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GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

Part 8—SYMBOLS FOR LOCATION DIAGRAMS

STANDARDS ASSOCIATION OF AUSTRALIA
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Department of Housing and Construction

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AUSTRALIAN STANDARD

GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

Part 8 SYMBOLS FOR LOCATION DIAGRAMS

AS 1102.8—1986

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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 AS 1102, Graphical Symbols for Electrotechnology, Part 8—1983, Location Symbols—Power and Communication Installations for Buildings and Sites.

The AS 1102 series of standards provides for a comprehensive treatment of graphical symbols for use generally in the field of electrotechnology. The purpose of this standard (which is Part 8 of the series) is to specify graphical symbols for general electrical application, power and communication application, intruder alarm equipment, airport lighting, and electric traction for use in the preparation of location diagrams. In this regard, this Part differs completely from other Parts as the symbols are not intended for use in circuit or wiring diagrams (although wherever possible the same symbols are used) but on location diagrams for general electrical application, power and communication application, airport lighting and electric traction. Parts 1 to 7 and 9 to 15 which specify graphical symbols for use in circuit or wiring diagrams are listed in Clause 1.2.

This standard is a major revision of the 1983 edition and has a shorter title. The format has been completely restructured and comprises separate sections for general electrical application, power application, communication application, intruder alarm equipment, airport lighting and electric traction. Appendix A provides guidance on architectural location diagrams for electrical services and Appendix B gives a method of location of analytical or process variable instruments on an electrical location diagram.

Many new symbols covering various electrical appliances/equipment, consoles, intruder alarm equipment, optical fibre cable, transmission towers, poles, amplifiers, cable distribution systems for sound and television, telephone apparatus, etc, have been included. In addition, Section 1 has been rewritten to align with current practice and the symbols renumbered in accordance with the current IEC method.

Attention is drawn to the fact that some symbols depicted in the 1983 edition have been redrawn to align with International Electrotechnical Commission (IEC) and current Australian usage and to eliminate inconsistencies and improve their presentation. In particular, the former luminaire general symbol (a circle) has been aligned with the IEC symbol (a circle with a cross) in an attempt to overcome some of the problems of using the same shaped symbol, i.e. a circle, for a different application. Clause 1.3.1 provides guidance on the relationship with IEC symbols.

In its terminology, format and treatment of the subject, this standard is, in general, consistent with the recommendations of IEC 117-5, 117-8 and 617-11.* Attention has also been paid to relevant sections of BS 3939.† Acknowledgement is made of the assistance received from these sources.

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. Also, a number of examples representing Australian practice have been added. In the abovementioned cases, these symbols are identified by an asterisk added to the reference number of the symbol. As an example, the recommended use of the general symbol for power outlets or socket-outlets, has been modified in accordance with the normal Australian requirement that a general purpose outlet (GPO) is understood to be switched and earthed.

Examples of the use of the symbols have been given in order to establish the method to be adopted for using the symbols on location diagrams but they are not exhaustive. Methods of using the symbols will vary with the need. It is considered that this should not cause problems providing the symbol is not changed. Wherever possible, any further symbols required should be drawn from the appropriate part of this standard. The urge to create new symbols should be resisted.

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* IEC 117 Recommended Graphical Symbols
117-5 Generating Stations and Substations, Lines for Transmission and Distribution
117-8 Symbols for Architectural Diagrams
IEC 617 Graphical Symbols for Diagrams
617-11 Architectural and Topographical Installation Plans and Diagrams

† BS 3939 Graphical Symbols for Electrical Power, Telecommuncations, and Electronics Diagrams

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GRAPHICAL SYMBOLS FOR ELECTROTECHNOLOGY

PART 8—SYMBOLS FOR LOCATION DIAGRAMS

SECTION 1. SPECIFICATION

1.1 SCOPE AND APPLICATION.

1.1.1 Scope. This standard defines graphical symbols for location diagrams for—

(a) general electrical application;

(b) power and communication application;

(c) intruder alarm equipment;

(d) airport lighting; and

(e) electric traction.

NOTES:

1. Appendix A provides guidance on architectural location diagrams for electrical services and Appendix B provides a method for the location of analytical or process variable instruments on an electrical location diagram.
2. The fire alarm detector symbols depicted in AS 1670, are suitable for use on location diagrams.

The symbols depicted in this standard are not intended for use in—

(a) wiring or circuit diagrams (see AS 1102, Parts 1 to 7 and 9 to 15); or

(b) for engineering survey and design drawings (see AS 1100, Part 401).

1.1.2 Application. Symbols depicted in this standard are applicable for use on location diagrams for—

(a) electrical equipment, electrical lighting, security and communication services;

(b) reticulation plans of electrical power systems and networks;

(c) topological maps of power supply systems; and

(d) location of airport lighting.

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

AS 1100 Drawing Practice
- Part 101—General Principles
- Part 301—Architectural Drawing
- Part 401—Engineering Survey and Engineering Survey Design Drawing

AS 1102 Graphical Symbols for Electrotechnology
- Part 1—General, Qualifying and Supplementary Symbols
- Part 2—Conductors and Connecting Devices
- Part 3—Resistors, Capacitors and Inductors
- Part 4—Electron Tubes and Rectifiers
- Part 5—Semiconductor Devices
- Part 6—Rotating Electrical Machines
- Part 7—Measuring Instruments
- Part 9—Binary Logic Elements
- Part 10—Signal Transmission Symbols
- Part 11—Switching and Protective Devices
- Part 12—Electric Traction
- Part 13—Microwave Technology
- Part 14—Telephony, Telegraphy and Transducers
- Part 15—Analogue Elements

AS 1103 Diagrams, Charts and Tables for Electrotechnology
- Part 1—Definitions and Classifications

AS 1670 SAA Code for Automatic Fire Alarm Installations

AS 2293 Emergency Evacuation Lighting in Buildings
- Part 1—Installation Requirements

1.3 GENERAL.

1.3.1 Relationship with IEC symbols. Symbols given in this standard 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, e.g. *8-01-103.

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 the symbols relative to one another may be changed to suit the circumstances of a given drawing or application.

Particular attention should be given to when the same shaped symbol is used for a different application, e.g. a circle. In these circumstances, care should be taken to ensure that the intended application is clear.

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.