agreement of the load equipment manufacturer should be sought.

NOTE 3 – For UPS output frequencies other than 50 Hz or 60 Hz, performance specification is subject to agreement between manufacturer and purchaser.

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