

AS 1103.6—1981  
UDC 003.62:621.3

# Australian Standard 1103, Part 6—1981

---

WITHDRAWN TAG  
MAY 1996  
S/S BY  
AS/NZS 4293.3-1996

**DIAGRAMS, CHARTS AND TABLES  
FOR ELECTROTECHNOLOGY**

## **Part 6—PREPARATION OF UNIT WIRING DIAGRAMS AND TABLES**

---



**STANDARDS ASSOCIATION OF AUSTRALIA**  
*Incorporated by Royal Charter*

THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Australian Electrical and Electronic Manufacturers Association  
Australian Institute of Refrigeration, Air Conditioning and Heating  
Incorporated  
Confederation of Australian Industry  
Department of Defence  
Department of Housing and Construction  
Department of Industry and Commerce  
Department of Transport  
Electricity Supply Association of Australia  
Institute of Draftsmen, Australia  
Institution of Radio and Electronics Engineers, Australia  
Melbourne and Metropolitan Board of Works  
Queensland Chamber of Mines  
Railways of Australia Committee  
Technical press  
Telecom Australia

---

This standard, prepared by Committee TE/13, Symbols, Units and Quantities for Electrotechnology, was approved on behalf of the Council of the Standards Association of Australia on 2 April 1981, and was published on 1 July 1981.

---

To keep abreast of progress in industry, Australian standards are subject to continuous 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 their standards are up-to-date. Full details of all SAA publications will be found in the Annual List of Australian Standards; these details are supplemented by listings in the SAA monthly journal 'The Australian Standard'. Information on the Annual List and 'The Australian Standard' may be obtained from any sales office of the Association, where details are also available of the current status of individual standards. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

---

*This standard was issued in draft form for public review as DR 77188.*

**AUSTRALIAN STANDARD**

**DIAGRAMS, CHARTS AND TABLES  
FOR ELECTROTECHNOLOGY**

**Part 6  
PREPARATION OF UNIT  
WIRING DIAGRAMS AND  
TABLES**

**AS 1103, Part 6—1981**

First published .....1981

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

ISBN 0 7262 2261 5

## PREFACE

This standard is a further Part in the series of standards on diagrams, charts and tables being prepared by the Association's Committee on Symbols, Units and Quantities for Electrotechnology under the authority of both the Telecommunications and Electronics Standards Board and the Electrical Standards Board.

In its terminology and general treatment of the subject, this standard is consistent with the recommendations of IEC 113-6:1976 issued by the International Electrotechnical Commission, and acknowledgement is made of the assistance received from this source. Some additional material has been included to better explain the tabular forms which can be used by themselves or in combination with diagrams. As a result the layout has been considerably altered.

The purpose of this standard is to provide guidelines for the preparation of unit wiring diagrams and tables that present information on the internal electrical connections of a unit or assembly of units. Such diagrams and/or tables are intended primarily for manufacturing or maintenance purposes. Diagrams and tables may be supplementary and either may contain information from other documents, e.g. working diagrams, circuit diagrams or parts lists.

The series of which this standard forms part is complementary to AS 1100, Drawing Practice, and AS 1102, Graphical Symbols for Electrotechnology. Reference should be made to AS 1100 for relevant information on matters specific to drawing practice which are not covered in this or other Parts of AS 1103.

For a fuller understanding of the methods adopted in this standard, reference will also be required to the following Australian standards:

|         |   |
|---------|---|
| AS 1046 | Letter Symbols for use in Electrotechnology<br>Part 1—General<br>Part 2—Telecommunications and Electronics  |
| AS 1100 | Drawing Practice  |
| AS 1102 | Graphical Symbols for Electrotechnology   |
| AS 1103 | Diagrams, Charts and Tables for Electrotechnology<br>Part 1—Definitions and Classifications<br>Part 2—Item Designation<br>Part 3—Basic Principles for the Presentation of Electrical Diagrams<br>Part 4—Guiding Principles for the Preparation of Circuit Diagrams<br>Part 5—Preparation of Interconnection Diagrams and Tables |
| AS 2067 | Switchgear Assemblies and Ancillary Equipment for Alternating Voltages Above 1 kV   |

© Copyright — STANDARDS ASSOCIATION OF AUSTRALIA 1981

Users of standards are reminded that copyright subsists in all SAA publications. 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.

## CONTENTS

|   | <i>Page</i> |
|---|-------------|
| 1 SCOPE ....                                      | 4           |
| 2 PURPOSE OF UNIT WIRING DIAGRAMS AND TABLES .... | 4           |
| 3 DEFINITIONS ....                                | 4           |
| 4 ITEM DESIGNATION AND MARKING ....               | 4           |
| 5 LAYOUT ....                                     | 4           |
| 6 VIEW OF EQUIPMENT ....                          | 4           |
| 7 COMPONENTS, DEVICES AND PARTS ....              | 4           |
| 8 TERMINALS ....                                  | 5           |
| 9 WIRING ....                                     | 5           |
| 10 UNIT WIRING TABLES ....                        | 6           |
| 11 EXAMPLES OF WIRING DIAGRAMS ....               | 8           |

## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**  
for  
**DIAGRAMS, CHARTS AND TABLES FOR ELECTROTECHNOLOGY**

**PART 6—PREPARATION OF UNIT WIRING DIAGRAMS AND TABLES**

**1 SCOPE.** This Part of the standard sets out guiding principles to be followed in the preparation of unit wiring diagrams and tables used in electro-technology. Such diagrams and tables are intended primarily for manufacturing and maintenance purposes.

The representation of printed circuits is not included in this standard.

**2 PURPOSE OF UNIT WIRING DIAGRAMS AND TABLES.** Unit wiring diagrams and tables provide information on the internal electrical connections of a unit or assembly of units.

Information on the external connections between units is not usually included, but references to the appropriate interconnection diagrams or tables may be provided.

Unit wiring diagrams and tables may supplement one another, and both may also contain information from other documents, such as working drawings, circuit diagrams, parts lists, etc.

**3 DEFINITIONS.** For the purpose of this Part of the standard the definitions of AS 1103, Part 1 apply.

**4 ITEM DESIGNATION AND MARKING.**

**4.1 Item Designation—General.** Item designations for components, devices and parts are shown in accordance with AS 1103, Part 2. However, in accordance with that standard other designations may be used provided that they are explained.

Item designations appearing on the wiring diagram or table should be the same as those on the corresponding circuit diagram and associated documentation.

**4.2 Identification of Wiring.** Cables, cores or conductors may be identified by a simple numerical designation. Where it is considered necessary, further identification shall be given by at least one of the following methods:

- (a) Showing (on the drawing) markings or colour codings that exist on the wiring.
- (b) Explaining (on the drawing or in supporting documentation) a code assigned on an overall system basis.
- (c) Including (on the drawing) supplementary information such as conductor function, size, length, screening and voltage rating.

NOTE: A system of identifying conductors by function is given in AS 2067.

**4.3 Terminals.** Each point of termination should be identified by at least one of the following:

- (a) A marking appearing on the actual item.

- (b) A designation appearing in associated documentation.

- (c) An arbitrary designation explained in the wiring information.

NOTE: The designation of terminals in a diagram may be omitted if no ambiguity arises.

**4.4 Abbreviations for Colours.** Where colours are indicated on a diagram, the following abbreviations shall be used:

|              |    |                 |   |
|--------------|----|-----------------|---|
| Black .....  | BK | Red .....       | R |
| Blue .....   | B  | Slate .....     | S |
| Brown .....  | BN | Turquoise ..... | T |
| Green .....  | G  | Violet .....    | V |
| Grey .....   | GY | White .....     | W |
| Orange ..... | O  | Yellow .....    | Y |

Where the covering of a single conductor has more than one colour, the colour combination used on a diagram shall be hyphenated and should indicate all the colours, e.g. red and yellow, R-Y; red, green and black, R-G-BK. Where there is a predominant colour with a narrower identifying colour, the predominant colour shall be stated first.

**5 LAYOUT.** Unit wiring diagrams should usually be drawn in approximate topographical representation.

**6 VIEW OF EQUIPMENT.** The view or views of equipment that are required for a unit wiring diagram are those which will most clearly show the terminals or wiring sides of the component devices or parts as they are mounted in the equipment. In most instances, one view as seen from the wiring side of the items should be sufficient. This view should generally correspond to the view of the items as seen during wiring. More than one view may be required where the equipment is wired from both front and rear; in such a case, the diagram shall clearly identify which view of the equipment is shown. Component devices or parts with more than one level of terminals may also require more than one view.

**7 COMPONENTS, DEVICES AND PARTS.** Unit wiring diagrams employ straight lines and simple outlines, e.g. squares, circles or rectangles, to depict equipment items. Sometimes graphical symbols may be used. Mechanical details, such as the fastening for an item, should be shown only if this helps in the understanding of the diagram.

If items are located above each other at several levels, these items may be shown in the diagram as rotated, turned or moved in such a way that the terminals may be seen by the reader of the diagram. The method used shall be appropriately indicated. (For an example, see Fig. 1.)