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Australian Standard 1102, Part 1—1981

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

GENERAL, QUALIFYING AND SUPPLEMENTARY SYMBOLS

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

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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

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

Part 1 GENERAL, QUALIFYING AND SUPPLEMENTARY SYMBOLS

AS 1102, Part 1—1981

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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 Industry Standards Boards, to supersede AS 1102, Part 1—1973.

In its terminology, format and general treatment of the subject this standard is consistent with the recommendations of various Parts of IEC 117 of the International Electrotechnical Commission. Attention has also been paid to BS 3939: Sections 1 and 2. Acknowledgement is made of the assistance received from these sources.

This standard is only one Part of a comprehensive standard being prepared on graphical symbols for use in the field of electrotechnology generally. The purpose of this Part is to specify graphical symbols for basic electrical and electronic components, together with qualifying and supplementary symbols from which more complex symbols may be constructed.

The principles governing the combining of basic and qualifying or supplementary symbols are demonstrated in the examples given in other Parts of the standard. The examples given are not exhaustive but it should be possible to construct any symbol required from the symbols given in specific Parts when combined with qualifying or supplementary symbols given in this Part.

This edition incorporates Addendum No 1 (December 1975), Amendment No 1 (October 1976), Amendment No 2 (May 1978), and other editorial and technical amendments to the 1973 edition, including the renumbering of symbols, additional example symbols for direction of force or motion, mechanical controls, cam and roller operation, and new symbols for blocking device latches, hydraulic, and other non electrical controls. Some graphical symbols have been deleted from this edition as they are now included in other Parts of AS 1102 series. These include symbols for:

- Delayed make and break contacts (included in AS 1102.11)
- Transmitters and receivers (included in AS 1102.10)
- Basic circuit elements (included in AS 1102.3)
- Piezo-electric crystals (included in AS 1102.14)
- Fuses (included in AS 1102.2).

This standard requires reference to the following Australian Standards:

AS 1100 Drawing Practice
Part 6—Letters, Numerals and Symbols

AS 1103 Diagrams, Charts and Tables for Electrotechnology
Part 1—Definitions and Classifications
Part 2—Basic Principles for Presentation of Elements of Electrical Diagrams
Part 4—Guiding Principles for the Preparation of Circuit Diagrams

Reference should also be made to the following standard for letter symbols for use in electrotechnology:

AS 1046 Letter Symbols for use in Electrotechnology
Part 1—General
Part 2—Telecommunications and Electronics

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

PART 1—GENERAL QUALIFYING AND SUPPLEMENTARY SYMBOLS

SECTION 1. SPECIFICATION

1.1 SCOPE. This standard defines graphical symbols for basic electrical and electronic components for use in electrotechnology, together with qualifying and supplementary symbols. Examples of the use of the qualifying symbols are given in order to establish the method to be adopted for constructing symbols.

1.2 GENERAL.

1.2.1 Relationship with IEC Symbols. Symbols are identical with those internationally agreed within the International Electrotechnical Commission (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). However, only one form of any symbol shall be used on a single diagram or series of drawings.

1.2.2 Size of Symbols. Precise dimensions and proportions of graphical symbols are difficult to specify. The size of each symbol and character 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 lettering.

At all times however, the relative proportions of the symbols should be maintained such 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 the requirements of 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 variability added to the resistor symbol indicates a variable resistor.

Supplementary symbols define the qualified component even more closely; for example, the variability of the resistor can 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.

1.2.5 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 basic 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.