

AS 3439.1—1993  
Type-tested and partially type-tested assemblies  
(IEC 439-1:1992)  
(In Professional Package 24) 135pp L  
Specifies requirements for type-tested and partially type-tested low voltage switchgear and controlgear assemblies for rated voltages up to 1000 V a.c. at frequencies not exceeding 1000 Hz, or 1500 V d.c. Applies to assemblies intended for use with generation, transmission, distribution and conversion of electrical energy and the control of electrical energy consuming equipment. This Standard is technically equivalent to and has been reproduced from IEC 439-1:1992.

Committee EL6: Supersedes AS 1136.1—1988:  
Draft for Comment Oct 88/127; Publication date 1993-12-20; ISBN 0 7262 8623 0.



Amdt 1. 1989-03-13

WITHDRAWN T&S  
DECEMBER 1993  
SK BY  
AS 3439.1-1993

AS 1136.1—1988

Standards  
Association of  
Australia



# Australian Standard® 1136.1—1988

## LOW VOLTAGE SWITCHGEAR AND CONTROLGEAR ASSEMBLIES Part 1—GENERAL REQUIREMENTS

This Australian Standard was prepared by Committee EL/6, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of the Standards Association of Australia on 22 December 1987 and published on 7 March 1988.

---

The following interests are represented on Committee EL/6:

Australian-British Chamber of Commerce  
Australian Electrical and Electronic Manufacturers Association  
Bureau of Steel Manufacturers of Australia  
Department of Defence  
Electrical Contractors Associations of Australia  
Electricity Supply Association of Australia  
Independant Electrical Switchboard Manufacturers Association Ltd  
Institution of Engineers, Australia  
Metropolitan Water Sewerage and Drainage Board (Sydney)  
Testing authorities

---

**Review of Australian Standards.** To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up-to-date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all SAA publications will be found in the Catalogue of SAA Publications; this information is supplemented each month by SAA's journal 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of the Association, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

---

*This Standard was issued in draft form for comment as DR 86175.*

**AUSTRALIAN STANDARD**

**LOW VOLTAGE SWITCHGEAR AND  
CONTROLGEAR ASSEMBLIES**  
**Part 1**  
**GENERAL REQUIREMENTS**

**AS 1136.1—1988**

First published as AS 1136—1974.  
Second edition 1980.  
Revised and redesignated AS 1136.1—1988.

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

ISBN 0 7262 4884 3

## PREFACE

This Standard was prepared by the Association's Committee on Industrial Switchgear and Controlgear to supersede AS 1136—1980, *Switchgear and controlgear assemblies for voltages up to 1000 V a.c.*

It is based on the 1985 edition of IEC 439-1, *Low-voltage switchgear and controlgear assemblies, Part 1: Requirements for type-tested and partially type-tested assemblies*, and acknowledgement is made of the assistance received from this source. Further Standards in this series are under consideration to cover particular requirements for assemblies to which unskilled persons may have access for their use and assemblies for construction sites.

In this Standard a type-tested low-voltage switchgear and controlgear assembly is referred to by the abbreviation TTA. Similarly a partially type-tested assembly is referred to by the abbreviation PTTA. When both a TTA and a PTTA are being referred to, the word 'assembly' (or 'assemblies') is used. The Standard defines what is meant by an assembly, a TTA and a PTTA.

This Standard differs significantly from IEC 439-1 and this is indicated both in Appendix L and by a rule in the margin against the clause or part thereof affected. Some important differences are as follows:

- (a) The manufacturer of an assembly is responsible for the correct selection and installation of components having regard to their conditions of use within the assembly including any necessary derating. Appendix J has been added concerning the selections of components.
- (b) Minimum impulse withstand voltages and minimum creepage distances are specified.
- (c) The typical forms of segregation have been extended to cover a number of variations frequently encountered.
- (d) Appendix B lists items subject to agreement between the purchaser and the manufacturer.
- (e) Appendix D is included to give guidance for the design of assemblies intended to provide increased security against the occurrence of or the effects of internal arcing faults.
- (f) Appendix E is included for the verification of the performance of assemblies designed in accordance with the guidelines set out in Appendix D. It specifies standard test conditions with the arc initiated by the connection of fuse wire at selected terminals or connections on the load side of the protective device within each compartment tested and insulation may be removed for this purpose. It also provides for special internal arcing fault tests, which may be required.
- (g) Tests carried out on assemblies to Appendix E of previous editions of AS 1136 are recognized as meeting either the standard test or a special test to Appendix E of this Standard.
- (h) Appendix F is included to show the types of system earthing for which assemblies may need to be designed.
- (i) Alternative test method for Test Duties 1 and 2 is given in Appendix K.

© Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1988

Users of Standards are reminded that copyright subsists in all SAA publications. Except where the Copyright Act otherwise allows, no part of this publication may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing of the Standards Association of Australia. Requests for permission should be directed to the Head Office of the Association. Where such requests relate to the reproduction of the whole or a substantial part of any Standard, permission may be conditional on an appropriate royalty payment.

## CONTENTS

	<i>Page</i>
<b>SECTION 1. SCOPE AND OBJECT</b>	
1.1 SCOPE ....	5
1.2 OBJECT ....	5
1.3 REFERENCED DOCUMENTS ....	5
1.4 COMPLIANCE ....	5
<b>SECTION 2. DEFINITIONS</b>	
2.1 GENERAL ....	6
2.2 GENERAL DEFINITIONS ....	6
2.3 CONSTRUCTIONAL UNITS ....	6
2.4 EXTERNAL DESIGN (TYPES) ....	7
2.5 STRUCTURAL PARTS ....	7
2.6 CONDITIONS OF INSTALLATION ....	7
2.7 PROTECTIVE MEASURES WITH REGARD TO ELECTRIC SHOCK ....	7
2.8 GANGWAYS ....	8
2.9 ELECTRONIC FUNCTIONS ....	8
<b>SECTION 3. DESCRIPTION OF ASSEMBLIES</b>	
3.1 GENERAL ....	9
<b>SECTION 4. ELECTRICAL CHARACTERISTICS</b>	
4.1 RATED VOLTAGES ....	10
4.2 RATED CURRENT OF A CIRCUIT ....	10
4.3 RATED SHORT-TIME WITHSTAND CURRENT OF A CIRCUIT ....	10
4.4 RATED PEAK WITHSTAND CURRENT OF A CIRCUIT ....	10
4.5 RATED PROSPECTIVE SHORT-CIRCUIT WITHSTAND CURRENT OF A CIRCUIT ....	10
4.6 RATED CONDITIONAL SHORT-CIRCUIT CURRENT OF A CIRCUIT ....	10
4.7 RATED FUSED SHORT-CIRCUIT CURRENT OF A CIRCUIT ....	10
4.8 RATED DIVERSITY FACTOR ....	10
4.9 RATED FREQUENCY ....	10
4.10 PREFERRED SHORT-CIRCUIT CAPACITY ....	11
<b>SECTION 5. INFORMATION TO BE PROVIDED BY THE MANUFACTURER</b>	
5.1 GENERAL ....	12
5.2 NAMEPLATES ....	12
5.3 MARKINGS ....	12
5.4 INSTRUCTIONS FOR INSTALLATION, OPERATION AND MAINTENANCE ....	12
5.5 MARKING OF TERMINALS FOR EXTERNAL CONDUCTORS	12
<b>SECTION 6. SERVICE CONDITIONS</b>	
6.1 NORMAL SERVICE CONDITIONS ....	13
6.2 SPECIAL SERVICE CONDITIONS ....	13
6.3 CONDITIONS DURING TRANSPORT, STORAGE AND ERECTION ....	13
<b>SECTION 7. DESIGN AND CONSTRUCTION</b>	
7.1 GENERAL ....	14
7.2 DIELECTRIC REQUIREMENTS ....	14
7.3 TERMINALS FOR EXTERNAL CONDUCTORS ....	14

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
-