DRAFT FOR DEVELOPMENT

DD CEN/TS 15810:2008

Graphical symbols for use on integrated building automation equipment

ICS 01.080.20; 91.140.01

National foreword

This Draft for Development is the UK implementation of CEN/TS 15810:2008.

This publication is not to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature. It should be applied on this provisional basis, so that information and experience of its practical application can be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the international organization responsible for its conversion to an international standard. A review of this publication will be initiated not later than 3 years after its publication by the international organization so that a decision can be taken on its status. Notification of the start of the review period will be made in an announcement in the appropriate issue of Update Standards.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into an international Standard, to extend the life of the Technical Specification or to withdraw it. Comments should be sent to the Secretary of the responsible BSI Technical Committee at British Standards House, 389 Chiswick High Road, London W4 4AL.

The UK participation in its preparation was entrusted to Technical Committee RHE/16, Performance requirements for control systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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TECHNICAL SPECIFICATION

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CEN/TS 15810

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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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Contents

Page

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.

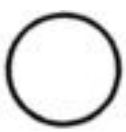
In these tables:

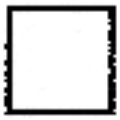
- Column 1 - N°: allocated number, without ordering signification.
- Column 2 - Symbol: drawing.
- Column 3 - Source: indicates origin of the symbol and allocated number in ISO 7000 or IEC 60147-1 standards. If the symbol came from another origin (e.g. national standards or manufacturers), the source 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

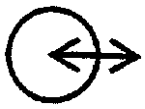
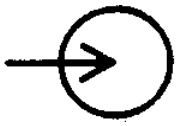
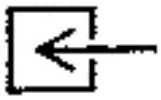
N°	Symbol	Source	TITLE	Application & Comments*
2		ISO 7000 n° 0536	WATER	Title: WATER unchanged
4		ISO 7000 n° 0537	AIR	Title: AIR unchanged
6		Part of ISO 7000 n°535	TRANSFER OF HEAT IN GENERAL	Title: HEAT, HEATING
8		ISO 7000 n° 027	COOLING; AIR CONDITIONING	Title: COOLING; AIR CONDITIONING unchanged 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.				

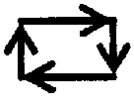
5.3 Symbols

Table 2 - Symbols

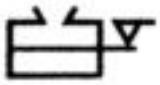
N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
102		IEC 60417-1 n° 5007	ON (power). To indicate connection to the mains, at least for mains switches or their positions.	Devices The operational mode of the device connected to the mains. Does not apply to BACS functions 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.

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
120		ISO 7000 n° 434	CAUTION	Device
122		IEC 60417-1 n° 5036	DANGEROUS VOLTAGE To indicate hazards arising from dangerous voltage.	Device
202		IEC 60417-1 n° 5448	ELECTRICAL INPUT/OUTPUT To identify a combined input/output connector or mode.	Device terminals Apply to analog, binary, or digital signal.
204		IEC 60417-1 n° 5034	INPUT To identify an input terminal.	Device terminals Apply to analog, binary, or digital signal.
206		IEC 60417-1 n° 5035	OUTPUT To identify an output terminal.	Device terminal Apply to analog, binary, or digital signal.
208		ISO 7000 n° 794	INPUT, ENTRANCE	Should be applied to signal or data input procedure. An alternative to 204.
210		ISO 7000 n° 795	OUTPUT, EXIT	Apply to signal or data output procedure. Alternative to 206.
212		ISO 7000 n° 1025	WRITE DATA INTO STORE	Device or function user interface. Input or write data during user input-output data procedure.
214		ISO 7000 n° 1026	READ DATA FROM STORE	Device or function user interface. Output or read data during user input-output data procedure.
216		ISO 7000 n° 1107	WRITE AND READ DATA INTO AND FROM STORE	Device or function user interface. Write and read data during user input-output data procedure. See 212, 214.
218			INPUT SETTING	Device or function user interface. Introduce manual mode or parameter setting.

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
220		IEC 60417-1 n° 5181	VARIABILITY IN STEPS To identify the device by which a quantity is controlled.	Device or function user interface. Step-by-step quantity value input. Figure may be curve shaped for rotary control, it may be filled (black or colour) or unfilled (white or clear).
222		IEC 60417 n° 5004	VARIABILITY To identify the control by means of which a quantity is controlled.	Device or function user interface. Progressive quantity value input (see also IEC 60417 n° 5183). Figure may be curve shaped for rotary control, it may be filled (black or colour) or unfilled (white or clear).
224	+		INCREASE ONE STEP	Device or function user interface. Button command, sign, could be put on a triangle or a square.
226	−		DECREASE ONE STEP	Device or function user interface. Button command, sign, could be put on a triangle or a square.
228		IEC 60417-1 n° 5495	RETURN TO AN INITIAL STATE To identify the control which returns a device to its initial state.	Device or function user interface programming.
230	**RESET**		DEFAULT DATA VALUE	Device or function user interface. Reset parameters to basis or default values. Text could be put in a rectangular frame.
232		IEC 60417-1 N° 5115	SIGNAL LAMP To identify the switch by means of which the signal lamp(s) is (are) switched on or off.	
234	**PROG**		PROGRAMMING MODE	Device or function user interface. Program or parameter introduction. Text could be put in a rectangular frame.
238	**MENU**		MENU	Device or function user interface. Program, function or mode selection. Text could be put in a rectangular frame.
240		IEC 60417-1 n° 5569	LOCKING To identify on a control that a function is locked or to show the locked status.	Device or function user interface. See ISO 7000 n° 1656: another lock symbol.

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
242		IEC 60417-1 n° 5570	UNLOCK To identify on a control that a function is not locked or to show the unlocked status.	Device or function user interface.
248		ISO 7000 n° 0908	OPERATOR'S MISTAKE	Device or function user interface.
250		ISO 7000 n° 1603 B	MALFUNCTION, GENERAL ; FAILURE	Device or function user interface.
252		ISO 7000 n°0026	AUTOMATIC CYCLE semi-automatic cycle	Sequencing control function or Put automated sequencing control function in operation.
254	**AUTO**		AUTOMATIC MODE	Device main functions. The mode of operation when control functions are not overridden by the user. Text could be put in a rectangular frame.
256		ISO 7000 n°0017	AUTOMATIC CONTROL (closed loop)	Control function
260		ISO 7000 n° 96	MANUAL CONTROL	Device, actuator or function mode.
262		ISO 7000 n° 1627	DO NOT INTERVENE	Do not intervene on device or output actuating equipment.
302		IEC 60417-1 n° 5184	CLOCK; TIME SWITCH; TIMER To identify terminals and controls related to clocks, time switches and timer.	Start-stop function
304		IEC 60417-1 n° 5440	PROGRAMMABLE TIMER, GENERAL To identify the control for a programmable timer, for instance the operating element for a programmable function.	Start-stop function, change of operation mode.

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
308		IEC 60417-1 n° 5417	PROGRAMMABLE DURATION To identify the control of a programmable timer for the ON-condition of a part of equipment at a present point of time and for a determined duration.	Start-stop function
402		ISO 7000 n° 160	CALIBRATION	
404			MOVEMENT SENSOR	Start-stop function
406			MEASURE TEMPERATURE	See elementary symbols 12, 18
408		ISO 7000 n° 0175	TEMPERATURE CONTROL	Closed loop temperature control function
410			HEATING CONTROL	Closed loop heating control function See elementary symbols 6, 20
412		ISO 7000 n° 0559	COOLING CONTROL	Closed loop cooling control function
414		ISO 7000 n° 543	AIR COOLING	Function
416		ISO 7000 n° 544	WATER COOLING	Function
418		ISO 7000 n° 2626	Air conditioning OFF, not available	Function

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
420		ISO 7000 n° 0224	MEASURE HUMIDITY	Measure relative humidity
422		ISO 7000 n° 0589	MOISTURE CONTROL	Closed loop humidity control function
424		ISO 7000 n° 0233	PRESSURE MEASUREMENT	Measure pressure
426		ISO 7000 n° 0548	PRESSURE CONTROL	Closed loop pressure control function
430		ISO 7000 n° 0361	LEVEL INDICATOR (fluid)	
432		ISO 7000 n° 0176	LEVEL CONTROL	Closed loop level control function
438		ISO 7000 n° 0182	TEMPERATURE SENSOR	Sensor
440		ISO 7000 n° 0035	TEMPERATURE INCREASE	Heating or cooling control function Room, air or water temperature
442		ISO 7000 n° 0036	TEMPERATURE DECREASE	Heating or cooling control function Room, air or water temperature
444		ISO 7000 n° 0632	TEMPERATURE LIMIT	Room, air or water temperature
446		ISO 7000 n° 0534	LOWER LIMIT OF TEMPERATURE	Heating or cooling control function *Room, air or water temperature*

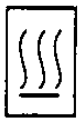
N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
448		ISO 7000 n° 0533	UPPER LIMIT OF TEMPERATURE	Heating or cooling control function Room, air or water temperature
450		ISO 7000 n° 0432	ABOVE WORKING TEMPERATURE RANGE	Room, air or water temperature
452		ISO 7000 n° 0433	BELOW WORKING TEMPERATURE RANGE	Room, air or water temperature
454			INSIDE TEMPERATURE	Heating or cooling control function Temperature or associated functions
455			ROOM TEMPERATURE	Heating or cooling control function Temperature or associated functions
456			OUTSIDE TEMPERATURE	Control functions Outside building (or outdoor) measured temperature or associated functions
457			OUTSIDE ROOM TEMPERATURE	Control functions Outside room measured temperature or associated functions
458			EXTACT AIR TEMPERATURE	Control functions Temperature or associated functions
462			HEATING CURVE SHIFT	Outdoor (or outside) temperature control function Heating curve or heating control reset table shift (offset)
466			HEATING CURVE SLOPE	Outdoor (or outside) temperature control function Heating curve or heating control reset table slope

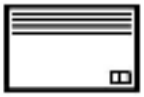
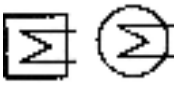
N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
502			COMFORT, NORMAL OR DAILY OCCUPANCY	A nominal mode, for a normally occupied room for daytime. Circle may be filled (black or colour) or unfilled (white or clear). Following ISO and IEC, like sun symbols could be used for different meaning e.g. photography, camera use, lighting, e.g. 812. They must be quite different to building automation equipment symbol.
510			PRECOMFORT	A reduced mode. The mode allowing the room temperature quickly reaches the nominal temperature as the final room state upon changing to the nominal operating mode.
512			OCCUPIED	Control mode. A nominal mode. The mode for a normally occupied.
513			OCCUPIED ROOM	Normally occupied control mode. A nominal mode. The mode for a normally occupied room.
516			WEEK-END or special days	Control mode. A nominal mode. The mode for extend a nominal mode, overriding reduced modes for a week end duration.
518			PARTY	Control mode. A nominal mode. The mode for extend a nominal mode, overriding reduced modes for an evening fixed duration.
520			SLEEPING	Control mode. A reduced mode. The mode for a temperature satisfying sleeping conditions or for a night time.
521			SLEEPING ROOM	Control mode. A reduced mode. The mode for a temperature satisfying sleeping conditions or for nigh time.
524			NIGHT ECONOMY MODE	A reduced mode. The economy mode for an unoccupied room or for a temperature satisfying sleeping conditions. This graphic representing increasing moon could be laterally reversed for a decreasing moon shape. Crescent may be filled (black or colour) or unfilled (white or clear).

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
530			UNOCCUPIED	Control mode A reduced mode. The energy-saving mode for an occupied building that does not need to be in a nominal mode.
531			UNOCCUPIED ROOM	Control mode A reduced mode. The energy-saving mode for an occupied room that does not need to be in a nominal mode.
536			FROST PROTECTION	Heating control function: The specific control function maintaining positive temperature preventing freezing inside. Heating control mode: A reduced control mode. The control mode to reach a minimum acceptable positive temperature preventing freezing. See elementary symbols 10, 22.
538			PROTECTION	A mode in which a plant is switched on only to prevent damages to both building and equipment from cooling down, condensation, frost or overheating. See elementary symbol 22.
539			GENERAL BUILDING PROTECTION	An operating mode for building protection to prevents many damages encompassing many services: HVAC, intrusion, fire, personal safety, etc. See elementary symbols 22, 28.
540			SUMMER	Heating or cooling control mode. Stop heating or cooling control function in operation.
542			WINTER	Heating or cooling control mode. Stop cooling or heating control function in operation.
546			OPEN WINDOW	Heating or cooling control mode. Cut-off heating or cooling for a limited period, e.g. for a window opening period.
547			OPEN DOOR	Heating or cooling control mode. Cut-off heating or cooling for a limited period, e.g. for a door opening period.
548			WIND COMPENSATION	Control function. Compensation by wind effect.

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
550			VACANCY, HOLIDAY	Heating air conditioning or ventilating control mode. A reduced mode. The mode for extend a reduced mode, overriding nominal modes for some days, e.g. for a holiday period.
554		IEC 60417-1 n° 5581	SAVE, ECONOMIZE To identify a control whereby an economy program become activated, for example to save energy or water	Heating air conditioning or ventilating control mode. Energy-saving mode for a room that does not need to be in a nominal mode.
556			LOAD SHEDDER	Function for peak load limitation of energy in accordance with energy supply tariff (electricity, natural gas, heating or cooling network, etc.).
602		ISO 7000 n° 1641	OPERATOR'S MANUAL: OPERATING INSTRUCTIONS	To identify or to invite to read the manual.
608		ISO 7000 n° 1640	HANDBOOK: MANUAL FOR OPERATION	Operation or maintenance service.
610			NOTA BENE	Device or function
612			MOUNTING	Device
618			FAULT FINDING	Device or function
620		ISO 7000 n° 0421	EXAMINE, CHECK	
622		ISO 7000 n° 0422	READY (to proceed)	
624			MAINTENANCE	Device or function

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
626		IEC 60417-1 n° 5307	ALARM, GENERAL To indicate an alarm on a control equipment.	
628		IEC 60417-1 n° 5308	URGENT ALARM, To indicate an urgent alarm on a control equipment.	
630		IEC 60417-1 n° 5319	INHIBIT ALARM To indicate the alarm inhibit on a control equipment.	
632		IEC 60417-1 n° 5309	ALARM SYSTEM CLEAR To identify the control by means of which the alarm circuit can be reset to its initial state.	
634		IEC 60417-1 n° 5014	HORN To identify switches which operate horn.	Safety equipment
636		IEC 60417-1 n° 5080	LOUDSPEAKER To identify the socket, terminal or switch for a loudspeaker.	
638		ISO 7000 n° 2301	URGENT ALERT INDICATOR	
642		IEC 60417-1 n° 5013	BELL To identify switches which operate bell.	Safety equipment
644		IEC 60417-1 n° 5576	BELL CANCEL To identify the control whereby a bell may be switched off or to indicate the opening status of the bell.	Safety equipment
648		ISO 7000 n° 1938	REMOTE STATION, STAND-BY	
650		ISO 7000 n° 1937	REMOTE STATION, READY	

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
652		ISO 7000 n° 1950	CALL OPERATOR OF REMOTE STATION	
702			BOILER, HEAT GENERATOR	Heating equipment
708		ISO 7000 n° 0134	PUMP	Heating or cooling hydraulic pump. Avoid confusion with compressor 760.
710		ISO 7000 n° 0355	COOLANT PUMP	
712		ISO 7000 n° 0147	ELECTRIC MOTOR	Heating or cooling equipment actuator, progressive action for valve or damper.
720		ISO 7000 n° 0234	VALVE, shutoff element	Heating or cooling 2-way valve
722		ISO 7000 n° 1852	HAND-CONTROLLED VALVE	Heating or cooling 2-way valve
726			THREE WAY VALVE	Heating or cooling For three valves, distinguish the common way and other ways: black/white triangle or other clear distinguishing.
728			MOTORISED CONTROL VALVE	Heating or cooling valve and actuator
730			FOUR WAY VALVE	Heating or cooling valve

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
734		ISO 7000 n° 1630	VALVE WITH DIAPHRAGM ACTUATOR	The complete ISO 7000 n° 1630 title is STOP VALVE WITH DIAPHRAGM ACTUATOR. Use of this symbol is not restricted to “start-stop valves” it applies also to modulating valves for HVAC control.
736			RADIATOR HEATING	Heating equipment
742			FLOOR HEATING	Heating equipment
744			ELECTRICAL HEATING	Heating equipment
746		ISO 7000 n° 0364	WORKING FLAME	Heating function Burner in operation
748			FLAME	Heating function Flame or burner in operation
750			BURNER	Heating equipment
752			ATMOSPHERIC BURNER	Heating equipment
758		ISO 7000 n° 0111 A,B	HEAT EXCHANGER	Heating equipment The complete ISO 7000 n° 0111 title is HEAT EXCHANGER WITHOUT CROSS FLOW. Use of this symbol applies to any kind of exchangers.
760		ISO 7000 n° 0137	COMPRESSOR, VACUUM PUMP	Cooling equipment compressor. This symbol is also used for ventilating fan, ventilation function. Preferably use 764 for these equipment or function.
764		ISO 7000 n° 0089	VENTILATING FAN; AIR CIRCULATING FAN	Ventilation function, ventilation equipment

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
768		IEC 60417-1 n° 5107A	NORMAL RUN, NORMAL SPEED To identify the switch or switch position by means of which a normal run is started.	Actuator or motor control speed
770		IEC 60417-1 n° 5108A	FAST RUN, FAST SPEED To identify the switch or switch position by which a faster than normal run is started.	Actuator or motor control speed
772		ISO 7000 n° 944	FAST RUN, HIGH SPEED	Actuator or motor control speed Complete 770 if a third speed in needed.
774			DAMPER	Ventilation, air conditioning equipment
776		ISO 7000 n° 1604	INTAKE AIR	Ventilation Used for intake air introduced in building.
778		ISO 7000 n° 1605	EXHAUST AIR	Ventilation Used for exhaust air extracted from building.
802		IEC 60417-1 n° 5012	LAMP; LIGHTING; ILLUMINATION To identify switches which control light source.	Lighting
804		IEC 60417-1 n° 5320	INDIRECT LIGHTING To identify a control for indirect lighting if a distinction from the symbol 5012 is necessary.	Lighting
810		IEC 60417-1 n° 5321	LOW INTENSITY LIGHTING To identify a control for low intensity lighting if a distinction from the symbol 5012 is necessary.	Lighting
812		IEC 60417-1 n° 5056	BRIGHTNESS ; BRILLIANCE To identify the brightness control, for example of a light dimmer.	Lighting
814		ISO 7000 n°1142	WORKING LIGHT	Lighting

N°	Symbol	Source	TITLE Description if source IEC 60417-1	Application & Comments
816		ISO 7000 n°1700	SPOT LIGHT	Lighting
818		ISO 7000 n°1144	STAIRS LIGHT	Lighting
820		ISO 7000 n°1555	EXTERIOR BULB FAILURE	Lighting
906		IEC 60417-1 n° 5573	WATER TAP CLOSED To identify a closed water tap or connection or the control to close the water supply.	Water tap closed
908		IEC 60417-1 n° 5574	WATER TAP OPEN To identify an open water tap or the control to open up the water supply.	Water tap open
910		IEC 60417-1 n° 5582	SHOWER AND BATH	Hot water equipment
912			WATER TANK	Hot water equipment

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[3] EN ISO 16484-2:2004, Building automation and control systems (BACS) – Part 2: Hardware (ISO 16484-2:2004)

[4] ISO 7000:2004, Graphical symbols for use on equipment – Index and synopsis

[5] IEC 60417-1, Graphical symbols for use on equipment – Part 1: Overview and application.

[6] ISO 80416-1, Basic principles for graphical symbols for use on equipment –Part 1: Creation of graphical symbols for registration

[7] ISO 80416-2, Basic principles for graphical symbols for use on equipment – Part 2: Form and use of arrows

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