

Australian Standard<sup>®</sup>

**A method of temperature-rise  
assessment by extrapolation for  
partially type-test assemblies (PTTA) of  
low-voltage switchgear and controlgear  
(IEC 60890, Ed. 1.0 (1987) MOD)**



This Australian Standard® was prepared by Committee EL-006, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 28 September 2009.

This Standard was published on 11 November 2009.

---

The following are represented on Committee EL-006:

- Australasian Railway Association
  - Australian Chamber of Commerce and Industry
  - Australian Electrical and Electronic Manufacturers Association
  - Bureau of Steel Manufacturers of Australia
  - Engineers Australia
  - National Electrical Switchboard Manufacturers Association
  - Testing Interests (Australia)
- 

This Standard was issued in draft form for comment as DR 07167.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

---

### **Keeping Standards up-to-date**

Australian Standards® are living documents that 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Standards may also be withdrawn.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 that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting **[www.standards.org.au](http://www.standards.org.au)**

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at **[mail@standards.org.au](mailto:mail@standards.org.au)**, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

---

AS 60890—2009

Australian Standard<sup>®</sup>

**A method of temperature-rise  
assessment by extrapolation for  
partially type-test assemblies (PTTA) of  
low-voltage switchgear and controlgear  
(IEC 60890, Ed. 1.0 (1987) MOD)**

First published as AS 4388—1996.  
Re-numbered and redesignated as AS 60890—2009.

**COPYRIGHT**

© Standards Australia

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.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 9303 7

## PREFACE

This Standard was prepared by the Standards Australia Committee EL-006, Industrial Switchgear and Controlgear, to supersede AS 4388—1996, *A method of temperature-rise assessment by extrapolation for partially type-tested assemblies (PTTA) of low-voltage switchgear and controlgear*, from the date of publication.

The objective of this Standard is to provide Australian and New Zealand electrical industries with methods to determine the temperature rise of air inside low-voltage switchgear and switchgear assemblies by extrapolation of results obtained by tests carried out on other assemblies.

This Standard was revised to introduce a new Annex ZA, which contains information on operating current, power loss and advisable maximum temperatures of copper busbars.

This Standard is an adoption with national modifications and has been reproduced from, IEC/TR 60890, Ed. 1.0 (1987), *A method of temperature-rise assessment by extrapolation for partially-tested assemblies (PTTA) of low-voltage switchgear and controlgear*, including its Corrigendum: 1988 and Amendment 1:1995, and has been varied as indicated to take account of Australian/New Zealand conditions.

Variations to IEC/TR 60890, Ed. 1.0 (1987) are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures that, 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.

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.
- (d) Any French text on figures should be ignored.

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.

## CONTENTS

	<i>Page</i>
1 Introduction .....	1
2 Scope .....	1
3 Object .....	1
4 Conditions for application .....	1
5 Calculation .....	2
5.1 Necessary information .....	2
5.2 Calculation procedure .....	2
6 Evaluation of the design .....	5
Annex A Examples for the calculations of the temperature rise of air inside enclosures .....	15
Annex B Operating current and power losses of conductors .....	22
Annex ZA (normative) Operating current and power loss of copper busbars .....	26

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- Looking for additional Standards? Visit Intertek Inform Infostore
  - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-