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Edition 1.0 2023-02

TECHNICAL REPORT

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Graphical symbols for diagrams –
Part 1: General, qualifying and generic symbols

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GRAPHICAL SYMBOLS FOR DIAGRAMS –

Part 1: General, qualifying and generic symbols

FOREWORD

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The text of this Technical Report is based on the following documents:

Draft	Report on voting
3/1488/DTR	3/1539/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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INTRODUCTION

Initial work was done by TC 3 Maintenance Team 60617 with the aim to clarify the terminology used in the naming of some of the graphical symbols for diagrams standardized in IEC 60617. This document also highlights improved naming of some graphical symbols categorized according to the concepts of generic symbol, general symbol and qualifying symbol, where the symbol "name" is recognized as giving a short description of the meaning of the graphical symbol for diagrams. Figure 1 provides the relationship among types of graphical symbols for diagrams.

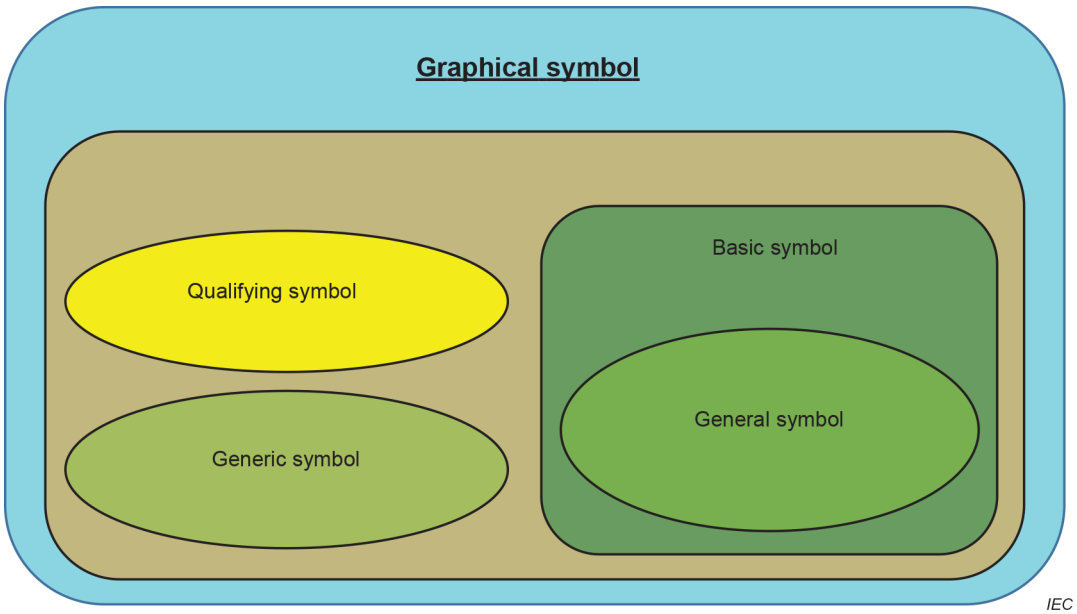

Figure 1 – Relationship among types of graphical symbols for diagrams

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GRAPHICAL SYMBOLS FOR DIAGRAMS –

Part 1: General, qualifying and generic symbols

1 Scope

This document contains, by way of example, a collection of generic symbols, general symbols and qualifying symbols for diagrams taken from IEC 60617. Some of the wording of entries in the IEC 60617 database are annotated and/or modified for the purpose of clarification. Existing symbols in the IEC 60617 database are classified according to the classification proposed in this document.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
graphical symbol
visually perceptible figure with a particular meaning used to transmit information independently of language

Note 1 to entry: The graphical symbol may represent objects of interest, such as products, functions or requirements for manufacturing, quality control, etc.

Note 2 to entry: A graphical symbol is not to be confused with the simplified representation of products which is normally drawn to scale and which can look like a graphical symbol.

[SOURCE: ISO 81714-1:2010, 3.1]

3.2
basic symbol
graphical symbol representing a defined concept, applicable for use in diagrams

Note 1 to entry: A basic symbol can be:

– used alone; or
– qualified by qualifying symbols or other basic symbols; or
– used as a qualifier to another basic symbol.

3.3
general symbol
basic symbol that forms the basis for other basic symbols representing the same main concept but with different specific characteristics

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Note 1 to entry: IEC 60617 graphical symbols S00001, S00227, S00457, S00555, S00567, S00583, S00641, S00841, and S00842 are examples of the concept of "general symbol".

3.4
qualifying symbol
graphical symbol applicable only for providing additional information to a basic symbol

Note 1 to entry: IEC 60617 categories "Qualifiers only" and "Functional attribute only" provide a list of qualifying symbols, e.g., S00077, S00120 and S00223.

3.5
generic symbol
graphical symbol that represents a main concept and is intended to be adapted with characters, qualifying symbols or basic symbols when being applied

Note 1 to entry: IEC 60617 graphical symbols S00066, S00819, S00910, S00911, S00912, S01870, S01921 are examples of the concept of "generic symbol".

3.6
name
short description of the meaning of the graphical symbol for diagram

[SOURCE: IEC 60617, General description, modified – the introductory "a" has been removed, and "meaning of the symbol" has been replaced with "meaning of the graphical symbol for diagram".]

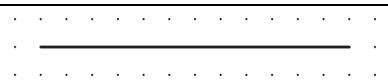
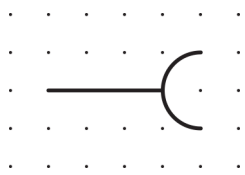
4 Classification of graphical symbols

4.1 General symbols

General symbols are the bases for a set of other basic symbols representing the same main concept but with different specific characteristics. Table 1 provides examples of general symbols for concepts applicable to all domains, for use in diagrams. Table 2 provides examples of general symbols for the domain of binary logic elements.

NOTE In Table 1 and Table 2, the column with the heading "Name" of graphical symbols sometimes includes additional wording after the comma which is not included in IEC 60617 at the time of publication of this document. Such additional wording will form part of the information to be used when a complete maintenance of IEC 60617 takes place. It is useful to keep consistency of naming. Therefore, any additions or deletions are highlighted in red.

Table 1 – Examples of general symbols applicable in all domains

Symbols	ID	Name
	S00001	Connection, general symbol
	S00031	Contact, female (of a socket or plug), general symbol
	S00032	Contact, male (of a socket or plug), general symbol

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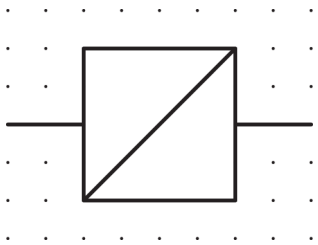
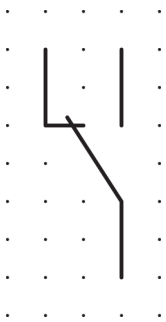
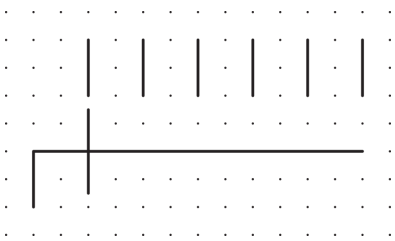
Symbols	ID	Name
	S00213	Converter, general symbol
	S00227	Make contact, general symbol; Switch, general symbol
	S00229	Break contact, general symbol
	S00230	Change-over break before make contact, general symbol
	S00270	Multi-position switch, general symbol

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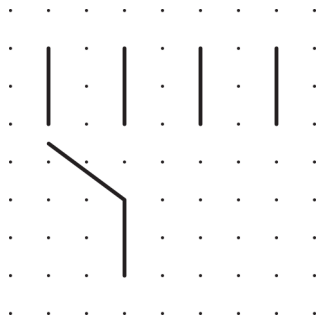
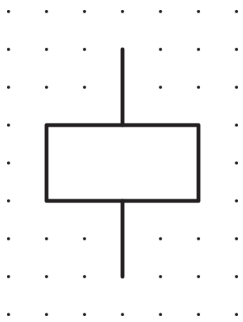
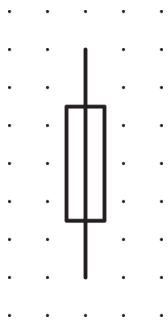
Symbols	ID	Name
	S00271	Multi-position switch, maximum four positions, general symbol
	S00297	Motor starter, general symbol
	S00305	Operating device, general symbol; Relay coil, general symbol
	S00362	Fuse, general symbol
	S00371	Spark gap, general symbol

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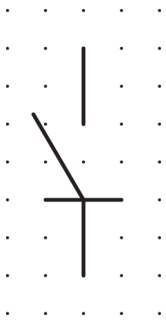
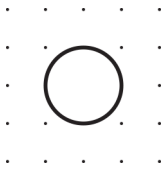
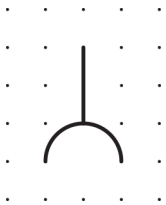
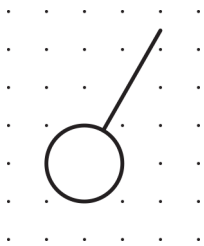
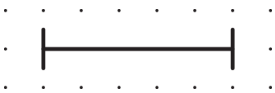
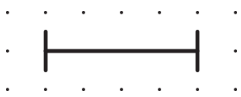
	S00376	Static switch, general symbol
	S00453	Box, general symbol
	S00457	Socket outlet (power) general symbol
	S00465	Socket outlet (telecommunications), general symbol
	S00466	On/Off switch, general symbol for installation diagrams
	S00484	Luminaire, general symbol; Fluorescent lamp, general symbol
	S00487	Projector, general symbol
	S00498	Straight section, general symbol

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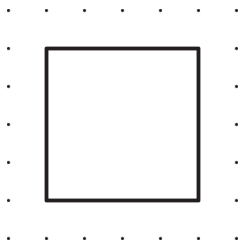
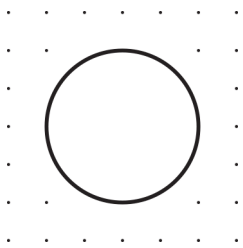
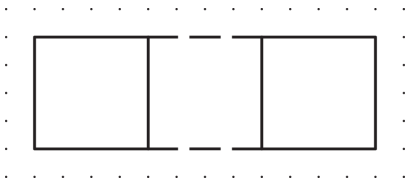
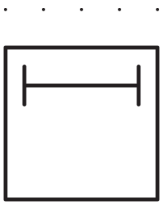
	S00533	Aeronautical ground light, elevated, general symbol
	S00534	Aeronautical ground light, surface, general symbol
	S00552	Warning sign, general symbol; Guidance sign, general symbol
	S00555	Resistor, general symbol
	S00567	Capacitor, general symbol
	S00583	Coil, general symbol; Winding, general symbol
	S00608	Delay line, general symbol; Delay element, general symbol
	S00641	Semiconductor diode, general symbol

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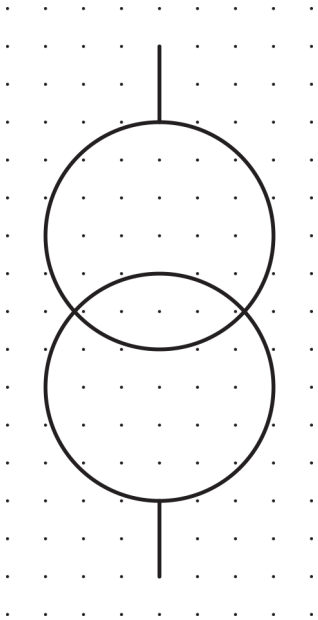
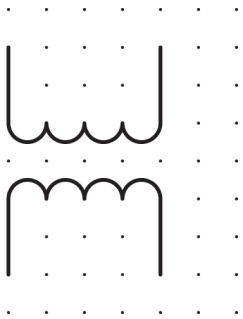
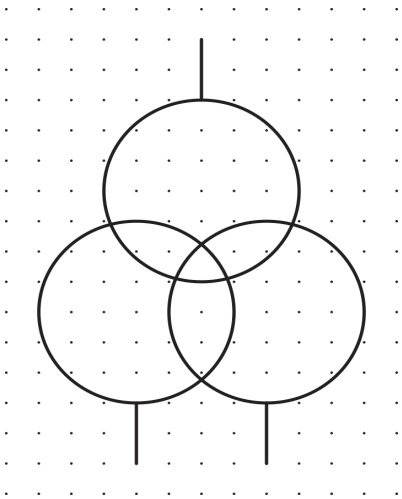
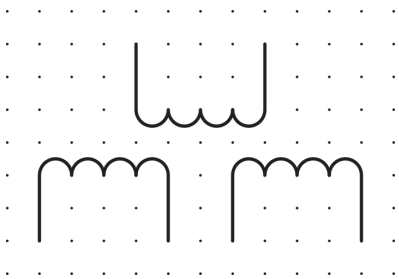
	S00841	Transformer with two windings, general symbol /Form 1
	S00842	Transformer with two windings, general symbol /Form 2
	S00844	Transformer with three windings, general symbol /Form 1
	S00845	Transformer with three windings, general symbol /Form 2

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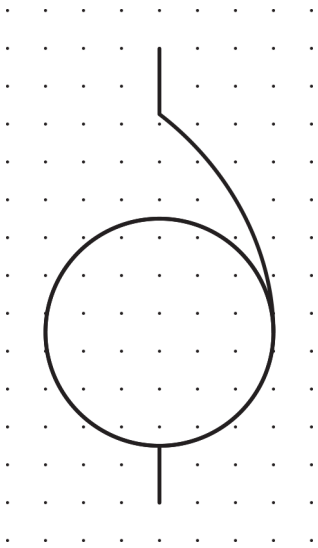
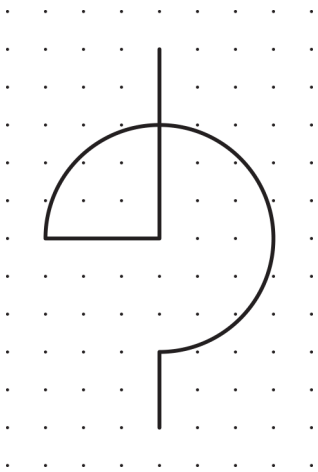
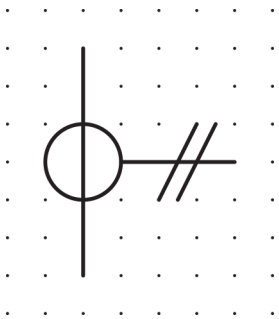
	S00846	Auto-transformer, general symbol /Form 1
	S00847	Auto-transformer, general symbol /Form 2
	S00848	Reactor, general symbol /Form 1
	S00849	Reactor, general symbol /Form 2
	S00850	Current transformer, general symbol /Form 1

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