

Australian/New Zealand Standard™

**Circuit-breakers for overcurrent
protection for household and similar
installations**

**Part 2: Circuit-breakers for a.c. and d.c.
operation
(IEC 60898-2, Ed. 1.1 (2003) MOD)**

AS/NZS 60898.2:2004

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 25 June 2004 and on behalf of the Council of Standards New Zealand on 9 July 2004.

This Standard was published on 13 August 2004.

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
Ministry of Economic Development (New Zealand)
National Electrical and Communications Association
Plastics Industry Pipe Association of Australia
Regulatory Authorities (Electrical)
Telarc New Zealand
Testing Interests (Australia)

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

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 International or Standards New Zealand at the address shown on the back cover.

Australian/New Zealand Standard™

**Circuit-breakers for overcurrent
protection for household and similar
installations**

**Part 2: Circuit-breakers for a.c. and d.c.
operation
(IEC 60898-2, Ed. 1.1 (2003) MOD)**

First published as AS/NZS 60898.2:2004.

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 3830 3

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-004, Electrical Accessories.

This Standard forms the first edition of AS/NZS 60898.2, *Circuit-breakers for overcurrent protection for household and similar installations Part 2: Circuit-breakers for a.c. and d.c. operation*.

The objective of this Standard is to provide Australian and New Zealand electrical industries, manufacturers and regulatory bodies with safety requirements for circuit-breakers for a.c. and d.c. operation, and which may be used as the basis for approval for sale or for connection to supply in Australia and New Zealand. This Standard is to be used in conjunction with AS/NZS 60898.1.

This Standard is an adoption with national modifications and has been reproduced from, IEC 60898-2, Ed. 1.1 (2003), *Circuit-breakers for overcurrent protection for household and similar installations—Part 2: Circuit-breakers for a.c. and d.c. operation* which includes Amendment 1:2003.

The clauses of this Standard supplement or modify the corresponding clauses of AS/NZS 60898.1. When a particular clause of AS/NZS 60898.1 is not mentioned in this Standard, the clause of AS/NZS 60898.1 applies without modification as far as is reasonable. Where this Standard states ‘addition’, ‘modification’ or ‘replacement’, the relevant requirement, test specification or explanatory matter in AS/NZS 60898.1 should be adapted accordingly.

Clauses which are additional to those in AS/NZS 60898.1 are numbered starting from 101.

Variations to IEC 60898-2 to take account of Australian/New Zealand conditions are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Australian/New Zealand 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.

Variations made to IEC 60898-2 form the Australian/New Zealand variations for the purposes of the CB scheme for recognition of testing to standards for safety of electrical equipment. These variations have been incorporated in the body of the standard. They are listed in Annex ZZ for easy reference.

This Standard will exist in parallel with AS/NZS 3111, *Approval and test specifications—Miniature overcurrent circuit-breakers* (and any revisions thereof). Both this Standard and AS/NZS 3111 are acceptable for miniature overcurrent circuit-breakers.

The essential safety requirements in AS/NZS 3820 that could be applicable to miniature circuit-breakers are covered by this Standard taken in conjunction with any other relevant requirements affecting safety.

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 roman type;
- *test specifications: in italic type;*
- notes: in smaller roman 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) A full point should be substituted for a comma when referring to a decimal marker.
This Standard does not purport to include all the necessary conditions of a contract.

CONTENTS

	<i>Page</i>
1 Scope and object	1
2 Normative references	1
3 Definitions	1
4 Classification	1
5 Characteristics of circuit-breakers	2
6 Marking and other product information	3
7 Standard conditions for operation in service	4
8 Requirements for construction and operation	4
9 Tests	5
 Annexes	 12
Annex C	12
 Figure 7b – Calibration of the test circuit in case of direct currents	 10
Figure 18 – Examples of connections of the circuit-breakers in different d.c. systems	11
 Table 1 – Preferred values of rated voltage	 2
Table 2 – Ranges of instantaneous tripping	3
Table 7 – Time-current operating characteristics	4
Table C.1 – Test sequences	12
Table C.2 – Number of samples for full test procedure	13

AUSTRALIA/NEW ZEALAND

Australian/New Zealand Standard**Circuit-breakers for overcurrent protection
for household and similar installations
Part 2: Circuit-breakers for a.c. and d.c. operation
(IEC 60898-2, Ed. 1.1 (2003) MOD)**

Any table, figure or text of the international standard that is struck through is not part of this standard. Any Australian/New Zealand table, figure or text that is added is part of this standard and is identified by shading.

1 Scope and object

This clause of Part 1 is applicable except as follows:

Addition at the end of the first paragraph:

This standard gives additional requirements for single- and two-pole circuit-breakers which, in addition to the above characteristics, are suitable for operation with direct current, and have a rated d.c. voltage not exceeding 220 V for single-pole and 440 V for two-pole circuit-breakers, a rated current not exceeding 125 A and a rated d.c. short-circuit capacity not exceeding 10 000 A.

NOTE This standard applies to circuit-breakers able to make and break both a.c. current and d.c. current.

Delete the last two paragraphs.

2 Normative references

This clause of Part 1 applies.

Delete IEC 61009-1:1991, IEC 61009-2-1:1991 and IEC 61009-2-2:1991.

3 Definitions

Clause 3 of Part 1 applies with the following modification:

Addition:

3.5.10.3

time constant

the rise time $T = L/R$ (ms) of a prospective direct current to reach a value of 0,63 times the maximum peak current

4 Classification

Clause 4 of Part 1 applies with the following modifications: