SLOVENSKI STANDARD
SIST-TS CEN/TS 15810:2009

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Grafični simboli za uporabo v vgrajenih napravah za avtomatizacijo stavb

Graphical symbols for use on integrated building automation equipment

Graphische Symbole auf Einrichtungen der integrierten Gebäudeautomation

Symboles graphiques à utiliser sur les équipements d'automatisation intégrée de bâtiment

Ta slovenski standard je istoveten z: **CEN/TS 15810:2008**

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97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use

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English Version

Graphical symbols for use on integrated building automation equipment

Symboles graphiques à utiliser sur les équipements d'automatisation intégrée de bâtiment

Graphische Symbole auf Einrichtungen der integrierten Gebäudeautomation

This Technical Specification (CEN/TS) was approved by CEN on 9 June 2008 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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Foreword

This document (CEN/TS 15810:2008) has been prepared by Technical Committee CEN/TC 247 “Building Automation, Controls and Building Management”, the secretariat of which is held by SNV.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

For application to building automation equipments, this European Document takes up some symbols and their titles without modification from international documents ISO 7000 or IEC 60417-1. Some other existing symbols actually present on devices of the market complete these symbols.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This international document presents graphical symbols for use on control, integrated automation equipment or technical building management equipments and systems.

Ease of use automation functionalities requires clear graphical symbols, readable independently of language, i.e. internationally recognising.

For building energy performance, it is important to take account expected behaviour of people encouraged to save energy through building automation equipment. Ease of use is a prime means to get realistic performance during exploitation. Professionals or end users are able to reduce largely energy consumptions by setting easily operating modes and functions parameters for best adaptation of mechanical services functionalities to needs.

For this purpose, graphical symbols constitute the best readable mean, mainly if these graphical elements are largely, internationally used by manufacturers of control, integrated automation equipment or technical building management equipments and systems.

NOTE This document, therefore, is contributing to the general European policy for energy saving, particularly in the fields of the Construction Products Directive (89/106/EEC) Essential Requirements n° 6 «Energy economy and heat retention» (and its interpretative document) and of the Energy Performance of Building Directive (2002/91/CE).

1 Scope

This document provides a synopsis of graphical symbols which are intended to be placed on building equipments and/or technical documentation of products in order to instruct the person(s) using the equipments.

These graphical symbols are primary intended:

— to identify control or automation or technical management equipments or part of these equipments: electronic devices (e.g. controller, scheduler, optimiser, etc.), sensors, actuators,

— to indicate functions and their operating modes,

— to indicate settings for modes and functions parameters introduction,

— to designate connexions,

— to provide instruction to users (professional and/or end user) for the operation of the equipment.

The graphical symbols in this document are not primarily intended for:

— safety signs,

— public information,

— schematics for systems principles.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

N/A

3 Terms and definitions

3.1
graphical symbol
visually perceptible figure with a particular meaning used to transmit information independently of language (see ISO 17724:2003)

3.2
elementary symbol
graphical elements able to be combined with other(s) element(s) to create a new symbol associating their meanings

3.3
function
autonomous operation providing output(s) in relation with data input(s) and parameters

NOTE Functions within a BACS are referred to as control functions, I/O, processing, optimization, management and operator functions (see EN ISO 16484-2).

3.4
mode
state of a function, device, equipment or a system defining the manner by which it performs its operation (EN 12098-5)

NOTE Synonymous: “functional modes”, “operation modes”, “operational modes”.

4 Symbols overview

These symbols are normally printed or screened on black and white or two colours, e.g. a dark colour and white. Colour is not an element for the meaning.

These symbols are readable static pictures, animation on a screen is not an element for the meaning.

The meaning of each graphical symbol may depend upon its orientation in a given reference system and care should be taken to avoid ambiguity (e.g. by rotating or mirroring).

Technology for display, print, paint or show on screen, project onto sufficient resolution for keep readability.

Each graphical symbol may be used in any field of building equipment, provided its meaning is clearly understood.

5 Symbols tables

5.1 General

Symbols in Tables 1 and 2 are selected in accordance with these rules:

- priority for graphical symbols from standards ISO 7000 and IEC 60417. Drawing, title and eventual comments (IEC 60147-1) are copied without modification;
- completed by symbols based on manufacturers recognized practices;
- no new symbols if they can not be found on devices on the market.

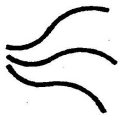
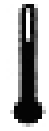
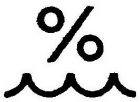
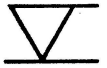
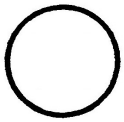
In these tables:

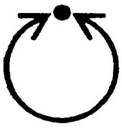
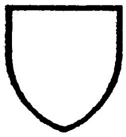
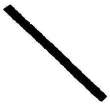
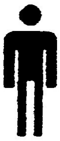
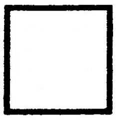
- Column 1 - N°: allocated number, without ordering signification.
- Column 2 - Symbol: drawing.
- Column 3 - Source: indicates origin of the symbol and allocated number in ISO 7000 or IEC 60147-1 standards. If the symbol came from another origin (e.g. national standards or manufacturers), the source is not labelled.
- Column 4 - TITLE: signification of symbol from ISO 7000 or IEC 60147-1 standard or another origin. On IEC 60417-1 the title of symbols is completed by a description. An extract from this description is copied from IEC 60417-1 in this column.
- Column 5 - Application & Comments: gives indications for kind of application and/or comments for the uses of the symbol.

5.2 Elementary symbols

Table 1 gives a selection list of symbols (or part of existing, standardized symbols) able to be combined to add new symbols signification by the same way to create compound words.

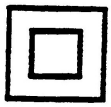
Table 1 - Elementary symbols

N°	Symbol	Source	TITLE	Application & Comments*
2		ISO 7000 n° 0536	WATER	Title: WATER unchanged
4		ISO 7000 n° 0537	AIR	Title: AIR unchanged
6		Part of ISO 7000 n°535	TRANSFER OF HEAT IN GENERAL	Title: HEAT, HEATING
8		ISO 7000 n° 027	COOLING; AIR CONDITIONING	Title: COOLING; AIR CONDITIONING unchanged This snow flake differs from snow flake n° 10, intended to avoid ambiguity/mix-up with frost.
10		Part of ISO 7000 n° 2614	ICY ROAD CONDITION	Title: FROST, ICY This snow flake differs from snow flake n° 8, intended to avoid ambiguity/mix-up with cooling.
12		ISO 7000 n° 034	TEMPERATURE	Title: TEMPERATURE unchanged
14		ISO 7000 n° 0505	RELATIVE HUMIDITY, MOISTURE CONTENT	Title: RELATIVE HUMIDITY, MOISTURE CONTENT unchanged
16		ISO 7000 n° 0159	LEVEL	Title: LEVEL unchanged
18		Part of ISO 7000 Part of n°0224 and many other	MEASURE …. or MEASUREMENT	Title: MEASURE … unchanged Include measured physical symbol on the circle.

N°	Symbol	Source	TITLE	Application & Comments*
20		ISO 7000 n° 95	FEEDBACK CONTROL	Title: CLOSED LOOP CONTROL
22		ISO 7000 n° 2410	PROTECTION	Title: PROTECTION unchanged Include symbol of protected risk on the human shield.
24		Part of ISO 7000 n°2626 and many other	OFF, NOT AVAILABLE	Title: SUPPRESS, NOT AVAILABLE
26		Part of ISO 7000 Part of n°2610 and many other	PATIENT	Title: HUMAN PRESENCE
28			HOUSE	Title: HOUSE This symbol is used by many manufacturers. It is recommended instead of IEC 60417-1 n° 5109, it is simplest and largely used.
29			ROOM	Title: ROOM This symbol is used by many manufacturers. The meaning is clear by combination with another symbol, in the context of building automation and control. Extended meaning possibly to building.
* For building automation equipment.				

5.3 Symbols

Table 2 - Symbols

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
102		IEC 60417-1 n° 5007	ON (power). To indicate connection to the mains, at least for mains switches or their positions.	Devices The operational mode of the device connected to the mains. Does not apply to BACS functions or modes.
104		IEC 60417-1 n° 5008	OFF (power) To indicate disconnection to the mains, at least for mains switches or their positions.	Devices The non operational mode for all the device functions. Does not apply to BACS functions or modes.
106		IEC 60417-1 n° 5009	STAND-BY To indicate connection to or disconnection from the mains, at least for mains switches or their positions.	Devices The non-operational lowest power consumption mode of the device which cannot be switched off (influenced) by the user and that may persist for an indefinite time when the appliance is connected to the main supply and used in accordance with manufacturer's instructions. Does not apply to BACS functions or modes.
108		IEC 60417-1 n° 5010	ON/OFF (push-push) To indicate connection to or disconnection from the mains, switches or their positions. Each position, "ON" or "OFF" is a stable position.	Devices Does not apply to BACS functions or modes.
110		IEC 60417-1 n° 5011	ON/OFF (push button) To indicate connection to the mains, at least for mains switches or their positions. "OFF" is a stable position, whilst the "ON" position only remains during the time the button is depressed.	Device Does not apply to BACS functions or modes.
112		IEC 60417-1 n° 5546	BATTERY CHECK To identify a control to check the condition of a battery or to identify the battery condition indicator.	Device The size of the darkened area may vary with charge.
114		IEC 60417-1 n° 5156	TRANSFORMER To identify switches, controls, connectors and terminals which connect electrical equipment to the mains through a transformer.	Device or controlled equipment.
116		ISO 7000 n° 2302	ELECTRICAL POWER, accessories	Device
118		IEC 60417-1 n° 5172	CLASS II EQUIPMENT To identify equipment meeting the safety requirements specified for class II equipment according to IEC 60536.	Device Insulation protection.