Dup.

Under revision see DR 87200 - DR 87209

AS 1102.4—1983
UDC 003.62:621.3

SUPERSEDED BY AS 1102.101-1989, AS 1102.102-1989, AS 1102.103-1989, AS 1102.104-1989, AS 1102.105-1989 AS 1102.106-1989, AS 1102.107-1989, AS 1102.108-1989, AS 1102.109-1989, AS 1102.110-1989.

Australian Standard 1102, Part 4—1983

WITHDRAWN TAS JUNE 1989

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

ELECTRON TUBES AND RECTIFIERS

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

E

This Australian standard was prepared by Committee TE/13, Symbols, Units and Quantities for Electrotechnology. It was approved on behalf of the Council of the Standards Association of Australia on 16 June 1983 and published on 5 September 1983.

The following interests are represented on Committee TE/13:

Confederation of Australian Industry

Department of Aviation

Department of Defence

Department of Defence Support

Departments of Technical and Further Education, N.S.W. and Victoria

Department of Housing and Construction

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

The Technical Press

Telecom Australia

AUSTRALIAN STANDARD

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

ELECTRON TUBES AND RECTIFIERS

AS 1102, Part 4—1983

First published 1974
Second edition 1983

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

ISBN 0 7262 3062 6

PREFACE

This edition of this standard was prepared by the Association's Committee on Symbols, Units and Quantities for Electrotechnology under the authority of both the Telecommunications and Electronics, and the Electrical Standards Boards to supersede AS 1102, Part 4—1974.

This edition is technically identical with the 1974 edition as amended by Amendment No 1 of June 1976 and Amendment No 2 of September 1978, except that it includes other editorial and technical changes such as the renumbering of symbols in accordance with the current IEC method and the updating of cross-references to other Australian standards. Also, some symbols have been rescaled or redrawn to eliminate inconsistencies and improve their presentation, and Section 1 has been rewritten to align with current practice.

In its terminology, format and general treatment of the subject this standard is consistent with the recommendations of Publications 117-6 and 117-11 of the International Electrotechnical Commission (IEC). Attention has also been paid to BS 3939, Sections 15 to 19. Acknowledgement is made of the assistance received from these sources.

This standard is one part in a series forming a comprehensive standard on graphical symbols for use generally in the field of electrotechnology. The purpose of this part is to specify graphical symbols for electron tubes (or valves) and mercury arc rectifiers for use in electrical and electronic diagrams.

Examples of the use of the symbols are given in order both to establish the method to be adopted for using the symbols in diagrams and to combine them with symbols specified in other parts in this series so as to express more complex ideas.

Attention is drawn in particular to the following parts of AS 1102:

Part 1—General, Qualifying and Supplementary Symbols.

Part 2—Conductors and Connecting Devices.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

PART 4—ELECTRON TUBES AND RECTIFIERS

SECTION 1. SPECIFICATION

1.1 SCOPE. This standard defines graphical symbols for electron tubes (or electronic valves) and mercury arc rectifiers for use in electrical and electronic diagrams. Examples of the use of the symbols are given in order to establish the method to be followed for constructing further symbols.

This standard may require reference to—

Part 1. General, Qualifying and Supplementary Symbols

Part 2. Conductors and Connecting Devices

for a full understanding of the methods adopted.

1.2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1100 Drawing Practice

AS 1103 Diagrams Charts and Tables for Electrotechnology
Part 1—Definitions and Classifications
Part 3—Basic Principles for the Presentation of Elements of Electrical Diagrams

1.3 GENERAL.

1.3.1 Relationship with IEC Symbols. Symbols are identical with those internationally agreed within the IEC except where established usage in Australia makes unqualified acceptance of the IEC symbol difficult. In such cases an alternative symbol is generally shown, with the object of adopting the IEC proposal as soon as practicable. The 'objective symbol' may be marked with an asterisk (which is not part of the symbol) or by marking it 'preferred'. However, only one form of any symbol shall be used on a single diagram or series of drawings.

1.3.2 Size of Symbols. Precise dimensions and proportions of graphical symbols are difficult to specify. The symbols of this standard have been drawn to a size convenient for publication and comprehension. The sizes of symbols relative to one another may be changed to suit the circumstances of a given drawing or application. See also Clause 1.3.3.

The relative sizes of the symbols should be preserved except where it is necessary to enlarge a symbol to give it prominence in a diagram or to provide adequate space within or around it to show symbols for associated components, or for coding.

At all times however, the relative proportions of the symbols should be maintained such that each symbol shall be unique and immediately recognizable.

1.3.3 Drawing Practice. In general, the drawing of graphical symbols for use on wiring or circuit diagrams should comply with the requirements of AS 1100 (in particular with Part 6) and AS 1103, Part 3.

1.3.4 Qualifying and Supplementary Symbols. These symbols are added to component symbols where necessary in order to define more closely the item concerned. For example the symbol for variability added to any component symbol indicates a variable component. See Symbol 4-08-28.

Supplementary symbols define the qualified component even more closely; for example, the variability of a component may be further qualified with a supplementary symbol indicating continuous variability or stepped variability.

Qualifying symbols may not be employed independently but it should be noted that component symbols may be used as qualifying symbols where appropriate.

1.3.5 New Symbols. If a symbol for a particular type of component is not shown as an example in this standard, it should be possible to produce it from the basic and qualifying symbols. New basic symbols for specialized components should be derived and not created.

1.3.6 Symbol Orientation. Orientation of a symbol, including mirror image reversal, does not change the meaning of a symbol.

1.3.7 Terminology. The terms and definitions employed in this standard are given in AS 1103, Part 1.

1.4 REQUIREMENTS FOR TUBE AND VALVE SYMBOLS. Owing to the large number of symbols for valve and tube elements, they are shown in the appropriate sections preceding the examples. Any element may be used where required, and symbols for new types of valve or tube should be made up where possible by using a combination of existing symbol elements.

In the symbols for elements the envelope is included for clarity.

In general, lines representing electrodes should not touch the side of the envelope remote from the connection point.

Symbols for multi-electrode valves may be built up by combining the symbols for the component parts.

Connections to the electrodes may be shown on either side of the envelope to facilitate drawing.