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Australian Standard 1103, Part 6—1981

DIAGRAMS, CHARTS AND TABLES FOR ELECTROTECHNOLOGY

Part 6—PREPARATION OF UNIT WIRING DIAGRAMS AND TABLES

STANDARDS ASSOCIATION OF AUSTRALIA
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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

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AUSTRALIAN STANDARD

DIAGRAMS, CHARTS AND TABLES FOR ELECTROTECHNOLOGY

Part 6 PREPARATION OF UNIT WIRING DIAGRAMS AND TABLES

AS 1102 Part 6—1981

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

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STANDARDS ASSOCIATION OF AUSTALIA

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 electrotechnology. 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.)