SLOVENSKI STANDARD
SIST EN 60617-2:1997

01-december-1997

Grafični simboli za sheme - 2. del: Elementi simbolov, kvalifikacijski simboli in drugi simboli za splošno uporabo (IEC 60617-2:1996)

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

Graphische Symbole für Schaltpläne -- Teil 2: Symbolelemente, Kennzeichen und andere Schaltzeichen für allgemeine Anwendungen

Symboles graphiques pour schémas -- Partie 2: Eléments de symboles, symboles distinctifs et autres symboles d'application générale

Ta slovenski standard je istoveten z: EN 60617-2:1996

ICS:

01.080.40	Grafični simboli za uporabo v risbah, diagramih, načrtih v elektrotehniki in elektroniki ter v ustrezni tehnični proizvodni dokumentaciji	Graphical symbols for use on electrical and electronics engineering drawings, diagrams, charts and in relevant technical product documentation
29.020	Elektrotehnika na splošno	Electrical engineering in general

SIST EN 60617-2:1997 **sl**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60617-2

June 1996

ICS 01.080.30

Descriptors: General, electric diagram, electrical symbol

English version

Graphical symbols for diagrams
Part 2: Symbol elements, qualifying symbols and other symbols having general application
(IEC 617-2:1996)

Symboles graphiques pour schémas
Partie 2: Eléments de symboles, symboles distinctifs et autres symboles d'application générale
(CEI 617-2:1996)

Graphische Symbole für Schaltpläne
Teil 2: Symbolelemente, Kennzeichen und andere Schaltzeichen für allgemeine Anwendungen
(IEC 617-2:1996)

This European Standard was approved by CENELEC on 1996-03-05. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 3A/380/FDIS, future edition 2 of IEC 617-2, prepared by SC 3A, Graphical symbols for diagrams, of IEC TC 3, Documentation and graphical symbols, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60617-2 on 1996-03-05.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1997-02-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1997-02-01

Endorsement notice

The text of the International Standard IEC 617-2:1996 was approved by CENELEC as a European Standard without any modification.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
617-2

Deuxième édition
Second edition
1996-05

Symboles graphiques pour schémas –

Partie 2:
Eléments de symboles, symboles distinctifs et autres symboles d'application générale

Graphical symbols for diagrams –

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

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

GRAPHICAL SYMBOLS FOR DIAGRAMS –

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

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 617-2 has been prepared by sub-committee 3A: Graphical symbols for diagrams, of IEC technical committee 3: Documentation and graphical symbols.

This second edition cancels and replaces the first edition published in 1983 and constitutes a technical revision.

The text of this standard is based on the following documents:

FDIS	Reports on voting
3A(CO)167	3A(CO)176
3A(CO)172	3A(CO)181
3A(CO)189	3A(CO)196
3A(CO)200	3A(CO)211
3A(CO)202	3A(CO)214
3A(CO)204	3A(CO)216
3A/380/FDIS	3A/418/RVD

Full information on the voting for the approval of this standard can be found in the reports on voting indicated in the above table.

Annexes A, B and C are for information only.

INTRODUCTION

This part of IEC 617 forms an element of a series which deals with graphical symbols for diagrams.

The 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: Basic 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

The scope and the normative references for this series are given in IEC 617-1.

Symbols have been designed in accordance with requirements given in the future ISO 11714-1*. The module size M = 2,5 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. To save space larger symbols have been reduced to half size and are marked "50 %" in the symbol column. In accordance with the future ISO 11714-1, 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 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 draughting system. The grid which was used has been reproduced in the background of the symbols.

The older symbols which were included in appendix A of the first edition of IEC 617-2 for a transitional period, are no longer part of this second edition, as they will definitely be withdrawn from use.

The indexes in Annex B and C include an alphabetic list of symbol names and their corresponding number. The symbol names are based on the description of the symbols of this part. A general index including an alphabetic list of symbols of all parts is given in IEC 617-1.

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* At present, at the stage of Draft International Standard (document 3/563/DIS).

SYMBOLES GRAPHIQUES POUR SCHÉMAS

Deuxième partie: Eléments de symboles, symboles distinctifs et autres symboles d'application générale

GRAPHICAL SYMBOLS FOR DIAGRAMS

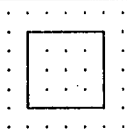
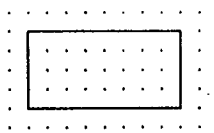
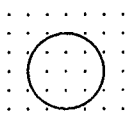
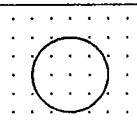
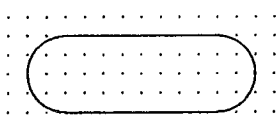
Part 2: Symbol elements, qualifying symbols and other symbols having general application

CHAPITRE I: ÉLÉMENTS DE SYMBOLES

SECTION 1 – CADRES ET ENVELOPPES

CHAPTER I: SYMBOL ELEMENTS

SECTION 1 – OUTLINES AND ENCLOSURES

No.	Symbole Symbol	Légende	Description
02-01-01	Forme 1 Form 1 	Objet, par exemple: – Equipement – Dispositif – Unité fonctionnelle – Composant – Fonction	Object, for example: – Equipment – Device – Functional unit – Component – Function
02-01-02	Forme 2 Form 2 	Des symboles ou légendes appropriés doivent être portés dans le symbole ou inscrits près de son cadre pour préciser le type de l'objet.	Suitable symbols or legends shall be inserted in or added to the symbol outline to indicate the type of object.
02-01-03	Forme 3 Form 3 	Un contour d'une autre forme peut être utilisé si la présentation l'exige.	An outline of another shape may be used if layout demands it.
02-01-04	Forme 1 Form 1 	Enveloppe (ampoule ou cuve) Enceinte Un contour d'une autre forme peut être utilisé si la présentation l'exige. Si l'enveloppe est construite pour assurer une protection spéciale, on peut l'indiquer par une note. Le symbole de l'enveloppe peut être omis s'il n'en résulte aucune confusion. Il doit être dessiné si une connexion aboutit à l'enveloppe. Si nécessaire le symbole de l'enveloppe peut être décomposé.	Envelope (bulb or tank) Enclosure An outline of another shape may be used if layout demands it. If the enclosure has special protective features attention may be drawn to these by a note. The envelope symbol may be omitted if no confusion is likely. The envelope must be shown if there is a connection to it. If necessary the envelope symbol may be split.
02-01-05	Forme 2 Form 2 		

No.	Symbole Symbol	Légende	Description
02-01-06		Séparation Le symbole est utilisé pour indiquer la séparation d'un groupe de constituants associés physiquement, mécaniquement ou fonctionnellement. N'importe quelle combinaison de traits courts et longs peut aussi être utilisée.	Boundary The symbol is used to indicate a boundary of a group of objects associated physically, mechanically or functionally. Any combination of short and long strokes may also be used.
02-01-07		Ecran Blindage Par exemple pour réduire la pénétration de champs électriques ou électromagnétiques. Toute forme convenable peut être utilisée pour le symbole.	Screen Shield For example for reducing penetration of electric or electromagnetic fields. The symbol may be drawn in any convenient shape.
02-01-08	* 200%	Protection contre le contact direct non intentionnel, symbole général. L'astérisque doit être remplacé par le(s) symbole(s) de l'équipement ou du disposif protégé contre le contact direct non intentionnel.	Protection against unintentional direct contact, general symbol. The asterisk shall be replaced by the symbol(s) for an equipment or device protected against unintentional direct contact.

CHAPITRE II: SYMBOLES DISTINCTIFS

SECTION 2 – NATURE DU COURANT ET DE LA TENSION

CHAPTER II: QUALIFYING SYMBOLS

SECTION 2 – KIND OF CURRENT AND VOLTAGE

No.	Symbole Symbol	Légende	Description
02-02-01	supprimé deleted	Transferé à Annexe A: 02-A1-01	Transferred to Annex A: 02-A1-01
02-02-02	supprimé deleted	Transferé à Annexe A: 02-A1-02	Transferred to Annex A: 02-A1-02
02-02-03	⎓	Courant continue La valeur de la tension peut être inscrite à droite et le type de réseau à gauche du symbole. EXEMPLE: 2/M⎓ 220/110 V	Direct current The voltage may be indicated at the right of the symbol and the type of system at the left. EXAMPLE: 2/M⎓ 220/110 V
02-02-04	∼	Courant alternatif La valeur numérique de la fréquence ou de la bande de fréquences peut être inscrite à droite du symbole. EXEMPLES:	Alternating current The numerical value of the frequency or the frequency range may be added at the right-hand side of the symbol. EXAMPLES:
02-02-05	∼ 50 Hz	Courant alternatif, 50 Hz	Alternating current of 50 Hz
02-02-06	∼ 100...600 kHz	Courant alternatif dans une bande de fréquences de 100 kHz à 600 kHz La valeur de la tension peut également être inscrite à droite du symbole. Le nombre de phases et la présence d'un neutre, peuvent être inscrits à gauche du symbole.	Alternating current frequency range 100 kHz to 600 kHz The voltage value may also be indicated to the right of the symbol. The number of phases and the presence of a neutral may be indicated at the left-hand side of the symbol.

No.	Symbole Symbol	Légende	Description
02-02-07	3/N ~ 400/230 V 50 Hz	EXEMPLE: Courant alternatif triphasé avec neutre, 400 V (230 V entre chaque phase et le neutre), 50 Hz. (voir aussi CEI 1293) S'il est nécessaire d'indiquer un système conformément aux désignations établies dans la CEI 364-3 la désignation appropriée doit être ajoutée.	EXAMPLE: Alternating current: three-phase with neutral, 400 V (230 V between phase and neutral), 50 Hz. (see also IEC 1293) If it is necessary to indicate a system in accordance with the designations established in IEC 364-3 the corresponding designation shall be added to the symbol.
02-02-08	3/N ~ 50 Hz / TN – S	EXEMPLE: Courant alternatif, triphasé, 50 Hz; système ayant un point relié à la terre et conducteur neutre et conducteur de protection séparés dans l'ensemble	EXAMPLE: Alternating current, three-phase, 50 Hz; system having one point directly earthed and separate neutral and protective conductors throughout
		Courant alternatif, différentes bandes de fréquences Les symboles suivants peuvent être utilisés lorsqu'il faut, dans un même schéma, distinguer les différentes bandes de fréquences, par exemple.	Alternating current, different frequency ranges The following symbols may be used when it is necessary on a given drawing to distinguish between the different frequency ranges, for example.
02-02-09		Fréquences relativement basses (fréquences industrielles, fréquences infra-acoustiques)	Relatively low frequencies (power frequencies or sub-audio frequencies)
02-02-10		Fréquences moyennes (fréquences acoustiques)	Medium frequencies (audio)
02-02-11		Fréquences relativement hautes (fréquences supra-acoustiques, fréquences porteuses, fréquences radioélectriques)	Relatively high frequencies (super audio, carrier and radio frequencies)
02-02-12		Courant redressé avec composante alternative (s'il est nécessaire de le distinguer d'un courant redressé et filtré)	Rectified current with alternating component (if it is necessary to distinguish from a rectified and filtered current)

No.	Symbole Symbol	Légende	Description
02-02-13	+	Polarité positive	Positive polarity
02-02-14	–	Polarité négative	Negative polarity
02-02-15	N	Neutre Ce symbole pour conducteur neutre est donné par la CEI 445.	Neutral This symbol for neutral is given in IEC 445.
02-02-16	M	Médian Ce symbole pour conducteur médian est donné par la CEI 445.	Mid-wire This symbol for mid-wire is given in IEC 445.