

Australian/New Zealand Standard™

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



## **AS/NZS 3190:2016**

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 16 March 2016 and by the Standards New Zealand Approval Board on 20 April 2016.  
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Consumer Electronics Suppliers Association  
Consumers Federation of Australia  
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# Australian/New Zealand Standard™

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

Originated in Australia as AS 3190—1974.  
First New Zealand edition AS/NZS 3190:2002.  
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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/NZS 3190:2011, *Approval and test specification—Residual current devices (current-operated earth-leakage devices)*.

This Standard will exist in parallel to the deemed to comply Standards listed in Clause 3.2.

The essential safety requirements in AS/NZS 3820, *Essential safety requirements for electrical equipment*, that could be applicable to residual current devices (current-operated earth-leakage devices) are covered by this Standard taken in conjunction with any other relevant requirements affecting safety.

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 that need to 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.

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.

This Standard was revised to introduce the following changes:

- (a) SRCD, EPOD, MCB, RCBO and RCCB definitions added.
- (b) Clause 8.1.1 text relating to Table 4 revised.
- (c) Table 4 reformatted, sample selection modified and footnotes incorporated into Clause 8.1.1.
- (d) Reinstate Clause 8.16.1 prospective current test values.
- (e) Delete Appendix C (AS/NZS 3012 PSOA reference) and reference in Clause 7.3.2.2.
- (f) Insulation resistance test parameters in Clause 8.2 clarified.
- (g) General editorial revision and correction of some minor errors.

*Exceptions: These occur in the main body of the text as italic print and are exceptions or variations to mandatory requirements. These give specific examples where the essential requirements do not apply or where they are varied for certain applications.*

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

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

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## STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

**Australian/New Zealand Standard****Approval and test specification—Residual current devices (current-operated earth-leakage devices)****1 SCOPE AND REFERENCED DOCUMENTS****1.1 Scope**

This Standard specifies essential safety requirements for 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.;
- (c) are designed for use at low voltage; and
- (d) are classified in accordance with Clause 4.

The devices may be either fixed or portable; integral with a switching device; miniature overcurrent circuit breaker; or 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/NZS 3111 or AS/NZS 60898.1;
- (ii) devices intended to protect an electricity authority distribution system; or
- (iii) devices for the protection of equipment for mines and covered by the AS/NZS 2081 series of Standards.

**1.2 Referenced documents**

The following documents are referred to in this Standard:

## AS

- |            |   |
|------------|---|
| 1931       | High-voltage test techniques  |
| 1931.1     | Part 1: General definitions and test requirements                             |
| 60068      | Environmental testing   |
| 60068.2.30 | Part 2.30: Tests—Test Db and guidance: Damp heat, cyclic (12 + 12-hour cycle) |

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|-------|--|
| 60529 | Degrees of protection provided by enclosures (IP Code) |
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## AS/NZS

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|------|---|
| 2081 | Electrical protection devices for mines and quarries                          |
| 3003 | Electrical installations—Patient areas  |
| 3012 | Electrical installations—Construction and demolition sites                    |
| 3100 | Approval and test specification—General requirements for electrical equipment |
| 3105 | Approval and test specification—Electrical portable outlet devices            |
| 3111 | Approval and test specification—Miniature overcurrent circuit-breakers        |
| 3112 | Approval and test specification—Plugs and socket-outlets                      |