
Grafični simboli za sheme - 7. del: Stikalni aparati, krmilni aparati in zaščitne naprave (IEC 60617-7:1996)

Graphical symbols for diagrams -- Part 7: Switchgear, controlgear and protective devices

Graphische Symbole für Schaltpläne -- Teil 7: Schaltzeichen für Schalt- und Schutzeinrichtungen

Symboles graphiques pour schémas -- Partie 7: Appareillage et dispositifs de commande et de protection

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01.080.40	Grafični simboli za uporabo v risbah, diagramih, načrtih v elektrotehnik 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
29.120.01	Električna dodatna oprema na splošno	Electrical accessories in general

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EUROPEAN STANDARD

EN 60617-7

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 1996

ICS 01.080.30

Descriptors: Electrical equipment, protective device, electric diagram, electrical symbol

English version

Graphical symbols for diagrams
Part 7: Switchgear, controlgear and protective devices
(IEC 617-7:1996)

Symboles graphiques pour schémas
Partie 7: Appareillage et dispositifs de
commande et de protection
(CEI 617-7:1996)

Graphische Symbole für Schaltpläne
Teil 7: Schaltzeichen für Schalt- und
Schutzeinrichtungen
(IEC 617-7:1996)

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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/385/FDIS, future edition 2 of IEC 617-7, 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 60617-7 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with the EN have to be withdrawn (dow) 1997-02-01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 617-7:1996 was approved by CENELEC as a European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
617-7**

Deuxième édition
Second edition
1996-05

Symboles graphiques pour schémas –

**Partie 7:
Appareillage et dispositifs de commande
et de protection**

iTeh STANDARD PREVIEW

Graphical symbols for diagrams –

**Part 7:
Switchgear, controlgear
and protective devices**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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CONTENTS

	Page
FOREWORD	7
INTRODUCTION	9
CHAPTER I: GENERAL RULES	
Section 1 Qualifying symbols	11
CHAPTER II: CONTACTS	
Section 2 Contacts with two or three positions	13
Section 3 Passing contacts with two positions	15
Section 4 Early and late operating contacts.....	16
Section 5 Contacts with delayed operation	17
Section 6 Automatic return and non-automatic return contacts.....	18
CHAPTER III: SWITCHES, SWITCHGEAR AND STARTERS	
Section 7 Single-pole switches.....	19
Section 8 Position switches.....	21
Section 9 Temperature sensitive switches.....	22
Section 10 (transferred to annex A1).....	23
Section 11 Examples of multi-position switches, including control switches.....	23
Section 12 Block symbols for complex switches.....	28
Section 13 Power-switching devices.....	31
Section 14 Block symbols for motor starters.....	35
CHAPTER IV: ALL-OR-NOTHING RELAYS	
Section 15 Operating devices	37
CHAPTER V: MEASURING RELAYS AND RELATED DEVICES	
Section 16 Block symbol and qualifying symbols.....	42
Section 17 Examples of measuring relays.....	44
Section 18 Other devices.....	47
CHAPTER VI: PROXIMITY AND TOUCH-SENSITIVE DEVICES	
Section 19 Sensors and detectors.....	48
Section 20 Switches	49
CHAPTER VII: PROTECTIVE DEVICES	
Section 21 Fuses and fuse-switches.....	50
Section 22 Spark gaps and arresters.....	52
Section 23 (transferred to annex A3).....	52

CHAPTER VIII: MISCELLANEOUS SYMBOLS	
Section 24	(transferred to annex A4)..... 53
Section 25	Static switches..... 53
Section 26	Static switching devices..... 54
Section 27	Coupling devices and static relays, block symbols..... 55
Annex A – Older symbols 56
Annex B – French alphabetic index 59
Annex C – English alphabetic index 63

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

GRAPHICAL SYMBOLS FOR DIAGRAMS –

Part 7: Switchgear, controlgear and protective devices

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.

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International Standard IEC 617-7 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)159 A	3A(CO)171
3A(CO)168	3A(CO)177
3A(CO)169	3A(CO)178
3A(CO)172	3A(CO)181
3A(CO)200	3A(CO)211
3A(CO)202	3A(CO)214
3A(CO)203	3A(CO)215
3A(CO)207	3A(CO)219
3A/385/FDIS	3A/423/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 617-7 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.

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

SYMBOLS GRAPHIQUES POUR SCHÉMAS

Septième partie: Appareillage et dispositifs de commande et de protection

GRAPHICAL SYMBOLS FOR DIAGRAMS

Part 7: Switchgear, controlgear and protective devices

CHAPITRE I: RÈGLES GÉNÉRALES

- I.1 Il est permis d'ajouter à la plupart des symboles un petit cercle vide ou plein pour représenter le point de l'articulation. Voir par exemple le 07-02-02.
Dans quelques symboles, le cercle représentant le point d'articulation doit être figuré. Par exemple, voir 07-02-05.
- I.2 Pour d'autres méthodes de représentation d'interrupteurs en particulier les interrupteurs électroniques et complexes voir CEI 617-12, section 17A et 29 et CEI 617-13, section 17.

CHAPTER I: GENERAL RULES

- I.1 A small circle, open or filled in, representing the hinge point, may be added to most of the symbols. For example, see 07-02-02.
In some symbols the circle indicating the hinge point shall be shown. For example, see 07-02-05.
- I.2 For other methods of representing switches, especially complex, electronic switches, see IEC 617-12, section 17A and 29, and IEC 617-13, section 17.

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SECTION 1 - QUALIFYING SYMBOLS

SECTION 1 - SYMBOLES DISTINCTIFS

No.	Symbole	Symbol	Légende	Description
07-01-01		Fonction contacteur	Contactor function	
07-01-02		Fonction disjoncteur	Circuit breaker function	
07-01-03		Fonction sectionneur	Disconnecter (isolator) function	
07-01-04		Fonction interrupteur-sectionneur	Switch-disconnector (isolating-switch) function	
07-01-05		Fonction déclenchement automatique provoqué par relais de mesure ou déclencheur incorporé	Automatic tripping function initiated by a built-in measuring relay or release	
07-01-06		Fonction contact de position	Position switch function	

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

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1. This qualifying symbol may be applied to simple contact symbols to indicate position switches if there is no need to show the means of operating the contact. In complicated cases, where it is desirable to show the means of operation, one of the symbols 02-13-16 through 02-13-19 may be used instead.

2. To depict a contact which is mechanically operated in both directions, this symbol shall be placed on both sides of the contact symbol.

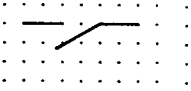
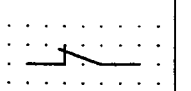
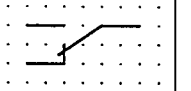
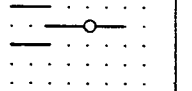
1. Ce symbole distinctif peut être utilisé avec un contact simple afin d'indiquer un interrupteur de position lorsqu'il n'est pas nécessaire de préciser ce mode de commande. Dans les cas complexes où il est souhaitable de préciser ce mode de commande, on peut appliquer à la place, l'un des symboles 02-13-16 à 02-13-19.

2. Pour représenter un contact actionné mécaniquement dans les deux sens, ce symbole doit être placé des deux côtés du symbole de contact.

No.	Symbole	Légende	Description
07-01-07		<p>Fonction retour automatique, par exemple retour à ressort</p> <p>1. Ce symbole peut être utilisé pour indiquer une fonction retour automatique. Par exemple, voir 07-06-01.</p> <p>2. Ce symbole ne doit pas être utilisé conjointement avec les symboles distinctifs 07-01-01, 07-01-04. Dans de nombreux cas, le symbole 02-12-07 peut être utilisé.</p>	<p>Automatic return function, for example, spring return</p> <p>1. This symbol may be used to indicate automatic return. For example, see 07-06-01.</p> <p>2. This symbol shall not be used together with qualifying symbols 07-01-01, 07-01-02, 07-01-03 and 07-01-04. In many cases, symbol 02-12-07 may be used.</p>
07-01-08		<p>Fonction retour non-automatique (à position maintenue)</p> <p>1. Ce symbole peut être utilisé pour indiquer une fonction retour non-automatique (à position maintenue). Lorsque cette convention est utilisée il convient de la signaler de manière appropriée.</p> <p>2. Ce symbole ne doit pas être utilisé conjointement avec les symboles distinctifs 07-01-01, 07-01-02, 07-01-03 et 07-01-04. Dans de nombreux cas, le symbole 02-12-08 peut être utilisé.</p>	<p>Non-automatic return (stay put) function</p> <p>1. This symbol may be used to indicate non-automatic return function. When this convention is invoked, its use should be appropriately referenced.</p> <p>2. This symbol should not be used together with qualifying symbols 07-01-01, 07-01-02, 07-01-03 and 07-01-04. In many cases, symbol 02-12-08 may be used.</p>
07-01-09		<p>Manœuvre positive d'un interrupteur</p> <p>1. Ce symbole doit être utilisé pour indiquer que la manœuvre positive de l'appareil mécanique de connexion est positive, c'est à dire que la manœuvre donne l'assurance que tous les contacts sont dans la position correspondant à celle de l'organe de commande.</p> <p>2. Si les contacts sont représentés avec une liaison, le symbole doit s'appliquer à tous les contacts reliés, sauf indication contraire (voir symbole 07-08-07).</p>	<p>Positive operation of a switch</p> <p>1. This symbol shall be used to indicate that the positive operation of a mechanical device in the direction shown is ensured or is required. This means that the operation ensures that all contacts are in the position corresponding to the activating device.</p> <p>2. If contacts are shown linked, the symbol shall apply to all the linked contacts unless otherwise indicated (see symbol 07-08-07).</p>

CHAPTER II: CONTACTS

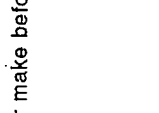

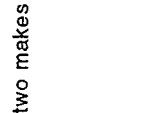

SECTION 2 – CONTACTS WITH TWO OR THREE POSITIONS

No.	Symbol	Légende	Description
07-02-01 Forme 1 Form 1		<p>Contact à fermeture (contact de travail)</p> <p>Ce symbole peut également être utilisé comme symbole général d'interrupteur.</p>	<p>Make contact</p> <p>This symbol may also be used as the general symbol for a switch.</p>
07-02-02 Forme 2 Form 2		<p>Contact à ouverture (contact de repos)</p>	<p>Break contact</p>
07-02-03		<p>Contact à deux directions sans chevauchement</p>	<p>Change-over break before make contact</p>
07-02-04		<p>Contact à deux directions avec position médiane de coupure</p>	<p>Change-over contact with off-position in the centre</p>

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No.	Symbole	Symbol	Légende	Description
07-02-06	Forme 1 		Contact à deux directions avec chevauchement	Change-over make before break contact
07-02-07	Forme 2 			
07-02-08			Contact à deux fermetures	Contact with two makes
07-02-09			Contact à deux ouvertures	Contact with two breaks

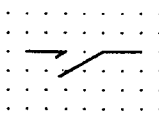
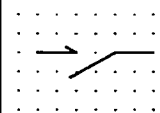
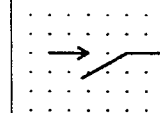
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SECTION 3 – PASSING CONTACTS WITH TWO POSITIONS

SECTION 3 – CONTACTS DE PASSAGE À DEUX POSITIONS

No.	Symbole	Symbol	Légende	Description
07-03-01			Contact de passage fermant momentanément à l'action de son organe de commande	Passing make contact closing momentarily when its operating device is actuated
07-03-02			Contact de passage fermant momentanément au relâchement de son organe de commande	Passing make contact closing momentarily when its operating device is released
07-03-03			Contact de passage fermant momentanément à l'action et au relâchement de son organe de commande	Passing make contact closing momentarily when its operating device is actuated or released

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