SLOVENSKI STANDARD
SIST EN 60617-10:1997

01-december-1997

Grafični simboli za sheme - 10. del: Telekomunikacije: Prenos (IEC 60617-10:1996)

Graphical symbols for diagrams -- Part 10: Telecommunications: Transmission

Graphische Symbole für Schaltpläne -- Teil 10: Schaltzeichen für die Nachrichtentechnik: Übertragungseinrichtungen

Symboles graphiques pour schémas -- Partie 10: Télécommunications: Transmission

Ta slovenski standard je istoveten z: EN 60617-10:1996

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
33.020	Telekomunikacije na splošno	Telecommunications in general

SIST EN 60617-10:1997 sl

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60617-10

June 1996

ICS 01.080.30

Descriptors: Electric diagram, electrical symbol, telecommunication, data transmission

English version

Graphical symbols for diagrams
Part 10: Telecommunications: Transmission
(IEC 617-10:1996)

Symboles graphiques pour schémas
Partie 10: Télécommunications:
Transmission
(CEI 617-10:1996)

Graphische Symbole für Schaltpläne
Teil 10: Schaltzeichen für die
Nachrichtentechnik:
Übertragungseinrichtungen
(IEC 617-10:1996)

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

Ref. No. EN 60617-10:1996 E

Foreword

The text of document 3A/388/FDIS, future edition 2 of IEC 617-10, 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 60617-10 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 617-10:1996 was approved by CENELEC as a European Standard without any modification.

NORME INTERNATIONALE

INTERNATIONAL STANDARD

CEI
IEC
617-10

Deuxième édition
Second edition
1996-05

Symboles graphiques pour schémas –

Partie 10:
Télécommunications: Transmission

Graphical symbols for diagrams –

Part 10:
Telecommunications: Transmission

Bureau central de la Commission Electrotechnique Internationale 3, rue de Varembé Genève Suisse

Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE W

Pour prix, voir catalogue en vigueur
For price, see current catalogue

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

GRAPHICAL SYMBOLS FOR DIAGRAMS –

Part 10: Telecommunications: Transmission

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 617-10 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)170 3A(CO)203 3A/388/FDIS	3A(CO)179 3A(CO)205 3A/426/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 617-10 for a transitional period, are no longer part of this second edition, as they will definitely be withdrawn from use.

The indexes in Annex A, 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.

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

SYMBOLES GRAPHIQUES POUR SCHÉMAS

Dixième partie: Télécommunications: Transmission

CHAPITRE I: CIRCUITS DE TÉLÉCOMMUNICATION

SECTION 1 – LIGNES ET AFFECTATION DE CIRCUITS

1.1 Le symbole 03-01-01 est utilisé pour représenter une ligne ou un autre circuit de télécommunication. L'affectation d'un circuit peut être précisée en utilisant des lettres, symboles 10-01-01 à 10-01-04.

GRAPHICAL SYMBOLS FOR DIAGRAMS

Part 10: Telecommunications: Transmission

CHAPTER I: TELECOMMUNICATION CIRCUITS

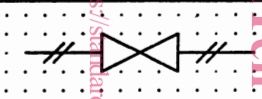
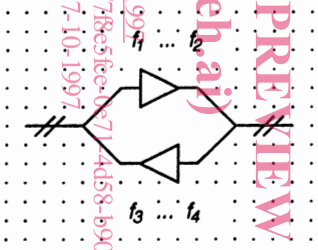
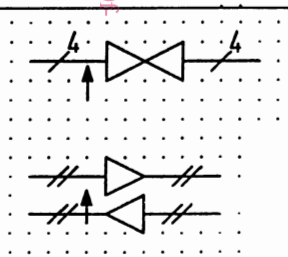
SECTION 1 – LINES AND CIRCUIT USAGE

1.1 Symbol 03-01-01 is used to represent a line or other telecommunication circuit. The usage of circuits may be indicated by letters, symbols 10-01-01 to 10-01-04.

No.	Symbole Symbol	Légende	Description
10-01-01	F	Téléphonie	Telephony
10-01-02	T	Télégraphie et transmission de données	Telegraphy and transmission of data
10-01-03	V	Canal vidéo (télévision)	Video channel (television)
10-01-04	S	Canal son (télévision ou radiodiffusion)	Sound channel (television or radio broadcasting)
10-01-05	F	EXEMPLES: Ligne ou circuit téléphonique Un trait tireté peut être dessiné pour distinguer une liaison radioélectrique d'une liaison de télécommunication. Le symbole d'antenne (10-04-01) peut être dessiné à chaque extrémité du symbole de la liaison radioélectrique.	EXAMPLES: Telephone line or circuit A dashed line may be used to identify a radio link or any radio section of a circuit. The antenna symbol (10-04-01) may be placed at the radio terminal points.
10-01-06	V+S+F	Liaison radioélectrique utilisée pour la télévision (vidéo et son) et pour la téléphonie	Radio link carrying television (video and sound) and telephony
10-01-07		Ligne pupinisée	Coil–loaded line Inductively loaded line

SECTION 2 – CIRCUITS AMPLIFIÉS

SECTION 2 – AMPLIFIED CIRCUITS

No.	Symbole Symbol	Légende	Description
10-02-01		Circuit à deux fils avec amplification dans un seul sens	Two-wire line with unidirectional amplification
10-02-02		Circuit à deux fils avec amplification dans les deux sens	Two-wire line with both-way amplification
10-02-03 10-02-04	Forme 1 Form 1 Forme 2 Form 2 	Circuit à quatre fils avec amplification dans les deux sens	Four-wire circuit with both-way amplification
10-02-05		Circuit assimilé à un circuit à quatre fils à partage de fréquences	Four-wire type circuit with frequency separation
10-02-06 10-02-07	Forme 1 Form 1 Forme 2 Form 2 	Circuit à quatre fils avec amplification terminale dans les deux sens et suppression d'écho	Four-wire circuit with both-way terminals amplification with echo suppression

CHAPITRE II: ANTENNES ET STATIONS OU POSTES RADIOÉLECTRIQUES

SECTION 3 – SYMBOLES DISTINCTIFS

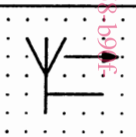
CHAPTER II: ANTENNAS AND RADIO STATIONS

SECTION 3 – QUALIFYING SYMBOLS

No.	Symbole Symbol	Légende	Description
10-03-01		Polarisation dans un plan Pour indiquer la polarisation horizontale (verticale) une flèche doit être tracée perpendiculairement (parallèlement) à la ligne centrale du symbole d'antenne.	Plane polarization Horizontal (vertical) polarization shall be indicated by an arrow shown perpendicular (parallel) to the stem of the antenna symbol.
10-03-02		Polarisation circulaire	Circular polarization
10-03-03		Direction de rayonnement fixe en azimut	Direction of radiation fixed in azimuth
10-03-04		Direction de rayonnement orientable en azimut	Direction of radiation variable in azimuth
10-03-05		Direction de rayonnement fixe en site	Direction of radiation fixed in elevation
10-03-06		Direction de rayonnement orientable en site	Direction of radiation variable in elevation
10-03-07		Direction de rayonnement fixe en azimut et en site	Direction of radiation fixed in azimuth and elevation
10-03-08		Radiogoniomètre ou radiophare	Direction finder or radio beacon

SECTION 4 – SYMBOLE GÉNÉRAL ET EXEMPLES D'EMPLOI

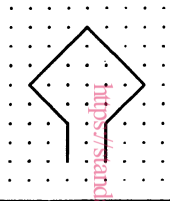
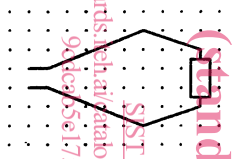
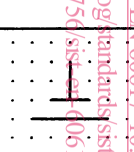
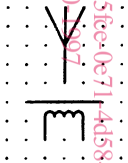
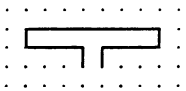
SECTION 4 – GENERAL SYMBOL AND EXAMPLES OF USE

No.	Symbole Symbol	Légende	Description
10-04-01		Antenne, symbole général Ce symbole peut être utilisé pour représenter une antenne directive ou non. La ligne centrale du symbole peut représenter un type quelconque d'alimentation, symétrique ou asymétrique, y compris un conducteur unique. On peut indiquer sur un diagramme distinct, voisin du symbole de l'antenne, le lobe principal du diagramme de directivité de l'antenne. On peut ajouter des indications supplémentaires (lettres et chiffres) tirées du Règlement des radiocommunications en vigueur, publié par l'Union Internationale des Télécommunications (UIT), Genève. On peut ajouter un nom ou une référence au symbole général de l'antenne.	Antenna, general symbol This symbol may be used to represent any type of antenna or aerial array. The stem of the symbol may represent any type of balanced or unbalanced feeder, including a single conductor. A drawing of the general shapes of the main lobes of the polar diagrams of the antenna may be given adjacent to the antenna symbol. Supplementary references in figures or letter symbols may be taken from the current Radio Regulations published by the International Telecommunication Union (ITU), Geneva. Alternatively a name or a reference may be written adjacent to the general antenna symbol.
10-04-02		Antenne avec polarisation circulaire	Antenna with circular polarization
10-04-03		Antenne à direction de rayonnement orientable en azimut	Antenna with direction of radiation variable in azimuth
10-04-04		Antenne à direction de rayonnement fixe en azimut, à polarisation horizontale	Directional antenna fixed in azimuth, horizontal polarization
10-04-05		Antenne à direction de rayonnement orientable en site	Antenna with direction of radiation variable in elevation

No.	Symbole Symbol	Légende	Description
10-04-06		Antenne radiogoniométrique ou de radiophare	Direction finding antenna (radio goniometric or radio beacon)
10-04-07	H	Antenne à direction de rayonnement fixe en azimut, à polarisation verticale avec son diagramme de rayonnement dans le plan horizontal	Directional antenna fixed in azimuth, vertically polarized, with horizontal polar diagram
10-04-08	(1s^{-1} 0° ... 57° ... 0°) 4 min^{-1}	Antenne radar tournant dans un sens en azimut à la vitesse de quatre tours par minute et oscillante en site entre 0° ... 57° ... 0° en 1 s	Radar antenna rotating four times per minute in azimuth and reciprocating in elevation between 0° ... 57° ... 0° in 1 s
10-04-09	TOURNIQET TURNSTILE	Antenne tourniquet	Turnstile antenna

SECTION 5 – ANTENNES PARTICULIÈRES ET ÉLÉMENTS D'ANTENNES

SECTION 5 – SPECIFIC TYPES OF ANTENNAS AND PARTS OF ANTENNAS

No.	Symbole Symbol	Légende	Description
10-05-01		Cadre	Loop (or frame) antenna
10-05-02		Antenne en losange, figurée terminée par une résistance	Rhombic antenna, shown terminated by a resistor
10-05-03		Contrepoids	Counterpoise
10-05-04		Antenne à noyau magnétique, par exemple de ferrite S'il n'y a pas de risque de confusion, on peut supprimer le symbole général d'antenne.	Magnetic rod antenna, for example ferrite If there is no risk of confusion, the general antenna symbol may be omitted.
10-05-05		Doublet	Dipole
10-05-06		Doublet replié	Folded dipole

No.	Symbole Symbol	Légende	Description
10-05-07		Doublet replié, figuré avec trois éléments directeurs et un élément réflecteur	Folded dipole, shown with three directors and one reflector
10-05-08		Symétriseur	Balun (Balancing unit)
10-05-09		Doublet replié, figuré avec un symétriseur et une paire coaxiale	Folded dipole, shown with balun and coaxial feeder
10-05-10		Antenne à fentes, figurée avec alimentation par un guide d'ondes de section rectangulaire	Slot antenna, shown with rectangular waveguide feeder
10-05-11		Cornet	Horn antenna Horn feed
10-05-12		Réflecteur en D alimenté par un cornet, figuré avec un guide d'ondes de section rectangulaire	Cheese (box) reflector with horn feed, shown with rectangular waveguide feeder
10-05-13		Antenne parabolique, figurée alimentée par un guide d'ondes de section rectangulaire	Parabolic antenna, shown with rectangular wave-guide feeder
10-05-14		Cornet réflecteur, figuré alimenté par un guide d'ondes de section circulaire	Horn-reflector antenna, shown with circular wave-guide feeder