AS/NZS 3190:2002
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Approval and test specification—Residual current devices (current-operated earth-leakage devices)

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-004, Electrical Accessories. It was approved on behalf of the Council of Standards Australia on 8 April 2002 and on behalf of the Council of Standards New Zealand on 4 April 2002. It was published on 16 May 2002.

The following are represented on Committee EL-004:

Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Canterbury Manufacturers Association, New Zealand
Consumer Electronic Suppliers Association
Electricity Supply Association of Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-004, Electrical Accessories to supersede AS 3190—1994, *Approval and test specification—Residual current devices (current-operated earth-leakage devices)* from the date of publication.

This Standard incorporates Amendment No. 1 (November 2002). 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 Australian and New Zealand electrical industries (including manufacturers, test laboratories, installers and regulators) with electrical safety requirements and test methods for residual current devices (current-operated earth-leakage devices).

This Standard is one of a series of Approval and Test Specifications to be read in conjunction with AS/NZS 3100, *Approval and test specification—General requirements for electrical equipment*. The purpose of this series is to outline conditions which must be met to secure approval for the sale and use of electrical equipment in Australia and New Zealand. Only safety matters and related conditions are covered.

This Standard was revised to introduce editorial changes and the following technical changes:

(a) Scope changed to cover increased rated load currents.

(b) Definitions included for ‘switched neutral pole’, ‘unprotected pole’, ‘break time’ and ‘minimum non-actuating time’.

(c) Introduction of requirements and tests for Type FS and Type FSE devices.

(d) New marking requirements and installation information.

(e) Increase in impulse withstand test voltage.

(f) Better specification of ‘ring wave’ test by reference to AS/NZS 3175.

(g) Allowance for disconnection of electronic circuits for some tests.

(h) Introduction of tests to detect ‘non-tripping’ zones.

(i) Introduction of values of resistance required for d.c. pulse tests at nominal supply voltages of 230 V and 240 V.

(j) Deletion of the original Appendices A, C and E as requirements are now contained in the body of the Standard.

(k) Consequential increase in the conjunction of AS/NZS 3175, AS/NZS 3190 and AS/NZS 61009.

A series of Australian/New Zealand Standards was published to apply to residual current-operated circuit-breakers without integral overcurrent protection for household and similar use. This series of Standards contains modified versions of IEC 61008-1:1990, IEC 61008-2-1:1990 and IEC 61008-2-2:1990. The titles of the IEC Standards were retained but modified by addition of the words Approval and test specification. They are published as the AS/NZS 3175 series of Standards. In addition AS/NZS 61009.1 was published to apply to residual current-operated circuit-breakers with integral overcurrent protection for household and similar use (RCBOs). AS/NZS 61009.1 is a modified version of IEC 61009-1:1996 with the title of the IEC Standard unchanged.

These Standards will replace AS/NZS 3190 in part, 10 years from the publication of this Standard. During this period it is anticipated that regulatory authorities will approve devices within the scope of AS/NZS 3175 or AS/NZS 61009.1 to either those Standards or to this Standard.

There is a general acceptance that Type III and Type IV residual current devices do not provide adequate personal protection however, they are within the scope of this Standard.

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies.

This Standard does not purport to include all the necessary provisions of a contract.

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1 SCOPE AND REFERENCED DOCUMENTS

1.1 Scope

This Standard applies to residual current devices and residual current relays intended to isolate supply or initiate a 'tripping' signal to isolate supply to protected circuits, socket-outlets or equipment in the event of a current flow to earth, which exceeds a predetermined level, and —

(a) have rated residual currents not exceeding 300 mA;

(b) have rated load currents not exceeding 125 A a.c.; and

(c) designed for use at low voltage.

The devices may be fixed or portable or, may be integral with a switching device or miniature overcurrent circuit breaker or, may be supplied as a separate attachment.

This Standard does not apply to—

(i) devices intended to be used with a particular circuit breaker other than a miniature overcurrent circuit-breaker, as defined in AS 3111; or

(ii) devices intended to protect an electricity authority distribution system; or

(iii) devices covered by AS 2081 and for protection of equipment for mines.

1.2 Referenced documents

The following documents are referred to in this Standard.

STANDARDS

AS	
1931	High-voltage testing techniques
1931.1	General definitions and test requirements
1939	Degrees of protection provided by enclosures for electrical equipment (IP Code)
2081	Electrical equipment for coal and shale mines—Electrical protection devices
2081.3	Earth-leakage protection devices for use on systems incorporating earth-fault current limiters
AS/NZS	
3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
3350	Safety of household and similar electrical appliances
3350.1	Part 1: General requirements
IEC	
60068	Environmental testing
60068-1	Part 1: General and guidance
60068-2-30	Part 2: Tests. Test Db and guidance: Damp heat, cyclic (12+12-hour cycle)