

DB 97171
1997ed FWD 970819
AS 1102.102—1989

1997ed.

Australian Standard®

**Graphical symbols for
electrotechnical documentation**

**Part 102: Symbol elements,
qualifying symbols and other
symbols having general application**



STANDARDS AUSTRALIA



This Australian Standard was prepared by Committee TE/13, Symbols, Units and Quantities for Electrotechnology. It was approved on behalf of the Council of Standards Australia on 27 March 1989 and published on 19 June 1989.

The following interests are represented on Committee TE/13:

Association of Consulting Engineers, Australia
Australian Electrical and Electronic Manufacturers Association
Civil Aviation Authority
Confederation of Australian Industry
Department of Administrative Services—Construction Group
Department of Defence
Department of Technical and Further Education, N.S.W., Vic. and S.A.
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This Standard was issued in draft form for comment as DR 87201.

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For history before 1989 see Preface.
AS 1102.102 first published 1989.

PREFACE

This Standard was prepared by the Standards Australia Committee on Symbols, Units and Quantities for Electrotechnology under the Authority of both the Telecommunications and Electronics Standards Board and the Electrical Standards Board.

THE 'NEW' AS 1102 SERIES

This Standard is one part of a major revision of the AS 1102 series, all 15 parts of which have or are currently being revised and consolidated so that the series is aligned with the 13-part IEC 617 series, *Graphical Symbols for Diagrams*.

The Committee decided upon this alignment rather than continue with the development of an Australian series based on but not aligned with IEC 617. Such a course would eventually have proved counter-productive since the IEC 617 series has already gained wide national and international acceptance.

Since the generic AS number for the series (AS 1102) is so well established throughout industry and technical colleges as *the* Australian Standard for electrotechnical graphical symbols, it was felt appropriate that it be retained. However, to clearly identify the revised Standards, three-digit part numbers have been employed (e.g. AS 1102.106) and in this Preface these revised Standards are referred to as the 'new' AS 1102 series.

The Standards of the 'new' AS 1102 series are derived as follows:

- (a) Eleven parts of the 'old' AS 1102 series (i.e. Parts 1 to 7, 10, 11, 13 and 14) are now consolidated and aligned with the first 10 parts of IEC 617 and thus become AS 1102.101 to AS 1102.110. These are published simultaneously.
- (b) Of the outstanding balance of parts of the 'old' AS 1102 series (i.e. Parts 8, 9, 12 and 15), these will all be revised and aligned in due course as follows:
 - (i) Part 8—1986, *Symbols for location diagrams*. This part will become AS 1102.111.
 - (ii) Part 9—1986, *Binary logic elements*. This part is already substantially in alignment with IEC 617-12 (1983) and will become AS 1102.112.
 - (iii) Part 12—1984, *Electric traction*. This part is wholly of Australian origin and it does not correspond with any IEC Standard. However, when it is revised it will be redesignated with a 3-digit part number. For the meantime it retains its 2-digit part number, i.e. Part 12.
 - (iv) Part 15—1982, *Analogue elements*. This part is already substantially in alignment with IEC 617-13 (1978) and will become AS 1102.113.

The following are the parts of the 'new' AS 1102 series that are published simultaneously:

AS 1102	<i>Graphical symbols for electrotechnical documentation</i>
AS 1102.101	<i>General information and general index</i>
AS 1102.102	<i>Symbol elements, qualifying symbols and other symbols having general application</i>
AS 1102.103	<i>Conductors and connecting devices</i>
AS 1102.104	<i>Passive components</i>
AS 1102.105	<i>Semiconductors and electron tubes</i>
AS 1102.106	<i>Production and conversion of electrical energy</i>
AS 1102.107	<i>Switchgear, controlgear and protective devices</i>
AS 1102.108	<i>Measuring instruments, lamps and signalling devices</i>
AS 1102.109	<i>Telecommunications: Switching and peripheral equipment</i>
AS 1102.110	<i>Telecommunications: Transmission</i>

The above parts collectively supersede the following Standards of the 'old' AS 1102 series:

AS 1102	<i>Graphical symbols for electrotechnology</i>
AS 1102.1—1985	<i>General, qualifying and supplementary symbols</i> (first published in 1973, second edition 1981)
AS 1102.2—1981	<i>Conductors and connecting devices</i> (first published in 1973)
AS 1102.3—1983	<i>Resistors, capacitors and inductors</i> (first published in 1973)

- AS 1102.4—1983 *Electron tubes and rectifiers* (first published in 1974)
AS 1102.5—1983 *Semiconductor devices* (first published in 1972)
AS 1102.6—1982 *Rotating electrical machines* (first published in 1975)
AS 1102.7—1982 *Measuring instruments* (first published in 1975)
AS 1102.10—1985 *Signal transmission symbols* (first published in 1973, second edition 1981)
AS 1102.11—1985 *Switching and protective devices* (first published in 1976, second edition 1981)
AS 1102.13—1979 *Microwave technology*
AS 1102.14—1979 *Telephony, telegraphy and transducers.*

PARTICULAR POINTS ON PART 102

The purpose of this Part (102) is to provide information on symbol elements, qualifying symbols and other symbols having general application to the AS 1102 series.

In its terminology, format and general treatment of the subject, this Standard aligns with IEC 617-2 (1983) except as modified to suit Australian conditions and includes a number of non-IEC symbols which represent Australian practice. These Australian symbols are separately identified (see Clauses 1.4 to 1.8 of Part 101).

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STANDARDS AUSTRALIA

Australian Standard

Graphical symbols for electrotechnical documentation

Part 102: Symbol elements, qualifying symbols and other symbols having general application

CHAPTER 0. SPECIFICATION

SECTION 0. SCOPE AND GENERAL

0.1 SCOPE. This Standard defines symbol elements, qualifying symbols and other symbols having a general application for electrotechnical documentation. Examples of the use of these symbols are given in this Standard and the other Standards of the 'new' AS 1102 series.

0.2 REFERENCED DOCUMENTS. The following documents are referred to in this Standard:

AS	
1046	Letter symbols for use in electrotechnology
1046.1	Part 1: General
1046.2	Part 2: Telecommunications and electronics
1100	Technical drawing
1100.301	Part 301: Architectural drawing
1102	Graphical symbols for electrotechnology
1102.9	Part 9: Binary logic elements
1102	Graphical symbols for electrotechnical documentation
1102.101	Part 101: General information and general index

1102.106	Part 106: Production and conversion of electrical energy
1102.107	Part 107: Switchgear, controlgear and protective devices
1102.110	Part 110: Telecommunications: Transmission

IEC

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Conventions concerning electric and magnetic circuits

0.3 GENERAL. This Standard requires to be read in conjunction with AS 1102.101 (in particular, Section 1).

NOTES:

1. Attention is drawn to the fact that reference may also be required to other Standards in the AS 1102 series.
2. AS 1102.101 provides a general index of symbols of the AS 1102 series (see Section 2).
3. Appendix A of AS 1102.101 establishes a grid for computer-aided drafting (CAD) systems.