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Australian Standard 1102, Part 15—1982

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

ANALOGUE ELEMENTS

AS/NZS 1102.113:1995
Analogue elements
(IEC 617-13:1993)
(In Professional Package 56A)
31pp *FF*
Provides symbols to represent functions and devices for operating and producing analogue quantities. This Standard is identical with and reproduced from IEC 617-13:1993.
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STANDARDS ASSOCIATION OF AUSTRALIA
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Represented on the committee which was responsible for the preparation of this standard were the following:

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

Education Department of Victoria

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

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AUSTRALIAN STANDARD

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

Part 15 ANALOGUE ELEMENTS

AS 1102, Part 15—1982

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PREFACE

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.

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 analogue elements to be used in diagrams for computation and control purposes. It also provides information on coding of symbols for sign indication, weighting of input signals and controlling inputs.

In its terminology, format and general treatment of the subject, this standard is technically identical with the recommendations of IEC 617-13 of the International Electrotechnical Commission and acknowledgement is made of the assistance received therefrom.

It should be noted that the IEC is currently revising the various parts of IEC 117, which will (when revised) be published as parts of IEC 617. This in turn will mean that the various parts of the AS 1102 series will require revision to align with the IEC publications. IEC 617-13, on which this standard is based, is the first part of the revised series, although it was not previously issued as a part of IEC 117.

The symbols are identical with those established by the IEC except for the inclusion of a comparator symbol, and alternative symbols representing Australian practice for signal convertors. These alternative symbols have been derived from accepted IEC practice, and are identified by an asterisk added to the reference number for the symbol.

An appendix (not included in IEC 617-13) covering graphical representation of amplifier and time analogue functions, discussed in Clause 2.1.4, is included for guidance should it prove necessary to graphically denote the actual function of an analogue element.

Some qualifying symbols and letter symbols necessary to identify a particular device are included in the standard, but for a full understanding of the methods adopted, reference is required to the following Australian standards:

AS 1000	The International System of Units (SI) and Its Application
AS 1046	Letter Symbols for Use in Electrotechnology Part 1—General Part 2—Telecommunications and Electronics
AS 1100	Drawing Practice Part 6—Letters, Numerals and Symbols
AS 1102	Graphical Symbols for Electrotechnology Part 1—General, Qualifying and Supplementary Symbols Part 2—Conductors and Connecting Devices Part 11—Switching and Protective Devices
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 Part 4—Guiding Principles for the Presentation of Circuit Diagrams

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

PART 15—ANALOGUE ELEMENTS

SECTION 1. SPECIFICATION

1.1 SCOPE. This standard specifies graphical symbols to be used in diagrams for analogue elements for fields such as computation and control.

This standard is not necessarily applicable to programming applications for general purpose analogue computers equipped with a removable patch (programming) panel.

1.2 GENERAL.

1.2.1 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 may be shown, with the object of adopting the IEC proposal as soon as practicable. However, only one form of any symbol shall be used on a single diagram or series of drawings. A number of non-IEC symbols which represent Australian practice have been added; in each of these cases as asterisk has been added to the symbol number as a prefix.

1.2.2 Size of Symbols. Precise dimensions and proportions of graphical symbols are difficult to specify. The size of the symbols and characters used in this standard is regarded as the minimum desirable for reproduction by the various methods in use.

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 so that each symbol shall be unique and immediately recognizable.

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

1.2.4 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 an analoque element is a simple rectangle with various inputs which may be qualified with Symbols 15-02-01 or 15-02-02 as in 15-04-07.

Supplementary symbols define the qualified component even more closely; for example, the analogue element symbol modified by 15-02-02 and the symbol for a 'make contact' from AS 1102, Part 11, becomes 15-08-01, a bidirectional switch.

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

1.2.5 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 symbols for specialized components should be derived and not created.

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

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