Amendment 1 - May 1986
" 2 - November 1986.
" 3- December 1987.
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Australian Standard 3193—1984

APPROVAL AND TEST SPECIFICATION—

TRANSFORMER TYPE BATTERY CHARGERS

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
STANDARDS HOUSE, 80 ARTHUR ST, NORTH SYDNEY, N.S.W.

Incorporated by Royal Charter

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The following interests are represented on Committee EL/2:

Australian Consumers Association

Australian Electrical and Electronic Manufacturers Association

Confederation of Australian Industry

Consumer Electronics Suppliers Association

Electrical Apparatus Approvals Authorities

Electrical Testing Laboratories

Electricity Supply Association of Australia

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STANDARDS ASSOCIATION OF AUSTRALIA
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AMENDMENT No 1
to
AS 3193—1984
Approval and Test Specification—
TRANSFORMER TYPE BATTERY CHARGERS

REVISED TEXT

The 1984 edition of AS 3193 is amended as follows; the amendments should be inserted in the appropriate place.

SUMMARY: The following sections of the standard are covered by this amendment: Clauses 5.1.1, 13 and 17.9.

Published on 3 March 1986.

AS 3193/Amdt 2/1986-11-03

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AMENDMENT No 2
to
AS 3193—1984
APPROVAL AND TEST SPECIFICATION—TRANSFORMER TYPE BATTERY CHARGERS

REVISED TEXT

The 1984 edition of AS 3193 which was amended in 1986 is further amended as follows; the amendments should be inserted in the appropriate place.

SUMMARY: The following sections of the standard are covered by this amendment: Clauses 15.1, 15.2, 16 and Figure A1.

Published on 3 November 1986.

AS 3193/Amdt 3/1987-12-01

STANDARDS ASSOCIATION OF AUSTRALIA
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AMENDMENT No 3
to
AS 3193—1984
APPROVAL AND TEST SPECIFICATION FOR TRANSFORMER TYPE BATTERY CHARGERS

REVISED TEXT

The 1984 edition of AS 3193 which was amended in March and November 1986 is further amended as follows; the amendments should be inserted in the appropriate place.

SUMMARY: The following sections of the Standard are covered by this amendment: Clauses 4.1.1 and 4.2.

Published on 1 December 1987.

AS 3193/Amdt 4/1989-11-06

STANDARDS AUSTRALIA

Amendment No 4
to
AS 3193—1984
Approval and test specification—
Transformer type battery chargers

REVISED TEXT

The 1984 edition of AS 3193, which was amended in March 1986, November 1986 and December 1987, is further amended as follows; the amendment(s) should be inserted in the appropriate place.

SUMMARY: This Amendment applies to the Preface and Clause 5.1.3.

Published on 6 November 1989.

PREFACE

This edition of this specification was prepared by the Association's Committee EL/2, Electrical Approvals Standards.

It is one of a series of approval and test specifications issued by the Association. These specifications are accompanied by a general specification AS 3100, containing definitions and general requirements for electrical materials and equipment. The purpose of these specifications is to outline conditions which msut be met to secure approval for the sale and use of electrical equipment in Australia. Only safety matters and related conditions are covered.

This edition was published to incorporate into the specification changes to Clauses 2, 15.1, 15.2, 17.5, 17.6.1, 17.6.4 and 17.8 and Table 1 with regard to clarification of the testing requirements.

This specification supersedes AS 3193—1982 from date of publication.

The Association desires to call attention to the fact that this specification does not purport to include all the necessary provisions of a contract.

This specification requires reference to the following Australian standard approval and test specifications.

AS 3100 Definitions and General Requirements for Electrical Materials and Equipment
AS 3108 Isolating transformers and safety isolating transformers SEE AMENDMENT 4
AS 3109 Appliance Couplers for Household and Similar General Purposes
AS 3122 Plugs and Plug Sockets
AS 3121 Insulating Mouldings
~~AS 3126—Extra-low-Voltage Transformers~~
AS 3133 Air Break Switches
AS 3161 Thermostats and Energy Regulators
AS 3191 Electric Flexible Cords

and to AS 1939, Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment. In addition, reference to other approval and test specifications may be required for approval of particular components incorporated in transformer type battery chargers (see Clause 3.3).

AMDT No 4 NOV. 1989 **Preface.**

Delete the reference to AS 3126, Extra-low voltage transformers, and *substitute* AS 3108, Isolating transformers and safety isolating transformers.

This Amendment forms part of the Specification on publication.

CONTENTS

AMDT No 3 DEC. 1987

Page 5. Clause 4.1.1.

Item (a)

1. *Delete* the first sentence and *substitute* the following 'Group 1 or Group 2 appliance coupler complying with AS 3109.1'.

2. *Delete* all the words after 'AS 3100'.

This amendment forms part of the specification on publication.

AMDT No 3 DEC. 1987

Page 5. Clause 4.2.

Delete item (c) and *substitute* the following:

(c) a socket-outlet which will not accept plugs conforming to Fig. 2.1 of AS 3112 nor connectors conforming to AS 3109.1.

This amendment forms part of the specification on publication.

AMDT No 1 MAR. 1986

Page 5. Clause 5.1.1.

Add the following:

or comply with AS 3108.

This amendment forms part of the specification on publication.

AMDT No 4 NOV. 1989

Page 6. Clause 5.1.3.

Delete 'Appendix A of AS 3126' in Item (b) and *substitute* AS 3108.

This Amendment forms part of the Specification on publication.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

APPROVAL AND TEST SPECIFICATION— TRANSFORMER TYPE BATTERY CHARGERS

This specification shall be read in conjunction with AS 3100. (See also Clause 3, below.)

1 SCOPE. This specification applies to fixed and portable transformer type battery chargers with input ratings not exceeding 2.5 kV.A, intended primarily for charging automotive type batteries.

For the purpose of this specification a transformer type battery charger is referred to hereinafter as a 'charger'.

2 DEFINITIONS. For the purpose of this specification the following definitions apply:

2.1 Rated charging voltage—the charging voltage(s) of the charger as given on the nameplate. This may be the nominal voltage of the battery to be charged.

NOTE: The rated charging voltage of a battery charger equals the product of the number of cells connected in series and the nominal voltage of one cell of the battery for which the charger is intended to be used.

2.2 Rated charging current—the direct current charging current(s) of the charger as given on the nameplate.

2.3 Normal load—the load obtained when the battery charger is operated at rated input voltage or at the upper limit of the rated input voltage range, the output circuit being connected as described in Clause 17.5.

3 COMPLIANCE WITH SPECIFICATIONS.

3.1 General requirements of AS 3100. This specification shall be read in conjunction with AS 3100, and the appropriate provisions of AS 3100 shall apply to the construction of the charger and the insulation and/or safeguarding of parts which normally carry current.

3.2 Specific requirements of this specification. A charger shall be deemed to conform to this specification only if it complies with all the requirements of this specification and passes the tests specified herein.

3.3 Requirements of other specifications. Components incorporated in a charger which are depended upon for safety shall comply with the appropriate requirements of any relevant approval and test specification unless such requirements are varied herein.

4 MEANS OF CONNECTION.

4.1 Input facilities.

4.1.1 *Connection by flexible cord.* Every charger designed for connection by means of a flexible cord shall be provided with one of the following means of connection to the supply:

(a) ~~A Type C appliance plug and appliance inlet socket complying with AS 3109. The socket shall be so arranged that the temperature of the inserted plug will not exceed the limiting temperatures specified in AS 3100 for the materials used when the charger is operated under the conditions prescribed in Clause 17.5.~~ SEE AMENDMENT 3

(b) A power supply cord which shall be assembled with the appliance by one of the following methods:

Type X attachment.
Type M attachment.
Type Y attachment.

4.1.2 *Flexible cord and connecting plug.* Every charger designed for connection to supply by flexible cord shall be provided with a supply flexible cord and an appropriate connecting plug.

The supply flexible cord shall—

(a) be of a type complying with AS 3191 and not inferior to—

(i) ordinary duty sheathed type, for chargers with a mass of not exceeding 2.2 kg; or

(ii) a heavy duty sheathed type, for all other chargers;

(b) be correctly wired in accordance with the appropriate requirements of Clause 4.4 of AS 3100; and

(c) have a free length of not less than 1.8 m.

4.1.3 *Permanent connection.* A charger designed for connection to supply circuit wiring shall comply with the relevant requirements of Clause 4.9 of AS 3100.

4.2 Output facilities. Facilities for connection to the output of a charger shall be suitable for the intended use and shall be in the following form:

(a) Connecting terminals which shall be accessible for user connection without exposing any terminal or live part on the input side.

(b) Insulated flexible conductors connected to internal terminals or wiring with suitable means to substantially reduce stress on the terminals. Compliance with requirements of Clause 4.5.3 of AS 3100 is only required if the segregation required by Clause 5.2 herein would be rendered ineffective by a conductor breaking from the terminal.

(c) ~~A plug-socket which will not accept plugs conforming to Fig. 2.1 of AS 3112 nor Type A or B appliance plugs conforming to AS 3109.~~ SEE AMENDMENT 3

The output circuit shall be insulated from the earth terminal, accessible case or external metal so that tests specified in Clauses 17.2 and 17.3 are satisfied.

5 DESIGN AND CONSTRUCTION.

5.1 Transformer.

5.1.1 *General.* Every charger transformer shall comply with the design and construction requirements of Clauses 5.1.2 and 5.1.3. SEE AMENDMENT No. 1. ADDITION.

5.1.2 *Separation.* The following requirements shall apply in respect of separation:

(a) The input and output windings shall be electrically isolated from each other.