



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS C 0617-8 : 2011

**Graphical symbols for diagrams—
Part 8: Measuring instruments,
lamps and signalling devices**

ICS 01.080.40;17.220.20;29.020

Reference number : JIS C 0617-8 : 2011 (E)

PROTECTED BY COPYRIGHT

Date of Establishment: 1999-02-20

Date of Revision: 2011-01-20

Date of Public Notice in Official Gazette: 2011-01-20

Investigated by: Japanese Industrial Standards Committee
Standards Board

Technical Committee on Electricity Technology

JIS C 0617-8:2011, First English edition published in 2012-04

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

PROTECTED BY COPYRIGHT

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Outline	2
4 Graphical symbols for diagrams and the description	4
Section 1 Indicating, recording, and integrating instruments (general symbols)	5
Section 2 Examples of indicating instruments	8
Section 3 Examples of recording instruments	23
Section 4 Examples of integrating instruments	26
Section 5 Counting devices	41
Section 6 Thermocouples	47
Section 8 Electric clocks	50
Section 10 Lamps and signalling devices	53
5 Application notes	61
Annex A (informative) Older symbols	64
Annex B (informative) Bibliography	75

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 C 0617-8:1999** has been replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public or utility model right. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public or utility model right.

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 8: Measuring instruments, lamps and signalling devices

Introduction

This Japanese Industrial Standard has been prepared based on **IEC 60617** published in 2001 and maintained as a database standard without modifying the current technical contents as of 2008.

In addition, as for the configuration of standard, parts of **IEC 60617** series have been incorporated into the database, but unlike **IEC**, each part of **JIS C 0617** series has been left as it is in consideration of the convenience of the standard.

1 Scope

This Standard specifies the graphical symbols for diagrams of measuring instruments, lamps and signalling devices.

NOTE 1 This Standard consists of the graphical symbols of which former numbers are 08-01-01 to 08-10-13 in **IEC 60617**. Annex A is 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 Standard 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 any revisions (including amendments) made thereafter shall not 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 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: General requirements* (MOD)

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)

IEC 60027 (all parts) *Letter symbols to be used in electrical technology* (partly being replaced by ISO/IEC 80000)

3 Outline

JIS C 0617 series consists of the following parts:

- 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*

Symbols have been designed in accordance with requirements given in **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 **JIS Z 8222-1**, clause 7, symbol dimensions (for instance height) may be modified in order to make space for a greater number of terminals or for other layout requirements.

In all cases, whether the size is enlarged or reduced, or dimensions modified, the thickness of the original line shall 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 draughting system. (The grid used has been reproduced in the background of the symbols.)

The older symbols which were included in **JIS C 0617-8:1999** but has been deleted now are shown in Annex A.

The index of all symbols specified in **JIS C 0617** series is shown in **JIS C 0617-1**.

The description of the item used for this Standard is shown in table 1.

The symbol names are corresponding to those of **IEC 60617**.

Table 1 Description of items used for specification of graphical symbols for diagrams

Item	Description
Symbol number	Classification number of a symbol. It is indicated by such a format as xx-yy-zz, where x, y and z are integer 0 to 9 and xx, yy and zz represent the part number, section number and symbol number in the section, respectively. NOTE: Graphical symbols which were included in the former standard and of which section number was attached with "A" have been deleted at present (see Annex A).
Symbol identity number	Number to identify graphical symbols indicated by such a format as Snnnnn where n is integer 0 to 9. This number is corresponding to the specific Symbol identity number in IEC 60617 and numbering is meaningless.
Name	Name to represent the concept of the relevant symbol.
Alternative names	Other name than that of the relevant symbol. Nearly synonym such as subsidiary specific name.
Form	The same name (meaning) as that of the relevant symbol. Symbols different in shapes, if any, are listed as Form 1, Form 2
Alternative forms	The symbol number of a symbol of which name is the same as the relevant symbol but of which form is different from the relevant symbol.
Application notes	Description or additional related specification of the relevant symbol. Application notes are described in another page with note number generally, because they are shared by more than one symbol. Note numbers are indicated by such a format as Annnnn, where n is integer 0 to 9. This number is corresponding to the application notes in IEC 60617 and numbering is meaningless.
Application class	Type of document to which the relevant symbols apply, which is defined in JIS C 1082-1 .
Function class	One or more classifications to which the relevant symbol belongs, which are defined in JIS C 0452-2 . That given in parentheses is classification code.

Table 1 (concluded)

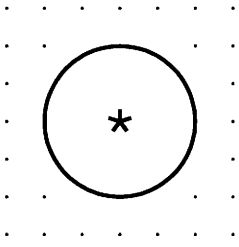
Item	Description	
Shape class	Basic shape which characterizes the relevant symbol.	
Symbol restrictions	Restrictions on means of application of the relevant symbol.	
Remarks	Additional information on the relevant symbol.	
Applies	Identity number of the symbol (symbol element, qualifying symbol and general symbol) used for assembly of the relevant symbol.	
Applied in	Identity number of the symbol which uses the relative symbol as an element.	
Keywords	List of keywords which facilitate retrieval.	
Note	It indicates note to this Standard. In addition, the following items are given as information just with IEC 60617 .	
	Status level	Status of the relevant symbol concerning IEC 60617 continuous maintenance. When the relevant symbol is adapted, its status level is set to "Standard". When the relevant symbol is replaced afterwards by alternative symbol or determined as technically obsolete, its status level changes to "Obsolete" for reference only. The relevant symbol which became obsolete is usable but is not maintained thereafter.
	Released on	Date when released as a part of IEC 60617 .
	Obsolete from	Date when become obsolete concerning IEC 60617 .

4 Graphical symbols for diagrams and the description

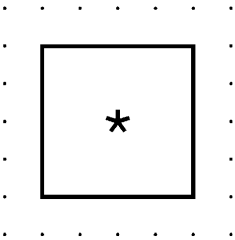
Graphical symbols for diagrams and the description based on **IEC 60617** information are as follows.

- Section 1 Indicating, recording, and integrating instruments, general symbols
- Section 2 Examples of indicating instruments
- Section 3 Examples of recording instruments
- Section 4 Examples of integrating instruments
- Section 5 Counting devices
- Section 6 Thermocouples
- Section 7 Telemetering devices (deleted)
- Section 8 Electric clocks
- Section 9 Miscellaneous measuring elements and instruments (deleted)
- Section 10 Lamps and signalling devices

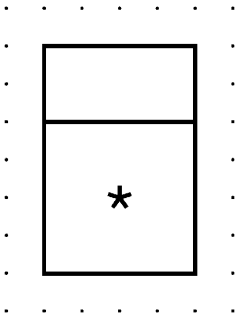
Section 1 Indicating, recording, and integrating instruments (general symbols)

Symbol number (Symbol identity number)	Symbol		
08-01-01 (S00910)			
Item	Description		
Name	Indicating instrument, general symbol		
Alternative names	Instrument		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145, A00146, A00147		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	The asterisk shall be replaced in accordance with the application note A00144.		
Applies	—		
Applied in	S01426, S01428, S01427, S00924, S00916, S00927, S00925, S00921, S00917, S00914, S00913, S00920, S00922, S00923, S00915, S00918, S00919, S00926, S01843		
Keywords	indicating instruments, instruments, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

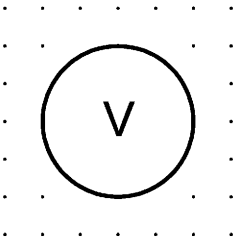
Section 1 Indicating, recording, and integrating instruments (general symbols)

Symbol number (Symbol identity number)	Symbol		
08-01-02 (S00911)			
Item	Description		
Name	Recording instrument, general symbol		
Alternative names	Instrument		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145, A00146, A00147		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Squares		
Symbol restrictions	—		
Remarks	The asterisk shall be replaced in accordance with the rules in application note A00144.		
Applies	—		
Applied in	S00928, S00929, S00930		
Keywords	instruments, measuring instruments, recording instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

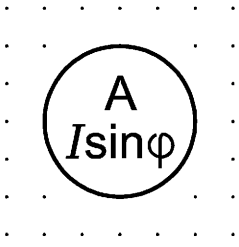
Section 1 Indicating, recording, and integrating instruments (general symbols)

Symbol number (Symbol identity number)	Symbol		
08-01-03 (S00912)			
Item	Description		
Name	Integrating instrument, general symbol		
Alternative names	Energy meter		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145, A00146, A00147, A00148		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Rectangles		
Symbol restrictions	—		
Remarks	The asterisk shall be replaced in accordance with the rules given in application note A00144.		
Applies	—		
Applied in	S00935, S00940, S00942, S00931, S00937, S00944, S00932, S00939, S00936, S00941, S00934, S00933, S00943, S00945, S00938		
Keywords	instruments, integrating instruments, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

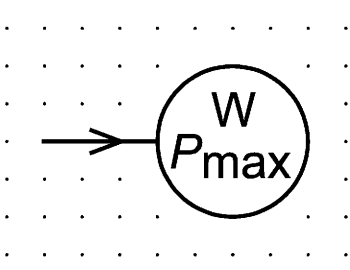
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-01 (S00913)			
Item	Description		
Name	Voltmeter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	S01429, S01843		
Keywords	indicating instruments, instruments, measuring instruments, voltmeters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

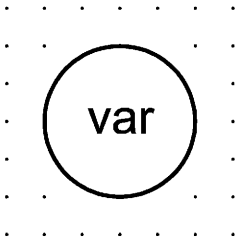
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-02 (S00914)			
Item	Description		
Name	Reactive current ammeter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, ammeters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

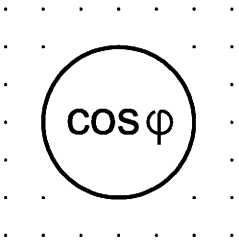
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-03 (S00915)			
Item	Description		
Name	Maximum demand indicator		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	Actuated by an integrating meter.		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, indicators, instruments, maximum demand, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

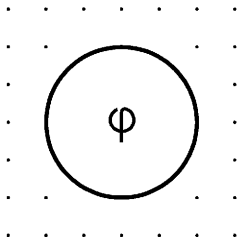
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-04 (S00916)			
Item	Description		
Name	Varmeter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, varmeters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

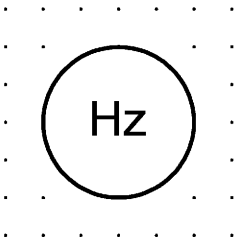
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-05 (S00917)			
Item	Description		
Name	Power-factor meter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, power-factor meters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

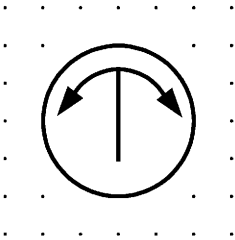
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-06 (S00918)			
Item	Description		
Name	Phase meter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, phase meters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

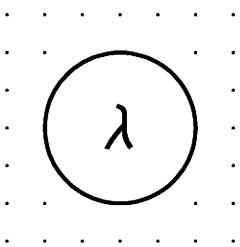
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-07 (S00919)			
Item	Description		
Name	Frequency meter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	frequency meters, indicating instruments, instruments, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

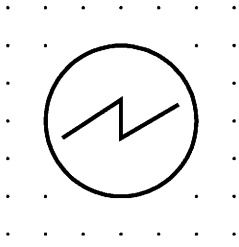
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-08 (S00920)			
Item	Description		
Name	Synchronoscope		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Arrows, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, Synchronoscopes		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

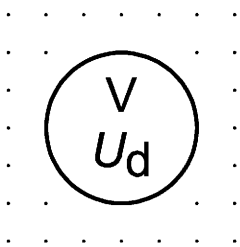
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-09 (S00921)			
Item	Description		
Name	Wavemeter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, wavemeters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

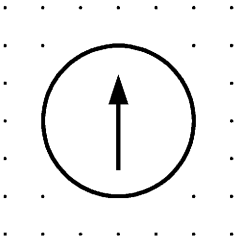
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-10 (S00922)			
Item	Description		
Name	Oscilloscope		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Circles, Lines		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, oscilloscopes		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

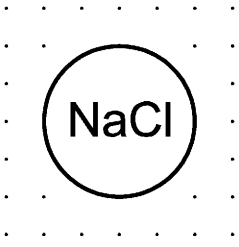
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-11 (S00923)			
Item	Description		
Name	Differential voltmeter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145, A00146		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, voltmeters		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

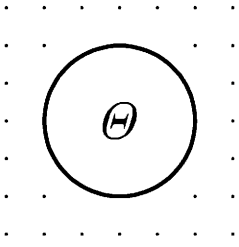
Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-12 (S00924)			
Item	Description		
Name	Galvanometer		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Arrows, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	galvanometers, indicating instruments, instruments, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-13 (S00925)			
Item	Description		
Name	Salinity meter		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—

Section 2 Examples of indicating instruments

Symbol number (Symbol identity number)	Symbol		
08-02-14 (S00926)			
Item	Description		
Name	Thermometer, Pyrometer		
Alternative names	—		
Form	—		
Alternative forms	—		
Application notes	A00144, A00145		
Application class	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams		
Function class	P Presenting information		
Shape class	Characters, Circles		
Symbol restrictions	—		
Remarks	—		
Applies	S00910		
Applied in	—		
Keywords	indicating instruments, instruments, measuring instruments, pyrometers, thermometers		
Note	—	Information just with IEC 60617	
		Status level	Standard
		Released on	2001-07-01
		Obsolete from	—