AS 1102.11—1981
UDC 003.62:621.3

Australian Standard 1102, Part 11—1981

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

SWITCHING AND PROTECTIVE DEVICES

for earth leakage circuit breakers.
- one way is to use the rectangle p.24,
- with it use symbol 11-06-11 (p.25)
- below it at right angle, symbol 11-03-05 (p.9).

Ron Box 29/3/85.

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

Railways of Australia Committee

Technical Press

Telecom Australia

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AUSTRALIAN STANDARD

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

Part 11 SWITCHING AND PROTECTIVE DEVICES

AS 1102, Part 11—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 Standards Boards, to supersede the 1976 edition.

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 define graphical symbols for a variety of related components, including contacts, switchgear, switching protective devices, starters and elements of electromechanical relays. Examples of these symbols are given in order to establish the method to be followed for using symbols in diagrams, and to combine them with symbols specified in other Parts of the series.

In its terminology, format, and general treatment of the subject, this standard is generally consistent with the recommendations of Publication 117-3 (1977) issued by the International Electrotechnical Commission (IEC), and acknowledgement is made of the assistance received therefrom.

This edition of the standard incorporates extensive changes to the symbols for contacts, switchgear and switching protective devices, previously detailed in the 1976 edition. These arise from the adoption of a single line symbol without alternative forms such as were previously permitted. They are modified by qualifying symbols to provide information on specific functions. These changes have, in turn, caused further changes in the more complicated contacts and switches.

The symbols are identical with those established by the IEC except where the established usage in Australia has made unqualified acceptance of the IEC recommended symbol difficult. A number of examples representing Australian practice have been added. These are identified by an asterisk added to the reference number for the symbol. In particular spring and non-spring return (stayput) contacts (see Clause 2.2.4) are shown with the IEC symbols 'non-preferred' and the Australian derived symbols 'preferred'. This is due to the location of the qualifying symbols for spring and non-spring return contacts on the IEC symbols.

It is considered for consistency with the location of other qualifying symbols on general symbols of this Part, spring and non-spring return qualifying symbols should be located on the moving contact, as these functions relate to the moving contact. Difficulties arise if the IEC convention of location of these qualifying symbols is invoked, as the spring and non-spring return symbols require appropriate reference when used, and they can not be used together with qualifying symbols for contactor, circuit breaker or isolator function. For simplicity and to avoid unnecessary confusion, the use of the 'preferred' symbols for spring and non-spring return contacts is strongly recommended.

The Australian National Committee participating in the latest IEC work on switching and protective device symbols is currently arguing for the adoption of the 'preferred' method of spring and non-spring return contacts.

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
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 11—SWITCHING AND PROTECTIVE DEVICES

SECTION 1. SPECIFICATION

1.1 SCOPE. This standard defines graphical symbols for contacts, switchgear, switching protective devices, starters and elements of electromechanical relays. Examples of the use of the symbols are given in order to establish the method to be adopted in constructing further symbols from the general and qualifying symbols.

NOTE: For a full understanding of the methods adopted in this standard, reference should be made to AS 1102, Part 1 and Part 2.

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 have been added, which represent Australian practice; in each of these cases an 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 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 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 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 from AS 1102, Part 1, which indicates 'both directions', when added to Symbol 11-04-01 (the symbol for a starter) will produce Symbol 11-04-05 which indicates a starter for reversing motor.

Supplementary symbols define the qualified component even more closely, e.g. Symbol 11-03-02 (the symbol for a contactor), when added to Symbol 11-04-05, will produce Symbol 11-04-09 which indicates a direct-on-line contactor starter for reversing motor.

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.