

norm**NEN-EN-ISO 14617-6**

Grafische symbolen voor schema's -
Deel 6: Meet- en besturingsfuncties
(ISO/DIS 14617-6:2000, IDT)

Publicatie uitsluitend voor commentaar

Graphical symbols for diagrams - Part 6: Measurement and control
functions (ISO/DIS 14617-6:2000, IDT)

maart 2000

ICS 01.080.30; 25.040.40

Commentaar voor 2000-06-01

Als Europees normontwerp is gepubliceerd: prEN ISO 14617-6:2000, IDT

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Voorbeeld
Preview



Graphical symbols for diagrams — Part 6: Measurement and control functions

*Symboles graphiques pour schémas —
Partie 6: Fonctions de mesurage et de contrôle*

ICS 01.080.30; 25.040.40

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Foreword

This part of ISO 14617 has been prepared by ISO Subcommittee TC10/SC10. It cancels and replaces ISO 3511-1:1977, ISO 3511-2:1984, and ISO 3511-4:1985.

ISO 14617 consists of the following parts, under the general title *Graphical symbols for diagrams*.

- Part 1: General information. General indexes
- Part 2: Graphical symbols having general application
- Part 3: Connections and related devices
- Part 4: Actuators and related devices
- Part 5: Measurement and control devices
- Part 6: Measurement and control functions
- Part 7: Basic mechanical components
- Part 8: Valves and dampers
- Part 9: Pumps, compressors, and fans
- Part 10: Fluid power converters
- Part 11: Devices for heat transfer, heat engines
- Part 12: Devices for separating, purification, and mixing

Other parts are under consideration.

Introduction

The purpose of the standard in its ultimate state is to create a library of harmonized graphical symbols for diagrams common to most technical fields. This work has been and will be performed in close co-operation between ISO and IEC. The final result is intended to be published as a standard common to ISO and IEC, from which technical committees responsible for specific application fields may prepare extracts and additional examples in the form of collective standards or manuals.

For an overview of the standard, see ISO 14617-1.

Voorbeeld
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1 Scope

This part of ISO 14617 comprises graphical symbols for measurement and control functions. In simple applications the symbols may instead represent components or devices implementing these functions. For graphical symbols for measurement and control components and devices, see ISO 14617-5.

For general rules for the creation and application of graphical symbols for use on diagrams, see ISO 81714-1.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 81714-1:XXXX, *Design of graphical symbols for use in the technical documentation of products – Part 1: Basic rules*

ISO 14617-1:XXXX, *Graphical symbols for diagrams – Part 1: General information, general indexes*

ISO 14617-2:XXXX, *Graphical symbols for diagrams – Part 2: Graphical symbols having general application*

ISO 14617-8:XXXX, *Graphical symbols for diagrams – Part 8: Valves and dampers*

ISO 31-11:1978, *Mathematical signs and symbols for use in the physical sciences and technology*

ISO 5598:1985, *Fluid power systems and components – Vocabulary*

IEC 60617-12:1997, *Graphical symbols for diagrams – Part 12: Binary logic elements*

IEC 60617-13: 1993, *Graphical symbols for diagrams – Part 13: Analogue elements*

IEC 60902: 1987, *Industrial-process measurement and*

control. Terms and definitions

IEC 61175:1993, *Designations for signals and connections*

IEV XXX = IEC 60050: *International Electrotechnical Vocabulary – Chapter XXX*

3 Definitions

For the purpose of this part of ISO 14617, the following definitions apply. The list has been restricted to such terms whose meaning is not obvious and is not defined elsewhere in an International Standard, or has been defined in different ways in different standards.

At the preparation of these definitions, ISO and IEC standards on terminology have been consulted; see the references in parenthesis. However, most of the definitions in these standards have been prepared by different technical committees with a restricted scope. This means that many terms defined in these standards have to be given more general or neutral definitions when applied in the context of graphical symbols.

For definition of the general terms *component, device, element, function, product, graphical symbol, connecting line, and terminal line*, see ISO 14617-1.

The terms defined below are mainly listed in the same order in which they occur for the first time in clauses 4 to 10.

3.1 control: Purposeful action on or in a system to meet specified objectives (IEV 351)

NOTE – Control may include monitoring and safeguarding besides the control action itself.

3.2 operation: A transfer of mechanical parts, for example, the closing member of a shut-off valve or the contacts of an electromechanical switching device (IEV 441)

NOTE 1 – The transfer direction may be defined as opening operation, closing operation, ON-operation, OFF-operation, etc.

NOTE 2 – The term has a specific meaning in conjunction with electric measuring relays. An over/under...relay is operating when its characteristic quantity reaches the set value by increasing/decreasing value. (IEV 448).

3.3 manual control: Control of an operation by human intervention (ISO 5598, IEV 351)

3.4 automatic (for example, control, operation): Self-actuating (not needing human intervention). (ISO 5598, IEC 351, IEC 60902)

3.5 final controlling element. An element which directly changes the output variable of a controlling system (manipulated variable) (IEC 60902)

3.6 delay device. A device providing a time interval between the instant when an actuating force is applied or removed and the instant when the consequent change of position or state of the affected parts start

3.7 automatic return device: A device for returning movable parts, for example, those of a valve to initial position (at rest position) after an actuating force has been removed

3.8 detent: A device which retains movable parts, for example, those of a valve in a certain position until sufficient force is applied to overcome the detaining force in order to move the parts to another position (ISO 5598)

3.9 latching device: A mechanical device giving the possibility for movable parts, for example, those of a valve to move in one direction but preventing them to return until the latch has been released (ISO 5598)

3.10 blocking device: A mechanical device preventing movable parts, for example, those of a valve to move in any direction until the blocking device has been released

3.11 interlocking device: A mechanical device making the operation of movable parts of one component, for example, a contactor dependent on the position or state of another component with movable parts (IEV 441)

3.12 information processing: The performing of operations on data to obtain or treat information



3.13 primary location: A location of measuring instruments, potentiometers etc. accessible to an operator. Cf. "auxiliary location".

3.14 auxiliary location: A location of measuring instruments, potentiometers etc. not accessible to an operator, for example, behind a panel. Cf. "primary location".

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4 Functional links and junctions

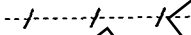
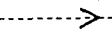





4.1 Symbols of basic nature

4.1.1 401		Functional connection See R401 (4.2.1) and R402 (4.2.2).
4.1.2 501		Joint of connections See R501 (4.2.3)

4.2 Application rules for the symbols in 4.1

4.2.1 R401	Symbols for connections may cross each other.
4.2.2 R402	When confusion between symbols 401 (4.1.1) and 405 (3-4.1.5) ... 410 (3-4.1.10) for other types of connections is likely, symbol 431 (4.3.1) shall be added.
4.2.3 R501	The diameter of the dot should be 5 times the width of the line. The symbol may be omitted in a T-joint. For example, see X505 (3-5.5.5).

4.3 Symbols giving supplementary information

4.3.1 431		Pure functional type
4.3.2 249		Direction of propagation, energy, or signal flow (simplex) See R247 (4.4.1)
4.3.3 250		Direction of propagation, energy, or signal flow, alternative directions (half-duplex) See R247 (4.4.1)
4.3.4 251		Direction of propagation, energy, or signal flow simultaneously in both directions possible (full-duplex) See R247 (4.4.1)
4.3.5 234		Analogue signal
4.3.6 235		Digital signal
4.3.7 236		Binary signal

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