JIS

JAPANESE
INDUSTRIAL
STANDARD

JIS C 0617-2 : 2011

Graphical symbols for diagrams— Part 2: Symbol elements, qualifying symbols and other symbols having general application

C 0617-2 : 2011

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

Consequently **JIS 0617-2**:1997 is replaced with this Standard.

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JIS C 0617 series consists of the following 13 parts under the general title *"Graphical symbols for diagrams"*:

Part 1: General information, general index. Cross-reference tables

Part 2: Symbol elements, qualifying symbols and other symbols having general application

Part 3: Conductors and connecting devices

Part 4: Passive components

Part 5: Semiconductors and electron tubes

Part 6: Production and conversion of electrical energy

Part 7: Switchgear, controlgear and protective devices

Part 8: Measuring instruments, lamps and signalling devices

Part 9: Telecommunications: Switching and peripheral equipment

Part 10: Telecommunications—Transmission

Part 11: Architectural and topographical installation plans and diagrams

Part 12: Binary logic elements

Part 13: Analogue elements

Graphical symbols for diagrams—
Part 2: Symbol elements, qualifying
symbols and other symbols having
general application

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 60617** without modifying the technical contents. The said **IEC** was published in 2001 as a database standard, and has been maintained online ever since. The adopted contents in this Standard are comprised of the contents of **IEC 60617** as of 2008.

While all the parts of **IEC 60617** have been incorporated into one database standard, this **JIS** will be continuously published in separate parts in print, partly for the users' convenience, instead of conforming to the new format of the **IEC**.

1 Scope

This Standard specifies the symbol elements, qualifying symbols and other symbols having general application, out of graphical symbols for diagrams.

NOTE 1   This Standard is constituted of the conventional graphical symbol numbers from 02-01-01 to 02-17-09 of **IEC 60617**. Annex A is provided for information.

NOTE 2   The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

IEC 60617   *Graphical symbols for diagrams* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standards and **JIS** are IDT (identical), MOD (modified), and NEQ (not equivalent) according to **ISO/IEC Guide 21-1**.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and the revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent edition (including amendments) shall be applied.

JIS C 0452-2   *Industrial systems, installations and equipment and industrial products—Structuring principles and reference designations—Part 2: Classification of objects and codes for classes*

NOTE :   Corresponding International Standard: IEC 61346-2 *Industrial systems, installations and equipment and industrial products—Structuring principles and reference designations—Part 2: Classification of objects and codes for classes* (IDT)

JIS C 0456 *Information technology—Coded graphic character set for use in the preparation of documents used in electrotechnology and for information interchange*

NOTE : Corresponding International Standard: IEC 61286 *Information technology—Coded graphic character set for use in the preparation of documents used in electrotechnology and for information interchange* (IDT)

JIS C 0617-1 *Graphical symbols for diagrams—Part 1: General information, general index. Cross-reference tables*

NOTE : Corresponding International Standard: IEC 60617 *Graphical symbols for diagrams* (MOD)

JIS C 1082-1:1999 *Preparation of documents used in electrotechnology—Part 1: General requirements*

NOTE : Corresponding International Standard: IEC 61082-1 *Preparation of documents used in electrotechnology—Part 1: Rules* (MOD)

JIS C 60364-1 *Low-voltage electrical installations—Part 1: Fundamental principles, assessment of general characteristics, definitions*

NOTE : Corresponding International Standard: IEC 60364-1 *Low-voltage electrical installations—Part 1: Fundamental principles, assessment of general characteristics, definitions* (IDT)

JIS X 0201 *7-bit and 8-bit coded character sets for information interchange*

NOTE : Corresponding International Standard: ISO/IEC 646 *Information technology—ISO 7-bit coded character set for information interchange* (MOD)

JIS X 0221 *Information technology—Universal Multiple-Octet Coded Character Set (UCS)*

NOTE : Corresponding International Standard: ISO/IEC 10646 *Information technology—Universal Multiple-Octet Coded Character Set (UCS)* (IDT)

JIS Z 8222-1 *Design of graphical symbols for use in the technical documentation of products—Part 1: Basic rules*

NOTE : Corresponding International Standard: ISO 81714-1 *Design of graphical symbols for use in the technical documentation of products—Part 1: Basic rules* (IDT)

JIS Z 8316 *Technical drawings—General principles of presentation*

NOTE : Corresponding International Standard: ISO 128 *Technical drawings—General principles of presentation* (MOD)

IEC 60050 (all parts) *International Electrotechnical Vocabulary*

IEC 60375 *Conventions concerning electric and magnetic circuits*

IEC 60445 *Basic and safety principles for man-machine interface, marking and identification—Identification of equipment terminals and conductor terminations*

IEC 61293 *Marking of electrical equipment with ratings related to electrical supply—Safety requirements*

3 Structure

The standard series of **JIS C 0617** consists of several parts as set out below:

Part 1: *General information, general index. Cross-reference tables*

Part 2: *Symbol elements, qualifying symbols and other symbols having general application*

Part 3: *Conductors and connecting devices*

Part 4: *Passive components*

Part 5: *Semiconductors and electron tubes*

Part 6: *Production and conversion of electrical energy*

Part 7: *Switchgear, controlgear and protective devices*

Part 8: *Measuring instruments, lamps and signalling devices*

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Part 12: *Binary logic elements*

Part 13: *Analogue elements*

Symbols have been designed in accordance with the requirements given in the **JIS Z 8222-1**. The module size M = 5 mm has been used. For better readability smaller symbols in this Standard have been enlarged to double size and are marked 200 % in the symbol column.

In accordance with clause **7** of **JIS Z 8222-1**, symbol dimensions (e.g. height) may be modified in order to make space for a greater number of terminals or for other layout requirement.

In all cases, whether the size is enlarged or reduced, or dimensions modified, the thickness of the original line should be maintained without scaling.

The symbols in this Standard are laid out in such a way that the distance between connecting lines is a multiple of a certain module. The module 2M has been chosen to provide enough space for a required terminal designation. The symbols have been drawn to a size convenient for comprehension, using the same grid consistently in the representation of all symbols.

All symbols are designed within a grid in a computer-aided drafting system (the grid which was used has been reproduced in the background of the symbols).

Graphical symbols that were specified in **JIS C 0617-2** : 1997 but now deleted are given in Annex A as old graphical symbols.

The indices of all the graphical symbols specified in the standard series of **JIS C 0617** are given in **JIS C 0617-1**.

The descriptions of item names used in this Standard are given in table 1.

In addition, English item names are those corresponding to **IEC 60617**.

Table 1 Descriptions of item names used for provisions of graphical symbols

Item	Description
Classification number of graphical symbols	Classification number in the form of xx-yy-zz, where x, y and z are expressed with integers from 0 to 9 and A. xx: Number of part yy: Number of section zz: Graphical symbol number in the number of section NOTE : The graphical symbols with A attached to the section numbers, which were specified in the previous edition, are now deleted (see Annex A).
Symbol identity number	An identifier of a graphical symbol of the form "Snnnnn" where n is an integer from 0 to 9. This number corresponds to the symbol identity number specified in **IEC 60617**, and carries no semantic meaning.
Name	Short description of the meaning of the symbol.
Alternative names	Synonymous, "almost synonymous" and possibly branch specific meanings, etc. under which the symbol might also be known.
Form	Designation of a particular form of the symbol. When there are graphical symbols having alternative forms, it is described as form 1, form 2 .... .
Alternative forms	Identity numbers of symbols having the same meaning but an alternative form.
Application notes	Links to common descriptive notes with additional relevant information. Application notes, which are normally shared among several symbols, are described in another page indicated with the application number. The application note number is indicated in the form of Annnnn, where n is an integer from 0 to 9. This number corresponds to application notes of **IEC 60617**, and carries no semantic meaning.
Application class	Document kinds in which the symbol is intended to be applied. It is defined in **JIS C 1082-1**.
Function class	One or more classes defined in **JIS C 0452-2**, to which the present symbol belongs. Those given in parentheses are codes for classes.
Shape class	Primary shape that characterizes the symbol.
Symbol restrictions	Possible restrictions with regard to the application of the symbol.
Remarks	Additional information of the graphical symbol concerned.
Applies	Identity numbers of symbols (symbol element, qualifying symbol and general symbol) used in the construction of the present symbol.
Applied in	Identity numbers of symbols where the present one is being used as an element.
Keywords	Listing of key words to facilitate retrieval.
NOTE	Reference information that supplements the matter related to graphical symbols etc. In addition, reference information of **IEC 60617** is deleted in this standard.

4 Graphical symbols for diagrams and their descriptions

The construction of chapters and sections of this Standard shall be as follows. Information given is derived from **IEC 60617**.

Chapter I   Symbol elements

   Section 1   Outlines and enclosures

Chapter II   Qualifying symbols

   Section 2   Kind of current and voltage

   Section 3   Adjustment, variability and automatic control

   Section 4   Direction of force, or motion

   Section 5   Direction of flow

   Section 6   Operational dependence on a characteristic quantity

   Section 7   Types of material

   Section 8   Effect or dependence

   Section 9   Radiation

   Section 10   Signal waveforms

   Section 11   Printing, perforating and facsimile

Chapter III   Other symbols having general application

   Section 12   Mechanical and other controls

   Section 13   Actuators, set 1
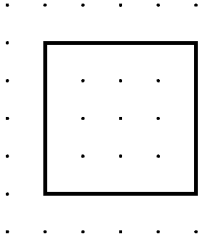
   Section 14   Actuators, set 2

   Section 15   Earth and frame, connections, equipotentiality

   Section 16   Ideal circuit elements

   Section 17   Miscellaneous

Chapter I   Symbol elements

Section 1   Outlines and enclosures

Number of graphical symbols (Symbol identity number)	Symbol
02-01-01 (S00059)	

Item	Description
Name	Object
Alternative names	Equipment; Device; Functional unit; Component; Function
Form	Form 1
Alternative forms	02-01-02 (S00060), 02-01-03 (S00061)
Application notes	A00013
Application class	Qualifying symbols
Function class	— Functional attribute only
Shape class	Squares
Symbol restrictions	—
Remarks	—
Applies	—
Applied in	S00385, S00386, S00393, S00391, S00392, S00394, S00396, S00397, S00398, S00395, S00399, S00401, S00402, S00404, S00403, S00400, S00443, S00442, S01421, S01465, S01463, S01464, S01655, S01031, S01176, S00515, S01078, S01136, S00900, S01030, S01035, S00992, S01076, S01181, S01175, S00896, S00781, S00894, S00519, S00608, S01184, S01037, S00533, S00993, S00492, S00893, S00785, S01032, S01167, S00899, S00549, S01036, S01244, S01075, S01125, S01225, S01079, S01029, S00552, S00494, S01174, S01177, S01130, S00897, S01033, S00548, S01034, S00783
Keywords	envelopes, outlines
NOTE	—