INTERNATIONAL STANDARD

IEC 60617

DATABASE SNAPSHOT

2007-01

Graphical symbols for diagrams



Reference number
IEC 60617-SN:2007

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INTERNATIONAL STANDARD

IEC 60617

DATABASE SNAPSHOT

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Graphical symbols for diagrams

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Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

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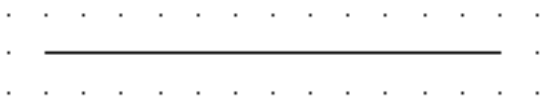
S00001



Name:	Connection, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-01
Alternative names:	conductor; cable; line; transmission path; telecommunication line
Keywords:	cables, conductors, connections, lines, telecommunication, transmission paths
Applied in:	S00004, S00005, S00050, S00051, S00054, S00052, S00423, S00410, S00408, S00409, S00407, S00411, S00416, S00415, S00412, S00414, S00413, S00417, S00418, S00425, S00437, S00439, S00447, S00444, S00445, S00446, S00449, S00448, S01391, S01414, S01415, S01448, S01449, S01807, S01185, S01082, S01084, S00531, S01148, S01143, S01086, S01142, S01149, S01318, S01151, S01141, S01081, S01138, S01145, S01083, S01140, S01377, S01378, S01150, S00826, S00592, S01080, S01336, S01831
Application notes:	A00109, A00193, A00194
Replaced by:	S01831
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	See also symbol S00058.

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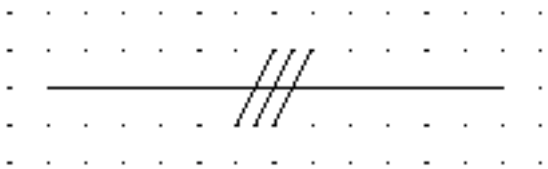
S00002



Name:	Group of connections (number of connections indicated)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-02
Keywords:	conductors, connections
Form:	Form 1
Alternative forms:	S00003
Applied in:	S00025, S00449, S00874, S00880, S01087, S00888, S00886, S00854, S00872, S00890, S00856, S00884, S00860, S01093, S00868, S00870, S00866, S00858, S00852, S00882, S00862, S00864, S01088, S01089, S00876, S01091, S01837
Applies:	S00058
Application notes:	A00192, A00193, A00194
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Three connections shown.

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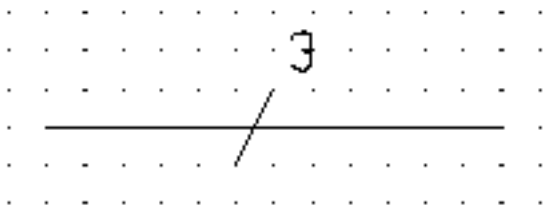
S00003



Name:	Group of connections (number of connections indicated)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-03
Keywords:	conductors, connections
Form:	Form 2
Alternative forms:	S00002
Applied in:	S00027, S00024, S00055, S00053, S00294, S00295, S01277, S00888, S01323, S00890, S01285, S01324, S01092
Applies:	S00058
Application notes:	A00192, A00193, A00194
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Three connections shown.

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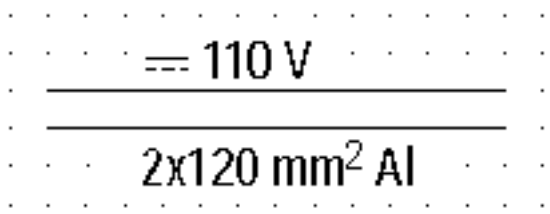

Name:	Direct current circuit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-04
Keywords:	conductors, connections
Applies:	S00001; S01401
Application notes:	A00193, A00194
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams
Remarks:	110 V, two aluminium conductors of 120 mm2

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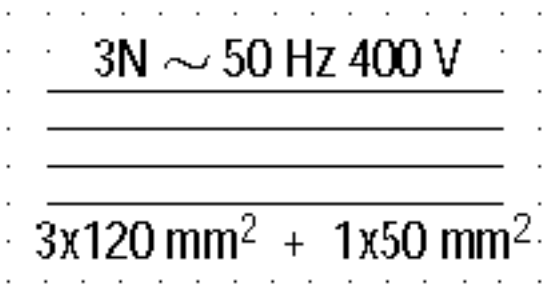

Name:	Three-phase circuit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-05
Keywords:	conductors, connections
Applied in:	S00314
Applies:	S00001; S01403
Application notes:	A00193, A00194
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	50 Hz, 400 V, three conductors of 120 mm(2) , with neutral of 50 mm (2). 3N may be replaced by 3+N.

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S00006



Name:	Flexible connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-06
Keywords:	conductors, connections
Applied in:	S01147
Shape class:	Depicting shapes
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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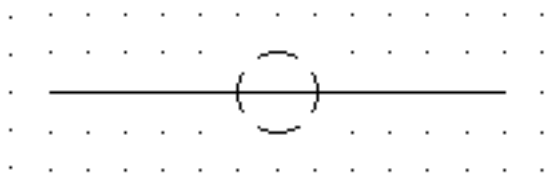

Name:	Screened conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-07
Keywords:	conductors, connections
Applied in:	S00013, S00791, S00783
Application notes:	A00001
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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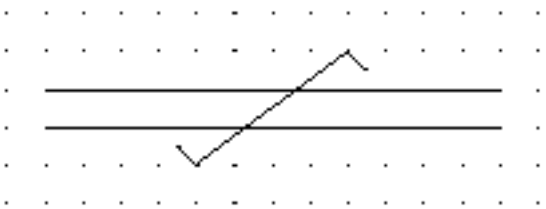

Name:	Twisted connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-08
Keywords:	conductors, connections
Application notes:	A00001
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Two connections shown.

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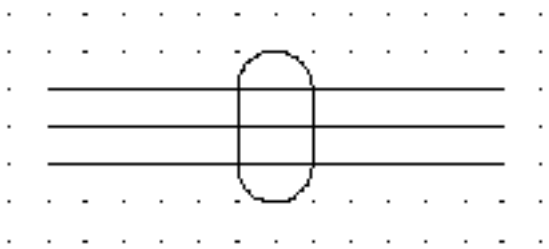

Name:	Conductors in a cable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-09
Keywords:	conductors, connections
Alternative forms:	S00010
Applied in:	S00010, S01324
Application notes:	A00001
Shape class:	Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Three conductors shown.

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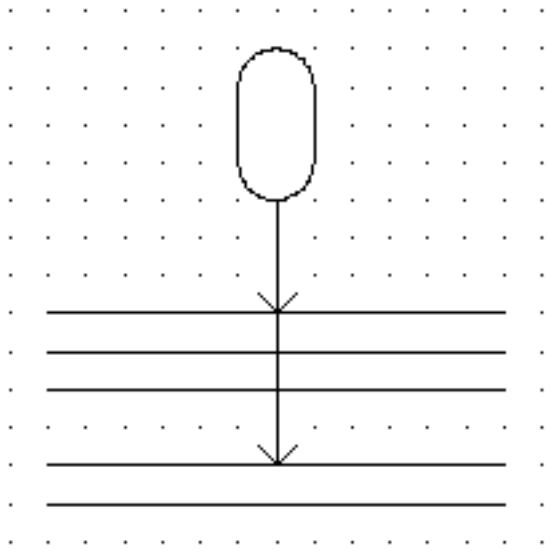
S00010



Name:	Conductors in a cable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-10
Keywords:	conductors, connections
Applies:	S00009
Application notes:	A00001
Shape class:	Arrows, Lines , Ovals
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Five conductors, two of which marked by arrowheads are in one cable.

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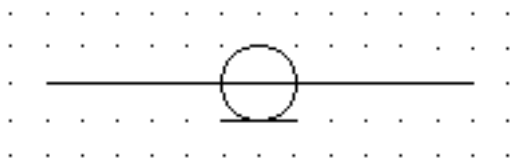
S00011



Name:	Coaxial pair
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-11
Keywords:	conductors, connections
Applied in:	S00013, S00012, S00042, S00591, S00606, S01119, S00610
Application notes:	A00011
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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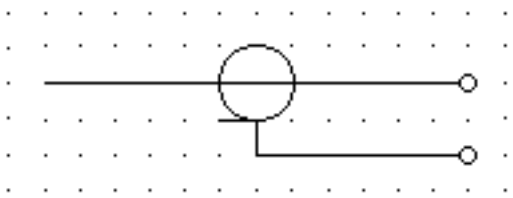
S00012



Name:	Coaxial pair connected to terminals
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-12
Keywords:	conductors, connections, terminals
Applies:	S00011; S00017
Application notes:	A00011
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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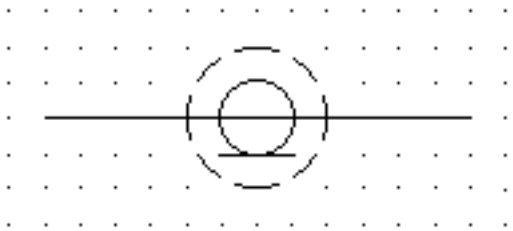
S00013



Name:	Coaxial pair with screen
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-13
Keywords:	conductors, connections
Applies:	S00007; S00011
Shape class:	Circles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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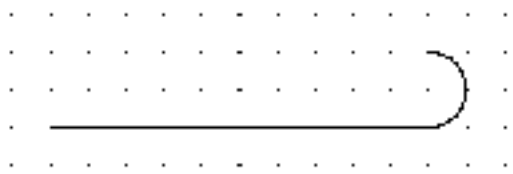
S00014



Name:	End of a conductor or cable, not connected
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-14
Keywords:	conductors, connections
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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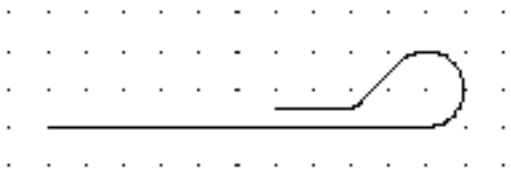
S00015



Name:	End of a conductor or cable, not connected and specially insulated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-15
Keywords:	cables, conductors, connections
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00016



Name:	Connection point
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-01
Alternative names:	Junction
Keywords:	branchings, connections, junctions
Applied in:	S00020, S00022, S00455, S00454, S01790, S01785, S01797, S01798, S00952, S01325, S00664, S01833, S01834, S01836
Replacing:	S01350
Shape class:	Circles, Dots (points)
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00017



Name:	Terminal
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-02
Keywords:	terminals
Applied in:	S00012, S00039, S00044, S00046, S00268, S00267, S00269, S01200, S00880, S00955, S00957, S01201, S00881, S01202, S01839, S01840, S01841, S01842
Shape class:	Circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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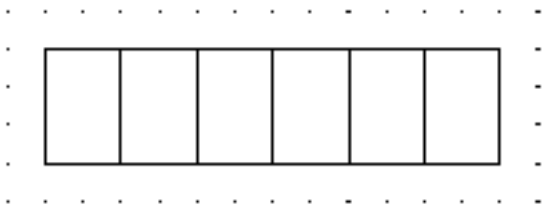
S00018



Name:	Terminal strip
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-03
Keywords:	terminals
Application notes:	A00002
Shape class:	Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams

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S00019



Name:	T-connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-04
Keywords:	branchings, connections, junctions
Form:	Form 1
Alternative forms:	S00020
Applied in:	S00021, S00029, S00030, S00055, S00054, S00502
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00020



Name:	T-connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-05
Keywords:	branchings, connections, junctions
Form:	Form 2
Alternative forms:	S00019
Applies:	S00016
Shape class:	Circles, Dots (points)
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with junction symbol.

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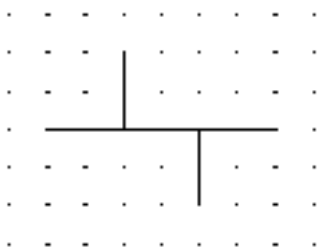
S00021



Name:	Double junction of conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-06
Keywords:	branchings, connections, junctions
Form:	Form 1
Alternative forms:	S00022
Applies:	S00019
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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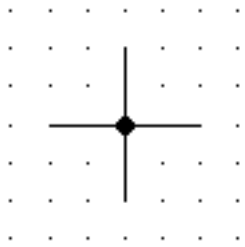
S00022



Name:	Double junction of conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-07
Keywords:	branchings, connections, junctions
Form:	Form 2
Alternative forms:	S00021
Applied in:	S00503
Applies:	S00016
Shape class:	Circles, Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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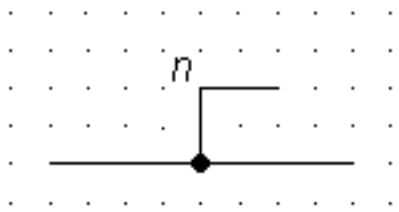
S00023



Name:	Branching
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-09
Alternative names:	Junction
Keywords:	branchings, connections, junctions
Applied in:	S01351
Application notes:	A00003
Shape class:	Characters, Circles, Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Junction common to a group of identical and repeated parallel circuits.

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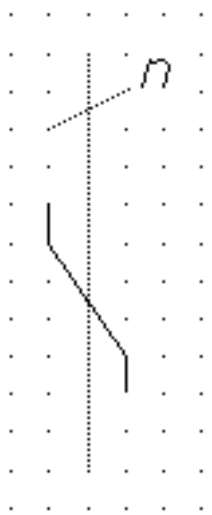

Name:	Interchange
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-11
Alternative names:	Interchange of conductors; Change of phase sequence; Inversion of polarity
Keywords:	connections, interchanges, inversion
Applied in:	S00025, S01413, S00514
Applies:	S00003
Application notes:	A00004, A00262
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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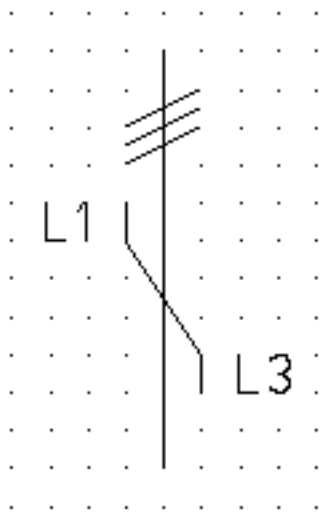
S00025



Name:	Change of phase sequence
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-12
Keywords:	interchanges
Applies:	S00002; S00024
Application notes:	A00004
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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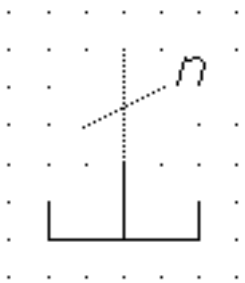

Name:	Neutral point
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-13
Keywords:	connections, junctions, neutral points
Applied in:	S00027, S00028
Application notes:	A00003, A00262
Shape class:	Characters, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Point at which multiple conductors are connected together to form the neutral point in a multiphase system.

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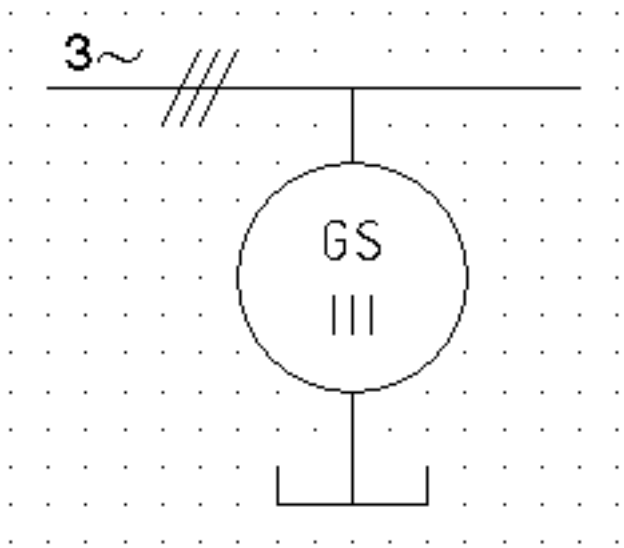
S00027



Name:	Neutral point of a generator (single-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-14
Keywords:	connections, generators, junctions, neutral points, power generators
Applies:	S00003; S00026; S00797; S00819
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Synchronous generator, three-phase, both leads of each phase of the generator winding brought out, shown with external neutral point.

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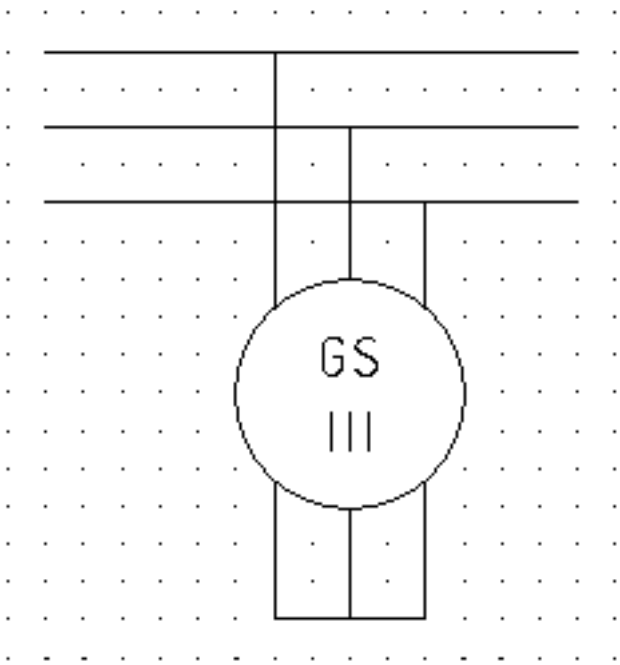

Name:	Neutral point of a generator (multi-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-15
Keywords:	connections, generators, junctions, neutral points, power generators
Applies:	S00026; S00797; S00819
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Remarks:	Multi-line representation of symbol S00027.

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S00029



Name:	Junction not interrupting the conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-16
Keywords:	branchings, connection devices, connections, junctions
Applies:	S00019
Application notes:	A00005
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown with symbol S00019.

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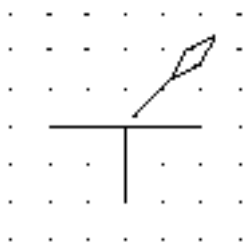
S00030



Name:	Junction requiring a special tool
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-02-17
Keywords:	branchings, connection devices, connections, junctions
Applies:	S00019
Shape class:	Depicting shapes, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown with symbol S00019.

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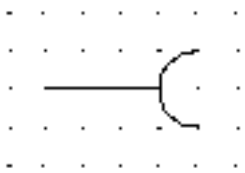
S00031



Name:	Contact, female (of a socket or plug)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-01
Alternative names:	Socket
Keywords:	connection devices, sockets
Applied in:	S00033, S00038, S00047, S00049, S00048, S00457, S01329
Application notes:	A00006
Replacing:	S01352
Shape class:	Half-circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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S00032



Name:	Contact, male (of a socket or plug)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-03
Alternative names:	Plug
Keywords:	connection devices, plugs
Applied in:	S00033, S00039, S00038, S00043, S00047, S00049, S00048, S01329
Application notes:	A00007
Replacing:	S01353
Shape class:	Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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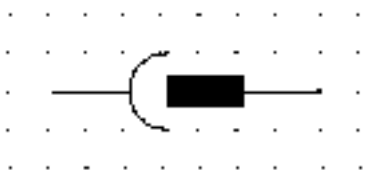

Name:	Plug and socket
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-05
Keywords:	plugs, sockets
Applied in:	S00034, S00035, S00042, S01329
Applies:	S00031; S00032
Application notes:	A00210
Replacing:	S01354
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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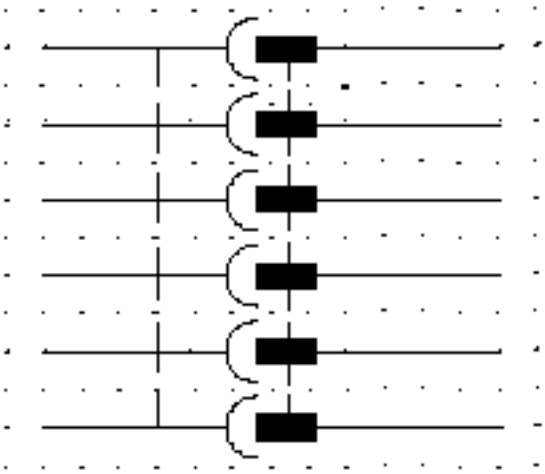

Name:	Plug and socket, multipole (multi-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-07
Keywords:	plugs, sockets
Alternative forms:	S00035
Applies:	S00033; S00144
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams
Remarks:	The symbol "Plug and socket, multipole" is shown with 6 female and 6 male contacts in multi-line representation

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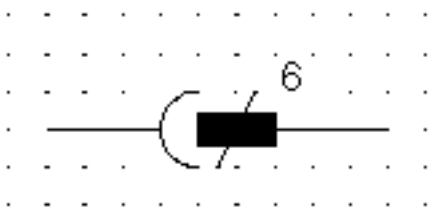
S00035



Name:	Plug and socket, multipole (single-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-08
Keywords:	plugs, sockets
Applies:	S00033
Shape class:	Characters, Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The symbol "Plug and socket, multipole" represents in single-line representation 6 female and 6 male contacts

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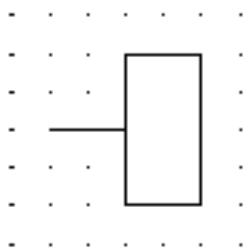

Name:	Connector, fixed portion of an assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-09
Keywords:	connection devices, connectors
Applied in:	S00038
Application notes:	A00008
Shape class:	Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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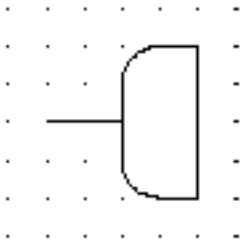

Name:	Connector, movable portion of an assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-10
Keywords:	connection devices, connections
Applied in:	S00038
Application notes:	A00008
Shape class:	Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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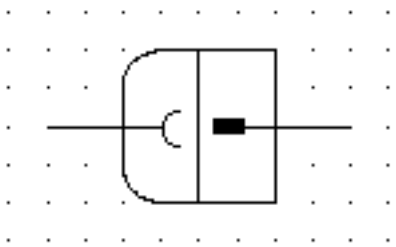

Name:	Connector assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-11
Keywords:	connection devices, connectors
Applies:	S00031; S00032; S00036; S00037
Application notes:	A00008
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with fixed plug-side and movable socket-side.

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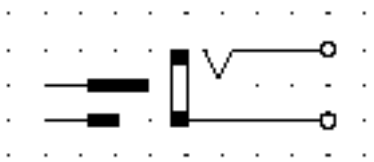

Name:	Telephone type plug and jack
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-12
Keywords:	connection devices, plugs, jacks
Applied in:	S00040
Applies:	S00017; S00032
Application notes:	A00009
Shape class:	Circles, Depicting shapes, Lines , Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams
Remarks:	The symbol is shown with two poles.

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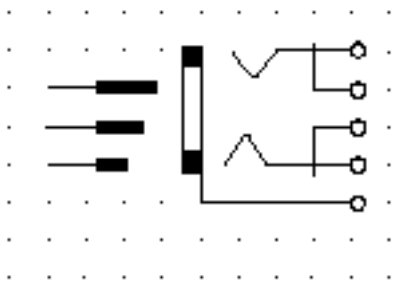

Name:	Telephone type plug and jack with break contacts
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-13
Keywords:	connection devices, jacks, plugs
Applies:	S00039; S00233
Application notes:	A00009
Shape class:	Circles, Depicting shapes, Lines , Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams
Remarks:	The symbol is shown with three poles.

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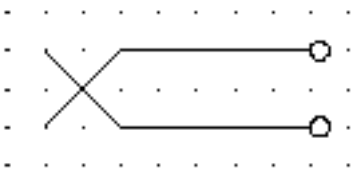

Name:	Telephone type break jack, telephone type isolating jack
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-14
Keywords:	connection devices
Shape class:	Circles, Depicting shapes, Lines
Function class:	X Connecting
Application class:	Circuit diagrams

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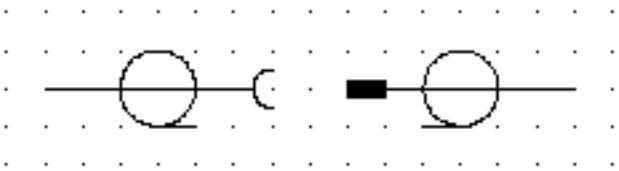

Name:	Plug and socket, coaxial
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-15
Keywords:	connection devices, connectors, plugs, sockets
Applies:	S00011; S00033
Application notes:	A00010
Shape class:	Circles, Half-circles, Lines , Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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Name:	Butt-connector
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-16
Keywords:	connection devices, connectors
Applies:	S00032
Shape class:	Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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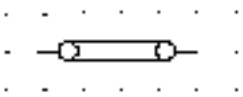

Name:	Connecting link, closed
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-17
Keywords:	connection devices
Form:	Form 1
Alternative forms:	S00045
Applies:	S00017
Shape class:	Circles, Depicting shapes
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams

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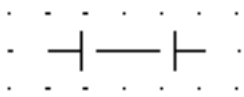

Name:	Connecting link, closed
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-18
Keywords:	connection devices
Form:	Form 2
Alternative forms:	S00044
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams

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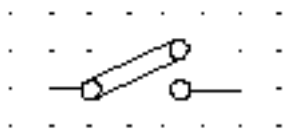
S00046



Name:	Connecting link, open
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-19
Keywords:	connection devices
Applies:	S00017
Shape class:	Circles, Depicting shapes
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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S00047



Name:	Plug and socket-type connector, male-male
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-20
Alternative names:	U-link
Keywords:	connection devices, connectors, plugs, sockets
Applies:	S00031; S00032
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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S00048



Name:	Plug and socket-type connector, male-female
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-21
Alternative names:	U-link
Keywords:	connection devices, connectors, plugs, sockets
Applies:	S00031; S00032
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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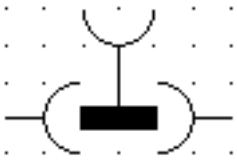
S00049



Name:	Plug and socket-type connector, male-male with socket access
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-03-22
Alternative names:	U-link
Keywords:	connection devices, connectors, plugs, sockets
Applies:	S00031; S00032
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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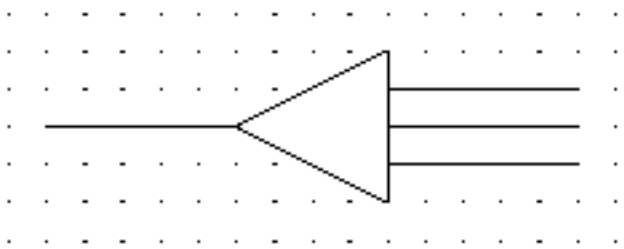
S00050



Name:	Cable sealing end (multi-core cable)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-01
Keywords:	cable fittings, sealings
Applied in:	S01397
Applies:	S00001; S00058
Shape class:	Equilateral triangles, Lines
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams
Remarks:	The symbol is shown with one three-core cable.

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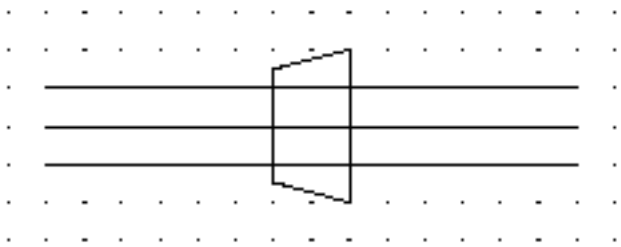
S00051



Name:	Cable sealing end (one-core cables)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-02
Keywords:	cable fittings, sealings
Applies:	S00001
Shape class:	Lines , Trapezoids
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three one-core cables.

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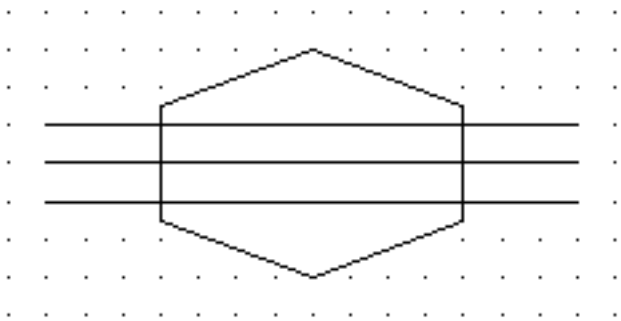
S00052



Name:	Straight-through joint box (multi-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-03
Keywords:	cable fittings
Alternative forms:	S00053
Applied in:	S00054
Applies:	S00001
Shape class:	Hexagons, Lines
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three conductors in multi-line representation

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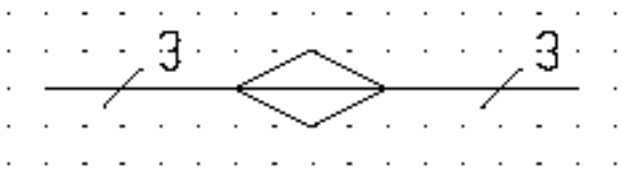
S00053



Name:	Straight-through joint box (single-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-04
Keywords:	cable fittings
Alternative forms:	S00052
Applied in:	S00055
Applies:	S00003
Shape class:	Characters, Lines , Parallelograms
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three conductors in single-line representation.

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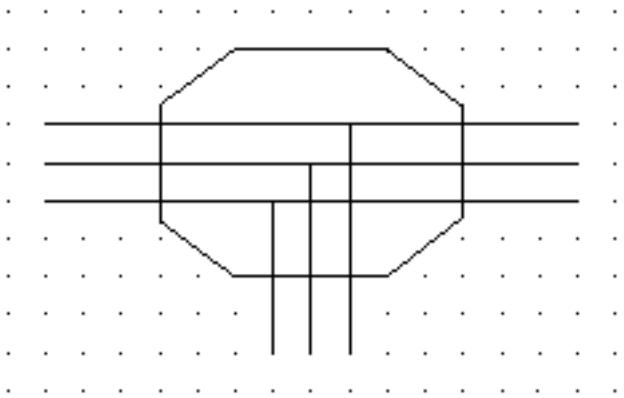
S00054



Name:	Junction box (multi-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-05
Keywords:	cable fittings
Alternative forms:	S00055
Applies:	S00001; S00019; S00052
Shape class:	Lines , Octagons
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three conductors with T-connections in multi-line representation

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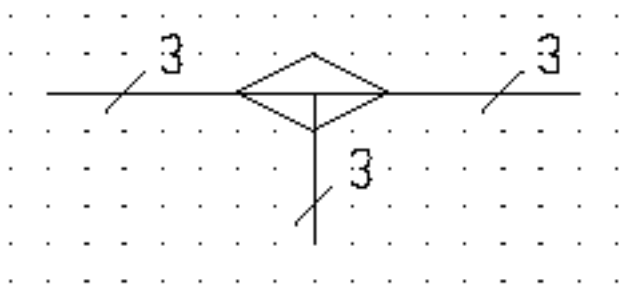
S00055



Name:	Junction box (single-line representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-06
Keywords:	cable fittings
Alternative forms:	S00054
Applies:	S00003; S00019; S00053
Shape class:	Characters, Lines , Parallelograms
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three conductors with T-connections in single-line representation.

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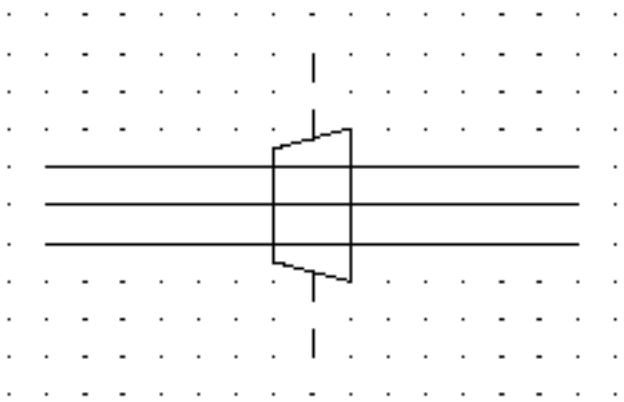
S00056



Name:	Pressure-tight bulkhead cable gland
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-04-07
Keywords:	cable fittings
Applied in:	S00513
Application notes:	A00012
Shape class:	Lines , Trapezoids
Function class:	X Connecting
Application class:	Connection diagrams, Installation diagrams, Network maps
Remarks:	The symbol is shown with three cables.

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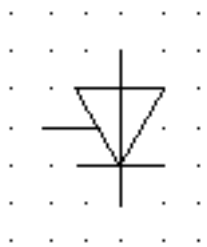
S00057



Name:	Triode thyristor, type unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-04
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Application notes:	A00184
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams
Remarks:	This symbol is used to represent a reverse blocking triode thyristor, if it is not necessary to specify the type of gate.

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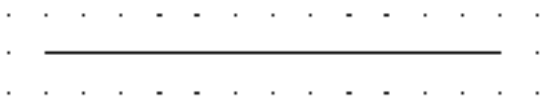

Name:	Group of connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-3 (ed.2.0) 03-01-01
Keywords:	connections
Applied in:	S00003, S00050, S00002, S01414
Application notes:	A00192, A00193, A00194
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	See also symbol S00001.

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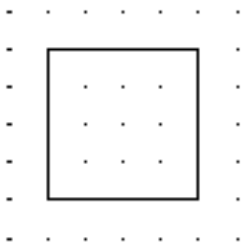

Name:	Object
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-01
Alternative names:	Equipment;Device;Functional unit;Component;Function
Keywords:	envelopes, outlines
Form:	Form 1
Alternative forms:	S00060; S00061
Applied in:	S00385, S00386, S00393, S00391, S00392, S00394, S00396, S00397, S00398, S00395, S00399, S00401, S00402, S00404, S00403, S00400, S00443, S00442, S01421, S01465, S01463, S01464, S01655, S01031, S01176, S00515, S01078, S01136, S00900, S01030, S01035, S00992, S01076, S01181, S01175, S00896, S00781, S00894, S00519, S00608, S01184, S01037, S00533, S00993, S00492, S00893, S00785, S01032, S01167, S00899, S00549, S01036, S01244, S01075, S01125, S01225, S01079, S01029, S00552, S00494, S01174, S01177, S01130, S00897, S01033, S00548, S01034, S00783
Application notes:	A00013
Shape class:	Squares
Function class:	- Functional elements or attributes

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Application class: Conceptual elements or qualifiers

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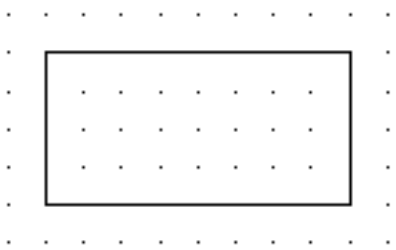
S00060



Name:	Object
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-02
Alternative names:	Equipment; Device; Functional unit; Component; Function
Keywords:	envelopes, outlines
Form:	Form 2
Alternative forms:	S00059; S00061
Applied in:	S00388, S00387, S00455, S00456, S01420, S01419, S00516, S00479, S01328, S00609, S00495, S01327, S00994, S00784, S00478, S01326, S00480
Application notes:	A00013
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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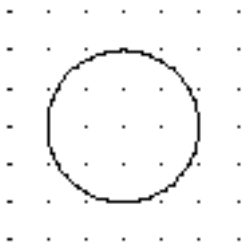
S00061



Name:	Object
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-03
Alternative names:	Equipment; Device; Functional unit; Component; Function
Keywords:	envelopes, outlines
Form:	Form 3
Alternative forms:	S00059; S00060
Applied in:	S00389, S00390, S00405, S00406, S00428, S00429, S00436, S00453, S01133, S00534, S00493, S01844, S01845
Application notes:	A00013
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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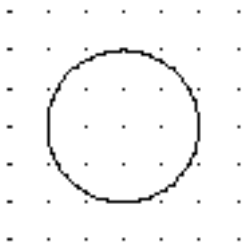
S00062



Name:	Envelope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-04
Keywords:	envelopes, outlines
Form:	Form 1
Alternative forms:	S00063
Applied in:	S00266, S00421, S00776, S00790, S00789, S00777, S00744, S00742, S00731, S00694, S00780, S00693, S00772, S00769, S00791, S00771, S00664, S00743, S00778
Application notes:	A00014, A00015, A00016, A00017
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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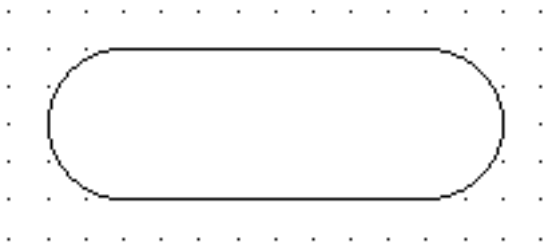
S00063



Name:	Envelope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-05
Keywords:	envelopes, outlines
Form:	Form 2
Alternative forms:	S00062
Applied in:	S01391, S00752, S00751, S00746, S00745, S00773, S00734, S00764, S00779, S00793, S00792, S00732, S00755, S00763, S00770, S00761, S00735, S00762, S00757, S00774, S00756, S00733, S00747, S00759, S00758, S00767, S00753, S00760, S00754, S00794
Application notes:	A00014, A00015, A00016, A00017
Shape class:	Barrels, Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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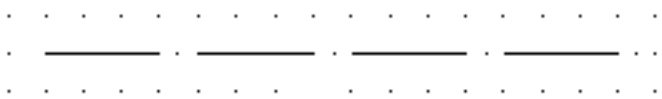
S00064



Name:	Boundary
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-06
Keywords:	envelopes, outlines
Application notes:	A00018, A00019
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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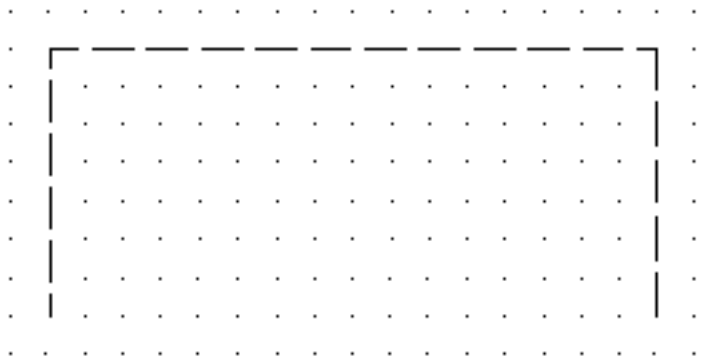
S00065



Name:	Screen
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-07
Alternative names:	Shield
Keywords:	envelopes, outlines, screens, shields
Applied in:	S00694, S00853, S00852
Application notes:	A00020
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For example for reducing penetration of electric or electromagnetic fields.

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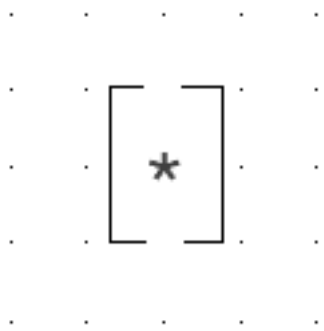
S00066



Name:	Protection against unintentional direct contact, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-01-08
Keywords:	envelopes, outlines, protections against contact
Applied in:	S00168
Application notes:	A00021
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00067



Name:	Direct current
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-03
Keywords:	current, kind of curent and voltage, voltage
Application notes:	A00022
Replacing:	S01347; S01348
Replaced by:	S01401
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00069



Name:	Alternating current (indication of frequency)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-05
Keywords:	current, kind of curent and voltage, voltage
Applies:	S01403
Application notes:	A00023
Replaced by:	S01403
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Shown for alternating current of 50 Hz.

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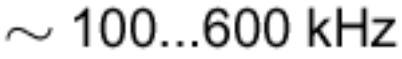
S00070



Name:	Alternating current (indication of frequency range)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-06
Keywords:	current, kind of curent and voltage, voltage
Applies:	S00107
Application notes:	A00023
Replaced by:	S01403
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Shown for a frequency range 100 kHz to 600 kHz.
Remarks:	Replaced by A00258 symbol S01403.

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S00071



Name:	Alternating current (indication of voltage)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-07
Keywords:	current, kind of curent and voltage, voltage
Applies:	S00107
Application notes:	A00023, A00024, A00025
Replaced by:	S01403
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown for three-phase with neutral, 400 V (230 V between phase and neutral), 50 Hz. (see also IEC 61293) . Replaced by A00258 to symbol S01403.

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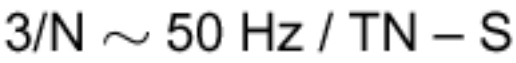
S00072



Name:	Alternating current (indication of system)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-08
Keywords:	current, kind of curent and voltage, voltage
Applies:	S00107
Application notes:	A00023, A00024, A00026
Replaced by:	S01403
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown for a three-phase system, 50 Hz; system having one point directly earthed and separate neutral and protective conductors throughout. Replaced by A00258 to symbol S01403.

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S00073



Name:	Alternating current (indication of frequency range: low)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-09
Alternative names:	Different frequency ranges. Relatively low frequencies (power frequencies or sub-audio frequencies)
Keywords:	current, kind of curent and voltage, voltage
Application notes:	A00027
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00074



Name:	Alternating current (indication of frequency range: medium)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-10
Alternative names:	Different frequency ranges. Medium frequencies (audio)
Keywords:	current, kind of curent and voltage, voltage
Applied in:	S01280, S01279, S01281
Application notes:	A00027
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00075



Name:	Alternating current (indication of frequency range: high)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-11
Alternative names:	Different frequency ranges.Relatively high frequencies (super audio, carrier)
Keywords:	current, kind of curent and voltage, voltage
Applied in:	S01829, S01173, S01279, S01281
Application notes:	A00027
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00076



Name:	Rectified current with alternating component
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-12
Keywords:	current, kind of curent and voltage, voltage
Shape class:	Depicting shapes, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If it is necessary to distinguish from a rectified and filtered current.

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S00077



Name:	Positive polarity
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-13
Keywords:	current, kind of curent and voltage, voltage
Applied in:	S00582, S00571, S00952, S00581
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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Name:	Negative polarity
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-14
Keywords:	current, kind of curent and voltage, voltage
Applied in:	S00952
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00079



Name:	Neutral
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-15
Keywords:	current, kind of curent and voltage, voltage
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol for neutral is given in IEC 60445.

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S00080



Name:	Mid-wire
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-16
Keywords:	current, kind of curent and voltage, voltage
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol for mid-wire is given in IEC 60445.

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S00081



Name:	Adjustability, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-01
Keywords:	adjustability, variability
Applied in:	S00082, S00088, S00299, S00441, S01430, S01429, S00874, S00751, S00565, S00557, S01157, S01099, S00527, S00857, S00856, S00768, S01241, S00577, S00877, S00590, S01097, S01229, S00865, S00579, S00875, S00587, S00864, S01245, S00753, S00573, S00876
Application notes:	A00261
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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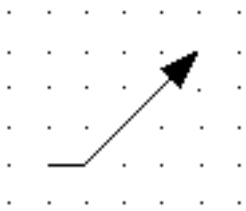
S00082



Name:	Adjustability, non-linear
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-02
Keywords:	adjustability, variability
Applies:	S00081
Application notes:	A00261
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00083



Name:	Variability, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-03
Keywords:	adjustability, variability
Applied in:	S00084, S00689
Application notes:	A00031, A00032, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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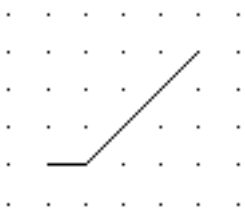
S00084



Name:	Variability, non-linear
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-04
Keywords:	adjustability, variability
Applied in:	S00582, S00558, S00581, S00690
Applies:	S00083
Application notes:	A00031, A00032, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00085



Name:	Adjustability, pre-set
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-05
Keywords:	adjustability, variability
Applied in:	S00086, S00090, S00343, S00575, S00562
Application notes:	A00031, A00032, A00033, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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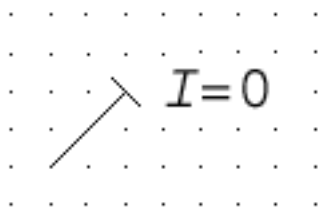
S00086



Name:	Pre-set adjustability
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-06
Keywords:	adjustability, variability
Applies:	S00085; S00111
Application notes:	A00031, A00032, A00033, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Pre-set adjustment permitted only at zero current.

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S00087



Name:	Action in steps
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-07
Keywords:	adjustability, automatic control, variability
Applied in:	S00088, S00298, S00589, S00524, S00865, S00821, S00864
Application notes:	A00034
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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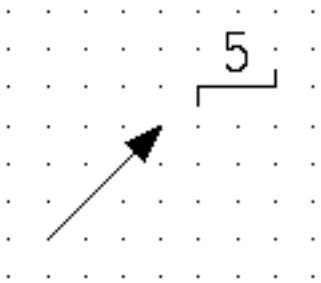
S00088



Name:	Adjustability step by step
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-08
Keywords:	adjustability, variability
Applies:	S00081; S00087
Application notes:	A00031, A00034, A00261
Shape class:	Arrows, Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	5 steps shown.

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S00089



Name:	Continuous variability
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-09
Keywords:	adjustability, automatic control, variability
Applied in:	S00090
Application notes:	A00031, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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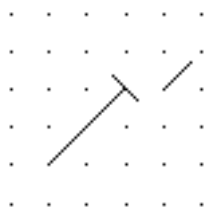
S00090



Name:	Continuous variability, pre-set
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-10
Alternative names:	Pre-set adjustment, continuously variable
Keywords:	adjustability, variability
Applies:	S00085; S00089
Application notes:	A00031, A00261
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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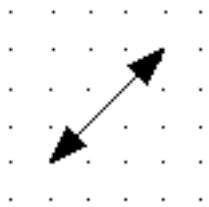
S00091



Name:	Automatic control
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-11
Keywords:	adjustability, automatic control, variability
Applied in:	S00092
Application notes:	A00031, A00035, A00261
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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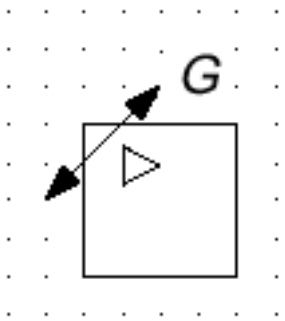
S00092



Name:	Amplifier with automatic gain control
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-03-12
Keywords:	adjustability, amplifiers, automatic control, variability
Applies:	S00091; S01240
Application notes:	A00031, A00035, A00261
Shape class:	Arrows, Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Amplifier with automatic gain control shown.

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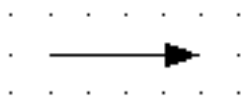
S00093



Name:	Rectilinear motion (unidirectional)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-01
Alternative names:	Force; Unidirectional, in the direction of the arrowhead
Keywords:	direction, force, motion
Applied in:	S00145, S00187, S01453, S01452, S00949, S01176, S01175, S00948, S00840, S00474, S01177
Application notes:	A00036, A00037
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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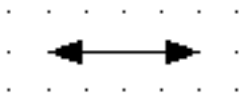
S00094



Name:	Rectilinear motion (bidirectional)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-02
Alternative names:	Force
Keywords:	direction, force, motion
Applied in:	S00122, S00188, S01179, S01211, S01222, S01218, S01220, S00523, S01158, S01221
Application notes:	A00036, A00037
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00095



Name:	Circular motion (unidirectional)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-03
Alternative names:	Rotation; Torque
Keywords:	direction, force, motion
Applied in:	S00146, S00162, S01197, S01199, S00964, S01196, S00767
Application notes:	A00035, A00036
Shape class:	Arrows, Circle segments
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Circular motion, rotation or torque in the direction of the arrowhead.

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S00096



Name:	Circular motion (bidirectional)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-04
Alternative names:	Rotation; Torque
Keywords:	direction, force, motion
Applied in:	S00162, S00301, S01200, S01152, S01201, S01198, S01202
Application notes:	A00036, A00037
Shape class:	Arrows, Circle segments
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00097



Name:	Circular motion (bidirectional and limited)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-05
Alternative names:	Rotation; Torque
Keywords:	direction, force, motion
Application notes:	A00035, A00036
Shape class:	Arrows, Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Circular motion, rotation or torque limited in both directions.

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S00098



Name:	Oscillating motion
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-04-06
Keywords:	direction, force, motion
Applied in:	S00317, S01109
Application notes:	A00035, A00036
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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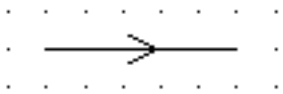
S00099



Name:	Propagation (one way)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-01
Alternative names:	Energy flow; Signal flow; Information flow
Keywords:	direction, flow
Applied in:	S00104, S00105, S01738, S01596, S01603, S01599, S01713, S01716, S01739, S01746, S00940, S00985, S00942, S01280, S01254, S01279, S01038, S01040, S00941, S01281, S00934, S01041, S01252, S01377, S01378, S01253, S01251
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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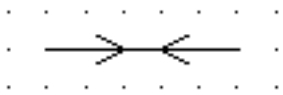
S00100



Name:	Propagation, both ways, simultaneously
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-02
Alternative names:	Simultaneous transmission and reception
Keywords:	direction, flow
Applied in:	S01803, S01126, S01039
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Simultaneous transmission and reception.

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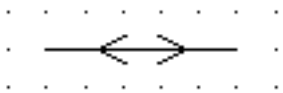
S00101



Name:	Propagation, both ways, not simultaneously
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-03
Alternative names:	Alternate transmission and reception
Keywords:	direction, flow
Applied in:	S01547, S01603, S01629, S01628, S01635, S01713, S01716, S01031, S01030, S01129, S00497, S01131, S00897
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Alternate transmission and reception.

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S00102



Name:	Transmission
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-04
Keywords:	direction, flow
Applied in:	S01035, S01037, S01036, S01029, S01128, S01034
Application notes:	A00038
Shape class:	Arrows, Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol S01128 shows an example where the dot may be omitted.

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S00103



Name:	Reception
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-05
Keywords:	direction, flow
Applied in:	S01037, S01032, S01036, S01127, S01033
Application notes:	A00039
Shape class:	Arrows, Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol S01127 shows an example where the dot may be omitted..

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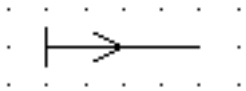
S00104



Name:	Energy flow from the busbars
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-06
Keywords:	busbars, direction, flow
Applied in:	S00935
Applies:	S00099
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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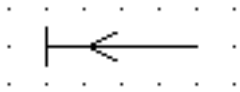
S00105



Name:	Energy flow towards the busbars
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-07
Keywords:	busbars, direction, flow
Applied in:	S00343, S00936
Applies:	S00099
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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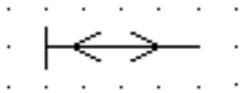
S00106



Name:	Energy flow, bidirectional (towards and from the busbars)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-05-08
Keywords:	busbars, direction, flow
Alternative forms:	S00103
Applied in:	S00937
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00107



Name:	Alternating current
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-04
Keywords:	current, kind of curent and voltage, voltage
Applied in:	S00070, S00071, S00072
Application notes:	A00023, A00024, A00025, A00026
Replaced by:	S01403
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00108



Name:	Actuating (higher than)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-06-01
Keywords:	dependence on a quantity, quantity dependency
Applied in:	S00341, S00343, S00345, S00350
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Actuating when the characteristic quantity is higher than the setting value. See also ISO/IEC 646.

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S00109



Name:	Actuating (lower than)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-06-02
Keywords:	dependence on a quantity, quantity dependency
Applied in:	S00340, S00345, S00347, S00344, S00346, S00351, S00349
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Actuating when the characteristic quantity is lower than the setting value. See also ISO/IEC 646.

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S00110



Name:	Actuating (either higher than or lower than)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-06-03
Keywords:	dependence on a quantity, quantity dependency
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Actuating when the characteristic quantity is either higher than a given high setting or lower than a given low setting.

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S00111

$= 0$

Name:	Actuating (equal to zero)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-06-04
Keywords:	dependence on a quantity, quantity dependency
Applied in:	S00086, S00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Actuating when the value of the characteristic quantity is equal to zero.

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S00112



Name:	Actuating (approximately equal to zero)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-06-05
Keywords:	dependence on a quantity, quantity dependency
Applied in:	S00350, S01832
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Actuating when the value of the characteristic quantity is approximately equal to zero.

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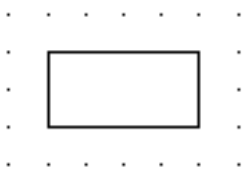
S00113



Name:	Material, unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-01
Keywords:	material
Application notes:	A00040
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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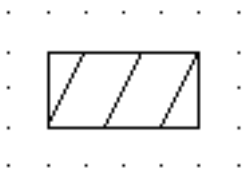
S00114



Name:	Material, solid
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-02
Keywords:	material
Applied in:	S00356, S00607, S01217, S01216
Application notes:	A00040
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00115



Name:	Material, liquid
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-03
Keywords:	material
Applied in:	S00408, S00793, S00792, S00795, S00794
Application notes:	A00040
Shape class:	Circle segments, Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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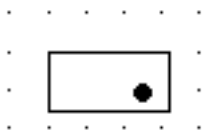
S00116



Name:	Material, gas
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-04
Keywords:	material
Applied in:	S00199, S00198, S00266, S00745, S00790, S00773, S00781, S00780, S00693, S00772, S00770, S00769, S00791, S00771, S00774, S00782, S00784, S00775, S00783
Application notes:	A00040
Shape class:	Dots (points), Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00117



Name:	Material, electret
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-05
Keywords:	material
Applied in:	S00603
Application notes:	A00040
Shape class:	Equilateral triangles, Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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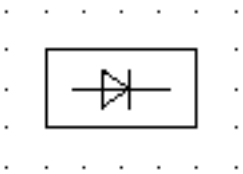
S00118



Name:	Material, semiconducting
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-06
Keywords:	material
Applied in:	S00785
Application notes:	A00040
Shape class:	Equilateral triangles, Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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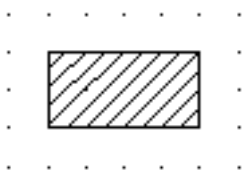
S00119



Name:	Material, insulating
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-07-07
Keywords:	material
Application notes:	A00040
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00120



Name:	Thermal effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-01
Keywords:	dependence, effect, thermal
Applied in:	S00191, S00266, S00265, S00325, S00381
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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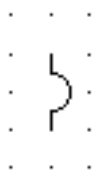
S00121



Name:	Electromagnetic effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-02
Keywords:	dependence, effect, electromagnetic
Applied in:	S00190
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00122



Name:	Magnetostrictive effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-03
Keywords:	dependence, effect, magnetostrictive
Applied in:	S00604, S00609, S00605
Applies:	S00094
Shape class:	Arrows, Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00123



Name:	Magnetic field effect or dependence
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-04
Keywords:	dependence, effect, magnetic
Applied in:	S00688, S00689, S00690
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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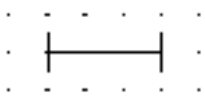
S00124



Name:	Delay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-05
Keywords:	delayed operation, dependence, effect
Applied in:	S00341, S00337, S00343, S00353, S01655, S00604, S00607, S00608, S00609, S01266, S00605
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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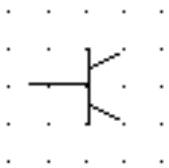
S00125



Name:	Semiconductor effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-06
Keywords:	dependence, effect, semiconductors
Applied in:	S00194, S00326, S00382
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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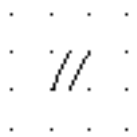
S00126



Name:	Coupling effect with electrical separation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-08-07
Keywords:	couplers, dependence, effect
Applied in:	S00384, S00383
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00127



Name:	Radiation, electromagnetic, non-ionizing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-09-01
Alternative names:	Light
Keywords:	radiation
Applied in:	S00130, S00384, S01431, S00685, S01078, S00488, S00489, S00786, S00684, S00686, S01318, S01063, S01327, S00787, S00904, S01079, S00908, S00788, S00642, S00906, S00687, S01216, S01326
Application notes:	A00041, A00042
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For example radio waves or visible light.

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S00128



Name:	Radiation, coherent, non-ionizing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-09-02
Alternative names:	Light
Keywords:	radiation
Applied in:	S00131, S01328, S01214, S01215
Application notes:	A00041, A00042
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For example coherent light.

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S00129



Name:	Radiation, ionizing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-09-03
Keywords:	radiation
Applied in:	S00790, S00901, S00789, S00781, S00786, S00785, S00907, S00791, S00787, S00782, S00784, S00788, S00905, S00783
Application notes:	A00041, A00042, A00043
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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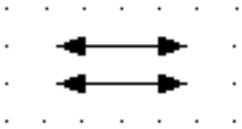
S00130



Name:	Radiation, electromagnetic, non-ionizing, bidirectional
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-09-04
Keywords:	radiation
Applied in:	S00131
Applies:	S00127
Application notes:	A00041
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For example radiation produced by radar or photorelay with mirror reflector.

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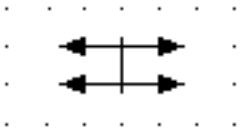
S00131



Name:	Radiation, coherent, non-ionizing, bidirectional
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-09-05
Keywords:	radiation
Applies:	S00128; S00130
Application notes:	A00041
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00132



Name:	Pulse, positive-going
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-01
Keywords:	signal waveform
Applied in:	S01675, S01674, S01237, S01235, S00546, S01238, S01223, S01222, S01218, S01219, S01220, S00551, S01263, S00966, S00550, S01221, S01228, S00545
Application notes:	A00044
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00133



Name:	Pulse, negative-going
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-02
Keywords:	signal waveform
Applied in:	S01235
Application notes:	A00044
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00134



Name:	Pulse, alternating current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-03
Keywords:	signal waveform
Application notes:	A00044
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00135



Name:	Step function, positive going
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-04
Keywords:	signal waveform
Applied in:	S01257, S00792, S01038
Application notes:	A00044
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00136



Name:	Step function, negative going
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-05
Keywords:	signal waveform
Application notes:	A00044
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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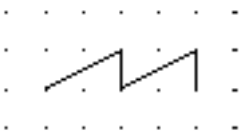
S00137



Name:	Saw-tooth wave
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-10-06
Keywords:	signal waveform
Applied in:	S01227
Application notes:	A00044
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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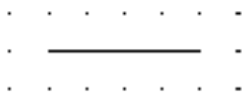
S00138



Name:	Printing, tape
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-01
Alternative names:	Tape printing
Keywords:	facsimile, perforating, printing
Applied in:	S01031, S00942, S00495
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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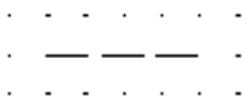
S00139



Name:	Perforating tape
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-02
Alternative names:	Using perforated tape
Keywords:	facsimile, perforating, printing
Applied in:	S01035, S01037, S01036, S01034
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00140



Name:	Printing and perforating, of one tape, simultaneous
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-03
Keywords:	facsimile, perforating, printing
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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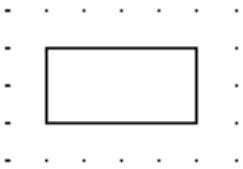
S00141



Name:	Printing, page
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-04
Keywords:	facsimile, perforating, printing
Applied in:	S01032
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00142



Name:	Keyboard
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-05
Keywords:	facsimile, perforating, printing
Applied in:	S01031, S01035
Shape class:	Dots (points)
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00143



Name:	Facsimile
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-11-06
Keywords:	facsimile, perforating, printing
Applied in:	S01033
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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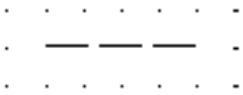
S00144



Name:	Link
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-01
Alternative names:	Mechanical link, pneumatic link, hydraulic link, optical link, functional link, radio link
Keywords:	links, mechanical control, other control
Form:	Form 1
Alternative forms:	S00147
Applied in:	S00034, S00145, S00146, S00165, S00164, S00190, S00191, S00248, S00261, S00268, S00267, S00269, S00364
Application notes:	A00045
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00145



Name:	Mechanical link (force or motion)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-02
Alternative names:	Link, mechanical ; Mechanical link with indication of direction of force or motion
Keywords:	links, mechanical control, other control
Applied in:	S00294, S00295
Applies:	S00093; S00144
Application notes:	A00045
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00146



Name:	Mechanical link (rotation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-03
Alternative names:	Link, mechanical; Mechanical link with indication of direction of rotation.
Keywords:	links, mechanical control, other control
Applies:	S00095; S00144
Application notes:	A00045, A00046
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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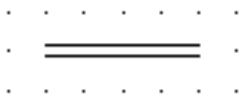
S00147



Name:	Link
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-04
Keywords:	links, mechanical control, other control
Form:	Form 2
Alternative forms:	S00144
Applied in:	S00149, S00148, S01200, S00822, S01202
Application notes:	A00045
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00148



Name:	Delayed action
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-05
Alternative names:	Action, delayed
Keywords:	links, mechanical control, other control
Form:	Form 1
Alternative forms:	S00149
Applied in:	S00245, S00243, S00247
Applies:	S00147
Application notes:	A00047
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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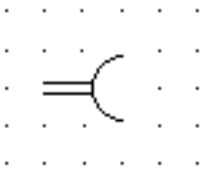
S00149



Name:	Delayed action
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-06
Alternative names:	Action, delayed
Keywords:	links, mechanical control, other control
Form:	Form 2
Alternative forms:	S00148
Applied in:	S00244, S00246, S00247
Applies:	S00147
Application notes:	A00047
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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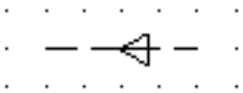
S00150



Name:	Automatic return
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-07
Alternative names:	Return, automatic
Keywords:	links, mechanical control, other control
Applied in:	S00267, S00294, S00295
Application notes:	A00048
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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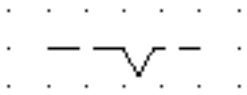
S00151



Name:	Detent
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-08
Alternative names:	Non-automatic return; Return, non-automatic; Device for maintaining a given position
Keywords:	links, mechanical control, other control
Applied in:	S00153, S00152, S00258, S00267, S00294
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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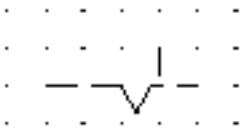
S00152



Name:	Detent, disengaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-09
Keywords:	links, mechanical control, other control
Applies:	S00151
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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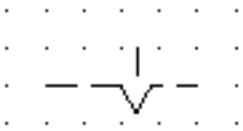
S00153



Name:	Detent, engaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-10
Keywords:	links, mechanical control, other control
Applies:	S00151
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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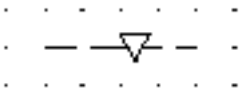
S00154



Name:	Mechanical interlock
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-11
Alternative names:	Interlock, mechanical; Mechanical interlock between two devices
Keywords:	links, mechanical control, other control
Shape class:	Equilateral triangles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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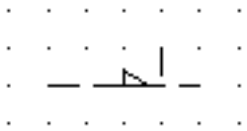
S00155



Name:	Latching device, disengaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-12
Keywords:	links, mechanical control, other control
Shape class:	Lines , Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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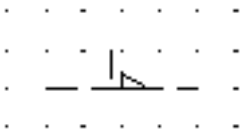
S00156



Name:	Latching device, engaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-13
Keywords:	links, mechanical control, other control
Shape class:	Lines , Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00157



Name:	Blocking device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-14
Keywords:	links, mechanical control, other control
Applied in:	S00158
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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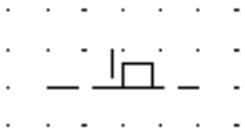
S00158



Name:	Blocking device, engaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-15
Alternative names:	Blocking device engaged,movement to the left blocked
Keywords:	links, mechanical control, other control
Applied in:	S00292
Applies:	S00157
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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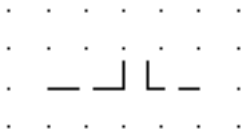
S00159



Name:	Clutch; Mechanical coupling
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-16
Keywords:	links, mechanical control, other control
Applied in:	S00160, S00161
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams

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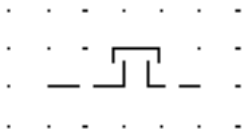
S00160



Name:	Mechanical coupling, disengaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-17
Keywords:	links, mechanical control, other control
Applies:	S00159
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams

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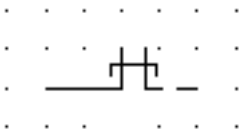
S00161



Name:	Mechanical coupling, engaged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-18
Keywords:	links, mechanical control, other control
Applied in:	S00162
Applies:	S00159
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams

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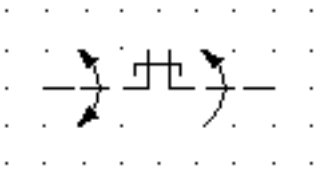
S00162



Name:	Unidirectional coupling device for rotation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-19
Alternative names:	Free wheel
Keywords:	links, mechanical control, other control
Applies:	S00095; S00096; S00161
Shape class:	Arrows, Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Remarks:	The coupling shown in engaged position.

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S00163



Name:	Brake
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-20
Keywords:	links, mechanical control, other control, brakes
Applied in:	S00165, S00164
Shape class:	Trapezoids
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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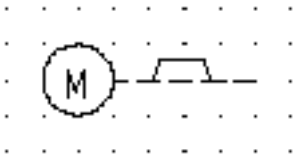
S00164



Name:	Brake, applied
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-21
Alternative names:	Electric motor with brake applied.
Keywords:	brakes, links, mechanical control, other control
Applies:	S00144; S00163; S00819
Shape class:	Depicting shapes
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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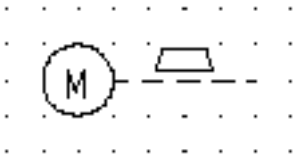
S00165



Name:	Brake, released
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-22
Alternative names:	Electric motor with brake released
Keywords:	brakes, links, mechanical control, other control
Applies:	S00144; S00163; S00819
Shape class:	Depicting shapes
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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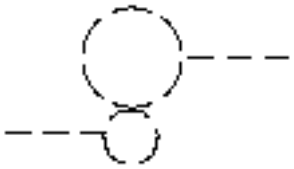
S00166



Name:	Gearing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-12-23
Keywords:	links, mechanical control, gearings
Shape class:	Circles, Lines
Function class:	X Connecting
Application class:	Circuit diagrams

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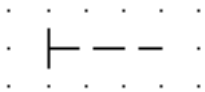
S00167



Name:	Actuator, manual, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-01
Keywords:	actuators
Applied in:	S00168, S00253, S00273, S00292, S00294, S00295, S00948
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Conceptual elements or qualifiers

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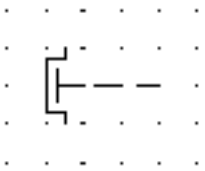
S00168



Name:	Actuator, manual (protected)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-02
Alternative names:	Manual actuator protected against unintentional operation
Keywords:	actuators
Applied in:	S00477
Applies:	S00066; S00167
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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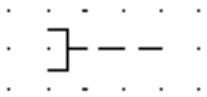
S00169



Name:	Actuator (operated by pulling)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-03
Keywords:	actuators
Applied in:	S00255
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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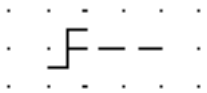
S00170



Name:	Actuator (operated by turning)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-04
Keywords:	actuators
Applied in:	S00256, S00268, S00269
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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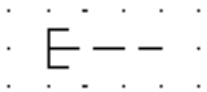
S00171



Name:	Actuator (operated by pushing)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-05
Keywords:	actuators
Applied in:	S00254, S00268, S00269
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00172



Name:	Actuator (operated by proximity effect)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-06
Keywords:	actuators
Applied in:	S00359, S00361
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00173



Name:	Actuator (operated by touching)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-07
Keywords:	actuators
Applied in:	S00358
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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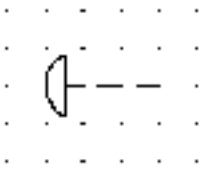
S00174



Name:	Actuator, emergency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-08
Alternative names:	Emergency actuator, type "mushroom-head"
Keywords:	actuators, emergency actuators
Applied in:	S00258
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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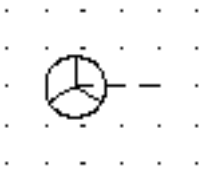
S00175



Name:	Actuator (operated by handwheel)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-09
Keywords:	actuators
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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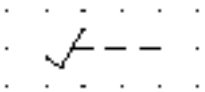
S00176



Name:	Actuator (operated by pedal)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-10
Keywords:	actuators
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00177



Name:	Actuator (operated by lever)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-11
Keywords:	actuators
Applied in:	S00272
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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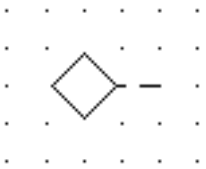
S00178



Name:	Actuator (operated by removable handle)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-12
Keywords:	actuators
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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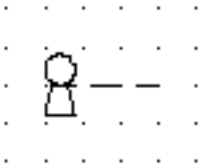
S00179



Name:	Actuator (operated by key)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-13
Keywords:	actuators
Applied in:	S00480
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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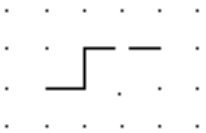
S00180



Name:	Actuator (operated by crank)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-14
Keywords:	actuators
Applied in:	S00822, S01024
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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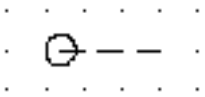
S00181



Name:	Actuator (operated by roller)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-15
Keywords:	actuators
Applied in:	S00185
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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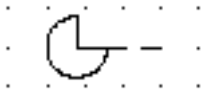
S00182



Name:	Actuator (operated by cam)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-16
Keywords:	actuators
Applied in:	S00184, S00183, S00951
Application notes:	A00049
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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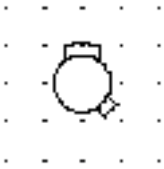
S00183



Name:	Actuator (operated by cam/cam profile)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-17
Keywords:	actuators
Applied in:	S00185
Applies:	S00182
Application notes:	A00049
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	An example of cam profile is shown

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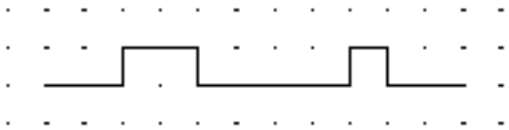
S00184



Name:	Actuator (operated by cam/profile plate)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-18
Keywords:	actuators
Applies:	S00182
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	An example of cam profile in developed representation is shown

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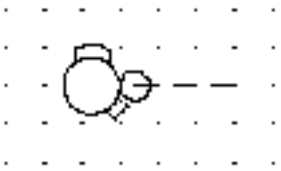
S00185



Name:	Actuator (operated by cam and roller)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-19
Keywords:	actuators
Applies:	S00181; S00183
Application notes:	A00049
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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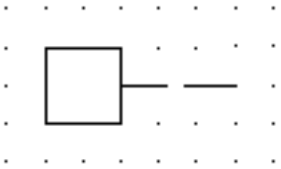
S00186



Name:	Actuator (operated by stored mechanical energy)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-20
Keywords:	actuators
Applied in:	S01406
Application notes:	A00050
Shape class:	Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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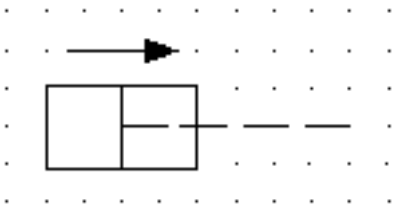
S00187



Name:	Actuator (actuated by pneumatic or hydraulic power/ single action)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-21
Alternative names:	Single acting actuator
Keywords:	actuators
Applies:	S00093
Shape class:	Arrows, Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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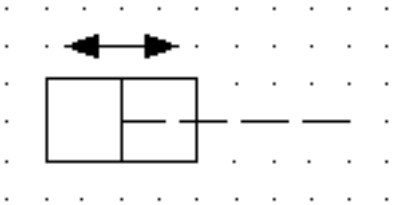
S00188



Name:	Actuator (actuated by pneumatic or hydraulic power/double acting)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-22
Alternative names:	Double acting actuator
Keywords:	actuators
Applies:	S00094
Shape class:	Arrows, Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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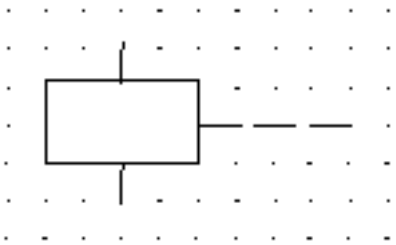
S00189



Name:	Actuator (actuated by electromagnetic effect)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-23
Keywords:	actuators
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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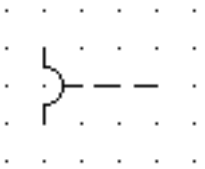
S00190



Name:	Actuator (actuated by electromagnetic device)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-08-16
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-24
Alternative names:	Actuator for protection against overcurrent
Keywords:	actuators
Applies:	S00121; S00144
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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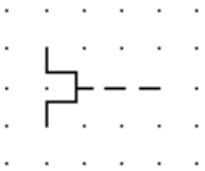
S00191



Name:	Actuator (actuated by thermal device)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-08-16
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-25
Alternative names:	Actuator for protection against overcurrent
Keywords:	actuators
Applies:	S00120; S00144
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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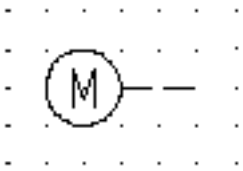
S00192



Name:	Actuator (operated by electric motor)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-26
Keywords:	actuators
Applied in:	S00294, S00295
Applies:	S00819
Shape class:	Characters, Circles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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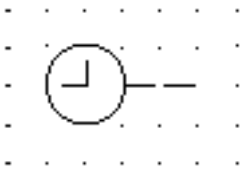
S00193



Name:	Actuator (operated by electric clock)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-27
Keywords:	actuators
Applies:	S00959
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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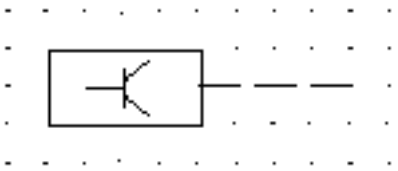
S00194



Name:	Actuator (semiconductor)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-13-28
Alternative names:	Semiconductor actuator
Keywords:	actuators
Applies:	S00125
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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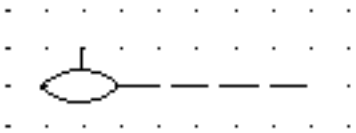
S00195



Name:	Actuator (actuated by liquid level)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-14-01
Keywords:	actuators
Applied in:	S00352
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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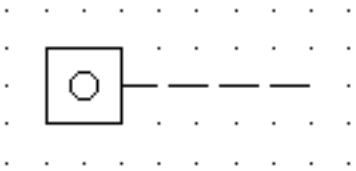
S00196



Name:	Actuator (actuated by a counter)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-14-02
Keywords:	actuators
Applies:	S00946
Shape class:	Circles, Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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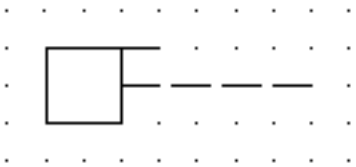
S00197



Name:	Actuator (actuated by fluid flow)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-14-03
Keywords:	actuators
Applied in:	S00198
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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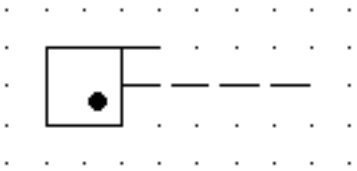
S00198



Name:	Actuator (actuated by gas flow)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-14-04
Keywords:	actuators
Applied in:	S00352
Applies:	S00116; S00197
Shape class:	Dots (points), Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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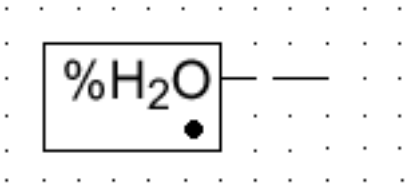
S00199



Name:	Actuator (actuated by relative humidity)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-14-05
Keywords:	actuators
Applies:	S00116
Shape class:	Characters, Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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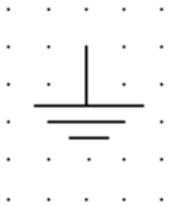
S00200



Name:	Earth, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-15-01
Alternative names:	Earthing, general symbol; Ground (US), general symbol; Grounding (US), general symbol
Keywords:	earth connection, equipotentiality, frame connection, ground connection
Applied in:	S00201, S00202, S00333, S01408, S00753, S01848
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For the definition of "earth", see IEV 195-02-03.

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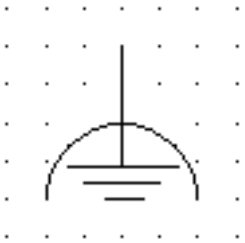
S00201



Name:	Noiseless earth
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-10
Earlier published in:	IEC 60617-2 (ed.2.0) 02-15-02
Alternative names:	Noiseless ground
Keywords:	earth connection, equipotentiality, frame connection
Applies:	S00200
Replaced by:	S01408
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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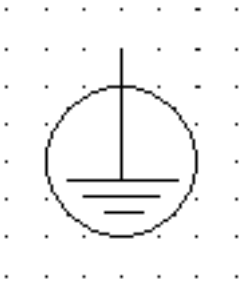
S00202



Name:	Protective earthing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-15-03
Alternative names:	Protective grounding (US); Protective earthing conductor; Protective earthing terminal; Protective grounding conductor (US); Protective grounding terminal (US)
Keywords:	earth connection, equipotentiality, frame connection, ground connection
Applies:	S00200
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes, W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams, Conceptual elements or qualifiers
Remarks:	For the definition of "protective earthing", see IEV 195-01-11.

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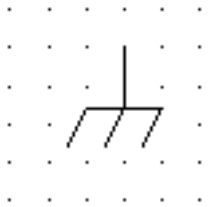
S00203



Name:	Frame
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-10
Earlier published in:	IEC 60617-2 (ed.2.0) 02-15-04
Alternative names:	Chassis
Keywords:	earth connection, equipotentiality, frame connection
Applied in:	S00328
Application notes:	A00053
Replaced by:	S01409; S01410
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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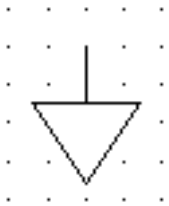
S00204



Name:	Protective equipotential bonding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-15-05
Alternative names:	Protective bonding conductor; Protective bonding terminal
Keywords:	equipotentiality, frame connection
Applied in:	S01799
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes, W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams, Conceptual elements or qualifiers
Remarks:	For the definition of "protective equipotential bonding", see IEV 195-01-15.

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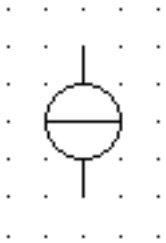
S00205



Name:	Ideal current source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-16-01
Keywords:	ideal circuit elements
Application notes:	A00054
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Function diagrams

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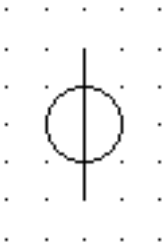
S00206



Name:	Ideal voltage source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-16-02
Keywords:	ideal circuit elements
Application notes:	A00054
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Function diagrams

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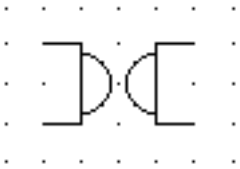
S00207



Name:	Ideal gyrator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-16-03
Keywords:	ideal circuit elements
Application notes:	A00054
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Function diagrams

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S00208



Name:	Fault
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-01
Alternative names:	Indication of assumed fault location
Keywords:	faults, indications of fault
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Function diagrams

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S00209



Name:	Flashover
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-02
Alternative names:	Break-through
Keywords:	faults, indications of fault
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Function diagrams

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S00210



Name:	Permanent magnet
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-03
Alternative names:	Magnet, permanent
Keywords:	magnet
Applied in:	S00319, S00360, S00734, S01027, S00765, S00763, S00749, S00761, S00831, S00757, S00756, S00759, S00826, S00767
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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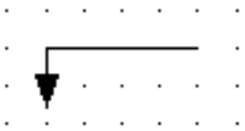
S00211



Name:	Movable contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-04
Alternative names:	Sliding contact
Keywords:	contacts
Applied in:	S00589, S00561, S00560, S00525, S00562, S00559
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00212



Name:	Test point indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-05
Keywords:	testing points
Application notes:	A00250
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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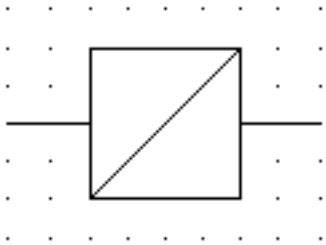
S00213



Name:	Converter, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-06
Alternative names:	Power converter; Signal converter; Measuring transducer; Repeater
Keywords:	converters, power converters, repeaters, signal converters
Applied in:	S01237, S01235, S01238, S00894, S00958, S01039, S01038, S01040, S01234, S01041, S01233, S01231, S01236, S01232
Applies:	S00214
Application notes:	A00055, A00056
Replacing:	S00958; S01231
Shape class:	Lines , Squares
Function class:	B Converting variable to signal, T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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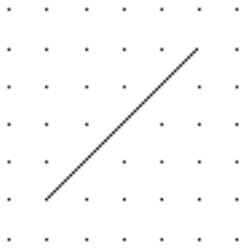
S00214



Name:	Conversion, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-06A
Keywords:	conversion, converters, power converters, signal converters
Applied in:	S00213, S01407, S01791, S00896, S00894, S00893, S01278, S01290, S00897
Replacing:	S00892
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00216



Name:	Analogue
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-08
Keywords:	analogue
Applied in:	S01635, S01684, S01748, S01749, S01289, S01290
Application notes:	A00057, A00058
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00217



Name:	Digital
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-17-09
Keywords:	digital
Applied in:	S01750, S01751, S01289, S01290
Application notes:	A00057, A00059
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00218



Name:	Contactor function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-01
Keywords:	contactors, contacts
Applied in:	S00284, S00286, S00285, S00377, S01413
Application notes:	A00061
Shape class:	Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00219



Name:	Circuit breaker function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-02
Keywords:	circuit breakers
Applied in:	S00287, S01413
Application notes:	A00061
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00220



Name:	Disconnector (isolator) function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-03
Keywords:	disconnectors
Applied in:	S00292, S00289, S00288, S00369, S01413
Application notes:	A00061
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00221



Name:	Switch-disconnector function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-04
Alternative names:	Isolating-switch function
Keywords:	disconnectors, switches
Applied in:	S00290, S00291, S00370
Application notes:	A00061
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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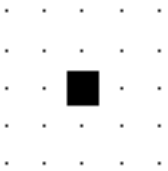
S00222



Name:	Automatic tripping function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-05
Keywords:	tripping
Applied in:	S00285, S00291, S01413
Application notes:	A00061
Shape class:	Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The tripping function can be initiated by a built-in measuring relay or release.

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S00223



Name:	Position switch function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-06
Keywords:	position switches
Applied in:	S00260, S00261, S00259
Application notes:	A00061, A00062, A00063
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00224



Name:	Automatic return function
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-25
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-07
Alternative names:	Spring return
Keywords:	automatic return
Applied in:	S00251, S00249, S00252
Application notes:	A00061, A00064, A00065
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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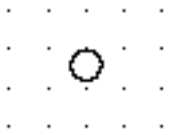
S00225



Name:	Non-automatic return function
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-25
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-08
Alternative names:	Stay put function
Keywords:	non-automatic return
Applied in:	S00250, S00252
Application notes:	A00061, A00066, A00067
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00226



Name:	Positive operation of a switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-01-09
Keywords:	positive operation
Applied in:	S00258, S00257, S00262, S00296
Application notes:	A00061, A00068, A00069
Shape class:	Arrows, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00227



Name:	Make contact, general symbol; Switch, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-01
Keywords:	contacts, power switching devices, switches
Applied in:	S00243, S00244, S00247, S00253, S00248, S00254, S00250, S00249, S00256, S00255, S00376, S00261, S00259, S00263, S00268, S00267, S00269, S00287, S00284, S00285, S00290, S00292, S00291, S00294, S00288, S00296, S00295, S00359, S00358, S00365, S00366, S00367, S01413, S01454, S00961, S00951, S00950
Application notes:	A00060, A00061
Replacing:	S00228; S00283
Shape class:	Lines
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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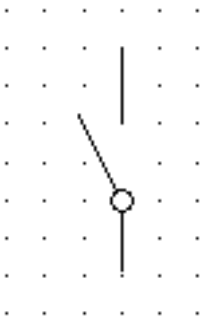
S00228



Name:	Make contact, general symbol; Switch, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-02
Keywords:	contacts, power switching devices, switches
Form:	Old form
Applied in:	S00289
Application notes:	A00061
Replacing:	S00283
Replaced by:	S00227
Shape class:	Circles, Lines
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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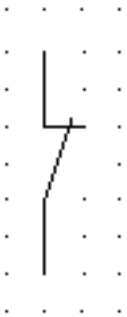
S00229



Name:	Break contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-03
Keywords:	contacts, switches
Applied in:	S00245, S00246, S00251, S00260, S00258, S00261, S00268, S00267, S00264, S00269, S00265, S00286, S00294, S00296, S00295, S00361, S01462
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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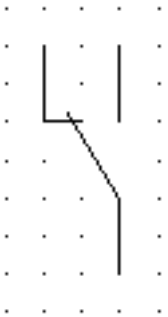
S00230



Name:	Change-over break before make contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-04
Keywords:	contacts, switches
Applied in:	S00268, S00267, S00269, S00320, S01416, S01330
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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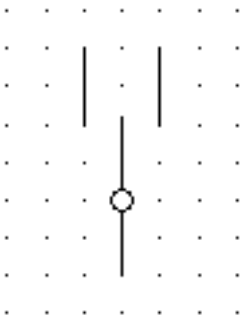
S00231



Name:	Change-over contact with off-position
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-05
Keywords:	contacts, switches
Applied in:	S00252, S00321
Application notes:	A00061
Shape class:	Circles, Lines
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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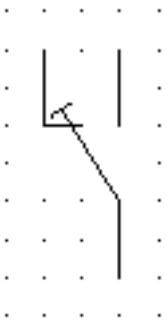
S00232



Name:	Change-over make before break contact, both ways
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-06
Keywords:	contacts, switches
Form:	Form 1
Alternative forms:	S00233
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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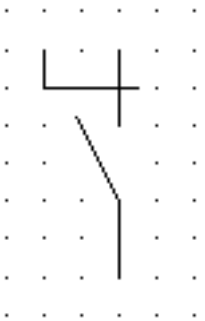
S00233



Name:	Change-over make before break contact, both ways
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-07
Keywords:	contacts, switches
Form:	Form 2
Alternative forms:	S00232
Applied in:	S00040, S00267
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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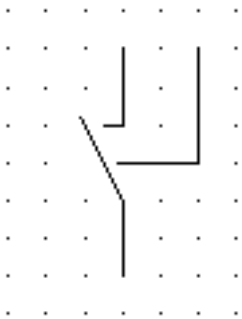
S00234



Name:	Contact with two makes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-08
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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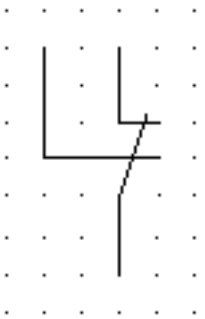
S00235



Name:	Contact with two breaks
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-02-09
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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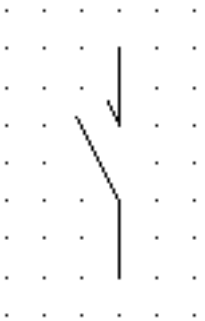
S00236



Name:	Passing make contact when actuated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-03-01
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is closing momentarily when its operating device is actuated.

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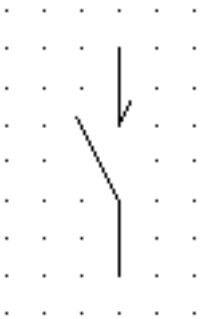
S00237



Name:	Passing make contact when released
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-03-02
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is closing momentarily when its operating device is released.

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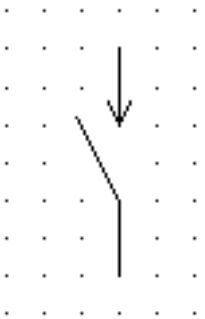
S00238



Name:	Passing make contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-03-03
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is closing momentarily when its operating device is actuated or released.

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S00239



Name:	Make contact, early closing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-04-01
Keywords:	contacts, switches
Applied in:	S00279
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is early to close relative to the other make contacts of a contact assembly.

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S00240



Name:	Make contact, late closing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-04-02
Keywords:	contacts, switches
Applied in:	S00279
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is late to close relative to the other make contacts of a contact assembly.

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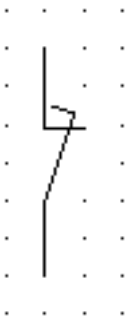

Name:	Break contact, late opening
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-04-03
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is late to open relative to the other break contacts of a contact assembly.

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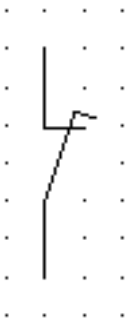

Name:	Break contact, early opening
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-04-04
Keywords:	contacts, switches
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact which is early to open relative to the other break contacts of a contact assembly.

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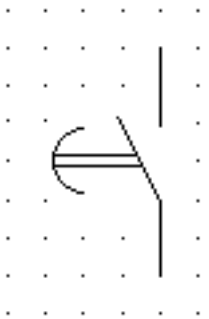

Name:	Make contact, delayed closing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-01
Keywords:	contacts, switches
Applied in:	S00248
Applies:	S00148; S00227
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The closing of the contact is delayed when the device containing the contact is being activated.

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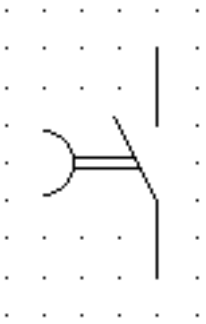

Name:	Make contact, delayed opening
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-02
Keywords:	contacts, switches
Applies:	S00149; S00227
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The opening of the contact is delayed when the device containing the contact is being de-activated.

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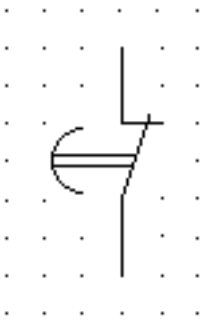

Name:	Break contact, delayed opening
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-03
Keywords:	contacts, switches
Applies:	S00148; S00229
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The opening of the contact is delayed when the device containing the contact is being activated.

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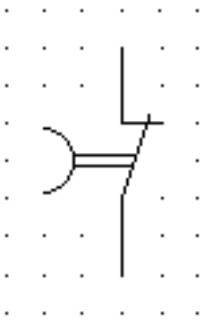

Name:	Break contact, delayed closing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-04
Keywords:	contacts, switches
Applied in:	S00248
Applies:	S00149; S00229
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The closing of the contact is delayed when the device containing the contact is being de-activated.

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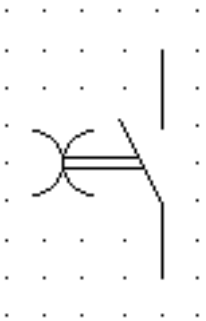

Name:	Make contact, delayed
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-05
Keywords:	contacts, switches
Applies:	S00148; S00149; S00227
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is delayed both when the device containing the contact is being activated and when it is being de-activated.

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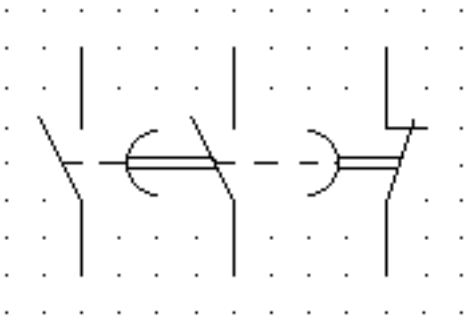
S00248



Name:	Contact assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-05-06
Keywords:	contacts, switches
Applies:	S00144; S00227; S00243; S00246
Application notes:	A00060, A00061, A00070
Shape class:	Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact assembly is shown with one make contact not delayed, one make contact delayed when the device containing the contact is being activated and one break contact delayed when the device containing the contact is being de-activated.

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S00249



Name:	Make contact, automatic return
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-06-01
Keywords:	contacts, switches
Applies:	S00224; S00227
Application notes:	A00060, A00061, A00064, A00065
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Withdrawn because of technical obsolescence.

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S00250



Name:	Make contact, stay put
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-06-02
Keywords:	contacts, switches
Applied in:	S00322
Applies:	S00225; S00227
Application notes:	A00060, A00061, A00066, A00067
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is without automatic return. Withdrawn because of technical obsolescence.

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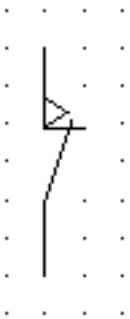
S00251



Name:	Break contact, automatic return
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-06-03
Keywords:	contacts, switches
Applies:	S00224; S00229
Application notes:	A00060, A00061, A00064, A00065
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Withdrawn because of technical obsolescence.

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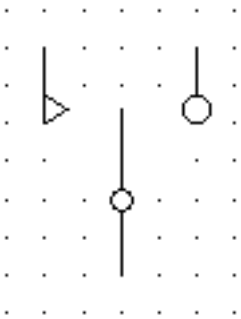

Name:	Change-over contact with off-position, automatic return and stay put
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-06-04
Keywords:	contacts, switches
Applies:	S00224; S00225; S00231
Application notes:	A00061, A00064, A00065, A00066, A00067
Shape class:	Circles, Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The contact is shown with an off-position in the centre, an automatic return from the left position and without an automatic return in the right position. Withdrawn because of technical obsolescence.

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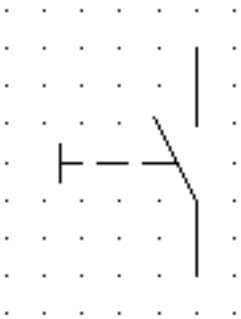
S00253



Name:	Switch, manually operated, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-01
Keywords:	contacts, switches
Applies:	S00167; S00227
Application notes:	A00060, A00061, A00082, A00083
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00254



Name:	Switch, manually operated, push-button, automatic return
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-02
Keywords:	contacts, switches
Applied in:	S00257
Applies:	S00171; S00227
Application notes:	A00060, A00061, A00082
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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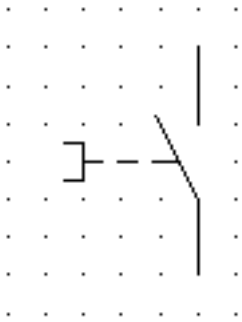
S00255



Name:	Switch, manually operated, pulling, automatic return
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-03
Keywords:	contacts, switches
Applies:	S00169; S00227
Application notes:	A00060, A00061, A00082
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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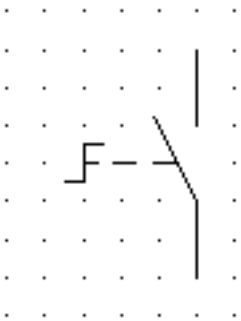

Name:	Switch, manually operated, turning, stay-put
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-04
Keywords:	contacts, switches
Applies:	S00170; S00227
Application notes:	A00060, A00061, A00083
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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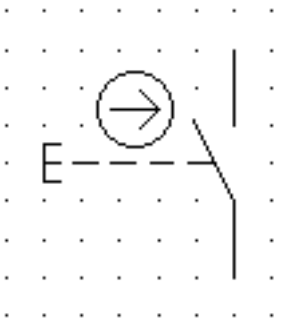
S00257



Name:	Switch, manually operated with positive operation, push-button, automatic return
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-05
Alternative names:	Alarm switch
Keywords:	contacts, switches
Applies:	S00226; S00254
Application notes:	A00060, A00061, A00082
Shape class:	Arrows, Circles, Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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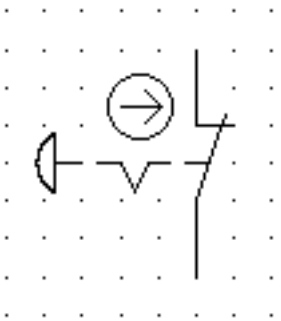
S00258



Name:	Switch, emergency stop
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-07-06
Keywords:	contacts, switches
Applies:	S00151; S00174; S00226; S00229
Application notes:	A00060, A00061, A00082
Shape class:	Arrows, Circles, Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	"Mushroom-head" activated, with positive opening operation of the break contact and maintain position.

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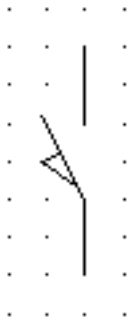
S00259



Name:	Position switch, make contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-08-01
Keywords:	contacts, position switches, switches
Applies:	S00223; S00227
Application notes:	A00060, A00061, A00084
Shape class:	Lines , Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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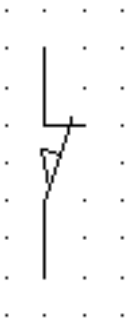
S00260



Name:	Position switch, break contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-08-02
Keywords:	contacts, position switches, switches
Applied in:	S00262
Applies:	S00223; S00229
Application notes:	A00060, A00061, A00084
Shape class:	Lines , Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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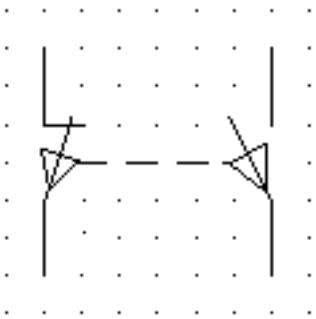
S00261



Name:	Position switch assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-08-03
Keywords:	contacts, position switches, switches
Applies:	S00144; S00223; S00227; S00229
Application notes:	A00060, A00061, A00084
Shape class:	Lines , Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Mechanically operated in both directions with two separate circuits

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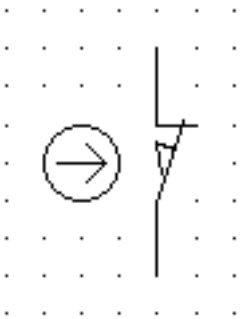

Name:	Position switch, break contact, positive operation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-08-04
Alternative names:	Limit switch
Keywords:	contacts, position switches, positive operation, switches
Applies:	S00226; S00260
Application notes:	A00060, A00061, A00084
Shape class:	Arrows, Circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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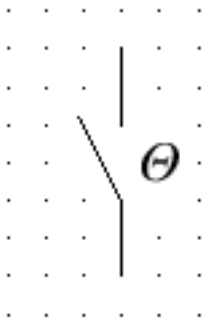
S00263



Name:	Temperature sensitive switch, make contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-09-01
Keywords:	contacts, switches, temperature
Applies:	S00227
Application notes:	A00060, A00061, A00085
Shape class:	Characters, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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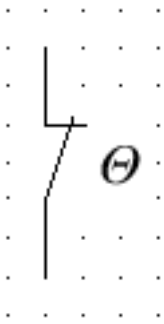
S00264



Name:	Temperature sensitive switch, break contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-09-02
Keywords:	contacts, switches, temperature
Applies:	S00229
Application notes:	A00060, A00061
Shape class:	Characters, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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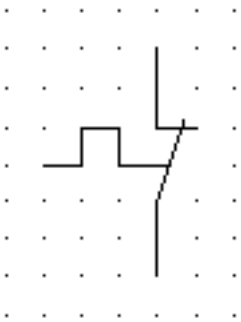
S00265



Name:	Thermal switch, self-operating, break contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-09-03
Alternative names:	Bimetal break contact
Keywords:	contacts, switches, temperature
Applies:	S00120; S00229
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	It is important to distinguish between a contact as shown and a contact of a thermal relay. In detached representation a thermal relay is applying the symbol S00191.

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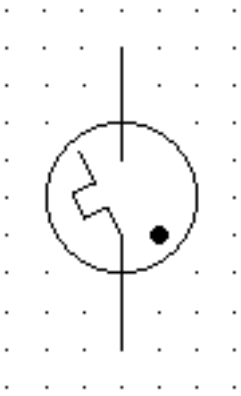

Name:	Gas discharge tube with thermal element
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-09-04
Alternative names:	Starter for fluorescent lamp
Keywords:	contacts, switches
Applies:	S00062; S00116; S00120
Shape class:	Circles, Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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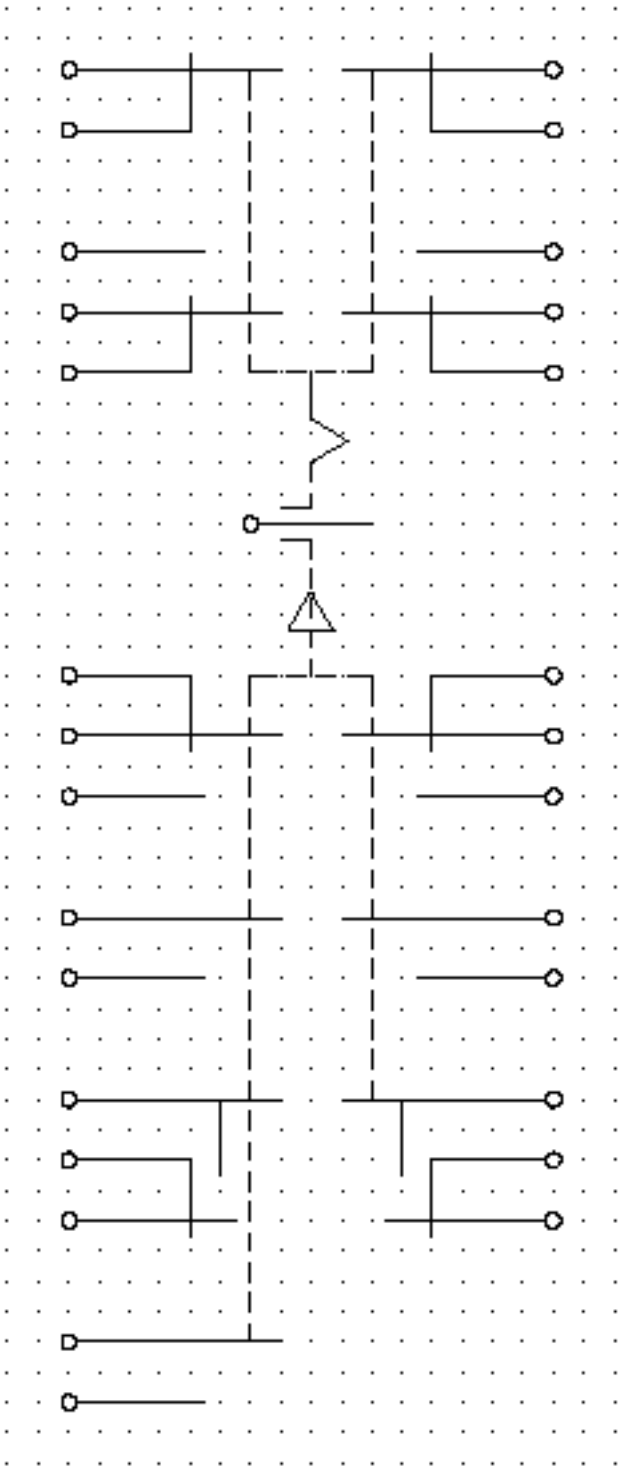
S00267



Name: Switch assembly, lever-operated

Status level: Obsolete - for reference only

Released on: 2001-07-01

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Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-01
Keywords:	contacts, switches
Applies:	S00017; S00144; S00150; S00151; S00227; S00229; S00230; S00233
Application notes:	A00061, A00082, A00083
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	Locking in the upper position and with automatic return from the lower position to the middle one, shown with terminals. The upper position contains two breaking (S00229) and two switching (S00230) contacts. The lower position contains three closing (S00227), two switching (S00230) and two make before break (S00233) contacts. Withdrawn because of technical obsolescence.

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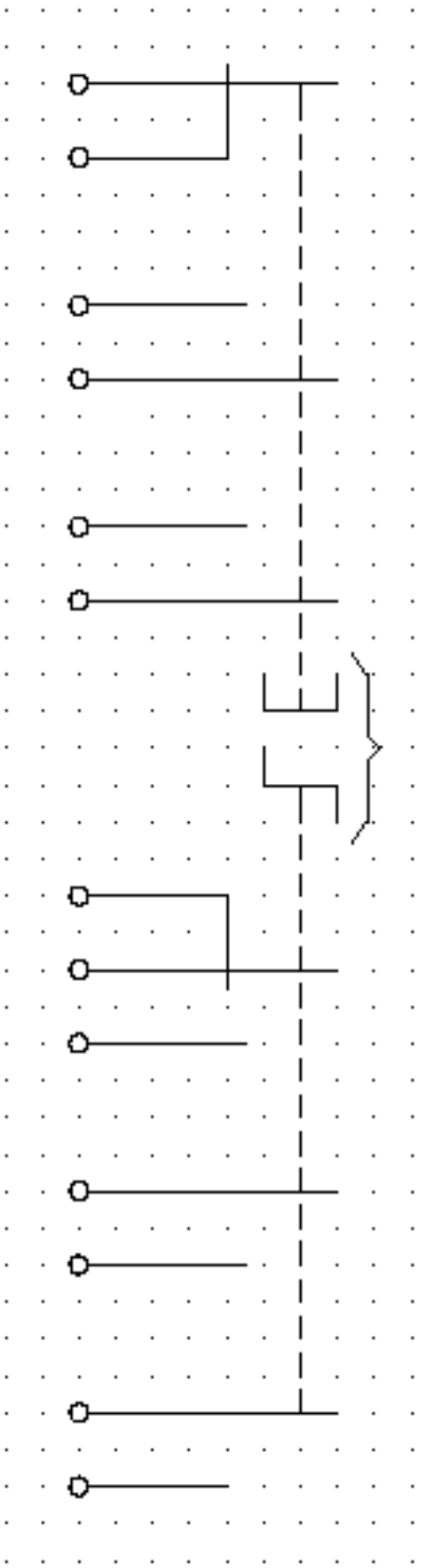
S00268



Name: Switch assembly, one set puch operated, one set turn operatedd

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Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-02
Keywords:	contacts, switches
Applies:	S00017; S00144; S00170; S00171; S00227; S00229; S00230
Application notes:	A00061, A00082, A00083
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	One set of contacts is operated by pushing the button (automatic return) and another set by turning it (non-automatic return), shown with terminals. The bracket indicates that there is only one actuator. The upper contact assembly contains one breaking (S00229) and two closing (S00227) contacts. The lower contact assembly contains two closing (S00227) and one switching (S00230) contacts. Withdrawn because of technical obsolescence.

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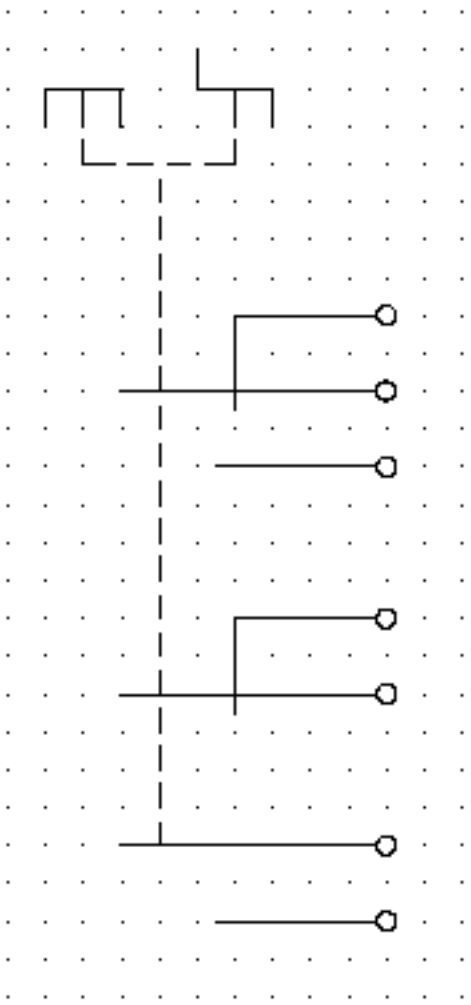

Name:	Switch assembly, push or turn operated
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-03
Keywords:	contacts, switches
Applies:	S00017; S00144; S00170; S00171; S00227; S00229; S00230
Application notes:	A00061, A00082, A00083

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Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	The same set of contacts may be operated in two different ways, either by turning (with non-automatic return) or pushing (with automatic return), shown with terminals. The assembly contains one switching (S00230), one breaking (S00229) and one closing (S00227) contacts. Withdrawn because of technical obsolescence.

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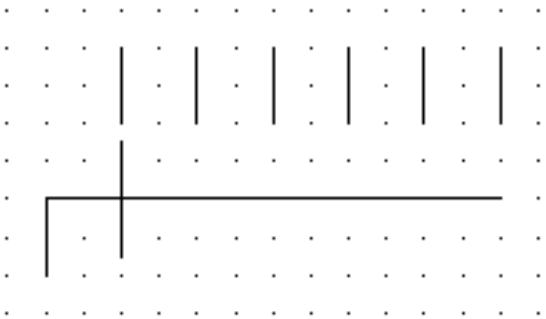
S00270



Name:	Multi-position switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-04
Keywords:	contacts, switches
Applied in:	S00276, S00278, S00275, S00277, S00279
Application notes:	A00061
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	Six positions shown

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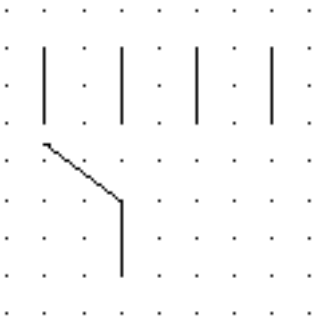
S00271



Name:	Multi-position switch, maximum four positions
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-05
Keywords:	contacts, switches
Applied in:	S00272, S00274
Application notes:	A00060, A00061
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams

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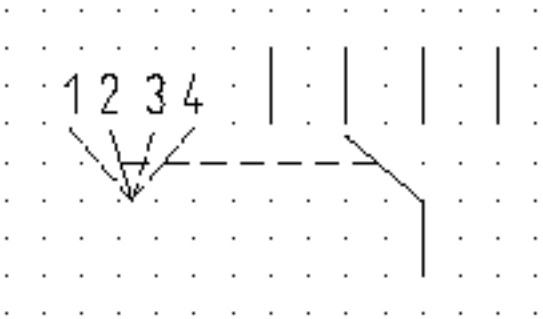
S00272



Name:	Multi-position switch, with position diagram
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-06
Keywords:	contacts, switches
Applies:	S00177; S00271
Application notes:	A00060, A00061, A00251
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams

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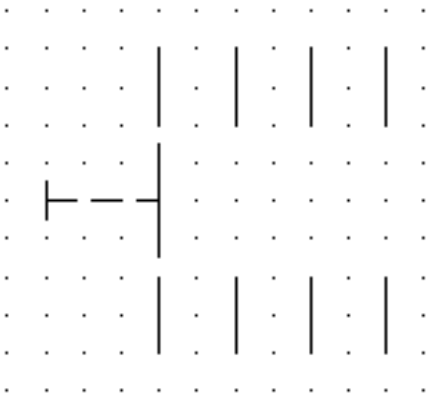

Name:	Multi-position switch, independent circuits
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-07
Keywords:	contacts, switches
Applies:	S00167
Application notes:	A00061, A00082, A00083
Replaced by:	S01454
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	Shown as manually operated, with four independent circuits

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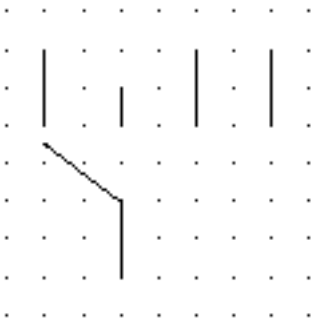

Name:	Multi-position switch, one position disabled
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-08
Keywords:	contacts, switches
Applies:	S00271
Application notes:	A00060, A00061
Replaced by:	S01454
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	The second position cannot be connected.

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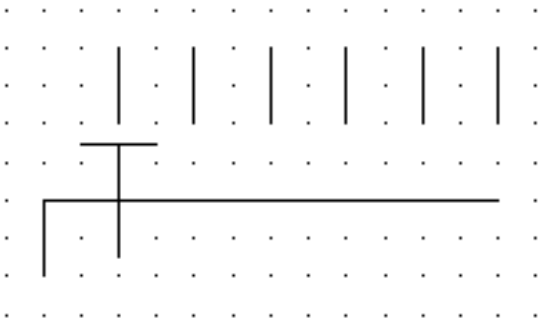
S00275



Name:	Multi-position switch, wiper
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-09
Keywords:	contacts, switches
Applies:	S00270
Application notes:	A00061
Replaced by:	S01454
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	A wiper bridges only while passing from one position to another.

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S00276



Name:	Multi-position switch, wiping multiple consecutive contacts
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-10
Keywords:	contacts, switches
Applies:	S00270
Application notes:	A00061
Replaced by:	S01454
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	A wiper bridges three consecutive terminals in each switch position.

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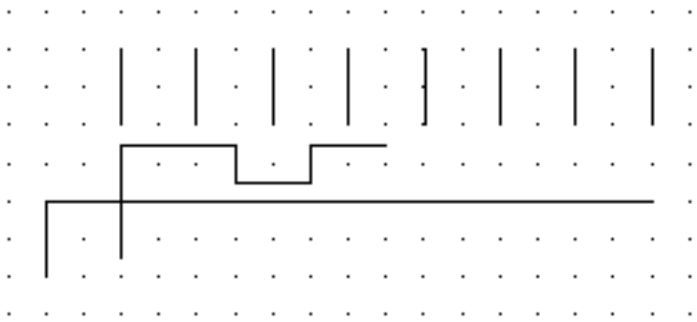
S00277



Name:	Multi-position switch, wiping multiple contacts
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-11
Keywords:	contacts, switches
Applies:	S00270
Application notes:	A00061
Replaced by:	S01454
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	A wiper bridges three non-consecutive terminals in each position, but omits one intermediate terminal in each switch position.

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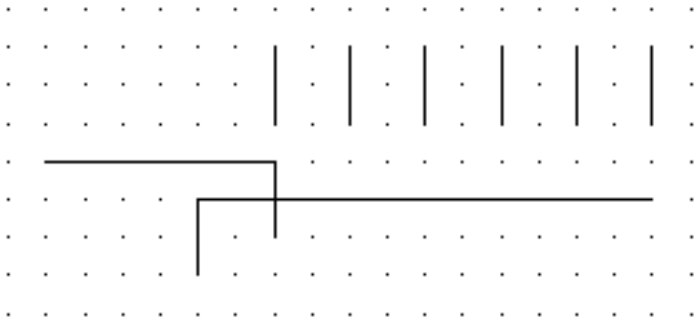
S00278



Name:	Multi-position switch, wiping cumulative contacts
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-12
Keywords:	contacts, switches
Applies:	S00270
Application notes:	A00061
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	For cumulative parallel switching. Withdrawn because of technical obsolescence.

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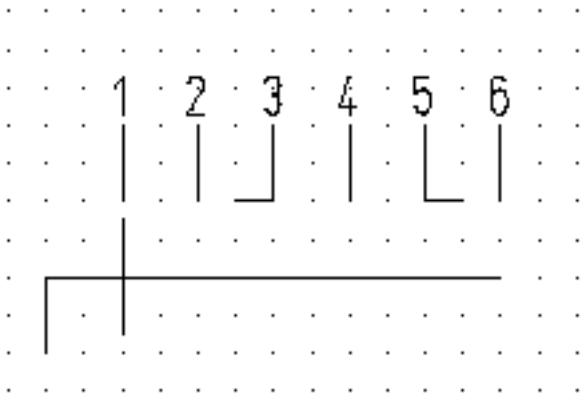
S00279



Name:	Multi-position switch, early/late break/make indicated
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-11-13
Alternative names:	One pole of a multi-pole switch
Keywords:	contacts, switches
Applies:	S00239; S00240; S00270
Application notes:	A00061
Shape class:	Lines
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams
Remarks:	When the wiper moves from position 2 to position 3, the contact at position 3 will get an early make. When the wiper moves from position 5 to position 6, the contact at position 5 will get a late break. When the wiper moves in the opposite direction, the function is reversed. Withdrawn because of technical obsolescence.

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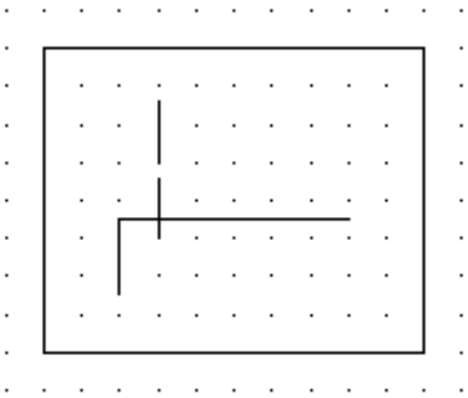
S00280



Name:	Complex switch, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-12-01
Keywords:	complex switches, switches
Applied in:	S00281, S00282
Application notes:	A00086
Replaced by:	S01454
Shape class:	Lines , Rectangles
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Withdrawn because of technical obsolescence.

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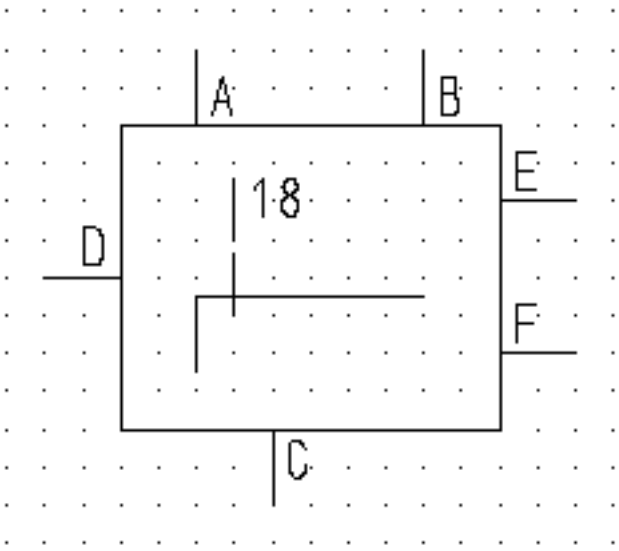
S00281



Name:	Complex switch, wafer type
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-12-02
Keywords:	complex switches, switches
Applies:	S00280
Application notes:	A00252
Shape class:	Characters, Lines , Rectangles
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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Remarks:	18-position rotary wafer switch with six terminals, here designated A to F, constructed as shown in the drawing of the application note A00252. The letters shown are not part of the symbol. Withdrawn because of technical obsolescence.

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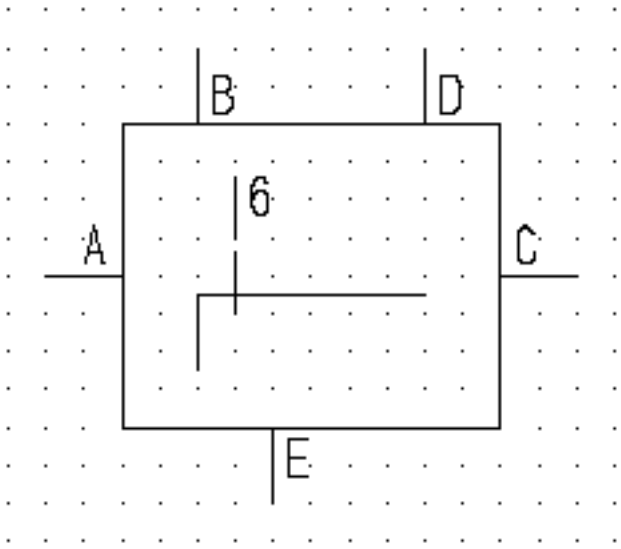
S00282



Name:	Complex switch, rotary drum type
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-12-03
Keywords:	complex switches, switches
Applies:	S00280
Application notes:	A00253
Shape class:	Characters, Lines , Rectangles
Function class:	S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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Remarks: Six-position rotary drum switch with 5 terminals, constructed as shown in application note A00253. The letters shown are not part of the symbol. Withdrawn because of technical obsolescence.

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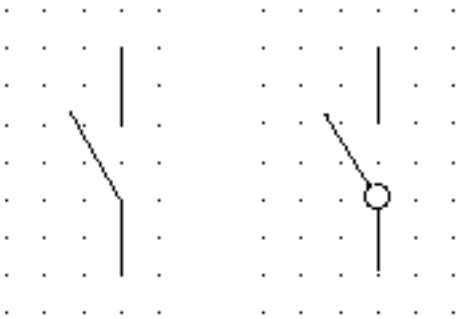
S00283



Name:	Switch
Status level:	Obsolete - for reference only
Released on:	1996-05
Obsolete from:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-01
Keywords:	power switching devices
Replaced by:	S00228; S00227
Shape class:	Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Publication error - use symbol S00227 or S00228.

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S00284



Name:	Contactor; Main make contact of a contactor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-02
Keywords:	contactors, contacts, power switching devices
Applied in:	S00301
Applies:	S00218; S00227
Application notes:	A00060
Shape class:	Half-circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Contact opened in the unoperated position.

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S00285



Name:	Contactor with automatic tripping
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-03
Keywords:	contactors, power switching devices, switches
Applies:	S00218; S00222; S00227
Application notes:	A00060
Shape class:	Half-circles, Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Initiated by a built-in measuring relay or release.

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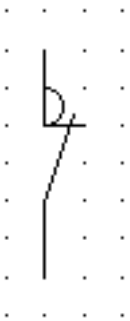
S00286



Name:	Contactor; Main break contact of a contactor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-04
Keywords:	contactors, contacts, power switching devices
Applies:	S00218; S00229
Application notes:	A00060
Shape class:	Half-circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Contact closed in the unoperated position.

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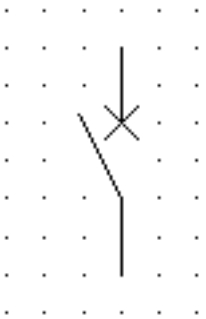
S00287



Name:	Circuit breaker
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-05
Keywords:	circuit breakers, contacts, power switching devices
Applies:	S00219; S00227
Application notes:	A00060
Shape class:	Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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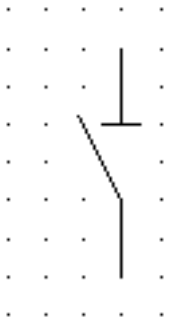
S00288



Name:	Disconnector; Isolator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-06
Keywords:	contacts, disconnectors, power switching devices
Applied in:	S01848
Applies:	S00220; S00227
Application notes:	A00060
Shape class:	Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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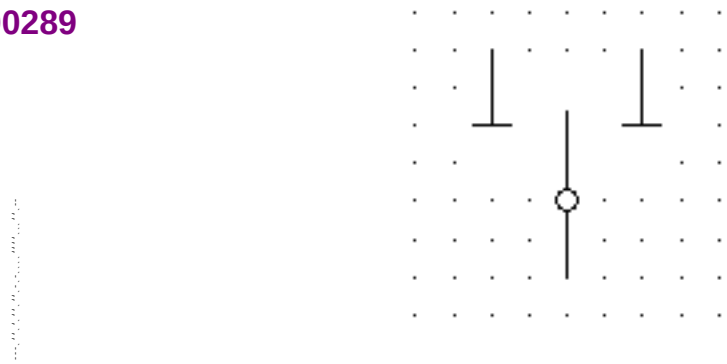
S00289



Name:	Two-way disconnector; Two-way isolator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-07
Keywords:	disconnectors, power switching devices
Applies:	S00220; S00228
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With off-position in the centre.

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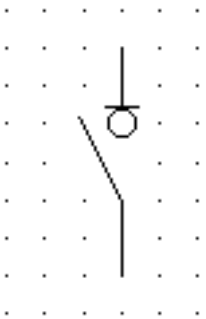
S00290



Name:	Switch-disconnector; On-load isolating switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-08
Keywords:	disconnectors, power switching devices, switches
Applies:	S00221; S00227
Application notes:	A00060
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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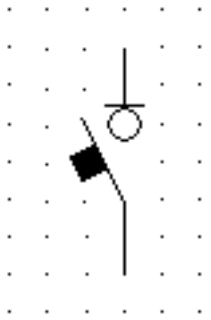
S00291



Name:	Switch-disconnector, automatic release; On-load isolating switch, automatic release
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-09
Keywords:	disconnectors, power switching devices, switches
Applies:	S00221; S00222; S00227
Application notes:	A00060
Shape class:	Half-circles, Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With automatic tripping initiated by a built-in measuring relay or release.

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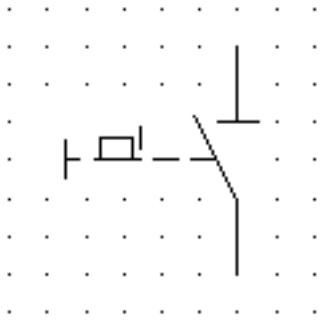

Name:	Disconnector; Isolator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-10
Keywords:	disconnectors, power switching devices
Applies:	S00158; S00167; S00220; S00227
Application notes:	A00060, A00082, A00083
Shape class:	Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With blocking device, manually operated.

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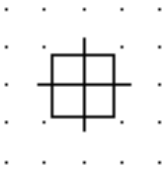

Name:	Trip-free mechanism
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-11
Keywords:	mechanical control, power switching devices
Applied in:	S00294
Application notes:	A00247
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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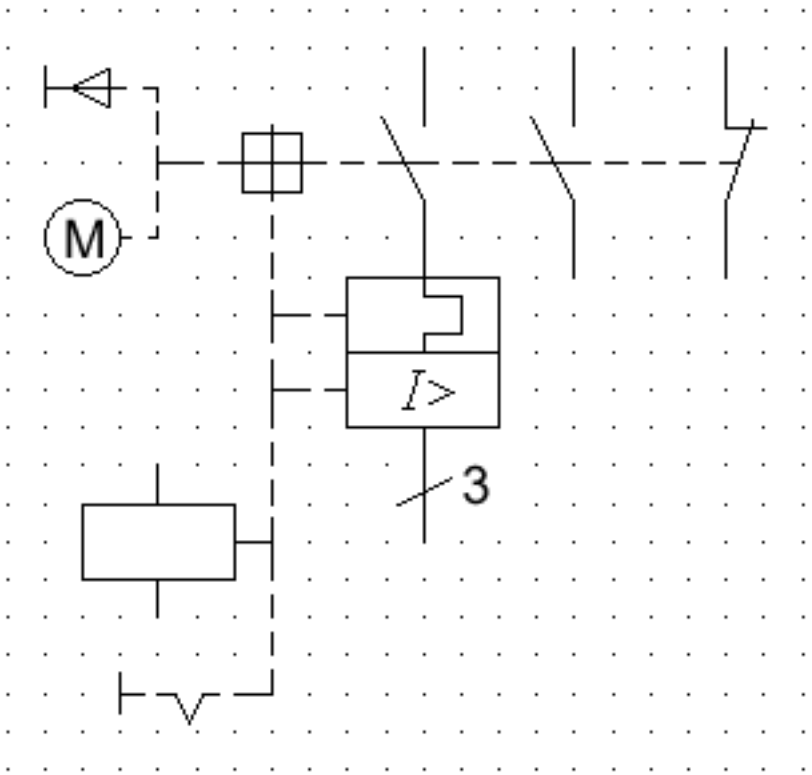

Name:	Trip-free mechanism, application
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-12
Keywords:	power switching devices
Applies:	S00003; S00145; S00150; S00151; S00167; S00192; S00227; S00229; S00293; S00305; S00325; S00345
Application notes:	A00060, A00082, A00083
Shape class:	Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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Remarks:

Three-pole mechanical switching device, operated by motor or manually, with trip-free mechanism, and: - thermal overload release
- overcurrent release
- hand release with detent
- coil for remote release
- one make and one break auxiliary contact.

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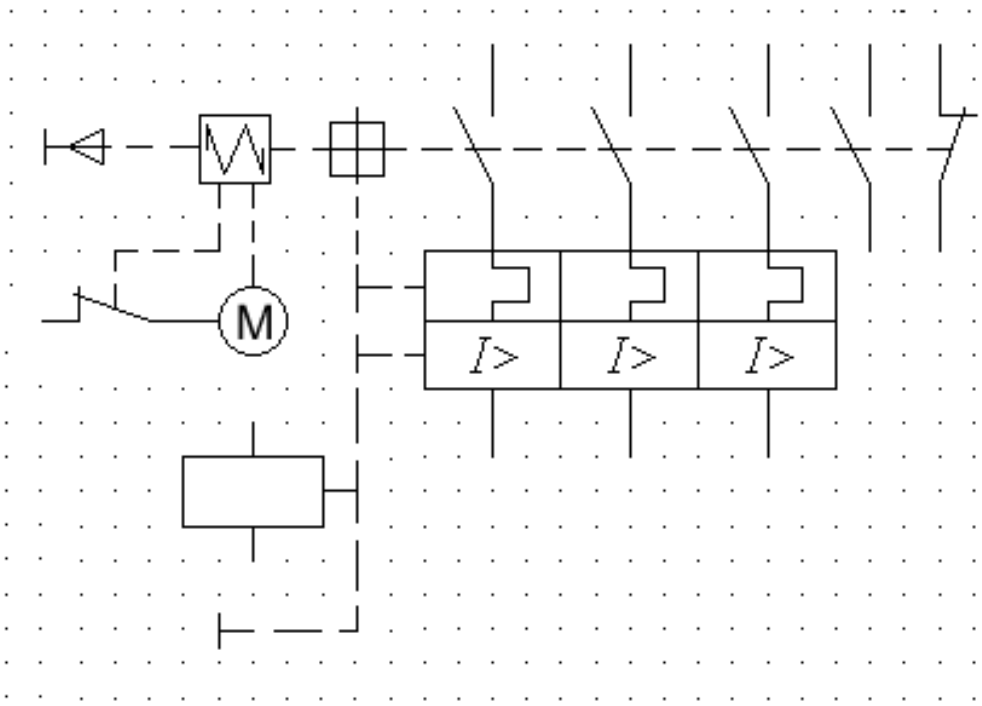
S00295



Name:	Mechanical switching device, three-pole
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-13
Keywords:	power switching devices
Applies:	S00003; S00145; S00150; S00167; S00192; S00227; S00229; S00305; S00325; S00345; S01406
Application notes:	A00060, A00082, A00083
Shape class:	Lines , Rectangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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Remarks:

Operated by motor with a spring storage and: - three overload releases
- three overcurrent releases
- hand release
- coil for remote release
- three main make contacts
- one make and one break auxiliary contact
- one position switch to start and stop the operation of the motor.

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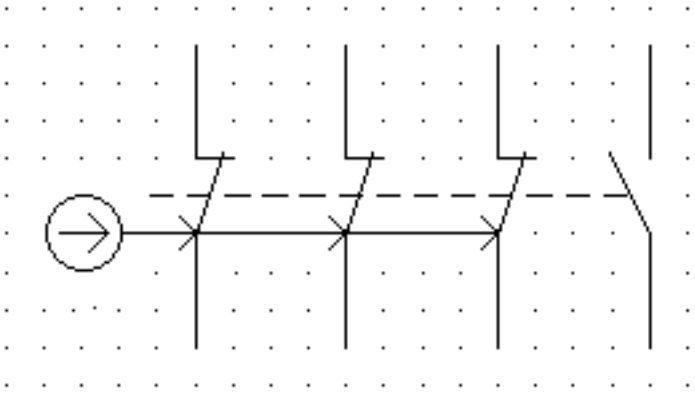
S00296



Name:	Switch with positive opening
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-13-14
Keywords:	positive operation, power switching devices
Applies:	S00226; S00227; S00229
Shape class:	Arrows, Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams
Remarks:	Switch with positive opening operation of the three main break contacts and the auxiliary make contact without positive operation.

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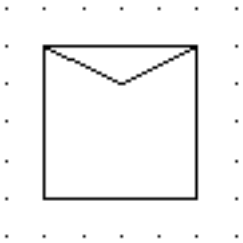
S00297



Name:	Motor starter, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-01
Keywords:	motor starters
Applied in:	S00301, S00298, S00302, S00299, S00303
Application notes:	A00087
Shape class:	Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00298



Name:	Starter operating in steps
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-02
Keywords:	motor starters
Applies:	S00087; S00297
Application notes:	A00088
Shape class:	Equilateral triangles, Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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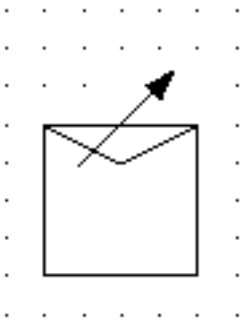
S00299



Name:	Starter-regulator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-03
Keywords:	motor starters
Applied in:	S00304
Applies:	S00081; S00297
Shape class:	Arrows, Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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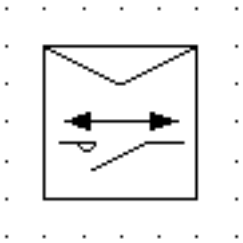
S00301



Name:	Direct-on-line starter, reversing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-05
Keywords:	motor starters, reversing
Applies:	S00096; S00284; S00297
Shape class:	Arrows, Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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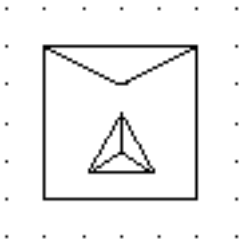
S00302



Name:	Star-delta starter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-06
Keywords:	motor starters
Applies:	S00297; S00806; S00808
Shape class:	Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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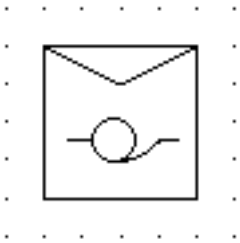
S00303



Name:	Starter with auto-transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-07
Keywords:	motor starters
Applies:	S00297; S00846
Shape class:	Circles, Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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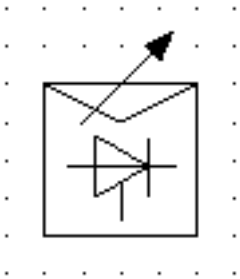
S00304



Name:	Starter-regulator with thyristors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-14-08
Keywords:	motor starters
Applies:	S00299; S00641
Shape class:	Arrows, Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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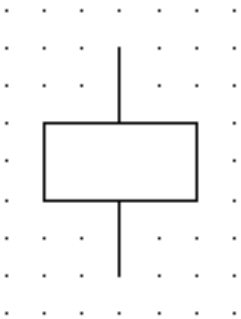
S00305



Name:	Operating device, general symbol; Relay coil, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-01
Alternative names:	Operating coil of a selector
Keywords:	all-or-nothing relays, operating devices
Form:	Form 1
Alternative forms:	S00306
Applied in:	S00310, S00294, S00295, S00308, S00307, S00309, S00325, S00317, S00312, S00311, S00316, S00315, S00318, S00324, S00319, S00323, S00326, S00379
Application notes:	A00089
Replacing:	S01003
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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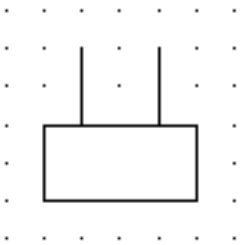
S00306



Name:	Operating device, general symbol; Relay coil; general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-02
Keywords:	all-or-nothing relays, operating devices
Form:	Other form
Alternative forms:	S00305
Application notes:	A00089
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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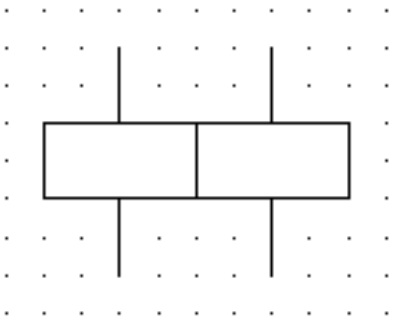
S00307



Name:	Operating device; Relay coil (attached representation)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-03
Keywords:	all-or-nothing relays, operating devices
Form:	Form 1
Alternative forms:	S00308
Applies:	S00305
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two separate windings, attached representation.

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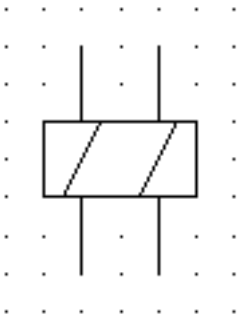
S00308



Name:	Operating device; Relay coil (attached representation)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-04
Keywords:	all-or-nothing relays, operating devices
Form:	Other form
Alternative forms:	S00306
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two separate windings, attached representation.

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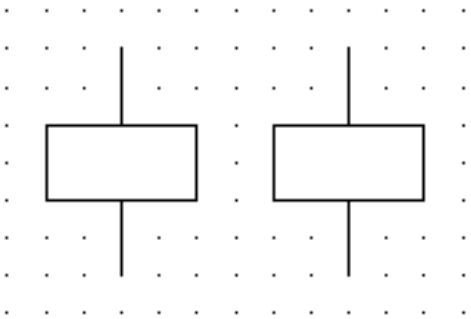
S00309



Name:	Operating device; Relay coil (detached representation)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-05
Keywords:	all-or-nothing relays, operating devices
Form:	Other form
Alternative forms:	S00310
Applies:	S00305
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two separate windings, detached representation.

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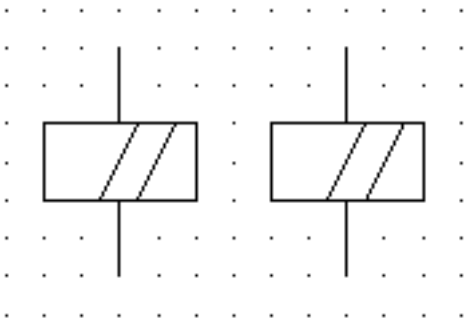
S00310



Name:	Operating device; Relay coil (detached representation)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-08-12
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-06
Keywords:	all-or-nothing relays, operating devices
Form:	Other form
Alternative forms:	S00309
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two separate windings, detached representation.

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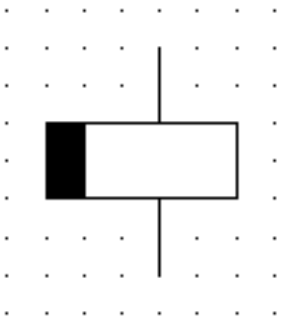
S00311



Name:	Relay coil of a slow-releasing relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-07
Keywords:	all-or-nothing relays, operating devices
Applied in:	S00313
Applies:	S00305
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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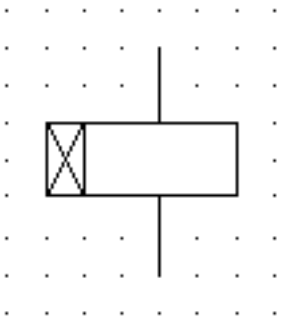
S00312



Name:	Relay coil of a slow-operating relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-08
Keywords:	all-or-nothing relays, operating devices
Applied in:	S00313
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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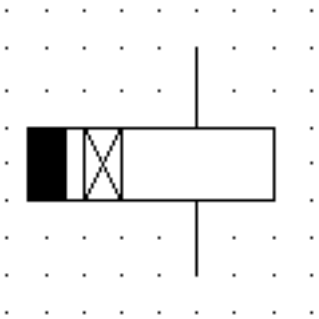
S00313



Name:	Relay coil of a slow-operating and slow-releasing relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-09
Keywords:	all-or-nothing relays, operating devices
Applies:	S00311; S00312
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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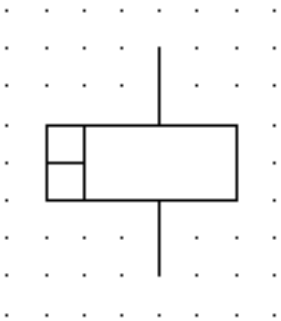
S00314



Name:	Relay coil of a high speed relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-10
Keywords:	all-or-nothing relays, operating devices
Applies:	S00005
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Fast-operating and fast-releasing

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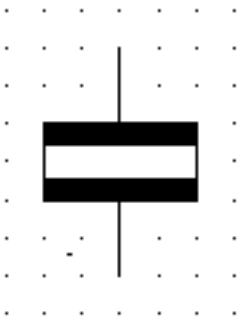
S00315



Name:	Relay coil of a relay unaffected by alternating current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-11
Keywords:	all-or-nothing relays, operating devices
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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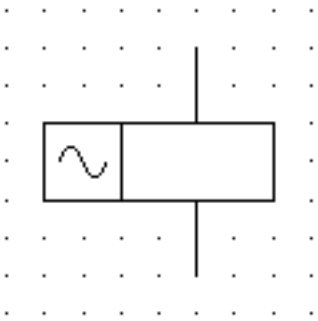
S00316



Name:	Relay coil of an alternating current relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-12
Keywords:	all-or-nothing relays, operating devices
Applies:	S00305; S01403
Shape class:	Depicting shapes, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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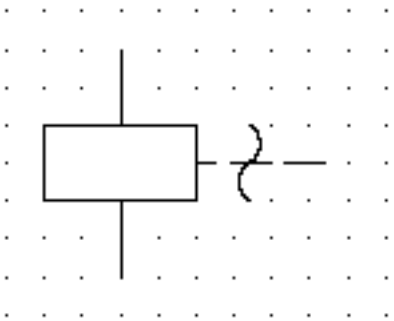
S00317



Name:	Relay coil of a mechanically resonant relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-13
Keywords:	all-or-nothing relays, operating devices
Applies:	S00098; S00305
Shape class:	Depicting shapes, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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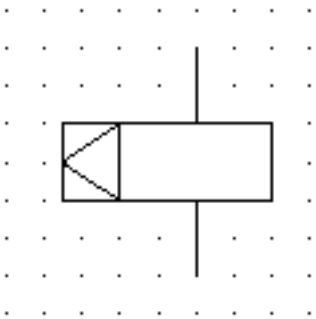
S00318



Name:	Relay coil of a mechanically latched relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-14
Keywords:	all-or-nothing relays, automatic control, operating devices
Applies:	S00305
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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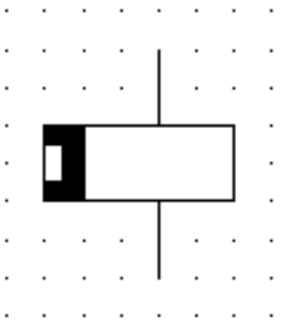
S00319



Name:	Relay coil of a polarized relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-15
Keywords:	all-or-nothing relays, operating devices
Applied in:	S00320, S00321, S00322, S01416
Applies:	S00210; S00305
Application notes:	A00090
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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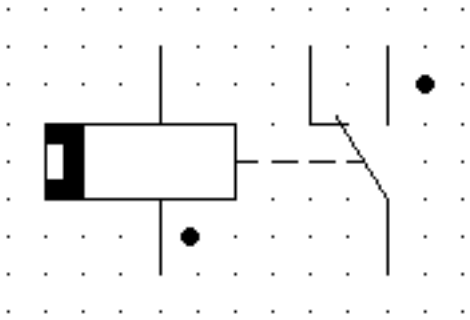
S00320



Name:	Polarized relay, self restoring
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-16
Keywords:	all-or-nothing relays, operating devices
Applies:	S00230; S00319
Shape class:	Dots (points), Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Self restoring, operating for only one direction of current in the winding.

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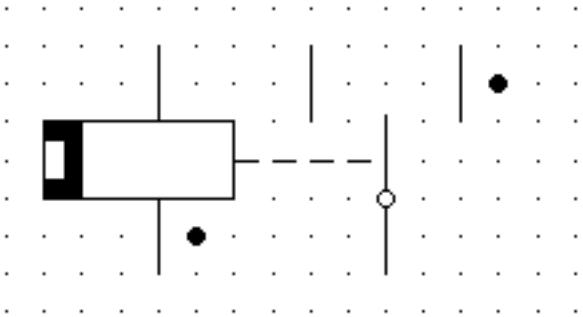
S00321



Name:	Polarized relay with neutral position
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-17
Keywords:	all-or-nothing relays, operating devices
Applies:	S00231; S00319
Shape class:	Dots (points), Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With neutral position, self restoring, operating for either direction of current in the winding.

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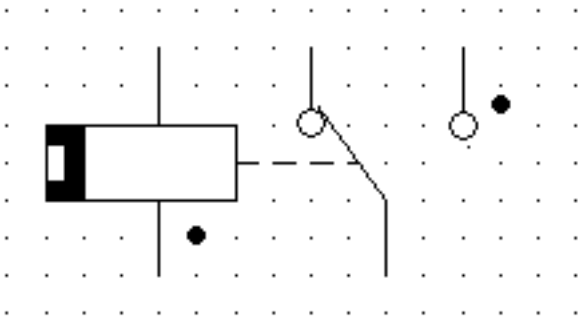
S00322



Name:	Polarized relay, stable positions
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-18
Keywords:	all-or-nothing relays, operating devices
Applies:	S00250; S00319
Replaced by:	S01416
Shape class:	Dots (points), Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two stable positions.

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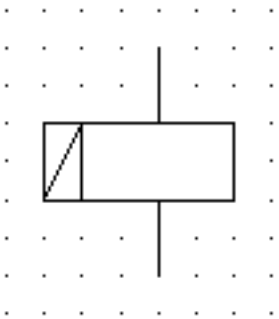
S00323



Name:	Relay coil of a remanent relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-19
Keywords:	all-or-nothing relays, operating devices
Form:	Form 1
Alternative forms:	S00324
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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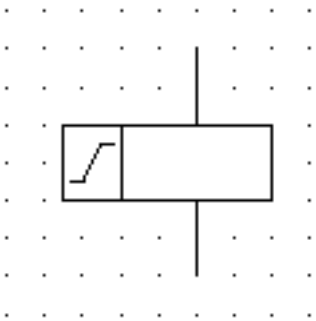
S00324



Name:	Relay coil of a remanent relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-20
Keywords:	all-or-nothing relays, operating devices
Form:	Form 2
Alternative forms:	S00323
Applies:	S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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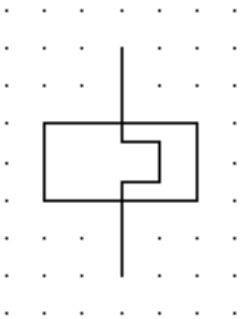
S00325



Name:	Operating device of a thermal relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-21
Keywords:	all-or-nothing relays, operating devices
Applied in:	S00294, S00295
Applies:	S00120; S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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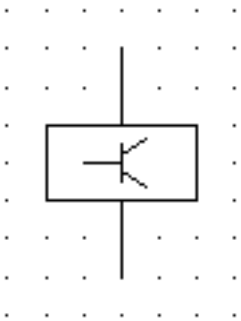
S00326



Name:	Operating device of an electronic relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-15-22
Keywords:	all-or-nothing relays, operating devices
Applies:	S00125; S00305
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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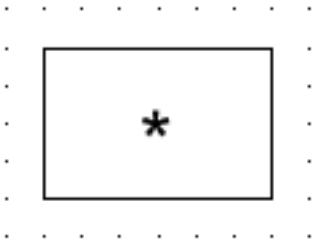
S00327



Name:	Measuring relay; Device related to a measuring relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-01
Keywords:	measuring relays, operating devices
Applied in:	S00339, S00343, S00338, S00340, S00345, S00347, S00348, S00344, S00346, S00351, S00349, S00352, S00353, S00350, S00479, S00478
Application notes:	A00091, A00092, A00093, A00094
Shape class:	Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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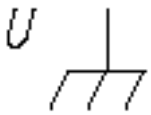

Name:	Voltage failure to frame; Frame potential in case of fault
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-02
Keywords:	measuring relays
Applies:	S00203
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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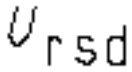
S00329



Name:	Residual voltage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-03
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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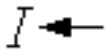
S00330



Name:	Reverse current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-04
Keywords:	measuring relays
Applied in:	S00339
Shape class:	Arrows, Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00331



Name:	Differential current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-05
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00332



Name:	Percentage differential current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-06
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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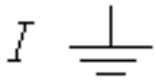
S00333



Name:	Earth fault current
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-07
Keywords:	measuring relays
Applies:	S00200
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00334



Name:	Current in the neutral conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-08
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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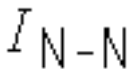
S00335



Name:	Current between neutrals of two polyphase systems
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-09
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00336



Name:	Power at phase angle "alpha"
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-10
Keywords:	measuring relays
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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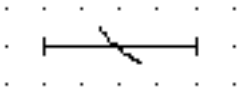

Name:	Inverse time-lag characteristic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-16-11
Keywords:	measuring relays
Applied in:	S00351
Applies:	S00124
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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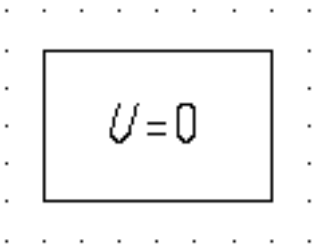

Name:	No voltage relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-01
Keywords:	measuring relays
Applies:	S00111; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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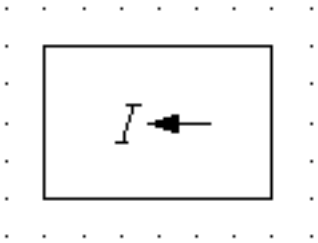
S00339



Name:	Reverse current relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-02
Keywords:	measuring relays
Applies:	S00327; S00330
Shape class:	Arrows, Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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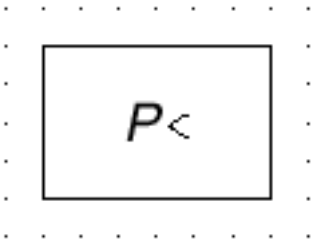
S00340



Name:	Underpower relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-03
Keywords:	measuring relays
Applies:	S00109; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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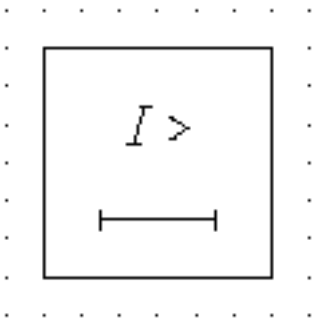
S00341



Name:	Delayed overcurrent relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-04
Keywords:	measuring relays
Applies:	S00108; S00124
Shape class:	Characters, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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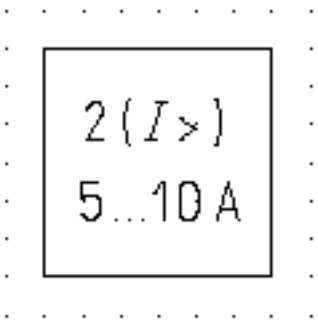
S00342



Name:	Overcurrent relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-05
Keywords:	measuring relays
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two measuring elements and a setting range from 5 A to 10 A.

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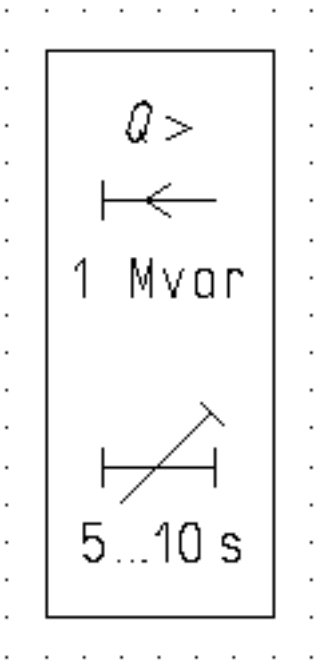
S00343



Name:	Overpower relay for reactive power
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-06
Keywords:	measuring relays
Applies:	S00085; S00105; S00108; S00124; S00327
Shape class:	Characters, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Overpower relay for reactive power: - energy-flow towards the busbars - operating value 1 Mvar - time-lag adjustable from 5 s to 10 s

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S00344



Name:	Undervoltage relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-07
Keywords:	measuring relays
Applies:	S00109; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Undervoltage relay shown with: - setting range from 50 V to 80 V - resetting ratio 130%

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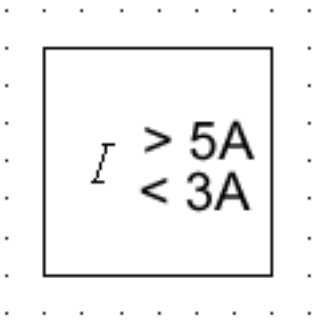
S00345



Name:	Current relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-08
Keywords:	measuring relays
Applied in:	S00294, S00295
Applies:	S00108; S00109; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With maximum and minimum settings, shown with limits 3 A and 5 A.

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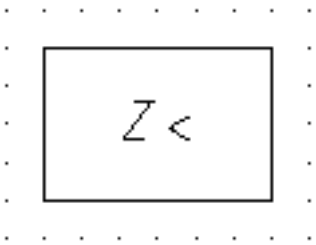
S00346



Name:	Under-impedance relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-09
Keywords:	measuring relays
Applies:	S00109; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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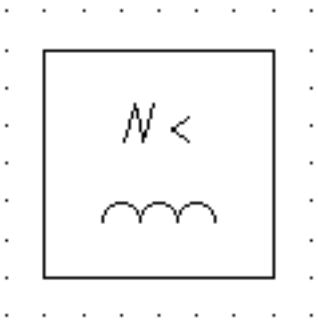
S00347



Name:	Relay detecting short-circuits between windings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-10
Keywords:	measuring relays
Applies:	S00109; S00327; S00583
Shape class:	Characters, Half-circles, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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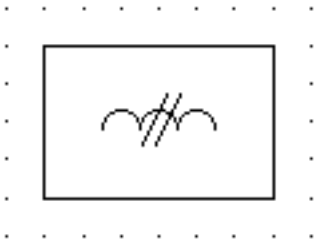
S00348



Name:	Divided-conductor detection relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-11
Keywords:	measuring relays
Applies:	S00327; S00583
Shape class:	Half-circles, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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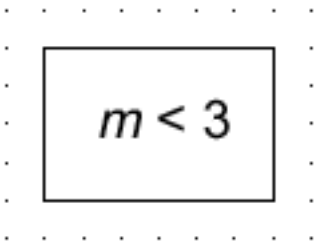
S00349



Name:	Phase-failure detection relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-12
Keywords:	measuring relays
Applies:	S00109; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown for a three-phase system.

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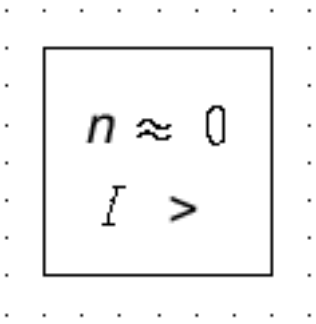
S00350



Name:	Locked-rotor detection relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-13
Keywords:	measuring relays
Applies:	S00108; S00112; S00327
Shape class:	Characters, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Operating by current measuring.

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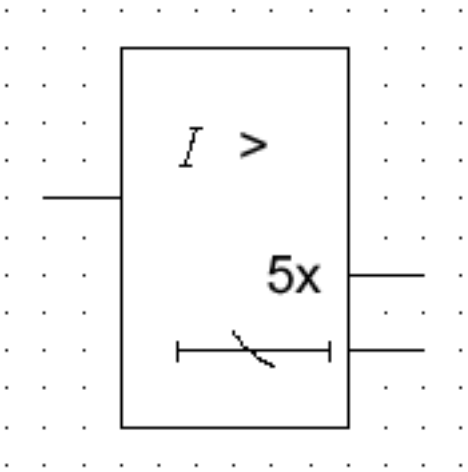
S00351



Name:	Overcurrent relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-17-14
Keywords:	measuring relays
Applies:	S00109; S00327; S00337
Shape class:	Characters, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With two outputs, one is active when the current is above five times the setting value, the other is active depending on the inverse time-lag characteristic setting of the device.

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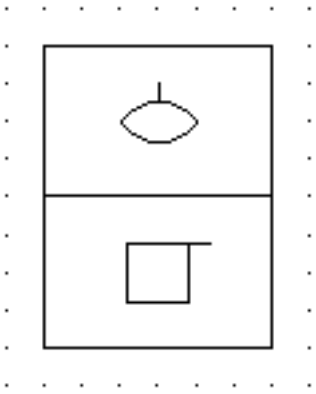
S00352



Name:	Buchholz protective device; Gas relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-18-01
Keywords:	Buchholz device, measuring relays
Applies:	S00195; S00198; S00327
Shape class:	Circle segments, Rectangles, Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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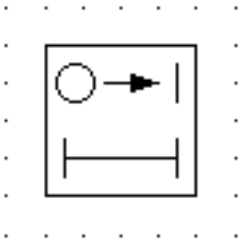
S00353



Name:	Device for auto-reclosing; Auto-reclose relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-18-02
Keywords:	auto-reclosing devices
Applies:	S00124; S00327
Shape class:	Circles, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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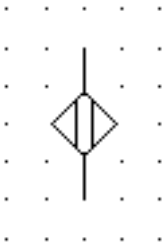
S00354



Name:	Proximity sensor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-19-01
Keywords:	proximity devices, touch-sensitive devices
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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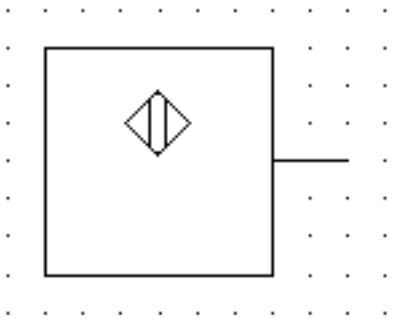
S00355



Name:	Proximity sensing device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-19-02
Keywords:	proximity devices, touch-sensitive devices
Applied in:	S00356
Application notes:	A00095
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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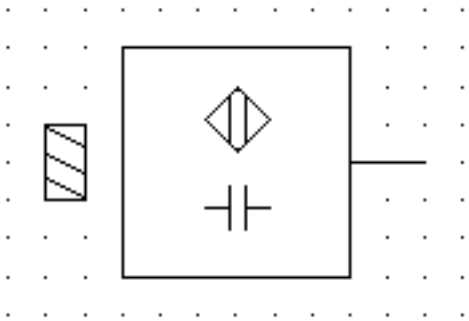
S00356



Name:	Proximity sensing device, capacitive
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-19-03
Keywords:	proximity devices, touch-sensitive devices
Applies:	S00114; S00355; S00567
Shape class:	Lines , Rectangles, Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Capacitive proximity detector operating on the approach of solid material.

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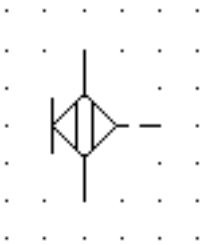

Name:	Touch sensor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-19-04
Keywords:	proximity devices, touch-sensitive devices
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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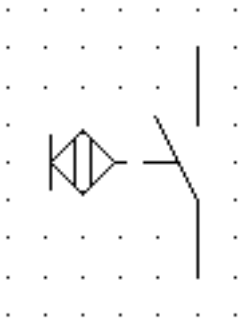
S00358



Name:	Touch sensitive switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-20-01
Keywords:	proximity devices, switches, touch-sensitive devices
Applies:	S00173; S00227
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Shown with make contact.

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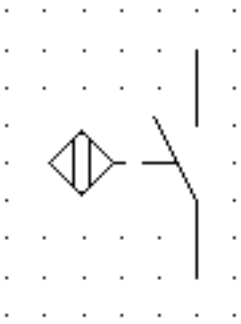
S00359



Name:	Proximity switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-20-02
Keywords:	proximity devices, touch-sensitive devices
Applied in:	S00360
Applies:	S00172; S00227
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with make contact.

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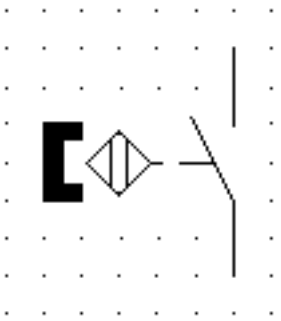
S00360



Name:	Proximity switch, magnetically controlled
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-20-03
Keywords:	proximity devices, touch-sensitive devices
Applies:	S00210; S00359
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Operated on the approach of a magnet, make contact shown.

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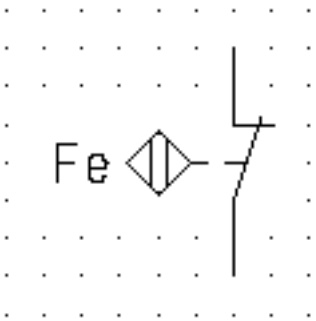

Name:	Proximity switch, controlled by iron
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-20-04
Keywords:	proximity devices, switches, touch-sensitive devices
Applies:	S00172; S00229
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Operated on the approach of iron, break contact shown.

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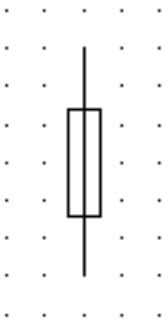

Name:	Fuse, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-01
Keywords:	fuses
Applied in:	S00363, S00364, S00366
Shape class:	Lines , Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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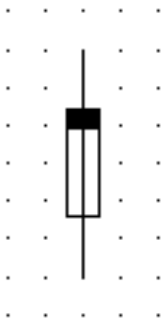
S00363



Name:	Fuse
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-02
Keywords:	fuses
Applies:	S00362
Shape class:	Lines , Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The side that remains live after blowing is indicated by a thick line.

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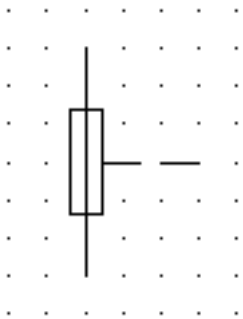
S00364



Name:	Fuse; Striker fuse
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-03
Keywords:	fuses
Applied in:	S00365, S00367
Applies:	S00144; S00362
Shape class:	Lines , Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With mechanical linkage.

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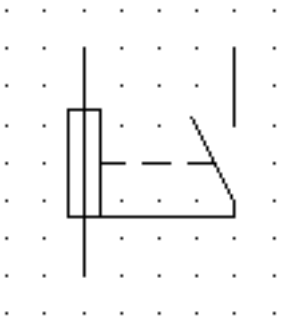
S00365



Name:	Fuse with alarm contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-04
Keywords:	fuses
Applies:	S00227; S00364
Shape class:	Lines , Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With alarm contact, three terminals.

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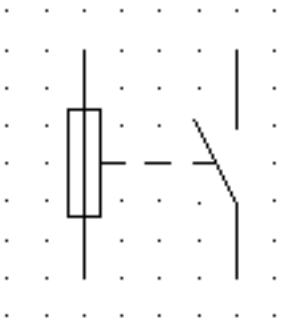
S00366



Name:	Fuse with separate alarm
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-05
Keywords:	fuses
Applies:	S00227; S00362
Shape class:	Lines , Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With separate alarm circuit.

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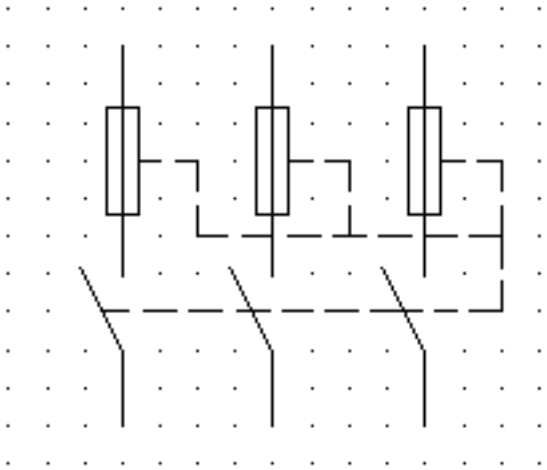

Name:	Three-pole switch with striker fuses
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-06
Keywords:	fuse-switches
Applies:	S00227; S00364
Shape class:	Lines , Rectangles
Function class:	F Protecting, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With automatic release by any one of the striker fuses.

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S00368



Name:	Fuse-switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-07
Keywords:	fuse-switches
Applied in:	S00370, S00369
Shape class:	Lines , Rectangles
Function class:	F Protecting, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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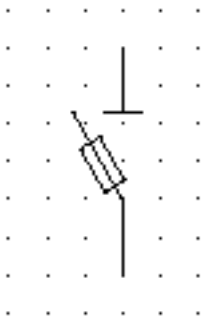
S00369



Name:	Fuse-disconnector; Fuse isolator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-08
Keywords:	fuse-switches
Applies:	S00220; S00368
Shape class:	Lines , Rectangles
Function class:	F Protecting, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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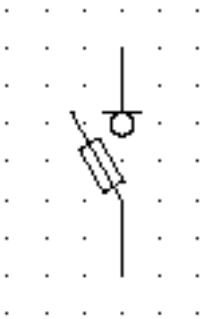
S00370



Name:	Fuse switch-disconnector; On-load isolating fuse switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-21-09
Keywords:	fuse-switches
Applies:	S00221; S00368
Shape class:	Lines , Rectangles
Function class:	F Protecting, Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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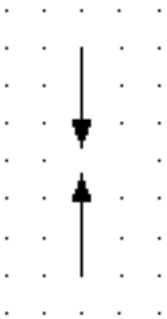
S00371



Name:	Spark gap
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-22-01
Keywords:	arresters, spark gaps
Applied in:	S00374, S00372
Shape class:	Arrows
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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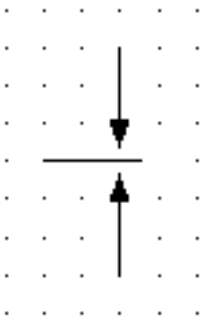
S00372



Name:	Spark gap, double
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-22-02
Keywords:	arresters, spark gaps
Applied in:	S00375
Applies:	S00371
Shape class:	Arrows
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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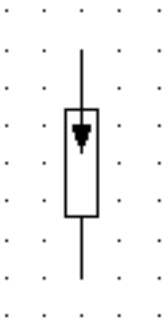
S00373



Name:	Surge diverter; Lightning arrester
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-22-03
Keywords:	arresters
Shape class:	Arrows, Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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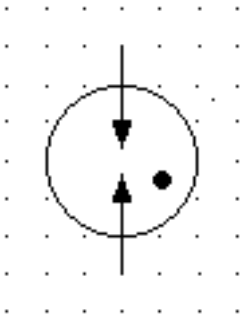
S00374



Name:	Protective gas discharge tube
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-22-04
Keywords:	arresters, spark gaps
Applies:	S00371; S00693
Shape class:	Arrows, Circles, Dots (points)
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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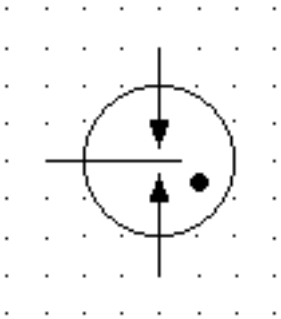

Name:	Protective gas discharge tube, symmetric
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-22-05
Keywords:	arresters, spark gaps
Applies:	S00372; S00693
Shape class:	Arrows, Circles, Dots (points)
Function class:	F Protecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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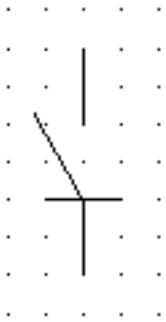
S00376



Name:	Static switch, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-25-01
Keywords:	static switches
Applied in:	S00380, S00378, S00379, S00377
Applies:	S00227
Application notes:	A00096, A00097
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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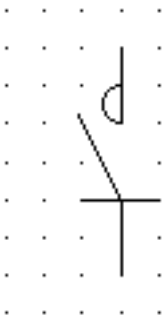

Name:	Static (semiconductor) contactor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-25-02
Keywords:	contactors, static switches
Applies:	S00218; S00376
Shape class:	Half-circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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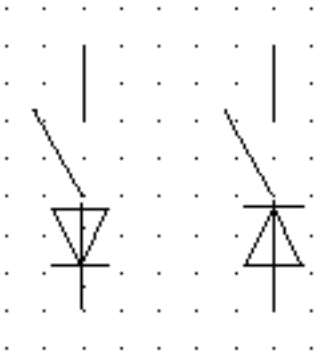
S00378



Name:	Static switch, unidirectional
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-25-03
Keywords:	static switches
Applies:	S00376; S00619
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Passing current in one direction only.

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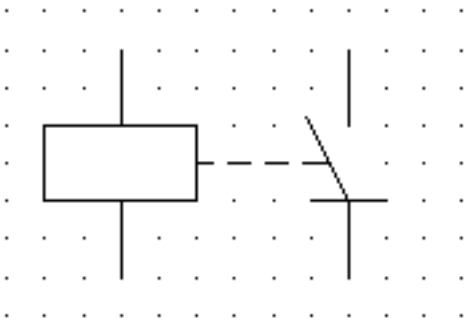
S00379



Name:	Static relay, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-26-01
Keywords:	static switching devices
Applied in:	S00382, S00381
Applies:	S00305; S00376
Application notes:	A00098
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with semiconductor make contact.

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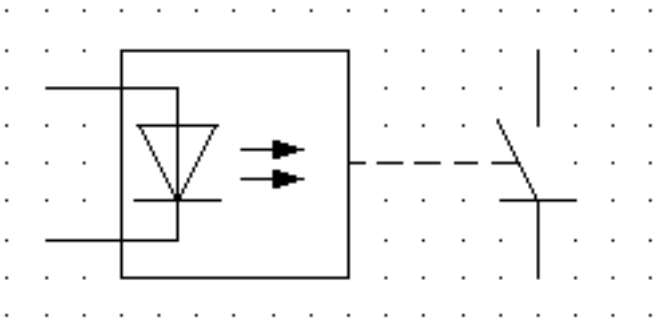
S00380



Name:	Static relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-26-02
Keywords:	static switching devices
Applies:	S00376; S00642
Shape class:	Arrows, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	With light emitting diode as actuator shown with make contact semiconductor.

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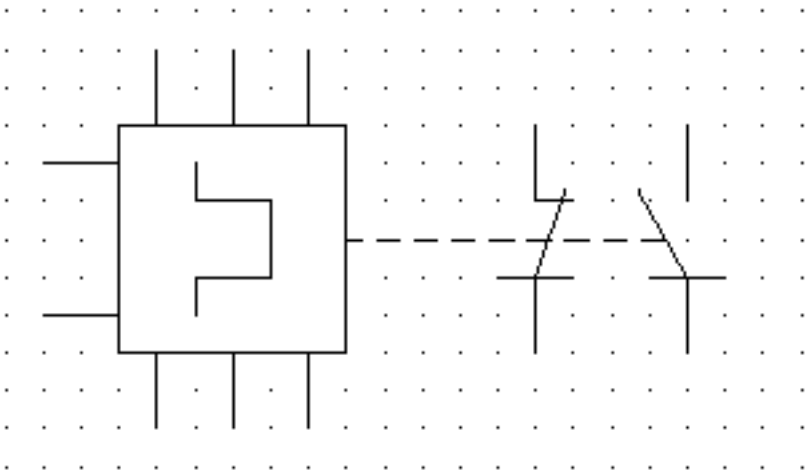
S00381



Name:	Static thermal overload relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-26-03
Keywords:	static switching devices
Applies:	S00120; S00379
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Three-pole thermal overload relay with two semiconductor contacts one semiconductor make contact and one semiconductor break contact; the actuator needs a separate auxiliary power supply.

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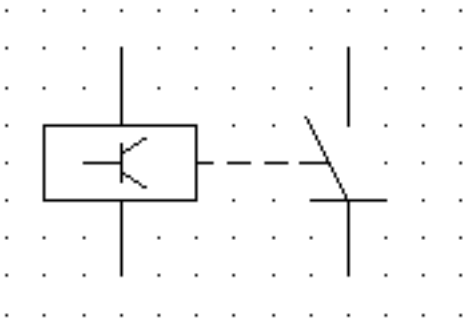
S00382



Name:	Static relay
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-26-04
Keywords:	static switching devices
Applies:	S00125; S00379
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Semiconductor operating device with semiconductor make contact.

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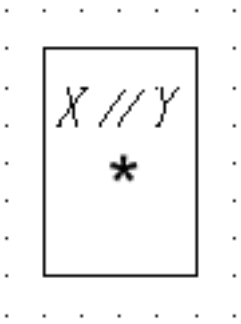

Name:	Coupling device with electrical separation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-27-01
Keywords:	coupling devices, static switching devices
Applies:	S00126
Application notes:	A00099
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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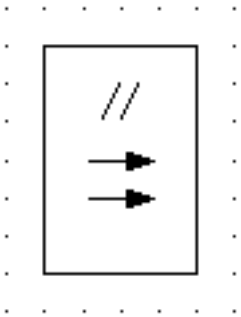

Name:	Coupling device with electrical separation, optical
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-7 (ed.2.0) 07-27-02
Keywords:	coupling devices, static switching devices
Applies:	S00126; S00127
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Optical coupling device with electrical separation.

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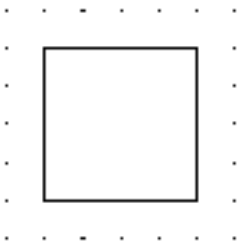

Name:	Generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-01
Keywords:	generating station
Applied in:	S00393, S00391, S00397, S00395, S00399, S00401, S00403
Applies:	S00059
Application notes:	A00071
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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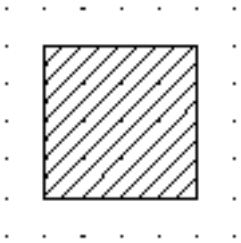

Name:	Generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-02
Keywords:	generating station
Applied in:	S00392, S00394, S00396, S00398, S00402, S00404, S00400
Applies:	S00059
Application notes:	A00071, A00072
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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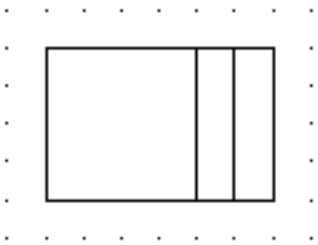

Name:	Combined electric and heat generating station, planned
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-03
Keywords:	generating station
Applies:	S00060
Application notes:	A00071
Replaced by:	S01419
Shape class:	Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Network maps

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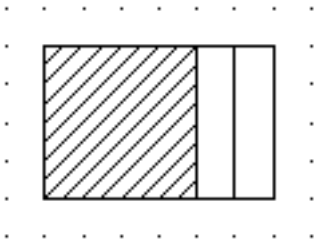

Name:	Combined electric and heat generating station, in service or unspecified
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-04
Keywords:	generating station
Applies:	S00060
Application notes:	A00071, A00072
Replaced by:	S01420
Shape class:	Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Network maps

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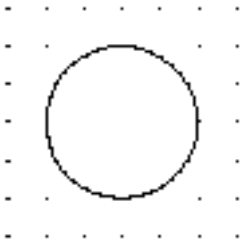

Name:	Substation, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-05
Keywords:	substation
Applied in:	S00405
Applies:	S00061
Application notes:	A00267
Shape class:	Circles
Function class:	Q Controlled switching or varying, T Converting but maintaining kind
Application class:	Network maps

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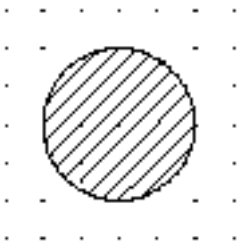

Name:	Substation, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-01-06
Keywords:	substation
Applied in:	S00406
Applies:	S00061
Application notes:	A00072, A00267
Shape class:	Circles
Function class:	Q Controlled switching or varying, T Converting but maintaining kind
Application class:	Network maps

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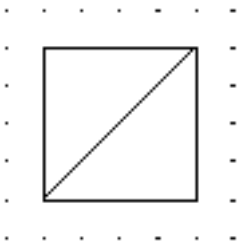

Name:	Hydroelectric generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-01
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Right-angled triangle, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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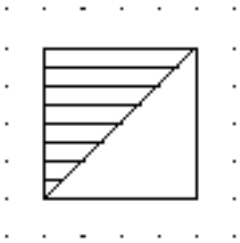

Name:	Hydroelectric generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-02
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Right-angled triangle, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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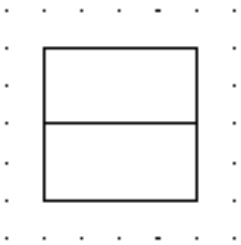
S00393



Name:	Thermoelectric generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-03
Alternative names:	coal thermoelectric generating station; lignite thermoelectric generating station; oil thermoelectric generating station; gas thermoelectric generating station
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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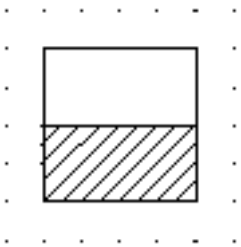

Name:	Thermoelectric generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-04
Alternative names:	thermoelectric generating station coal; thermoelectric generating station lignite; thermoelectric generating station oil; thermoelectric generating station gas
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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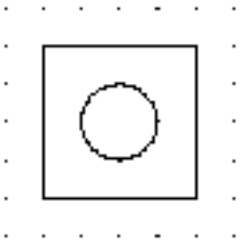
S00395



Name:	Nuclear energy generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-05
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Circles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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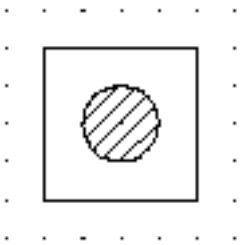
S00396



Name:	Nuclear energy generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-06
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Circles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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S00397



Name:	Geothermic generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-07
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Lines , Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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S00398



Name:	Geothermic generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-08
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Lines , Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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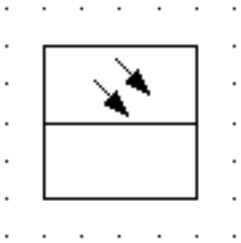
S00399



Name:	Solar generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-09
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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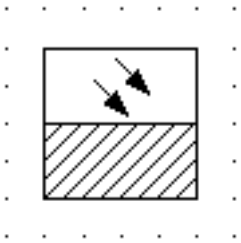
S00400



Name:	Solar generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-10
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Network maps

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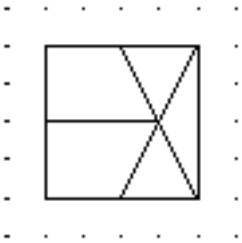
S00401



Name:	Wind generating station, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-11
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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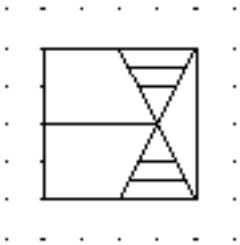
S00402



Name:	Wind generating station, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-12
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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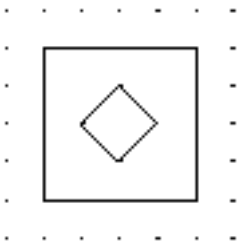
S00403



Name:	Plasma generating station, planned; Magneto-hydrodynamic (MHD), planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-13
Keywords:	generating station
Applies:	S00059; S00385
Application notes:	A00071
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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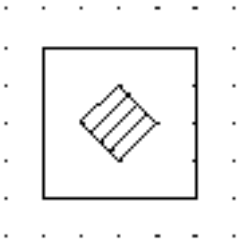
S00404



Name:	Plasma generating station, in service or unspecified; Magneto-hydrodynamic (MHD), in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-14
Keywords:	generating station
Applies:	S00059; S00386
Application notes:	A00071, A00072
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Network maps

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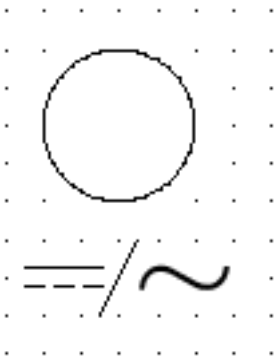
S00405



Name:	Converting substation, planned
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-15
Keywords:	substation
Applies:	S00061; S00389; S01401; S01403
Shape class:	Circles, Depicting shapes
Function class:	Q Controlled switching or varying, T Converting but maintaining kind
Application class:	Network maps
Remarks:	The symbol is shown with conversion from DC to AC

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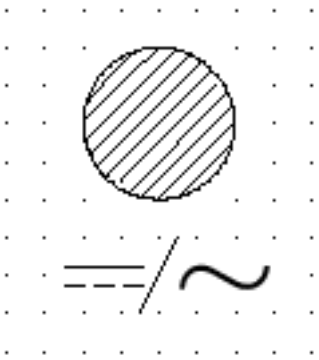
S00406



Name:	Converting substation, in service or unspecified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-02-16
Keywords:	substation
Applies:	S00061; S00390; S01401; S01403
Application notes:	A00072
Shape class:	Circles, Depicting shapes
Function class:	Q Controlled switching or varying, T Converting but maintaining kind
Application class:	Network maps
Remarks:	The symbol is shown with conversion from DC to AC

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S00407



Name:	Underground line
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-01
Keywords:	lines, networks
Applied in:	S00413
Applies:	S00001
Application notes:	A00073
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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S00408



Name:	Submarine line
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-02
Keywords:	lines, networks
Applies:	S00001; S00115
Application notes:	A00073
Shape class:	Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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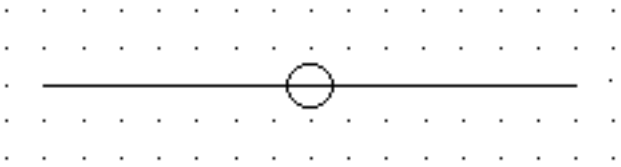
S00409



Name:	Overhead line
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-03
Keywords:	lines, networks
Applied in:	S01453, S01452
Applies:	S00001
Application notes:	A00073
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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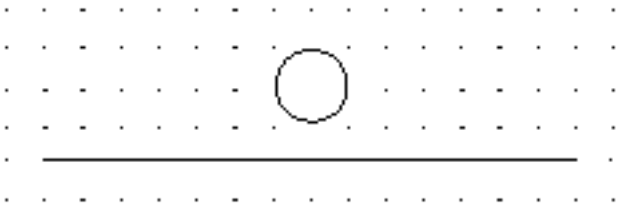
S00410



Name:	Line within a duct; Line within a pipe
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-04
Keywords:	lines, networks
Applied in:	S00411
Applies:	S00001
Application notes:	A00073, A00074
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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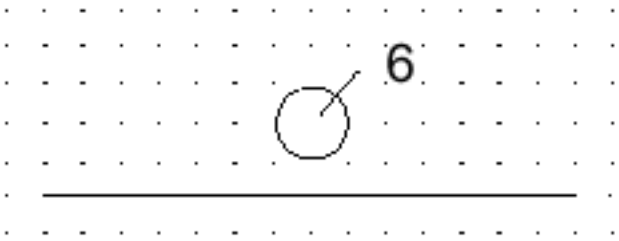
S00411



Name:	Line within a six-way-duct
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-05
Keywords:	lines, networks
Applies:	S00001; S00410
Application notes:	A00073
Shape class:	Characters, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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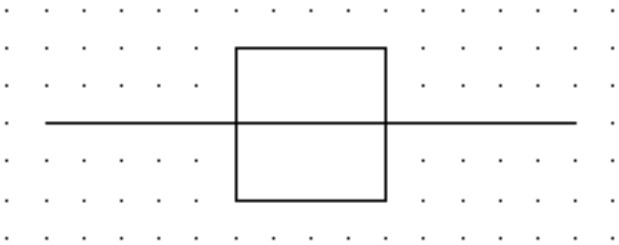
S00412



Name:	Manhole for underground chamber
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-06
Keywords:	lines, networks
Applied in:	S00425, S00445
Applies:	S00001
Application notes:	A00073
Shape class:	Lines , Squares
Function class:	W Guiding or transporting
Application class:	Network maps

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S00413



Name:	Line with buried joint
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-07
Keywords:	lines, networks
Applies:	S00001; S00407
Application notes:	A00073
Shape class:	Dots (points), Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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S00414



Name:	Line with gas or oil block
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-08
Keywords:	lines, networks
Applied in:	S00416
Applies:	S00001
Application notes:	A00073
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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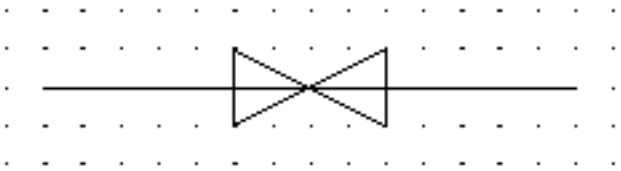
S00415



Name:	Line with gas or oil stop valve
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-09
Keywords:	lines, networks
Applies:	S00001
Application notes:	A00073
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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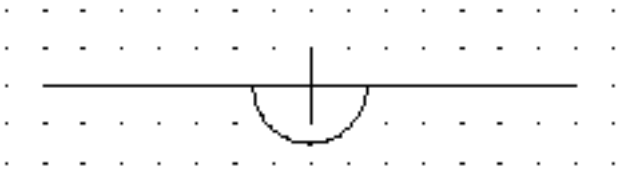
S00416



Name:	Line with gas or oil block by-pass
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-10
Keywords:	lines, networks
Applies:	S00001; S00414
Application notes:	A00073
Shape class:	Circle segments, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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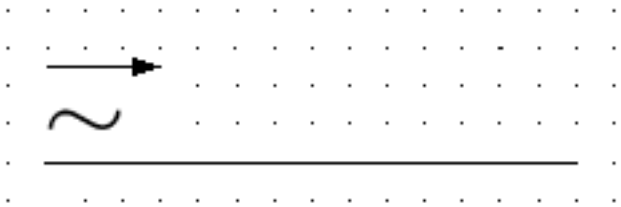
S00417



Name:	AC power feeding on telecommunication lines
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-16
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-11
Keywords:	lines, networks
Applies:	S00001; S01403
Application notes:	A00073
Shape class:	Arrows, Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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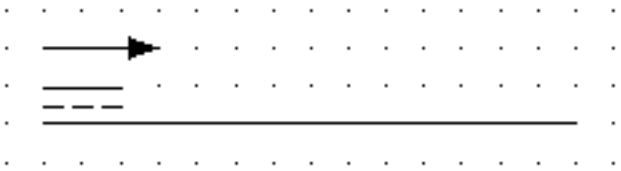
S00418



Name:	DC power feeding on telecommunication lines
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-16
Earlier published in:	IEC 60617-11 (ed.2.0) 11-03-12
Keywords:	lines, networks
Applies:	S00001; S01401
Application notes:	A00073
Shape class:	Arrows, Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Network maps

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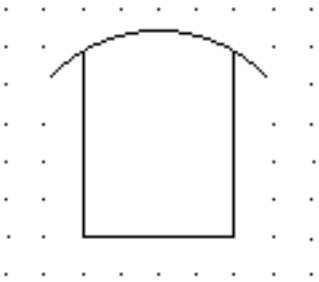
S00419



Name:	Weather-proof enclosure, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-01
Keywords:	junctions, networks
Applied in:	S00420
Application notes:	A00075
Shape class:	Circle segments, Rectangles
Function class:	W Guiding or transporting, X Connecting
Application class:	Network maps

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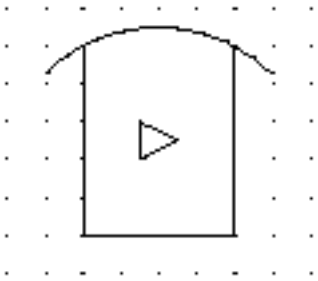
S00420



Name:	Amplifying point in a weather-proof enclosure
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-02
Keywords:	junctions, networks
Applies:	S00419; S01239
Application notes:	A00075
Shape class:	Circle segments, Equilateral triangles, Rectangles
Function class:	W Guiding or transporting, X Connecting
Application class:	Network maps

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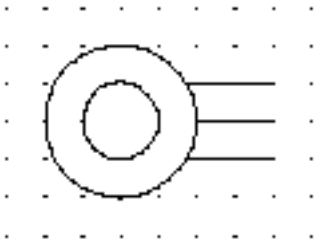
S00421



Name:	Cross-connection point
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-03
Keywords:	junctions, networks
Applies:	S00062
Application notes:	A00076
Shape class:	Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Network maps

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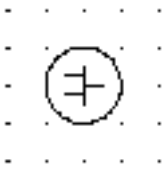
S00422



Name:	Line concentrator, automatic line connector
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-04
Keywords:	connections, networks
Applied in:	S00423
Shape class:	Circles, Depicting shapes
Function class:	K Processing signals or information, X Connecting
Application class:	Network maps
Remarks:	The symbol is shown for signal transmission from left to right. A number of lines on the left are concentrated for fewer lines on the right.

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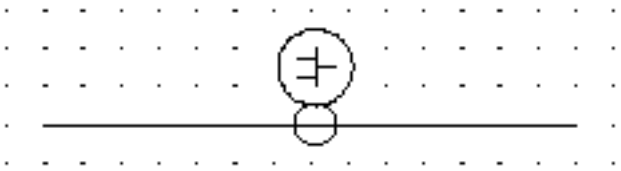
S00423



Name:	Line concentrator on a pole
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-05
Keywords:	connections, lines, networks
Applies:	S00001; S00422
Shape class:	Circles, Depicting shapes, Lines
Function class:	K Processing signals or information, X Connecting
Application class:	Network maps
Remarks:	The symbol is shown for signal transmission from left to right. A number of lines on the left are concentrated for fewer lines on the right.

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S00424



Name:	Anti-creepage device
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-16
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-06
Alternative names:	Anti-creepage device for cable
Keywords:	installation material
Applied in:	S00425, S00507
Application notes:	A00077
Shape class:	Depicting shapes
Function class:	U Keeping in defined position
Application class:	Conceptual elements or qualifiers

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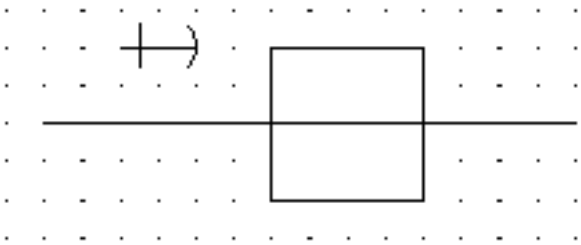
S00425



Name:	Access chamber with a cable having anti-creepage device
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-16
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-07
Keywords:	installation material, lines, networks
Applies:	S00001; S00412; S00424
Shape class:	Depicting shapes, Lines , Squares
Function class:	U Keeping in defined position, W Guiding or transporting
Application class:	Network maps
Remarks:	The symbol shows that creepage towards the left is prevented.

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S00426



Name:	Protective anode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-08
Keywords:	earth connection, galvanic protection, networks
Applied in:	S00427
Application notes:	A00079
Shape class:	Lines , Right-angled triangle
Function class:	F Protecting
Application class:	Network maps

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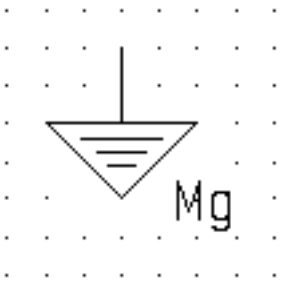
S00427



Name:	Magnesium protective anode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-04-09
Keywords:	earth connection, galvanic protection, networks
Applies:	S00426
Shape class:	Characters, Lines , Right-angled triangle
Function class:	F Protecting
Application class:	Network maps

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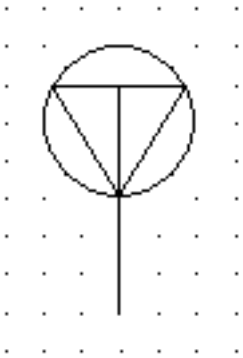
S00428



Name:	Head end with local antenna
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-05-01
Keywords:	communication networks, head ends
Applies:	S00061; S01102; S01239
Shape class:	Circles, Equilateral triangles, Lines
Function class:	T Converting but maintaining kind, W Guiding or transporting
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with one branch feeder.

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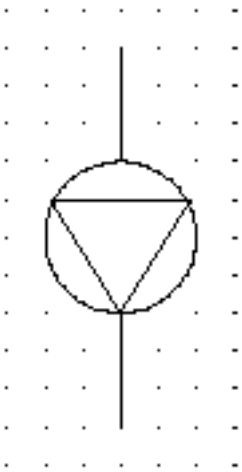
S00429



Name:	Head end without local antenna
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-05-02
Keywords:	communication networks, head ends
Applies:	S00061; S01239
Shape class:	Circles, Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with one input and one output trunk feeder.

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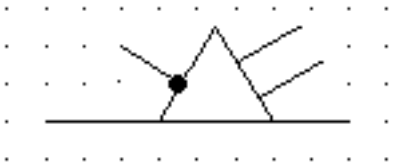
S00430



Name:	Bridger amplifier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-06-01
Keywords:	amplifiers, communication networks
Applies:	S01239
Application notes:	A00101, A00102
Shape class:	Dots (points), Equilateral triangles, Lines
Function class:	T Converting but maintaining kind
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with three branch or spur feeder outputs.

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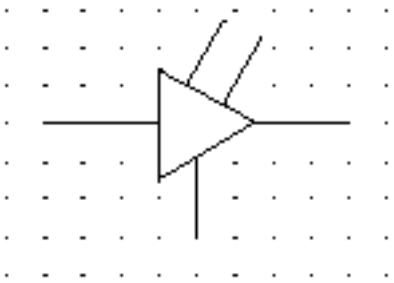
S00431



Name:	Trunk bridging amplifier assembly
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-06-02
Keywords:	amplifiers, communication networks
Applies:	S01239
Shape class:	Equilateral triangles, Lines
Function class:	T Converting but maintaining kind
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with three branch feeder outputs.

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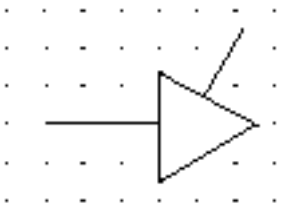
S00432



Name:	End of amplifier (branch or spur feeder)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-06-03
Keywords:	amplifiers, communication networks
Applies:	S01239
Shape class:	Equilateral triangles, Lines
Function class:	T Converting but maintaining kind
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with one spur feeder output.

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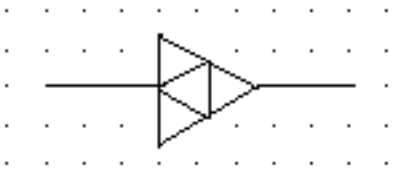
S00433



Name:	Amplifier with return channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-06-04
Keywords:	amplifiers, communication networks
Applies:	S01239
Shape class:	Equilateral triangles, Lines
Function class:	T Converting but maintaining kind
Application class:	Installation diagrams, Network maps

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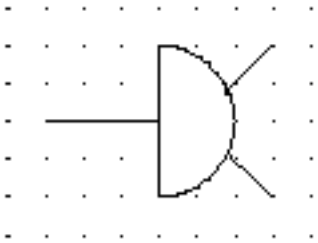
S00434



Name:	Splitter, two-way
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-11 (ed.2.0) 11-07-01
Keywords:	cabled sound and television, splitters
Replaced by:	S01334
Shape class:	Half-circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Network maps

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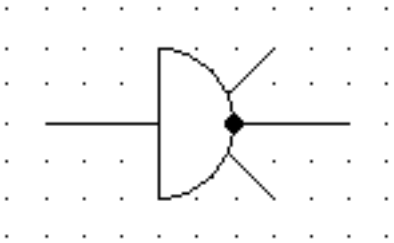
S00435



Name:	Splitter, three-way
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-07-02
Keywords:	cabled sound and television, splitters
Applies:	S01334
Application notes:	A00101, A00102
Shape class:	Dots (points), Half-circles, Lines
Function class:	K Processing signals or information, W Guiding or transporting
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with one higher level output.

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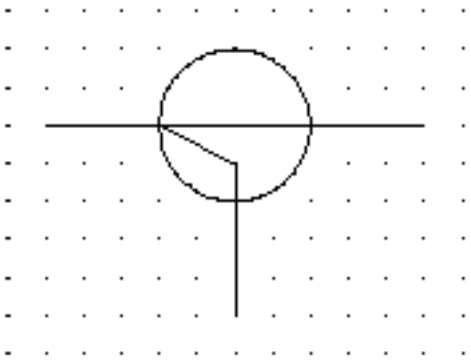
S00436



Name:	Directional coupler
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-11 (ed.2.0) 11-07-03
Keywords:	cabled sound and television, couplers
Applies:	S00061
Replaced by:	S01340
Shape class:	Circles, Lines
Function class:	K Processing signals or information, W Guiding or transporting
Application class:	Installation diagrams, Network maps

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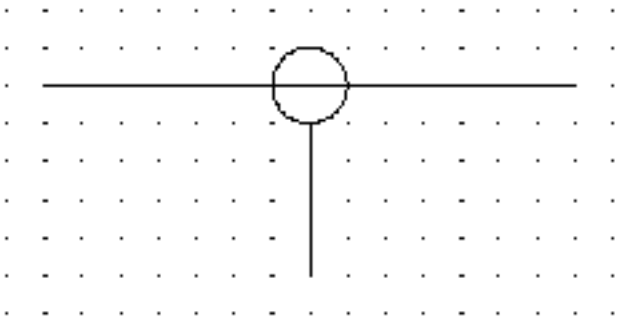
S00437



Name:	Subscriber's tap-off
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-11 (ed.2.0) 11-08-01
Keywords:	cabled sound and television, tap-off
Applies:	S00001
Application notes:	A00103, A00104
Replaced by:	S01336
Shape class:	Circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with a single tap-off on line.

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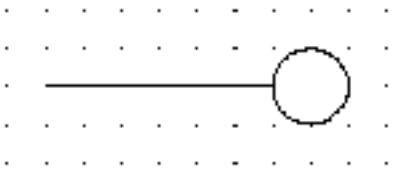
S00438



Name:	System outlet
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-08-02
Keywords:	cabled sound and television, system outlets
Applied in:	S00439
Shape class:	Circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams, Network maps

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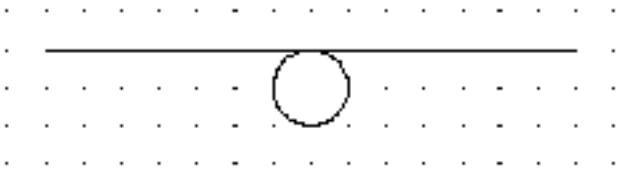
S00439



Name:	Looped system outlet; Serial wired outlet
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-08-03
Keywords:	cabled sound and television, system outlets
Applies:	S00001; S00438
Shape class:	Circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams, Network maps

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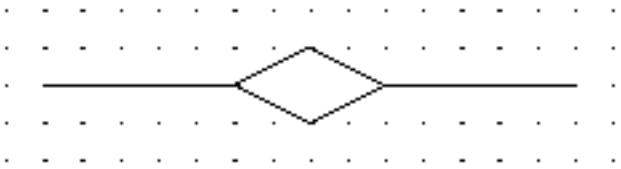
S00440



Name:	Equalizer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-09-01
Keywords:	cabled sound and television, equalizers
Applied in:	S00441
Shape class:	Lines , Parallelograms
Function class:	K Processing signals or information
Application class:	Installation diagrams, Network maps

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S00441



Name:	Variable equalizer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-09-02
Keywords:	cabled sound and television, equalizers
Applies:	S00081; S00440
Shape class:	Arrows, Lines , Parallelograms
Function class:	K Processing signals or information
Application class:	Installation diagrams, Network maps

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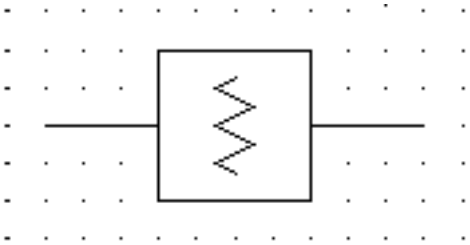
S00442



Name:	Attenuator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-09-03
Keywords:	attenuators, cabled sound and television
Alternative forms:	S01244
Applies:	S00059; S01355
Application notes:	A00105
Replacing:	S01168
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Network maps

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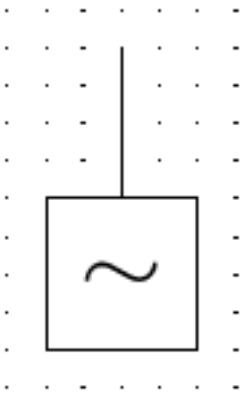
S00443



Name:	Line power unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-10-01
Keywords:	cabled sound and television, power feeding
Applies:	S00059; S01403
Shape class:	Depicting shapes, Lines , Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams, Network maps
Remarks:	AC type shown.

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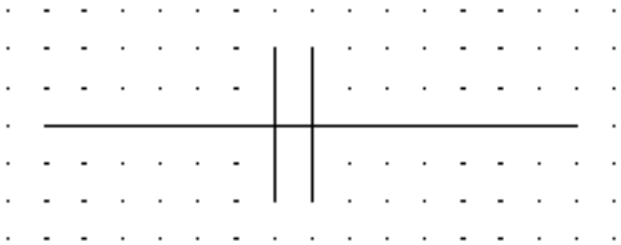
S00444



Name:	Power block
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-10-02
Keywords:	cabled sound and television, power feeding
Applies:	S00001
Shape class:	Lines
Function class:	R Restricting or stabilising
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown in a distribution feeder.

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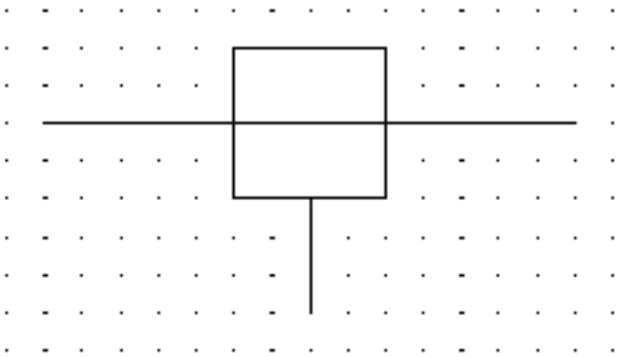
S00445



Name:	Power feeding injection point
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-10-03
Keywords:	cabled sound and television, power feeding
Applies:	S00001; S00412
Shape class:	Lines , Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams, Network maps

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S00446



Name:	Neutral conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-11-01
Keywords:	identification of conductors, installations in buildings, electrical installations
Applied in:	S00449, S00448, S00866
Applies:	S00001
Application notes:	A00106
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Installation diagrams, Overview diagrams

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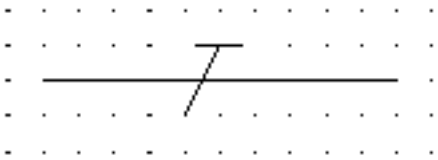
S00447



Name:	Protective conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-11-02
Keywords:	identification of conductors, installations in buildings, electrical installations
Applied in:	S00449, S00448
Applies:	S00001
Application notes:	A00106
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Installation diagrams, Overview diagrams

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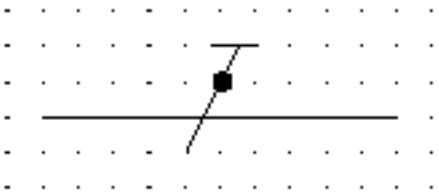
S00448



Name:	Combined protective and neutral conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-11-03
Keywords:	electrical installations, identification of conductors, installations in buildings
Applies:	S00001; S00446; S00447
Application notes:	A00106
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Installation diagrams, Overview diagrams

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S00449



Name:	Three-phase wiring with neutral conductor and protective conductor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-11-04
Keywords:	identification of conductors, installations in buildings, electrical installations
Applies:	S00001; S00002; S00446; S00447
Application notes:	A00106
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Installation diagrams, Overview diagrams

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S00450



Name:	Wiring going upwards
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-01
Keywords:	installations in buildings, wiring
Application notes:	A00107
Shape class:	Arrows, Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Installation diagrams

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S00451



Name:	Wiring going downwards
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-02
Keywords:	installations in buildings, wiring
Application notes:	A00108
Shape class:	Arrows, Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Installation diagrams

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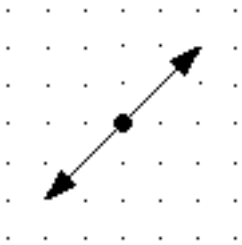
S00452



Name:	Wiring passing through vertically
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-03
Keywords:	installations in buildings, wiring
Shape class:	Arrows, Dots (points)
Function class:	- Functional elements or attributes
Application class:	Installation diagrams

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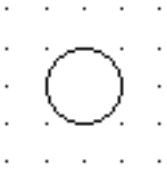
S00453



Name:	Box, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-04
Keywords:	installations in buildings, wiring
Applied in:	S00454, S00522, S00521
Applies:	S00061
Shape class:	Circles
Function class:	X Connecting
Application class:	Installation diagrams

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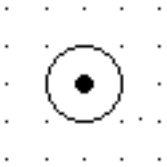
S00454



Name:	Connection box; Junction box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-05
Keywords:	installations in buildings, wiring
Applies:	S00016; S00453
Shape class:	Circles, Dots (points)
Function class:	X Connecting
Application class:	Installation diagrams

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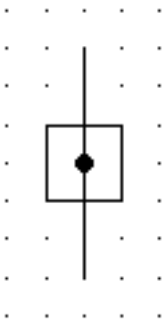
S00455



Name:	Consumers terminal, Service entrance equipment
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-06
Keywords:	installations in buildings, wiring
Applies:	S00016; S00060
Shape class:	Dots (points), Lines , Squares
Function class:	X Connecting
Application class:	Installation diagrams, Network maps
Remarks:	The symbol is shown with wiring.

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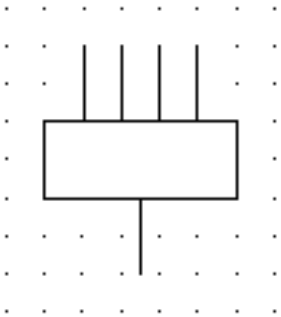
S00456



Name:	Distribution centre
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-12-07
Keywords:	installations in buildings, wiring
Applies:	S00060
Shape class:	Lines , Squares
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	The symbol is shown with five wirings.

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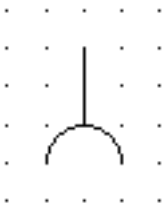
S00457



Name:	Socket outlet (power) general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-01
Alternative names:	Receptacle outlet (power), general symbol
Keywords:	installations in buildings, socket outlets
Applied in:	S00459, S00461, S00458, S00460, S00463, S00462, S00464
Applies:	S00031
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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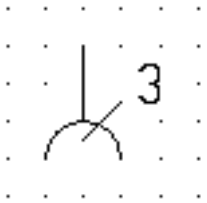
S00458



Name:	Multiple socket outlet (power)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-02
Keywords:	installations in buildings, socket outlets
Form:	Form 1
Alternative forms:	S00459
Applies:	S00457
Shape class:	Characters, Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	The symbol is shown with three outlets.

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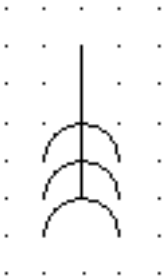
S00459



Name:	Multiple socket outlet (power)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-03
Keywords:	installations in buildings, socket outlets
Form:	Form 2
Alternative forms:	S00458
Applies:	S00457
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	The symbol is shown with three outlets.

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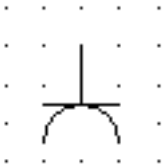
S00460



Name:	Socket outlet (power) with protective contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-04
Keywords:	installations in buildings, socket outlets
Applied in:	S00528
Applies:	S00457
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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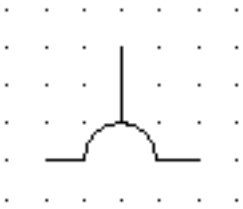
S00461



Name:	Socket outlet (power) with sliding shutter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-05
Keywords:	installations in buildings, socket outlets
Applies:	S00457
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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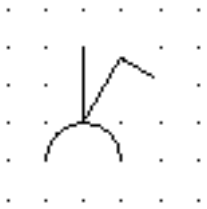
S00462



Name:	Socket outlet (power) with single-pole switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-06
Keywords:	installations in buildings, socket outlets
Applied in:	S00463
Applies:	S00457
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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S00463



Name:	Socket outlet (power) with interlocked switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-07
Keywords:	installations in buildings, socket outlets
Applies:	S00457; S00462
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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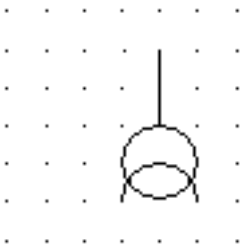
S00464



Name:	Socket outlet (power) with isolating transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-08
Alternative names:	Shaver outlet
Keywords:	installations in buildings, socket outlets
Applies:	S00457
Shape class:	Circles, Half-circles, Lines
Function class:	X Connecting
Application class:	Installation diagrams

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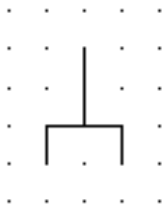
S00465



Name:	Socket outlet (telecommunications), general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-13-09
Keywords:	installations in buildings, socket outlets
Applied in:	S01812
Application notes:	A00109
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams

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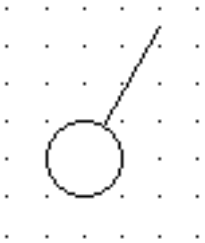
S00466



Name:	Switch, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-01
Keywords:	installations in buildings, switches
Applied in:	S01455, S01456, S00472, S01830, S00474, S00473, S00469, S00470, S00471, S00468, S00467
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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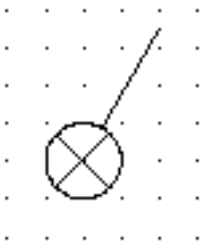
S00467



Name:	Switch with pilot light
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-02
Keywords:	indicator lamps, installations in buildings, switches
Applies:	S00466; S00965
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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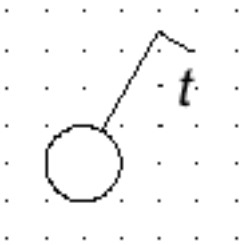
S00468



Name:	Period limiting switch, single pole
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-03
Keywords:	installations in buildings, switches
Applies:	S00466
Shape class:	Characters, Circles, Lines
Function class:	K Processing signals or information, Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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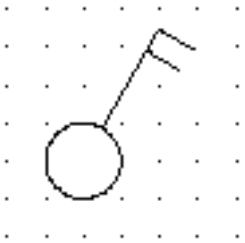
S00469



Name:	Two pole switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-04
Keywords:	installations in buildings, switches
Applies:	S00466
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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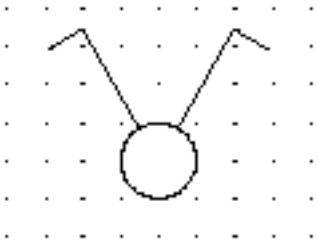
S00470



Name:	Multiposition single pole switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-05
Keywords:	installations in buildings, switches
Applies:	S00466
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams
Remarks:	For example for different degrees of lighting.

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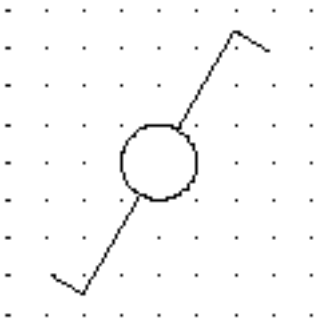
S00471



Name:	Two-way single pole switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-06
Keywords:	installations in buildings, switches
Applies:	S00466
Replaced by:	S01455
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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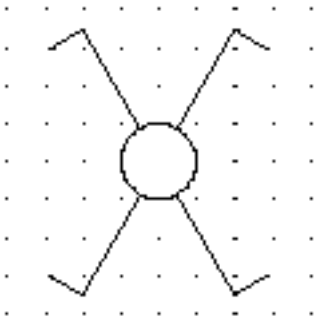
S00472



Name:	Intermediate switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-07
Keywords:	installations in buildings, switches
Applies:	S00466
Application notes:	A00254
Replaced by:	S01456
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams
Remarks:	For the equivalent circuit diagram, see A00254.

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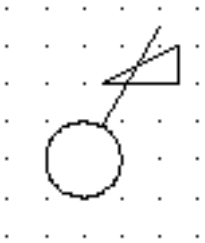
S00473



Name:	Dimmer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-08
Keywords:	installations in buildings, switches
Applies:	S00466
Shape class:	Circles, Lines , Right-angled triangle
Function class:	Q Controlled switching or varying, R Restricting or stabilising, S Converting a manual operation into a signal
Application class:	Installation diagrams

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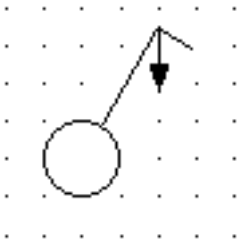
S00474



Name:	Pull-cord single pole switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-09
Keywords:	installations in buildings, switches
Applies:	S00093; S00466
Shape class:	Arrows, Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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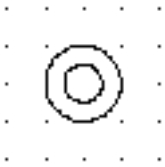
S00475



Name:	Push-button
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-10
Keywords:	installations in buildings, switches
Applied in:	S00477, S00476
Shape class:	Circles
Function class:	S Converting a manual operation into a signal
Application class:	Installation diagrams

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S00476



Name:	Push-button with indicator lamp
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-11
Keywords:	indicator lamps, installations in buildings, switches
Applies:	S00475; S00965
Shape class:	Circles, Lines
Function class:	P Presenting information, S Converting a manual operation into a signal
Application class:	Installation diagrams

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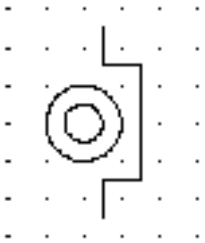
S00477



Name:	Push-button protected against unintentional operation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-12
Keywords:	installations in buildings, switches
Applies:	S00168; S00475
Application notes:	A00110
Shape class:	Circles, Lines
Function class:	S Converting a manual operation into a signal
Application class:	Installation diagrams

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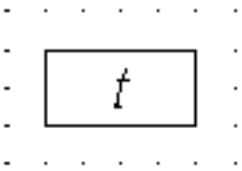
S00478



Name:	Timer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-13
Alternative names:	Period limiting equipment
Keywords:	installations in buildings, switches
Applies:	S00060; S00327
Shape class:	Characters, Squares
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Installation diagrams

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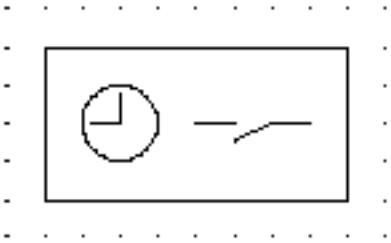
S00479



Name:	Time switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-14
Keywords:	installations in buildings, switches
Applies:	S00060; S00327; S00959
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information, Q Controlled switching or varying
Application class:	Installation diagrams

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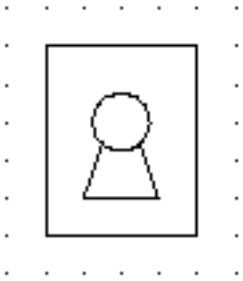
S00480



Name:	Key-operated switch
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-14-15
Alternative names:	Watchman's system device
Keywords:	installations in buildings, locks, switches
Applies:	S00060; S00179
Shape class:	Depicting shapes, Squares
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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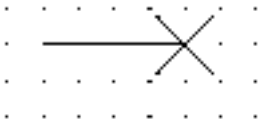
S00481



Name:	Lighting outlet position
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-01
Keywords:	installations in buildings, lightning outlets and fittings
Applied in:	S00482, S00491
Shape class:	Lines
Function class:	U Keeping in defined position, X Connecting
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring.

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S00482



Name:	Lighting outlet on wall
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-02
Keywords:	installations in buildings, lightning outlets and fittings
Applies:	S00481
Shape class:	Lines
Function class:	U Keeping in defined position, X Connecting
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring from the left.

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S00483



Name:	Lamp, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2006-01-24
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-03
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Replaced by:	S00965
Shape class:	Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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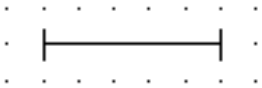
S00484



Name:	Luminaire, general symbol; Fluorescent lamp, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-04
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applied in:	S00485, S00486
Shape class:	Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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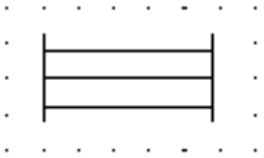
S00485



Name:	Luminaire with many fluorescent tubes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-05
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Form:	Form 1
Alternative forms:	S00486
Applies:	S00484
Shape class:	Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams
Remarks:	Shown with three fluorescent tubes.

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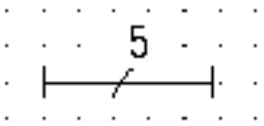
S00486



Name:	Luminaire with many fluorescent tubes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-06
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Form:	Form 2
Alternative forms:	S00485
Applies:	S00484
Shape class:	Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams
Remarks:	Shown with five fluorescent tubes.

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S00487



Name:	Projector, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-07
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applied in:	S00488, S00489
Applies:	S00965
Shape class:	Circles, Half-circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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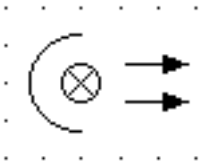
S00488



Name:	Spot light
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-08
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applies:	S00127; S00487
Shape class:	Arrows, Circles, Half-circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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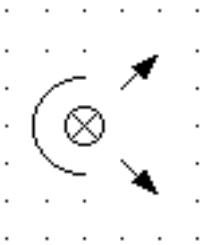
S00489



Name:	Flood light
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-09
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applies:	S00127; S00487
Shape class:	Arrows, Circles, Half-circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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S00490



Name:	Auxiliary apparatus for discharge lamp
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-16
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-10
Keywords:	installations in buildings, lightning outlets and fittings
Applies:	S01363
Application notes:	A00112
Shape class:	Rectangles
Function class:	R Restricting or stabilising, T Converting but maintaining kind
Application class:	Installation diagrams

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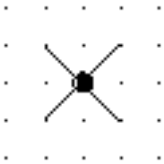
S00491



Name:	Emergency lighting luminaire on special circuit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-11
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applied in:	S00492
Applies:	S00481
Shape class:	Dots (points), Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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S00492



Name:	Self-contained emergency lighting luminaire
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-15-12
Keywords:	installations in buildings, lamps, lightning outlets and fittings
Applies:	S00059; S00491
Shape class:	Dots (points), Lines , Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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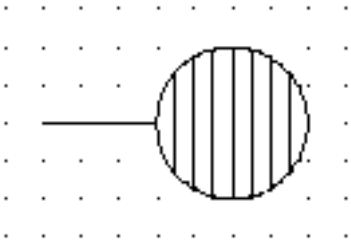
S00493



Name:	Water heater
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-16-01
Keywords:	heaters, installations in buildings
Applies:	S00061
Shape class:	Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring.

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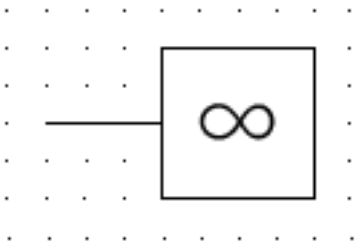
S00494



Name:	Fan
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-16-02
Keywords:	fans, installations in buildings, ventilators
Applies:	S00059
Replaced by:	S01421
Shape class:	Depicting shapes, Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring.

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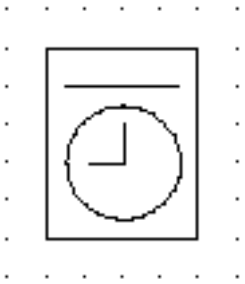
S00495



Name:	Time clock, time recorder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-16-03
Keywords:	clocks, installations in buildings
Applies:	S00060; S00138; S00959
Shape class:	Depicting shapes, Rectangles
Function class:	K Processing signals or information, P Presenting information
Application class:	Installation diagrams

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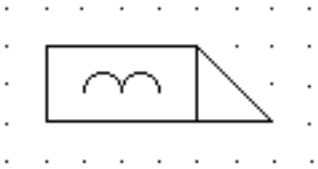
S00496



Name:	Electric lock
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-16-04
Keywords:	installations in buildings, locks
Applies:	S00583
Shape class:	Depicting shapes, Rectangles, Right-angled triangle
Function class:	Q Controlled switching or varying, U Keeping in defined position
Application class:	Installation diagrams

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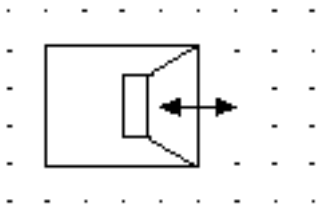
S00497



Name:	Audio intercommunication equipment
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-16-05
Keywords:	entry phones, installations in buildings
Applies:	S00101; S01060
Shape class:	Arrows, Depicting shapes, Rectangles
Function class:	B Converting variable to signal, P Presenting information
Application class:	Installation diagrams
Remarks:	For example an entry phone.

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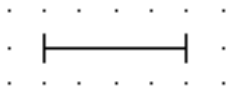
S00498



Name:	Straight section, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-01
Keywords:	trunking systems
Applied in:	S00516, S00515, S00531, S00532, S00508, S00527, S00512, S00518, S00530, S00529, S00522, S00525, S00499, S00521, S00502, S00503, S00504, S00505, S00506, S00520, S00507, S00513, S00514, S00509
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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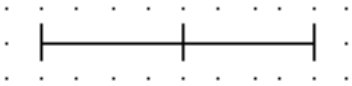
S00499



Name:	Assembled straight section
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-02
Keywords:	trunking systems
Applies:	S00498
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol shown is two assembled sections.

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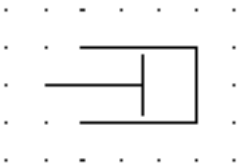
S00500



Name:	End cover
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-03
Keywords:	trunking systems
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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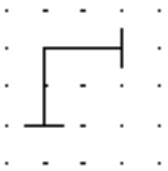
S00501



Name:	Elbow
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-04
Keywords:	trunking systems
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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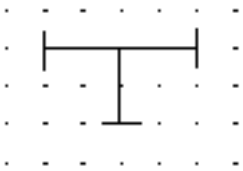
S00502



Name:	Tee (three way connection)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-05
Keywords:	trunking systems
Applies:	S00019; S00498
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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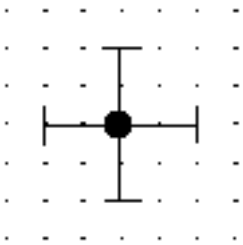
S00503



Name:	Cross (four way connection)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-06
Keywords:	trunking systems
Applies:	S00022; S00498
Application notes:	A00228
Shape class:	Dots (points), Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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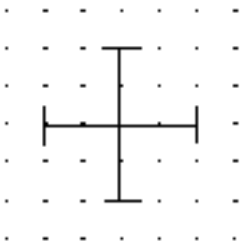
S00504



Name:	Crossing of two systems without connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-07
Keywords:	trunking systems
Applied in:	S00505
Applies:	S00498
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	For example two systems at different levels.

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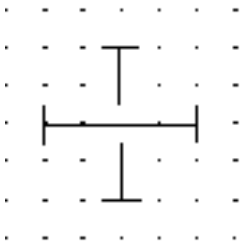
S00505



Name:	Crossing of two independent systems
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-08
Keywords:	trunking systems
Applies:	S00498; S00504
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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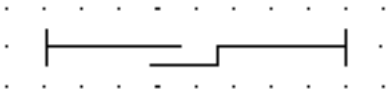
S00506



Name:	Straight section adjustable in length
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-09
Keywords:	trunking systems
Applies:	S00498
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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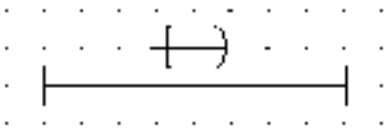
S00507



Name:	Straight section internally anchored
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-10
Keywords:	trunking systems
Applies:	S00424; S00498
Application notes:	A00228
Shape class:	Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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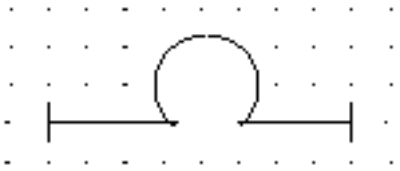
S00508



Name:	Expansion unit for enclosure
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-11
Keywords:	trunking systems
Applied in:	S00510
Applies:	S00498
Application notes:	A00228
Shape class:	Circle segments, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	This unit accomodates mechanical movement of the enclosure or tray.

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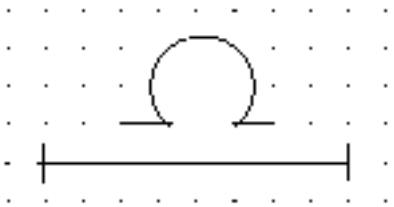
S00509



Name:	Expansion unit for conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-12
Keywords:	trunking systems
Applied in:	S00510
Applies:	S00498
Application notes:	A00228
Shape class:	Circle segments, Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	This unit accommodates thermal expansion of the conductors.

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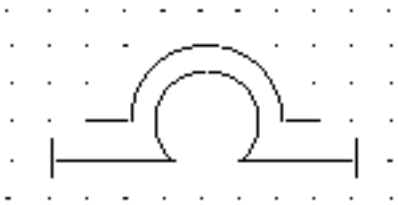
S00510



Name:	Expansion unit for enclosure and conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-13
Keywords:	trunking systems
Applies:	S00508; S00509
Application notes:	A00228
Shape class:	Circle segments, Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	This unit accommodates mechanical movement and expansion of both the enclosure or the tray and the conductors.

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S00511



Name:	Flexible unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-14
Keywords:	trunking systems
Application notes:	A00228
Shape class:	Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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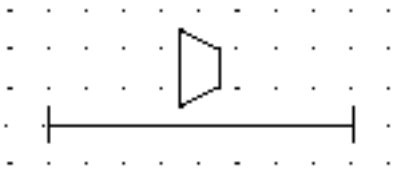
S00512



Name:	Reduction unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-15
Keywords:	trunking systems
Applies:	S00498; S01282; S01283
Application notes:	A00228
Shape class:	Lines , Trapezoids
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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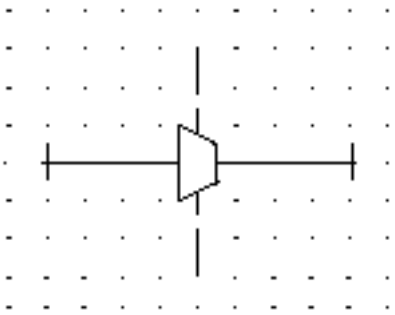
S00513



Name:	Straight section with internal pressure tight barrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-16
Keywords:	trunking systems
Applies:	S00056; S00498
Application notes:	A00012, A00228
Shape class:	Lines , Trapezoids
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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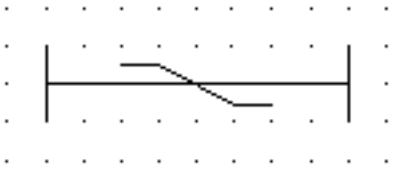
S00514



Name:	Phase transposition unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-17
Keywords:	trunking systems
Applies:	S00024; S00498
Application notes:	A00228
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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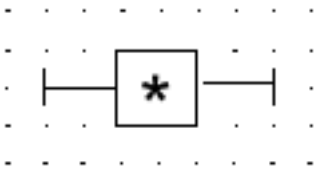
S00515



Name:	Equipment box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-18
Keywords:	trunking systems
Applied in:	S00527, S00519, S00520, S00526
Applies:	S00059; S00498
Application notes:	A00113, A00228
Shape class:	Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams

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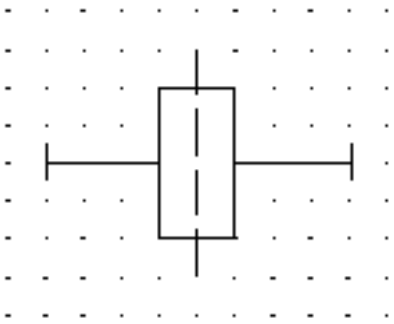
S00516



Name:	Straight section with internal fire barrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-19
Keywords:	trunking systems
Applies:	S00060; S00498
Application notes:	A00228
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams

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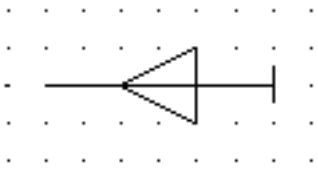
S00517



Name:	End feeder unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-20
Keywords:	trunking systems
Applied in:	S00519
Application notes:	A00228
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with supply from the left.

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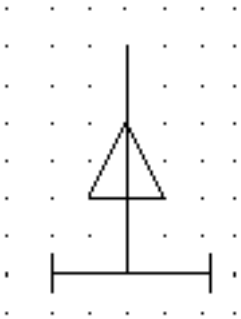
S00518



Name:	Central feeder unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-21
Keywords:	trunking systems
Applied in:	S00520
Applies:	S00498
Application notes:	A00228
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with supply from the top.

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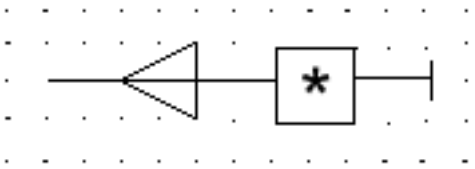
S00519



Name:	End feeder unit with equipment box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-22
Keywords:	trunking systems
Applies:	S00059; S00515; S00517
Application notes:	A00113, A00228
Shape class:	Equilateral triangles, Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with supply from the left.

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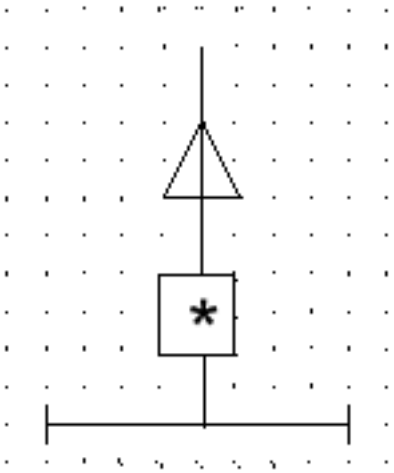

Name:	Central feeder unit with equipment box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-23
Keywords:	trunking systems
Applies:	S00498; S00515; S00518
Application notes:	A00113, A00228
Shape class:	Equilateral triangles, Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with supply from the top.

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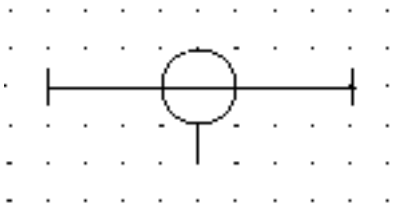
S00521



Name:	Straight section with fixed tap-off
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-24
Keywords:	trunking systems
Applied in:	S00524, S00528, S00522, S00523, S00526
Applies:	S00453; S00498
Application notes:	A00228
Shape class:	Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with tap-off downwards.

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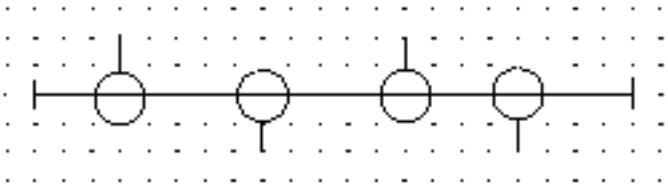
S00522



Name:	Straight section with several tap-offs
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-25
Keywords:	trunking systems
Applies:	S00453; S00498; S00521
Application notes:	A00228
Shape class:	Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with four tap-offs, two on each side.

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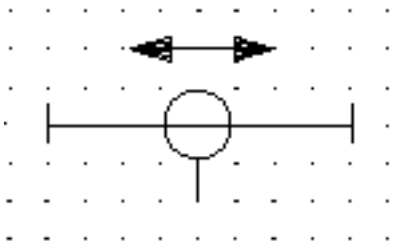
S00523



Name:	Straight section with continously movable tap-off
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-26
Keywords:	trunking systems
Applies:	S00094; S00521
Application notes:	A00228
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams

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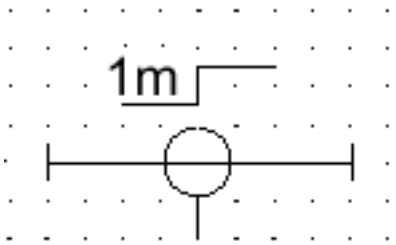
S00524



Name:	Straight section with tap-off adjustable in steps
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-27
Keywords:	trunking systems
Applies:	S00087; S00521
Application notes:	A00228
Shape class:	Characters, Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with 1 meter steps.

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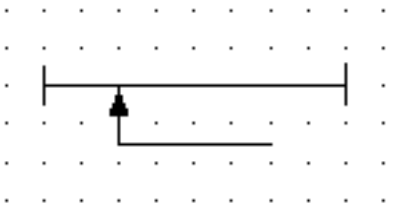
S00525



Name:	Straight section with tap-off by movable contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-28
Keywords:	trunking systems
Applies:	S00211; S00498
Application notes:	A00228
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams
Remarks:	For example sliding contact.

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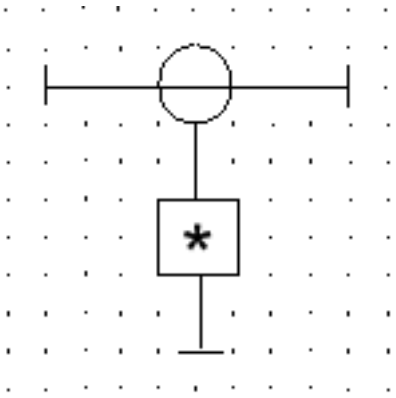

Name:	Straight section with fixed tap-off with equipment box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-29
Keywords:	trunking systems
Applies:	S00515; S00521
Application notes:	A00113, A00228
Shape class:	Circles, Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams

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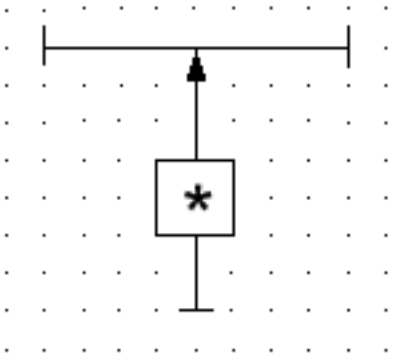

Name:	Straight section with adjustable tap-off with equipment box
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-30
Keywords:	trunking systems
Applies:	S00081; S00498; S00515
Application notes:	A00113, A00228
Shape class:	Arrows, Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams

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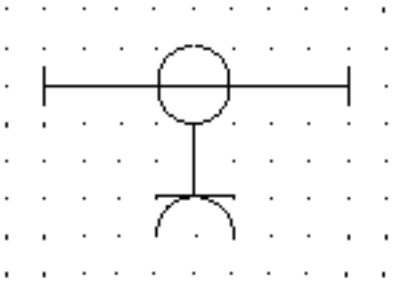

Name:	Straight section with fixed tap-off having socket-outlet with protective contact.
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-31
Keywords:	trunking systems
Applies:	S00460; S00521
Application notes:	A00228
Shape class:	Circles, Half-circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Installation diagrams, Overview diagrams

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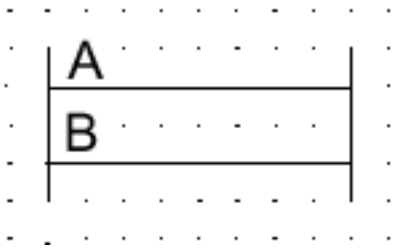

Name:	Straight section consisting of two wiring systems
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-32
Keywords:	trunking systems
Alternative forms:	S00530
Applies:	S00498
Application notes:	A00228
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The two wiring systems are in this symbol called A and B.

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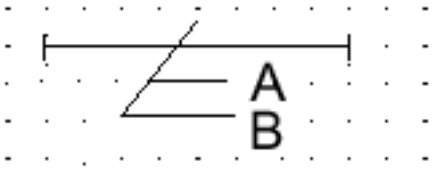
S00530



Name:	Straight section consisting of two wiring systems
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-33
Keywords:	trunking systems
Form:	Simplified form
Alternative forms:	S00529
Applies:	S00498
Application notes:	A00228
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The two wiring systems are in this symbol called A and B.

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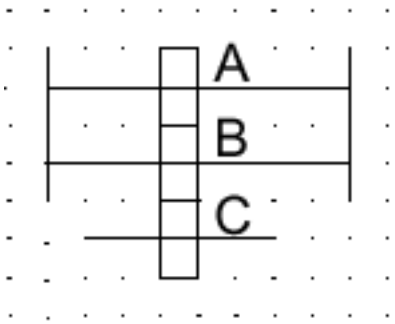
S00531



Name:	Straight section consisting of several separate compartments
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-34
Keywords:	trunking systems
Alternative forms:	S00532
Applies:	S00001; S00498
Application notes:	A00228
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with three compartments, one compartment for wiring system A, one for wiring system B and one for on-site installation of cable C.

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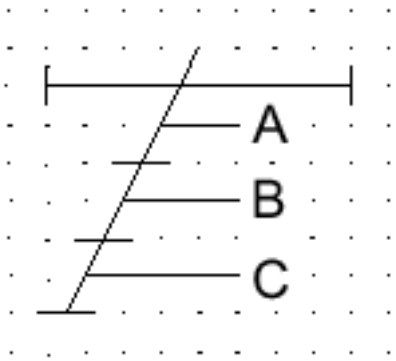

Name:	Straight section consisting of several separate compartments
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-17-35
Keywords:	trunking systems
Form:	Simplified form
Alternative forms:	S00531
Applies:	S00498
Application notes:	A00228
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with three compartments, one compartment for wiring system A, one for wiring system B and one for on-site installation of cable C.

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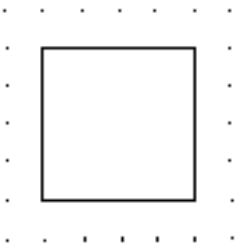

Name:	Aeronautical ground light, elevated, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-01
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00539, S00537, S00535
Applies:	S00059
Application notes:	A00114, A00116, A00119
Shape class:	Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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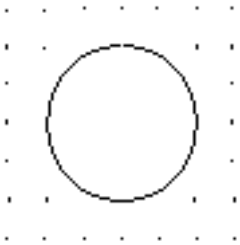

Name:	Aeronautical ground light, surface, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-02
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00539, S00542, S00538, S00540, S00541, S00536
Applies:	S00061
Application notes:	A00114, A00116, A00119
Shape class:	Circles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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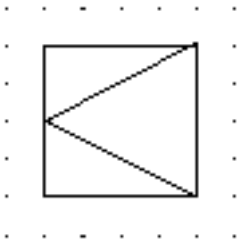

Name:	Aeronautical ground light, white colour and uni-directional beam, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-03
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00547, S00543, S00545
Applies:	S00533
Application notes:	A00114, A00116
Shape class:	Equilateral triangles, Right-angled triangle, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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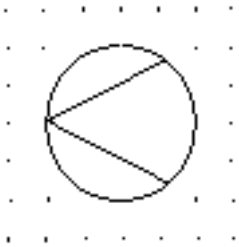

Name:	Aeronautical ground light, white colour and uni-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-04
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00546
Applies:	S00534
Application notes:	A00114, A00116
Shape class:	Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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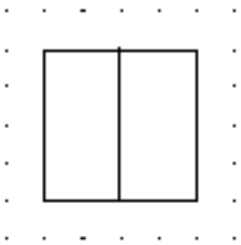

Name:	Aeronautical ground light, white/white colour and bi-directional beam, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-05
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00544
Applies:	S00533
Application notes:	A00114, A00116
Shape class:	Rectangles, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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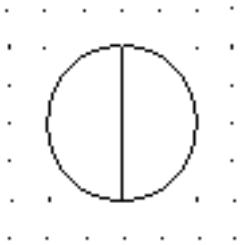

Name:	Aeronautical ground light, white/white colour and bi-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-06
Keywords:	airport lights indicators, outdoor installations
Applies:	S00534
Application notes:	A00114, A00116
Shape class:	Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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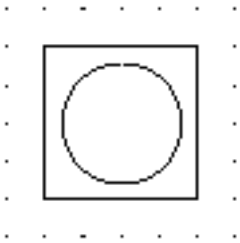

Name:	Aeronautical ground light, white colour and omni-directional beam, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-07
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00551, S00544, S00550, S00543
Applies:	S00533; S00534
Application notes:	A00114, A00116
Shape class:	Circles, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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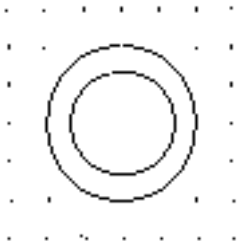

Name:	Aeronautical ground light, white colour and omni-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-08
Keywords:	airport lights indicators, outdoor installations
Applies:	S00534
Application notes:	A00114, A00116
Shape class:	Circles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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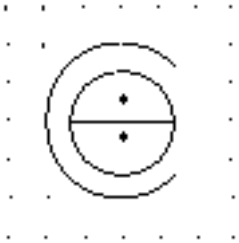

Name:	Curve light, green/green colour and bi-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-09
Keywords:	airport lights indicators, outdoor installations
Applies:	S00534
Application notes:	A00114, A00116
Shape class:	Circle segments, Circles, Dots (points), Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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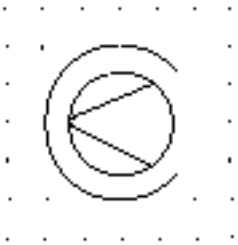

Name:	Curve light, white colour and uni-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-10
Keywords:	airport lights indicators, outdoor installations
Applies:	S00534
Application notes:	A00114, A00116
Shape class:	Circle segments, Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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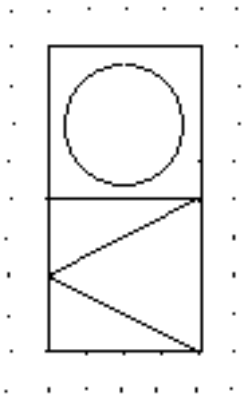

Name:	Aeronautical ground light, white omni-directional beam on top, and white uni-directional beam below, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-11
Keywords:	airport lights indicators, outdoor installations
Applies:	S00535; S00539
Application notes:	A00114, A00116
Shape class:	Circles, Equilateral triangles, Right-angled triangle, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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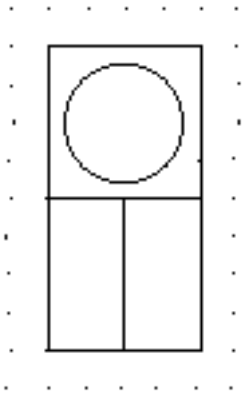
S00544



Name:	Aeronautical ground light, white omni-directional beam on top, and white/white bi-directional beam below, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-12
Keywords:	airport lights indicators, outdoor installations
Applies:	S00537; S00539
Application notes:	A00114, A00116
Shape class:	Circles, Rectangles, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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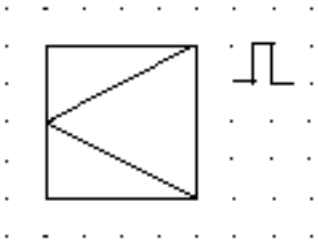
S00545



Name:	Aeronautical ground light, white flashing uni-directional beam, elevated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-13
Keywords:	airport lights indicators, outdoor installations
Applies:	S00132; S00535
Application notes:	A00114, A00116
Shape class:	Equilateral triangles, Lines , Right-angled triangle, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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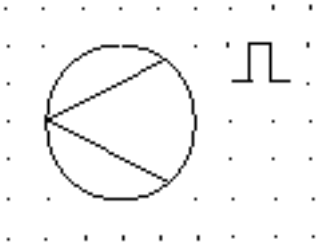
S00546



Name:	Aeronautical ground light, white flashing uni-directional beam, surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-14
Keywords:	airport lights indicators, outdoor installations
Applies:	S00132; S00536
Application notes:	A00114, A00116
Shape class:	Circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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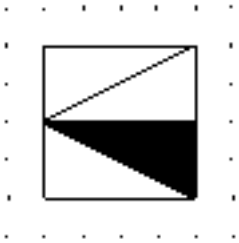
S00547



Name:	Precision approach path indicator white/red uni-directional beam
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-15
Keywords:	airport lights indicators, outdoor installations
Applies:	S00535
Application notes:	A00114, A00116
Shape class:	Right-angled triangle, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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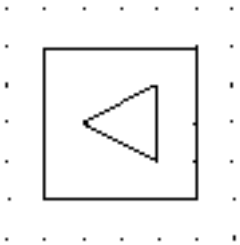
S00548



Name:	Wind direction indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-16
Keywords:	airport lights indicators, outdoor installations
Applies:	S00059
Application notes:	A00114
Shape class:	Equilateral triangles, Squares
Function class:	P Presenting information
Application class:	Installation diagrams

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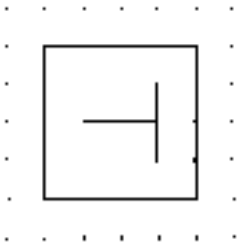
S00549



Name:	Landing direction indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-17
Keywords:	airport lights indicators, outdoor installations
Applies:	S00059
Application notes:	A00114
Shape class:	Lines , Squares
Function class:	P Presenting information
Application class:	Installation diagrams

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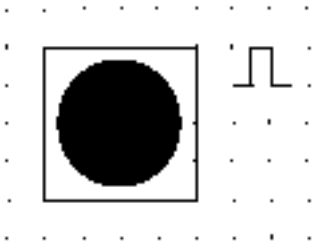
S00550



Name:	Obstacle light; Hazard light; Red flashing omni-directional beam
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-18
Keywords:	airport lights indicators, outdoor installations
Applies:	S00132; S00539
Application notes:	A00114, A00116
Shape class:	Circles, Lines , Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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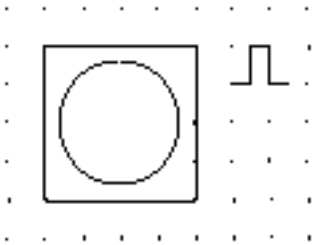
S00551



Name:	Aeronautical ground light, white flashing omni-directional beam
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-19
Keywords:	airport lights indicators, outdoor installations
Applies:	S00132; S00539
Application notes:	A00114, A00116
Shape class:	Circles, Lines , Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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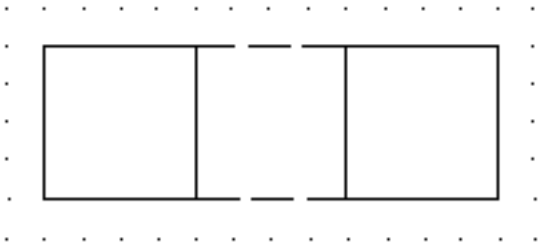
S00552



Name:	Warning sign, general symbol; Guidance sign, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-20
Keywords:	airport lights indicators, outdoor installations
Applied in:	S00553, S00554
Applies:	S00059
Application notes:	A00114
Shape class:	Squares
Function class:	P Presenting information
Application class:	Installation diagrams

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S00553



Name:	Distance warning sign
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-21
Keywords:	airport lights indicators, outdoor installations
Applies:	S00552
Application notes:	A00114
Shape class:	Characters, Squares
Function class:	P Presenting information
Application class:	Installation diagrams
Remarks:	Distance warning sign shown "4000/9000 feet" shown.

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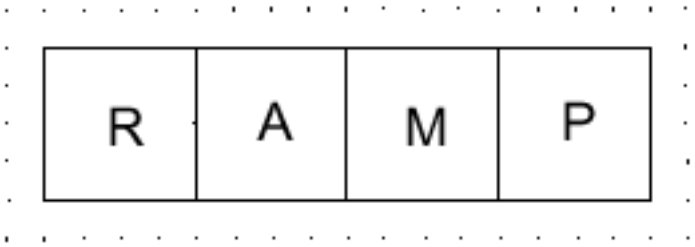
S00554



Name:	Taxiing guidance sign
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-11 (ed.2.0) 11-18-22
Keywords:	airport lights indicators, outdoor installations
Applies:	S00552
Application notes:	A00114
Shape class:	Characters, Squares
Function class:	P Presenting information
Application class:	Installation diagrams
Remarks:	Taxiing guidance sign "RAMP" shown.

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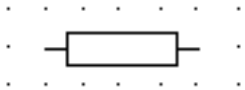
S00555



Name:	Resistor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-01
Keywords:	resistors
Applied in:	S01740, S01799, S00558, S00565, S00564, S00557, S00684, S00561, S00689, S00560, S00563, S01112, S00566, S00562, S00559
Replacing:	S01355
Shape class:	Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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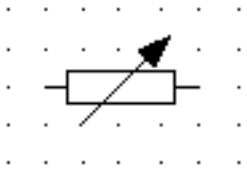
S00557



Name:	Resistor, adjustable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-03
Keywords:	resistors
Applies:	S00081; S00555
Shape class:	Arrows, Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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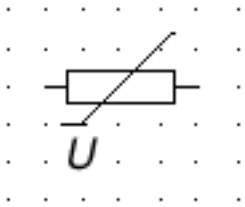
S00558



Name:	Resistor, voltage dependent
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-04
Alternative names:	Varistor
Keywords:	resistors, varistors
Applies:	S00084; S00555
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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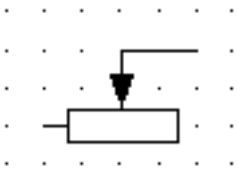
S00559



Name:	Resistor with movable contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-05
Keywords:	resistors
Applies:	S00211; S00555
Shape class:	Arrows, Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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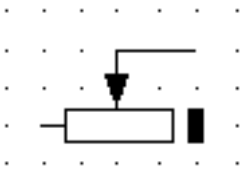
S00560



Name:	Resistor with movable contact and off position
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-06
Keywords:	resistors
Applies:	S00211; S00555
Shape class:	Arrows, Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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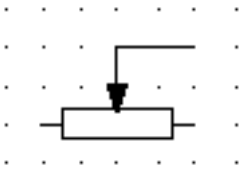
S00561



Name:	Potentiometer with movable contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-07
Keywords:	potentiometers, resistors
Applies:	S00211; S00555
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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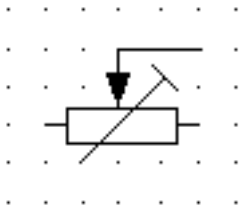
S00562



Name:	Potentiometer with movable contact and pre-set adjustment
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-08
Keywords:	potentiometers, resistors
Applies:	S00085; S00211; S00555
Shape class:	Arrows, Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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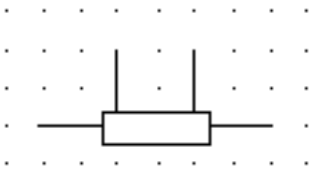
S00563



Name:	Resistor with fixed tappings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-09
Keywords:	resistors
Applies:	S00555
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	The symbol is shown with two tappings.

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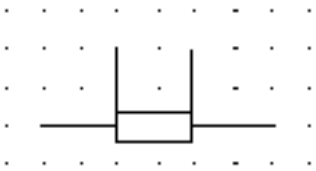
S00564



Name:	Resistor with separate current and voltage terminals
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-10
Alternative names:	Shunt
Keywords:	resistors, shunts
Applies:	S00555
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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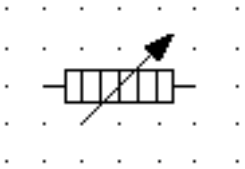
S00565



Name:	Carbon-pile resistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-11
Keywords:	resistors
Applies:	S00081; S00555
Shape class:	Arrows, Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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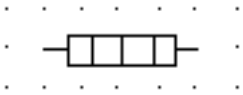
S00566



Name:	Heating element
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-01-12
Keywords:	resistors
Applied in:	S01825, S01823, S00759
Applies:	S00555
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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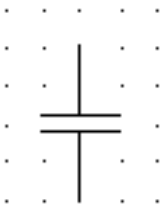
S00567



Name:	Capacitor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-01
Keywords:	capacitors
Applied in:	S00356, S00582, S00571, S01164, S00575, S00789, S01165, S01163, S00577, S00581, S00579, S00644, S01054, S00573
Replacing:	S01356
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00569



Name:	Capacitor, lead-through; Capacitor, feed-through
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-10
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-03
Keywords:	capacitors
Replacing:	S01357
Replaced by:	S01411
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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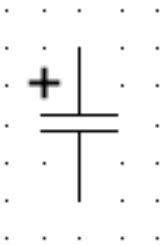
S00571



Name:	Capacitor, polarized
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-05
Alternative names:	Electrolytic capacitor
Keywords:	capacitors
Applies:	S00077; S00567
Replacing:	S01358
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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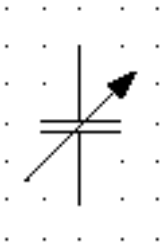
S00573



Name:	Capacitor, adjustable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-07
Keywords:	capacitors
Applies:	S00081; S00567
Replacing:	S01359
Shape class:	Arrows, Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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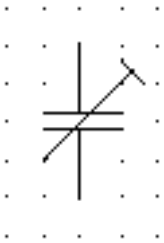
S00575



Name:	Capacitor with pre-set adjustment
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-09
Keywords:	capacitors
Applies:	S00085; S00567
Replacing:	S01360
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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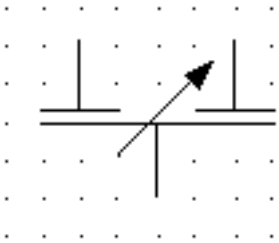
S00577



Name:	Capacitor, differential
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-11
Keywords:	capacitors
Applies:	S00081; S00567
Replacing:	S01361
Shape class:	Arrows, Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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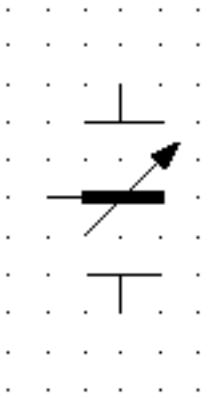
S00579



Name:	Capacitor, split and adjustable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-13
Keywords:	capacitors
Applies:	S00081; S00567
Replacing:	S01362
Shape class:	Arrows, Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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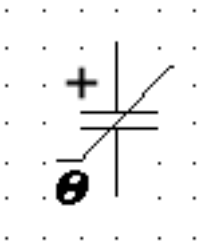
S00581



Name:	Capacitor, temperature dependent and polarised
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-15
Alternative names:	Ceramic capacitor
Keywords:	capacitors
Applies:	S00077; S00084; S00567
Application notes:	A00231
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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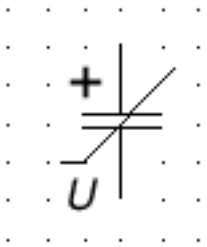
S00582



Name:	Capacitor, voltage dependent and polarised
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-02-16
Alternative names:	Semiconductor capacitor
Keywords:	capacitors
Applies:	S00077; S00084; S00567
Application notes:	A00230
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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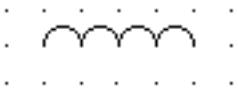
S00583



Name:	Coil, general symbol; Winding, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-01
Alternative names:	Inductor; Choke
Keywords:	chokes, coils, inductors, windings
Applied in:	S00347, S00348, S00847, S00830, S00842, S00828, S01164, S00591, S01165, S00589, S01086, S00834, S00823, S00849, S00825, S00845, S00590, S00829, S00588, S00755, S00749, S00824, S00827, S00586, S00739, S00735, S00833, S00817, S00816, S00496, S00585, S01198, S00832, S00690, S00835, S00753, S00815
Application notes:	A00127, A00263
Replacing:	S00815; S00816; S00817; S01363
Shape class:	Half-circles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00585



Name:	Inductor with magnetic core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-03
Keywords:	inductors
Applied in:	S00591, S01114, S00587
Applies:	S00583
Shape class:	Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00586



Name:	Inductor with gap in magnetic core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-04
Keywords:	inductors
Applies:	S00583
Shape class:	Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00587



Name:	Inductor, continuously variable
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-05
Keywords:	inductors
Applies:	S00081; S00585
Shape class:	Arrows, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	The symbol is shown with magnetic core.

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S00588



Name:	Inductor with fixed tappings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-06
Keywords:	inductors
Applies:	S00583
Shape class:	Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	The symbol is shown with two tappings (taps).

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S00589



Name:	Inductor with moveable contact, variable in steps
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-07
Keywords:	inductors
Applies:	S00087; S00211; S00583
Shape class:	Arrows, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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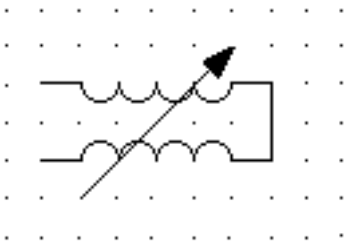
S00590



Name:	Variometer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-08
Keywords:	inductors, variometers
Applies:	S00081; S00583
Shape class:	Arrows, Half-circles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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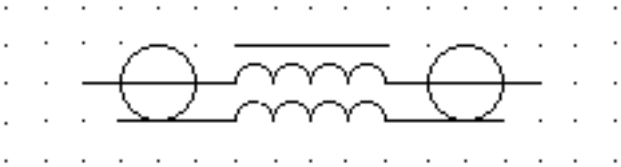
S00591



Name:	Coaxial choke with magnetic core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-09
Keywords:	chokes, coaxial cables
Applies:	S00011; S00583; S00585
Shape class:	Circles, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00592



Name:	Ferrite bead
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-03-10
Keywords:	ferrite beads
Applies:	S00001
Shape class:	Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Teh ferrite bead is shown on a conductor.

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S00593



Name:	Ferrite core
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-04-01
Keywords:	cores
Shape class:	Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of technical obsolescence.

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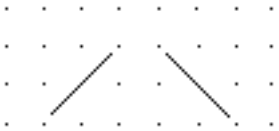
S00594



Name:	Flux/current direction indicator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-04-02
Keywords:	indicators
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Symbol restrictions:	This symbol is not applicable for topographical representation.
Remarks:	This symbol indicates that a horizontal line drawn at a right angle through a core symbol represents a core winding, and it also gives the relative directions of current and flux. Withdrawn because of technical obsolescence.

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S00595



Name:	Ferrite core with one winding
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-04-03
Keywords:	cores
Applied in:	S00596, S00597
Application notes:	A00255
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	See A00255 for explanations. Withdrawn because of technical obsolescence.

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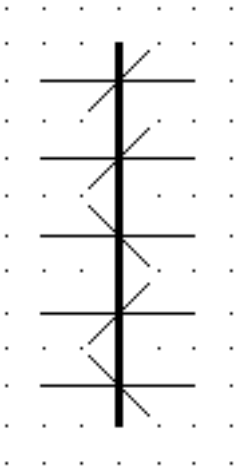
S00596



Name:	Ferrite core with five windings
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-05-01
Keywords:	cores
Applied in:	S00598
Applies:	S00595
Application notes:	A00232
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	Withdrawn because of technical obsolescence.

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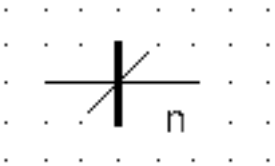
S00597



Name:	Ferrite core with one winding of n turns
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-05-02
Keywords:	cores
Applies:	S00595
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	Withdrawn because of technical obsolescence.

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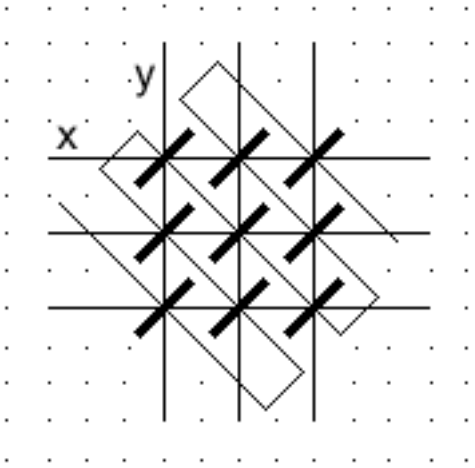
S00598



Name:	Ferrite core matrix
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-06-01
Keywords:	cores
Applies:	S00596
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	The ferite core matrix consists of x and y windings and a read-out winding. The symbol of a ferrite core, S00593, is shown at 45° to the horizontal. Withdrawn because of technical obsolescence.

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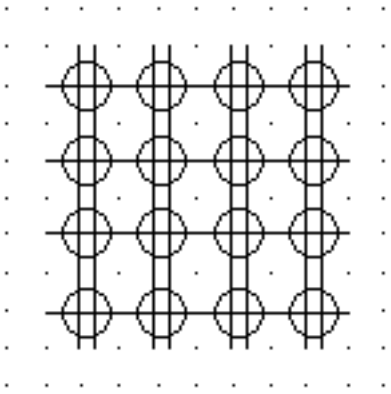
S00599



Name:	Matrix arrangement of magnetic stores
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2001-11-11
Earlier published in:	IEC 60617-4 (ed.2.0) 04-06-02
Keywords:	magnetic stores
Shape class:	Circles, Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	The matrix arrangement comprises thin sheet magnetic stores, located between two orthogonal thin sheet wiring layers. Withdrawn because of technical obsolescence.

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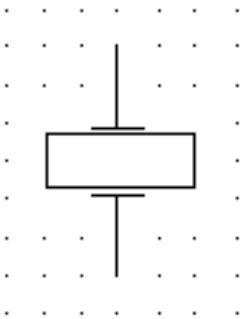
S00600



Name:	Piezoelectric crystal with two electrodes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-07-01
Keywords:	piezoelectrical crystals
Applied in:	S00602, S00607, S00601, S00611
Applies:	S01405
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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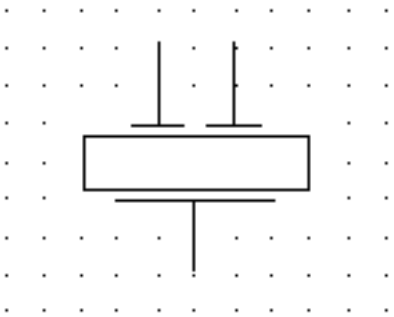
S00601



Name:	Piezoelectric crystal with three electrodes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-07-02
Keywords:	piezoelectrical crystals
Applies:	S00600; S01405
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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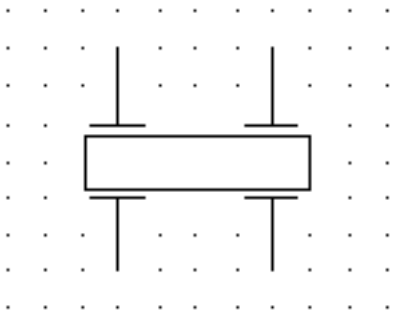
S00602



Name:	Piezoelectric crystal with two pairs of electrodes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-07-03
Keywords:	piezoelectrical crystals
Applies:	S00600; S01405
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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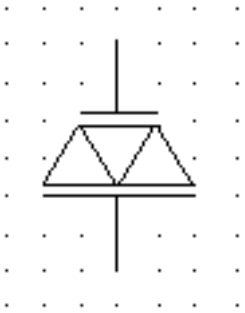
S00603



Name:	Electret with electrodes and connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-07-04
Keywords:	electrets
Applies:	S00117
Shape class:	Equilateral triangles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	The longer line represents the positive pole.

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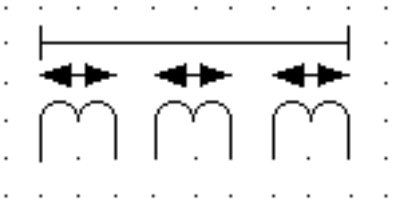
S00604



Name:	Delay line, magnetostrictive with windings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-08-01
Keywords:	delay lines
Form:	Assembled form
Applies:	S00122; S00124
Shape class:	Arrows, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	The symbol is shown three windings shown in an assembled representation.

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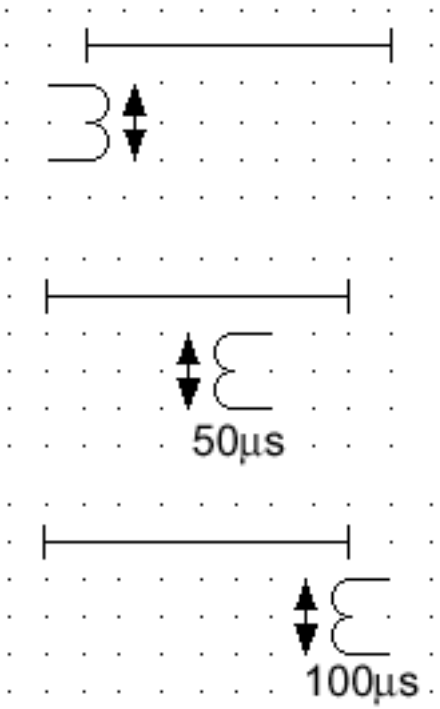
S00605



Name:	Delay line, magnetostrictive with windings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-08-02
Keywords:	delay lines
Form:	Detached form
Applies:	S00122; S00124
Shape class:	Arrows, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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Remarks:

The delay line is shown with one input and two outputs windings, in detached representation. The windings are from top to bottom: - Input
- Intermediate output with 50 s delay
- Final output with 100 s delay

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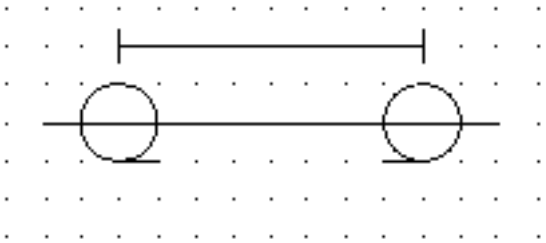
S00606



Name:	Delay line, coaxial
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-08-03
Keywords:	delay lines
Applies:	S00011
Shape class:	Circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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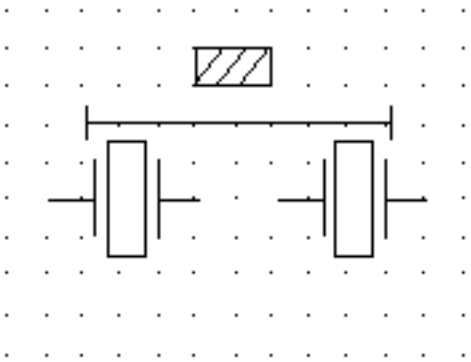
S00607



Name:	Delay line, solid material type with piezoelectric transducers
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-08-04
Keywords:	delay lines, piezoelectrical crystals, transducers
Applies:	S00114; S00124; S00600
Shape class:	Lines , Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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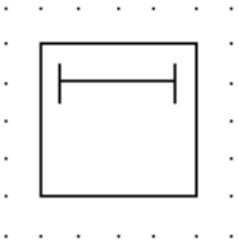
S00608



Name:	Delay line, general symbol; Delay element, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-09-01
Keywords:	delay lines
Applied in:	S00612, S00611, S00610
Applies:	S00059; S00124
Shape class:	Lines , Squares
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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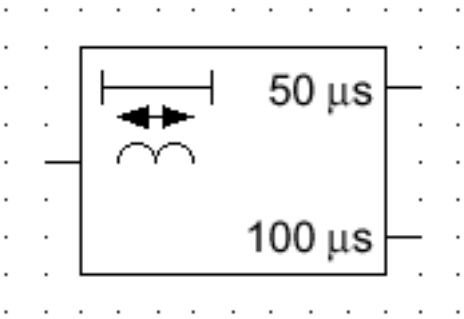
S00609



Name:	Delay line, magnetostrictive type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-09-02
Keywords:	delay lines
Applies:	S00060; S00122; S00124
Shape class:	Arrows, Characters, Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	The symbol is shown with two outputs. The output signals are delayed 50 microseconds and 100 microseconds respectively.

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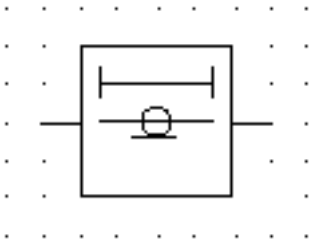
S00610



Name:	Delay line, coaxial type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-09-03
Keywords:	delay lines
Applies:	S00011; S00608
Shape class:	Circles, Lines , Squares
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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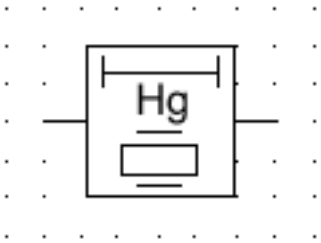
S00611



Name:	Delay line, mercury type with piezoelectric transducers
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-09-04
Keywords:	delay lines
Applies:	S00600; S00608
Shape class:	Lines , Squares
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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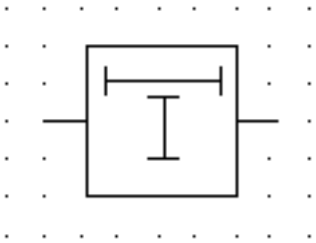
S00612



Name:	Delay line, artificial line type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-4 (ed.2.0) 04-09-05
Keywords:	delay lines
Applies:	S00608
Shape class:	Lines , Squares
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00613



Name:	Semiconductor region, one connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-01
Keywords:	connections, ohmic connections, semiconductor regions, semiconductors, transistors
Applied in:	S00057, S00653, S00641, S00616, S00652, S00648, S00651, S00663, S00662, S00665, S00657, S00646, S00661, S00654, S00614, S00655, S00660, S00645, S00656, S00658, S00659, S00664, S00649, S00650, S00615
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	The vertical line is the semiconductor region and the perpendicular line is the ohmic connection.

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S00614



Name:	Semiconductor region, several connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-02
Keywords:	ohmic connections, semiconductor regions, semiconductors, transistors
Form:	Form 1
Alternative forms:	S00615; S00616
Applies:	S00613
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	Two connections are shown.

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S00615



Name:	Semiconductor region, several connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-03
Keywords:	ohmic connections, semiconductor regions, semiconductors, transistors
Form:	Form 2
Alternative forms:	S00614; S00616
Applies:	S00613
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	Two connections shown.

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S00616



Name:	Semiconductor region, several connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-04
Keywords:	ohmic connections, semiconductor regions, semiconductors, transistors
Form:	Form 3
Alternative forms:	S00614; S00615
Applied in:	S00666, S00667, S00672, S00668, S00670, S00671, S00669
Applies:	S00613
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Two connections shown.

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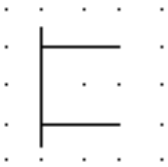
S00617



Name:	Conduction channel for depletion devices
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-05
Keywords:	conduction channels, depletion type, semiconductors, transistors
Applied in:	S00682, S00672, S00683, S00677, S00678, S00671, S00679
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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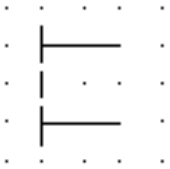
S00618



Name:	Conduction channel for enhancement devices
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-06
Keywords:	conduction channels, enhancement type, semiconductors, transistors
Applied in:	S00673, S00676, S00674, S00675, S00681, S00680
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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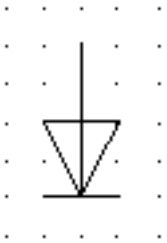
S00619



Name:	Rectifying junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-07
Keywords:	junctions, rectifiers, semiconductors
Applied in:	S00057, S00378, S00653, S00641, S00648, S00651, S00662, S00657, S00646, S00661, S00654, S00647, S00655, S00660, S00645, S00656, S00658, S00650
Replacing:	S01364
Shape class:	Equilateral triangles, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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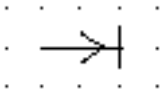
S00620



Name:	Junction which influences a semiconductor layer, P-region which influences an N-layer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-09
Keywords:	field effect transistors, gates, junctions, N-layer, P-region, semiconductors, transistors
Applied in:	S00671
Application notes:	A00176
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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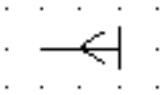
S00621



Name:	Junction which influences a semiconductor layer, N-region which influences a P-layer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-10
Keywords:	field effect transistors, gates, junctions, N-region, P-layer, semiconductors, transistors
Applied in:	S00672
Application notes:	A00176
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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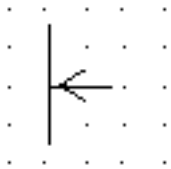
S00622



Name:	Conductivity type of the channel, N-type channel on a P-type substrate
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-11
Keywords:	conduction channels, field effect transistors, IGFET, N-type channel, semiconductors, transistors
Applied in:	S00676, S00674, S00677
Application notes:	A00177
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	N-type channel on a P-type substrate for a depletion type IGFET is shown.

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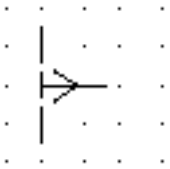
S00623



Name:	Conductivity type of the channel, P-type channel on an N-type substrate
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-12
Keywords:	conduction channels, field effect transistors, IGFET, insulated gate, P-type channel, semiconductors, transistors
Applied in:	S00673, S00675, S00678, S00679
Application notes:	A00177
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	P-type channel on an N-type substrate for an enhancement type IGFET is shown.

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S00624



Name:	Insulated gate
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-13
Keywords:	field effect transistors, gates, IGFET, insulated gate, semiconductors, transistors
Applied in:	S00682, S00673, S00676, S00674, S00683, S00677, S00675, S00678, S00681, S00680, S00679
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	For an example with multiple gates see symbol S00679.

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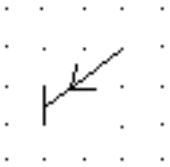
S00625



Name:	Emitter on a region of dissimilar conductivity type, P emitter on an N region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-14
Keywords:	bipolar transistors, emitters, semiconductors, transistors
Applied in:	S00626, S00682, S00667, S00663, S00670, S00683, S00681, S00680, S00669, S00687
Application notes:	A00178
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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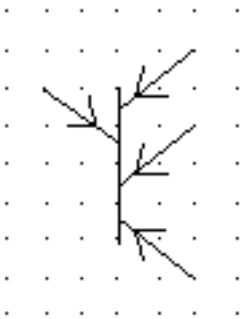
S00626



Name:	Emitters on a region of dissimilar conductivity type, P emitters on an N region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-15
Keywords:	bipolar transistors, emitters, semiconductors, transistors
Applies:	S00625
Application notes:	A00178
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00627



Name:	Emitter on a region of dissimilar conductivity type, N emitter on a P region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-16
Keywords:	bipolar transistors, emitters, semiconductors, transistors
Applied in:	S00682, S00666, S00668, S00665, S00683, S00681, S00680, S00628, S00664
Application notes:	A00178
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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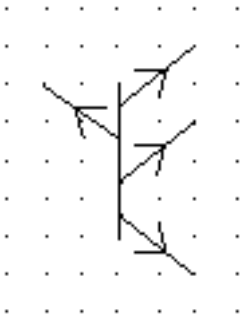
S00628



Name:	Emitters on a region of dissimilar conductivity type, N emitters on a P region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-17
Keywords:	bipolar transistors, emitters, semiconductors, transistors
Applies:	S00627
Application notes:	A00178
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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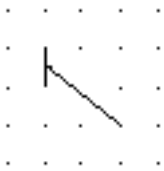
S00629



Name:	Collector on a region of dissimilar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-18
Keywords:	bipolar transistors, collectors, semiconductors, transistors
Applied in:	S00668, S00630, S00663, S00665, S00664, S00687
Application notes:	A00179
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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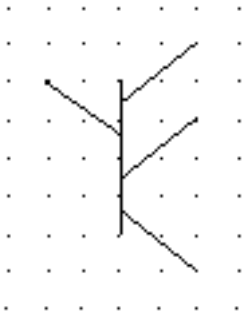
S00630



Name:	Collectors on a region of dissimilar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-19
Keywords:	bipolar transistors, collectors, semiconductors, transistors
Applies:	S00629
Application notes:	A00179
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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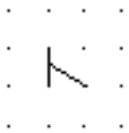
S00631



Name:	Transition between regions of dissimilar conductivity types
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-20
Keywords:	semiconductor regions, semiconductors, transistors
Applied in:	S00682, S00683, S00681, S00680
Application notes:	A00180
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00632



Name:	Intrinsic region separating regions of dissimilar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-21
Keywords:	intrinsic region, NIP, PIN, semiconductor regions, semiconductors, transistors
Application notes:	A00181
Shape class:	Lines , Parallelograms
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	A PIN or NIP structure is shown.

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S00633



Name:	Intrinsic region between regions of similar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-22
Keywords:	intrinsic region, NIN, PIP, semiconductor regions, semiconductors, transistors
Application notes:	A00181
Shape class:	Lines , Parallelograms
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	A PIP or NIN structure is shown.

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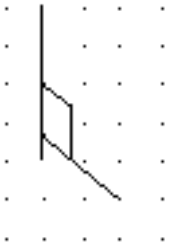
S00634



Name:	Intrinsic region between a collector and a region of dissimilar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-23
Keywords:	collectors, intrinsic region, NIP, PIN, semiconductor regions, semiconductors, transistors
Applied in:	S00669
Application notes:	A00182
Shape class:	Lines , Parallelograms
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	A PIN or NIP structure is shown.

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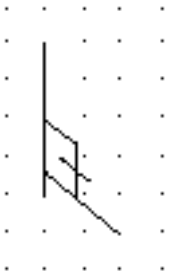
S00635



Name:	Intrinsic region between a collector and a region of similar conductivity type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-01-24
Keywords:	collectors, intrinsic region, NIN, PIP, semiconductor regions, semiconductors, transistors
Applied in:	S00670
Application notes:	A00182
Shape class:	Lines , Parallelograms
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Remarks:	A PIP or NIN structure is shown.

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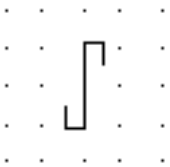
S00636



Name:	Schottky effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-02-01
Keywords:	diodes, Schottky, semiconductors, transistors
Application notes:	A00150
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00637



Name:	Tunnel effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-02-02
Keywords:	diodes, semiconductors, tunnel
Applied in:	S00645
Application notes:	A00150
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00638



Name:	Unidirectional breakdown effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-02-03
Alternative names:	Zener effect
Keywords:	diodes, semiconductors, Zener
Applied in:	S00651, S00662, S00665, S00646, S00661, S00660
Application notes:	A00150
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00639



Name:	Bidirectional breakdown effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-02-04
Keywords:	diodes, semiconductors
Applied in:	S00647
Application notes:	A00150
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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S00640



Name:	Backward effect
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-02-05
Alternative names:	Unitunnel effect
Keywords:	diodes, semiconductors, tunnel
Applied in:	S00648
Application notes:	A00150
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams

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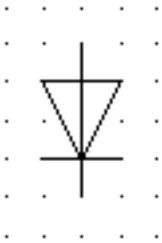
S00641



Name:	Semiconductor diode, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-01
Keywords:	diodes, semiconductors
Applied in:	S00304, S00685, S00643, S01328, S00895, S00785, S00907, S01327, S01263, S00644, S00642, S00906, S01326
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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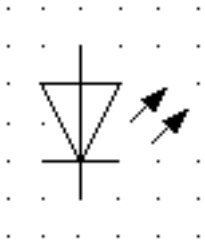

Name:	Light emitting diode (LED), general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-02
Keywords:	diodes, LED, photo-emissive devices, semiconductors
Applied in:	S00380, S00691, S00692
Applies:	S00127; S00641
Shape class:	Arrows, Equilateral triangles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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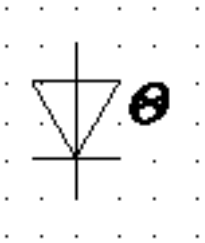
S00643



Name:	Temperature sensing diode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-03
Keywords:	diodes, semiconductors, temperature
Applies:	S00641
Shape class:	Characters, Equilateral triangles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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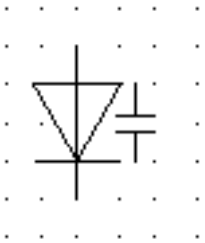
S00644



Name:	Variable capacitance diode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-04
Alternative names:	Varactor
Keywords:	capacitors, diodes, semiconductors
Applies:	S00567; S00641
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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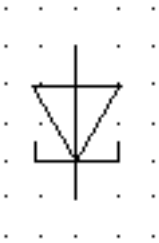
S00645



Name:	Tunnel diode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-05
Alternative names:	Esaki diode
Keywords:	diodes, Esaki, semiconductors, tunnel
Applies:	S00613; S00619; S00637
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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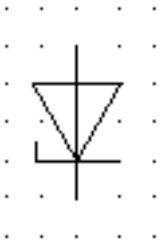
S00646



Name:	Breakdown diode, unidirectional
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-06
Alternative names:	Zener diode; Voltage regulator diode
Keywords:	diodes, semiconductors, voltage regulators, Zener
Applied in:	S00651
Applies:	S00613; S00619; S00638
Shape class:	Equilateral triangles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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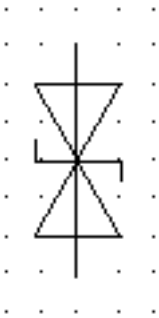
S00647



Name:	Breakdown diode, bidirectional
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-07
Keywords:	diodes, semiconductors
Applies:	S00619; S00639
Shape class:	Equilateral triangles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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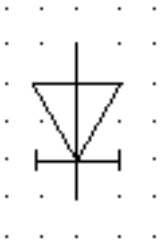
S00648



Name:	Backward diode (unitunnel diode)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-08
Keywords:	diodes, semiconductors
Applies:	S00613; S00619; S00640
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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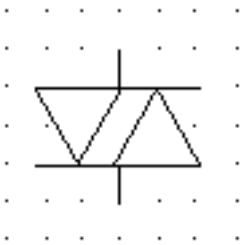
S00649



Name:	Bidirectional diode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-03-09
Keywords:	diodes, semiconductors
Applied in:	S00652
Applies:	S00613
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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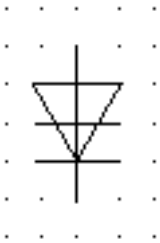
S00650



Name:	Reverse blocking diode thyristor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-01
Keywords:	diodes, semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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S00651



Name:	Reverse conducting diode thyristor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-02
Keywords:	diodes, semiconductors, thyristors
Applies:	S00613; S00619; S00638; S00646
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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S00652



Name:	Bidirectional diode thyristor; Diac
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-03
Keywords:	diacs, semiconductors, thyristors
Applies:	S00613; S00649
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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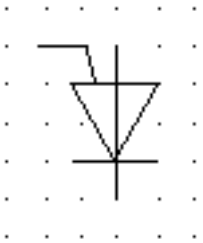
S00653



Name:	Reverse blocking triode thyristor, N-gate (anode-side controlled)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-05
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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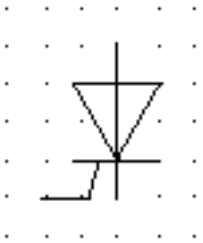

Name:	Reverse blocking triode thyristor, P-gate (cathode-side controlled)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-06
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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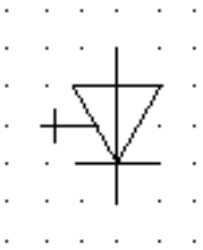

Name:	Turn-off thyristor, gate not specified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-07
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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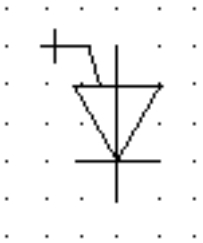

Name:	Turn-off triode thyristor, N-gate (anode-side)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-08
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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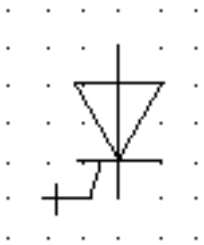

Name:	Turn-off triode thyristor, P-gate (cathode-side controlled)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-09
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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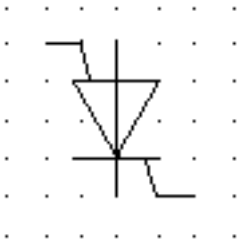

Name:	Reverse blocking thyristor, tetrode type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-10
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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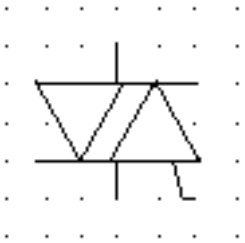

Name:	Bidirectional triode thyristor; Triac
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-11
Keywords:	semiconductors, thyristors, triacs
Applies:	S00613
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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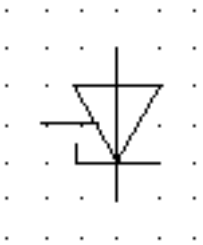
S00660



Name:	Reverse conducting triode thyristor, gate not specified
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-12
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619; S00638
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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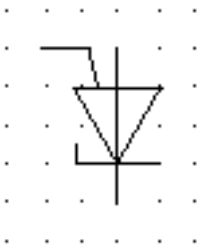

Name:	Reverse conducting triode thyristor, N-gate (anode-side controlled)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-13
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619; S00638
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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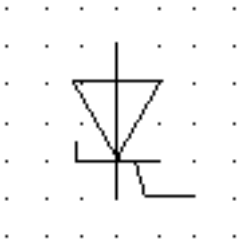

Name:	Reverse conducting triode thyristor, P-gate (cathode-side controlled)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-04-14
Keywords:	semiconductors, thyristors
Applies:	S00613; S00619; S00638
Shape class:	Equilateral triangles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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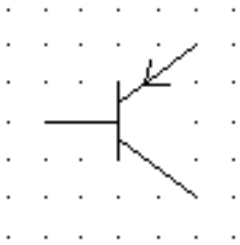
S00663



Name:	PNP transistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-01
Keywords:	PNP, semiconductors, transistors
Applies:	S00613; S00625; S00629
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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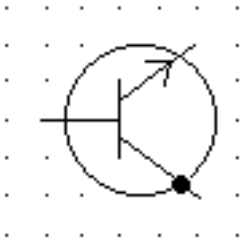
S00664



Name:	NPN transistor with collector connected to the envelope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-02
Keywords:	NPN, semiconductors, transistors
Applies:	S00016; S00062; S00613; S00627; S00629
Shape class:	Arrows, Circles, Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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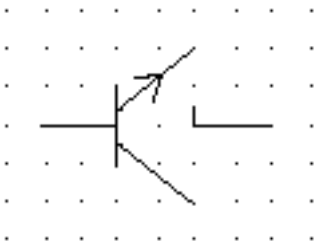

Name:	NPN avalanche transistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-03
Keywords:	avalanche, NPN, semiconductors, transistors
Applies:	S00613; S00627; S00629; S00638
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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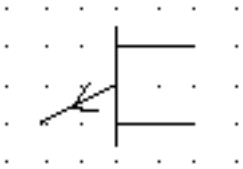

Name:	Unijunction transistor with P-type base
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-04
Keywords:	P-type base, semiconductors, transistors, unijunction
Applies:	S00616; S00627
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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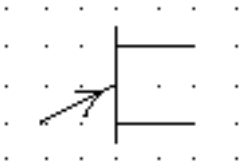
S00667



Name:	Unijunction transistor with N-type base
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-05
Keywords:	N-type base, semiconductors, transmission devices, unijunction
Applies:	S00616; S00625
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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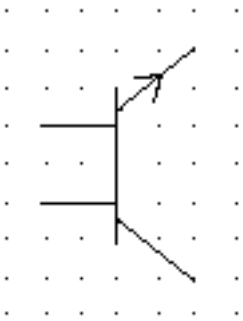

Name:	NPN transistor with transverse biased base
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-06
Keywords:	NPN, semiconductors, transistors, transverse biased base
Applies:	S00616; S00627; S00629
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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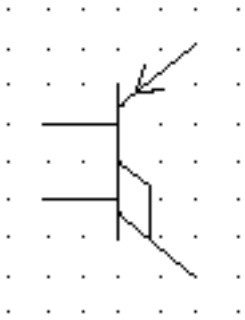
S00669



Name:	PNIP transistor with connection to the intrinsic region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-07
Keywords:	intrinsic region, PNIP, semiconductors, transistors
Applies:	S00616; S00625; S00634
Shape class:	Arrows, Lines , Parallelograms
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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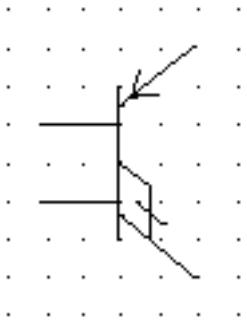
S00670



Name:	PNIN transistor with connection to the intrinsic region
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-08
Keywords:	intrinsic region, PNIN, semiconductors, transistors
Applies:	S00616; S00625; S00635
Shape class:	Arrows, Lines , Parallelograms
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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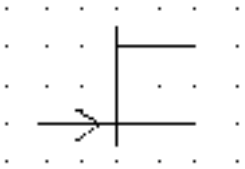
S00671



Name:	Junction field effect transistor with N-type channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-09
Keywords:	field effect transistors, junction field effect, N-type channel, semiconductors, transistors
Applies:	S00616; S00617; S00620
Application notes:	A00164
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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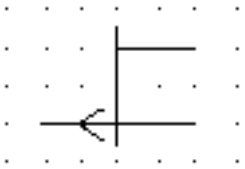
S00672



Name:	Junction field effect transistor with P-type channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-10
Keywords:	field effect transistors, junction field effect, P-type channel, semiconductors, transistors
Applies:	S00616; S00617; S00621
Application notes:	A00164
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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S00673



Name:	Insulated gate field effect transistor IGFET enhancement type, single gate, P-type channel without substrate connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-11
Keywords:	enhancement type, field effect transistors, IGFET, insulated gate, P-type channel, semiconductors, transistors
Applied in:	S00675
Applies:	S00618; S00623; S00624
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	For an example with multiple gates, see symbol S00679.

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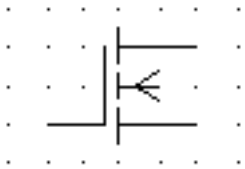
S00674



Name:	Insulated gate field effect transistor IGFET enhancement type, single gate, N-type channel without substrate connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-12
Keywords:	enhancement type, field effect transistors, IGFET, insulated gate, N-type channel, semiconductors, transistors
Applied in:	S00676
Applies:	S00618; S00622; S00624
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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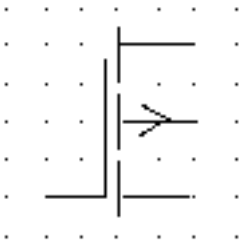
S00675



Name:	Insulated gate field effect transistor IGFET enhancement type, single gate, P-type channel with substrate connection brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-13
Keywords:	enhancement type, field effect transistors, IGFET, insulated gate, P-type channel, semiconductors, transistors
Applies:	S00618; S00623; S00624; S00673
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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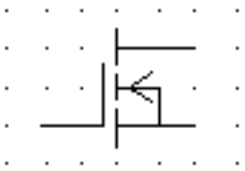
S00676



Name:	Insulated gate field effect transistor IGFET enhancement type, single gate, N-type channel with substrate internally connected to source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-14
Keywords:	enhancement type, field effect transistors, IGFET, insulated gate, N-type channel, semiconductors, transistors
Applies:	S00618; S00622; S00624; S00674
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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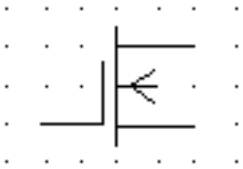
S00677



Name:	Insulated gate field effect transistor IGFET, depletion type, single gate, N-type channel without substrate connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-15
Keywords:	depletion type, field effect transistors, IGFET, insulated gate, N-type channel, semiconductors, transistors
Applies:	S00617; S00622; S00624
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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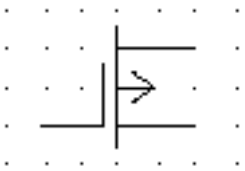

Name:	Insulated gate field effect transistor IGFET, depletion type, single gate, P-type channel without substrate connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-16
Keywords:	depletion type, field effect transistors, IGFET, insulated gate, P-type channel, semiconductors, transistors
Applied in:	S00679
Applies:	S00617; S00623; S00624
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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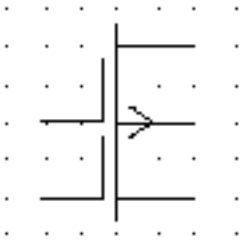
S00679



Name:	Insulated gate field effect transistor IGFET, depletion type, two gates, P-type channel with substrate connection brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-17
Keywords:	depletion type, field effect transistors, IGFET, insulated gate, P-type channel, semiconductors, transistors
Applies:	S00617; S00623; S00624; S00678
Application notes:	A00183
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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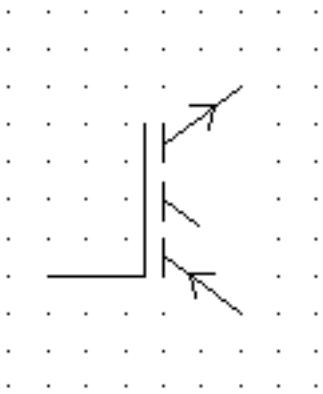
S00680



Name:	Insulated-gate bipolar transistor (IGBT) enhancement type, P channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-18
Keywords:	bipolar transistors, enhancement type, IGBT, insulated gate, P-type channel, semiconductors, transistors
Applies:	S00618; S00624; S00625; S00627; S00631
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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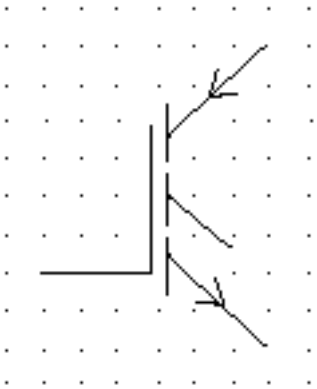

Name:	Insulated-gate bipolar transistor (IGBT) enhancement type, N channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-19
Keywords:	bipolar transistors, enhancement type, IGBT, insulated gate, N-type channel, semiconductors, transistors
Applies:	S00618; S00624; S00625; S00627; S00631
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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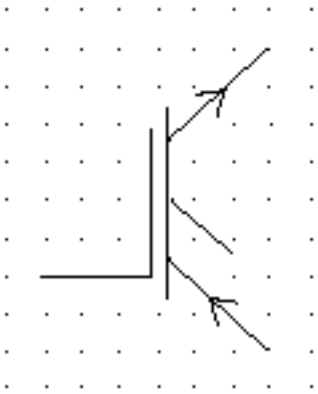

Name:	Insulated-gate bipolar transistor (IGBT) depletion type, P channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-20
Keywords:	bipolar transistors, depletion type, IGBT, insulated gate, P-type channel, semiconductors, transistors
Applies:	S00617; S00624; S00625; S00627; S00631
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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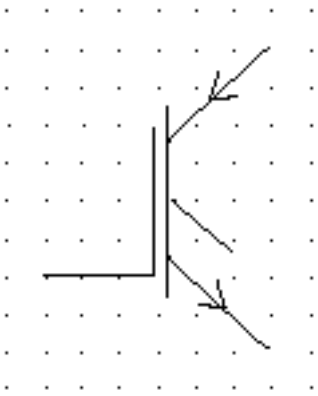

Name:	Insulated-gate bipolar transistor (IGBT) depletion type, N channel
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-05-21
Keywords:	bipolar transistors, depletion type, IGBT, insulated gate, N-type channel, semiconductors, transistors
Applies:	S00617; S00624; S00625; S00627; S00631
Shape class:	Arrows, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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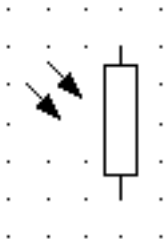

Name:	Light dependent resistor (LDR); Photo resistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-01
Keywords:	light dependant devices, photo-conductive devices, photo-sensitive devices, resistors
Applies:	S00127; S00555
Shape class:	Arrows, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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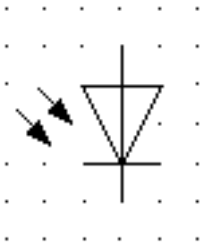

Name:	Photodiode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-02
Keywords:	diodes, photo-conductive devices, photo-sensitive devices
Applies:	S00127; S00641
Shape class:	Arrows, Equilateral triangles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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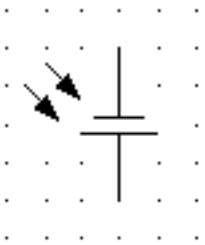

Name:	Photovoltaic cell
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-03
Keywords:	photo-sensitive devices, photovoltaic devices, semiconductors
Applies:	S00127; S00898
Shape class:	Arrows, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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S00687



Name:	Phototransistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-04
Keywords:	photo-sensitive devices, phototransistors, PNP, semiconductors
Applied in:	S00691, S00692
Applies:	S00127; S00625; S00629
Shape class:	Arrows, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	PNP type is shown

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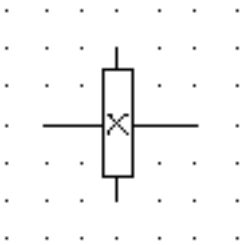

Name:	Hall generator with four connections
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-05
Keywords:	Hall generators, magnetic field sensitive devices
Applies:	S00123
Shape class:	Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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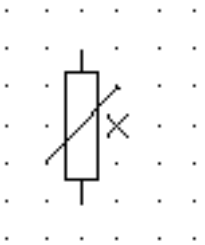

Name:	Magnetoresistor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-06
Keywords:	magnetic field sensitive devices, magnetoresistors, resistors
Applied in:	S00690
Applies:	S00083; S00123; S00555
Shape class:	Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	A linear type is shown.

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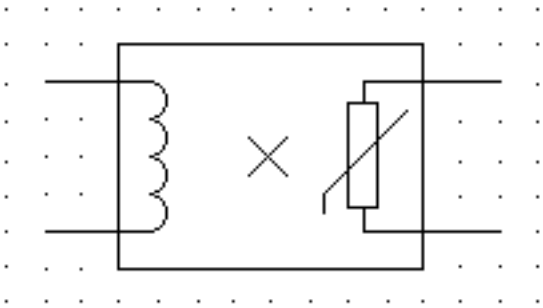
S00690



Name:	Magnetic coupling device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-07
Alternative names:	Magnetic isolator
Keywords:	coupling devices, isolators, magnetic field sensitive devices
Applies:	S00084; S00123; S00583; S00689
Shape class:	Half-circles, Lines , Rectangles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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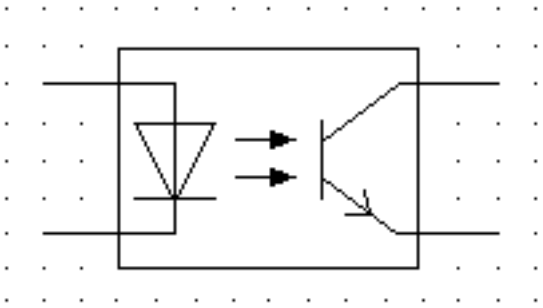

Name:	Optocoupler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-08
Alternative names:	Photocoupler; Opto isolator
Keywords:	coupling devices, isolators, photo-sensitive devices
Applies:	S00642; S00687
Shape class:	Arrows, Equilateral triangles, Lines , Rectangles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams
Remarks:	The symbol is shown with light-emitting diode and photo-transistor.

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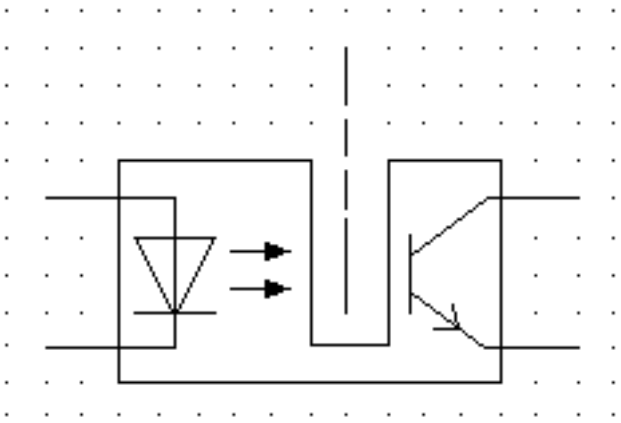

Name:	Optical coupling device with slot for light-barrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-06-09
Keywords:	coupling devices, photo-sensitive devices
Applies:	S00642; S00687
Shape class:	Arrows, Depicting shapes, Equilateral triangles, Lines
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams
Remarks:	This symbol is shown with a light-emitting diode and a photo-transistor together with a mechanical barrier.

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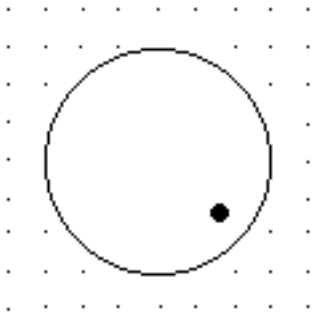

Name:	Gas-filled envelope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-01
Keywords:	electron tubes, envelopes
Applied in:	S00374, S00375, S00790, S00780, S00772, S00769, S00791, S00771
Applies:	S00062; S00116
Shape class:	Circles, Dots (points)
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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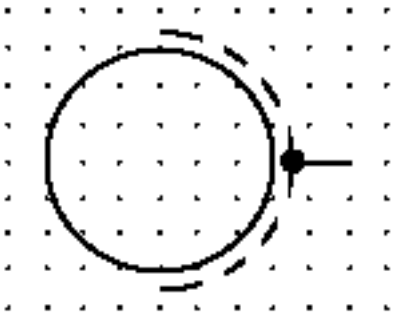

Name:	Envelope with external screen (shield)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-02
Keywords:	electron tubes, envelopes, shields
Applies:	S00062; S00065
Shape class:	Circles, Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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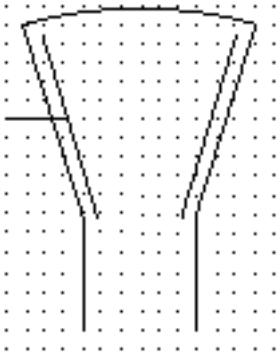

Name:	Envelope, conductive coating on internal surface
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-03
Keywords:	electron tubes, envelopes
Shape class:	Depicting shapes, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00696



Name:	Hot cathode, indirectly heated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-04
Keywords:	cathodes, electron tubes
Alternative forms:	S00697
Applied in:	S00751, S00746, S00745, S00765, S00755, S00763, S00749, S00757, S00756, S00747, S00759, S00748, S00767, S00753, S00750
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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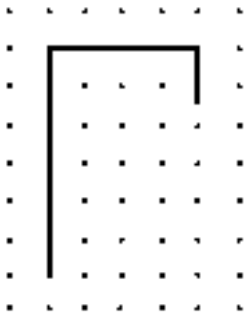

Name:	Hot cathode, indirectly heated
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-05
Keywords:	cathodes, electron tubes
Form:	Other form
Alternative forms:	S00696
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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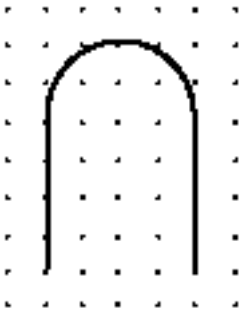

Name:	Hot cathode, directly heated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-06
Alternative names:	Heater for hot cathode, indirectly heated; Heater for thermocouple
Keywords:	cathodes, electron tubes, heaters
Alternative forms:	S00699
Applied in:	S00776, S00751, S00746, S00745, S00955, S00744, S00954, S00957, S00765, S00755, S00763, S00749, S00761, S00771, S00757, S00956, S00756, S00747, S00759, S00748, S00767, S00753, S00750
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00699



Name:	Hot cathode, directly heated
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-07
Alternative names:	Heater for hot cathode, indirectly heated; Heater for thermocouple
Keywords:	cathodes, electron tubes, heaters
Form:	Other form
Alternative forms:	S00698
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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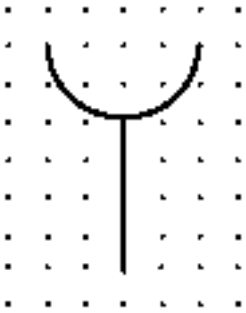
S00700



Name:	Photoelectric cathode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-08
Keywords:	cathodes, electron tubes, photoelectric
Applied in:	S00777
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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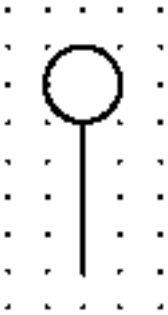
S00701



Name:	Cold cathode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-09
Alternative names:	Ionically heated cathode
Keywords:	cathodes, electron tubes
Applied in:	S00773, S00772, S00770, S00769, S00774, S00775
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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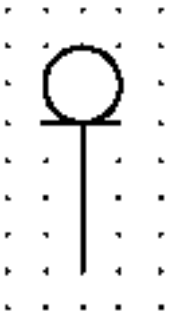
S00702



Name:	Composite electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-10
Keywords:	anodes, cathodes, elctrodes, electron tubes
Applied in:	S00793, S00792, S00772, S00770, S00794
Application notes:	A00165
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Composite electrode serving as an anode and/or as a cold cathode. Withdrawn because of obsolescence.

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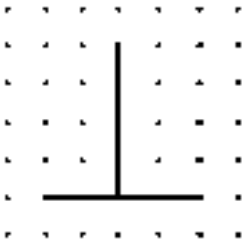
S00703



Name:	Anode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-11
Alternative names:	Plate; Collector (microwave devices)
Keywords:	anodes, collectors, electron tubes
Applied in:	S00746, S00745, S00773, S00777, S00744, S00764, S00779, S00755, S00763, S00770, S00769, S00771, S00757, S00774, S00756, S00747, S00718, S00759, S00758, S00748, S00753, S00760, S00754, S00775, S00778
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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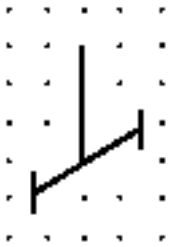
S00704



Name:	Fluorescent target
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-12
Keywords:	anodes, electron tubes
Applied in:	S00748
Application notes:	A00166
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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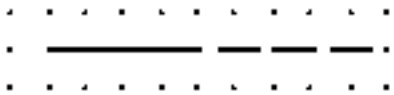
S00705



Name:	Grid
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-13
Keywords:	electron tubes, grids
Applied in:	S00751, S00746, S00745, S00744, S00717, S00747, S00782, S00748, S00750
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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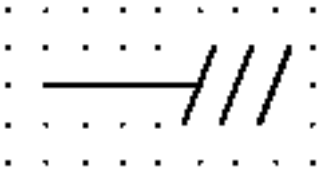
S00706



Name:	Ion diffusion barrier
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-07-14
Keywords:	electron tubes, solion
Applied in:	S00793, S00794
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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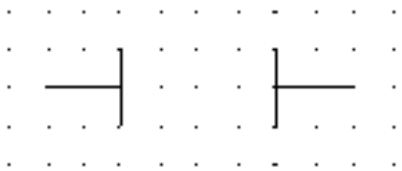
S00707



Name:	Lateral deflecting electrodes
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-01
Keywords:	cathode ray tubes, electrodes, electron tubes, television tubes
Alternative forms:	S00708
Applied in:	S00781, S00782, S00784, S00750, S00783
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	One pair of electrodes is shown.

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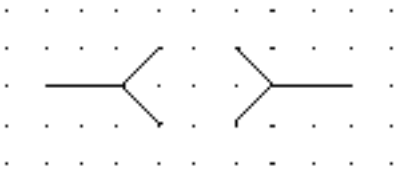
S00708



Name:	Lateral deflecting electrodes
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-02
Keywords:	cathode ray tubes, electrodes, electron tubes, television tubes
Form:	Other form
Alternative forms:	S00707
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	One pair of electrodes is shown. Withdrawn because of obsolescence.

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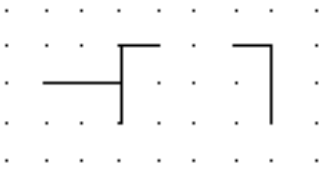
S00709



Name:	Intensity modulating electrode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-03
Keywords:	cathode ray tubes, electron tubes, television tubes
Applied in:	S00755, S00763, S00749, S00757, S00756, S00759, S00767, S00753
Application notes:	A00167
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00710



Name:	Focusing electrode with aperture
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-04
Alternative names:	Beam-forming plate
Keywords:	cathode ray tubes, electron tubes, television tubes
Applied in:	S00751, S00755, S00763, S00749, S00757, S00756, S00759, S00767, S00753, S00750
Application notes:	A00168
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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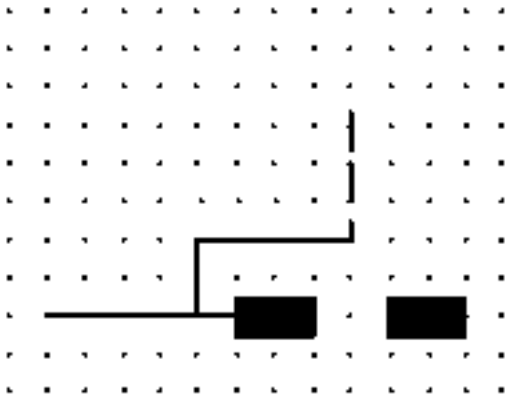
S00711



Name:	Beam-splitting electrode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-05
Keywords:	cathode ray tubes, electron guns, electron tubes
Applied in:	S00750
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Beam-splitting electrode internally connected to the final focusing electrode of the electron gun.

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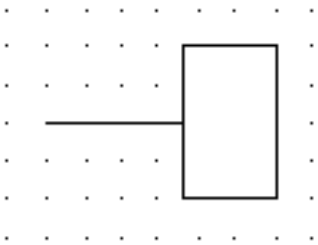
S00712



Name:	Cylindrical focusing electrode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-06
Alternative names:	Drift space electrode; Electronic lens element
Keywords:	cathode ray tubes, electron tubes, electronic lenses
Applied in:	S00749, S00753
Application notes:	A00168
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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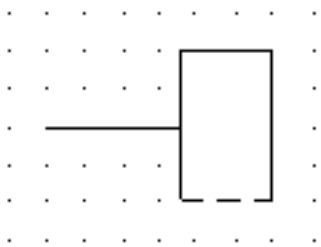
S00713



Name:	Cylindrical focusing electrode with grid
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-07
Keywords:	cathode ray tubes, electrodes, electron tubes, television tubes
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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S00714



Name:	Multi-aperture electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-08
Keywords:	cathode ray tubes, electrodes, electron tubes, television tubes
Application notes:	A00167
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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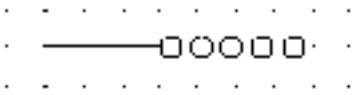
S00715



Name:	Quantizing electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-09
Alternative names:	Sampling electrode
Keywords:	cathode ray tubes, electron guns, electron tubes
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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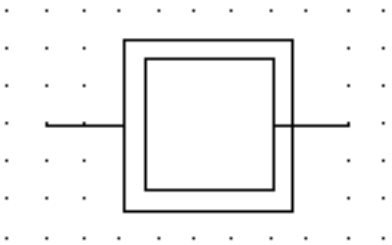
S00716



Name:	Radial deflecting electrodes
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-10
Keywords:	cathode ray tubes, electrodes, electron tubes, television tubes
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	One pair of electrodes is shown. Withdrawn because of obsolescence.

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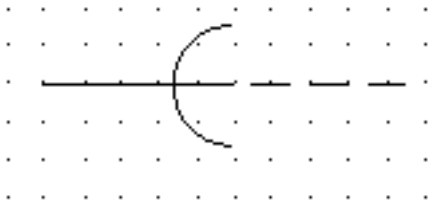
S00717



Name:	Grid with secondary emission
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-11
Keywords:	cathode ray tubes, electron tubes, grids, television tubes
Applies:	S00705
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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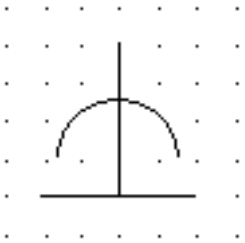
S00718



Name:	Anode with secondary emission
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-12
Alternative names:	Dynode
Keywords:	anodes, electron tubes
Applies:	S00703
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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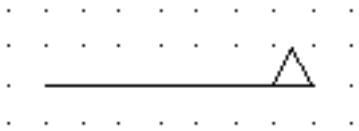
S00719



Name:	Photo-emissive electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-13
Keywords:	electrodes, electron tubes
Shape class:	Equilateral triangles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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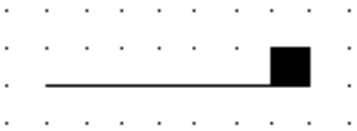
S00720



Name:	Storage electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-14
Keywords:	electrodes, electron tubes
Applied in:	S00723, S00722, S00721
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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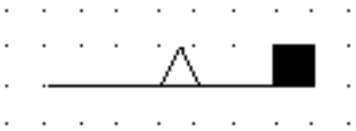
S00721



Name:	Photo-emissive storage electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-15
Keywords:	electrodes, electron tubes
Applies:	S00720
Shape class:	Equilateral triangles, Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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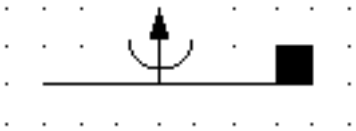
S00722



Name:	Storage electrode with secondary emission in the direction of the arrow
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-16
Keywords:	electrodes, electron tubes
Applies:	S00720
Shape class:	Arrows, Half-circles, Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Storage electrode with secondary emission in the direction of the arrow. Withdrawn because of obsolescence.

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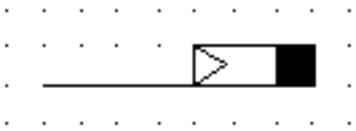
S00723



Name:	Photo-conductive storage electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-08-17
Keywords:	electrodes, electron tubes
Applies:	S00720
Shape class:	Equilateral triangles, Lines , Rectangles, Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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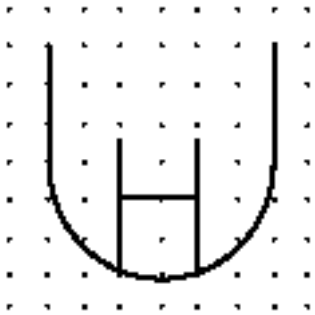
S00724



Name:	Electron gun assembly
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-01
Keywords:	cathodes, electron guns, microwave tubes
Form:	Simplified form
Alternative forms:	S00696; S00698
Applied in:	S00752, S00764, S00758, S00760, S00754
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown with envelope and simplified symbol for indirectly heated cathode. Withdrawn because of obsolescence.

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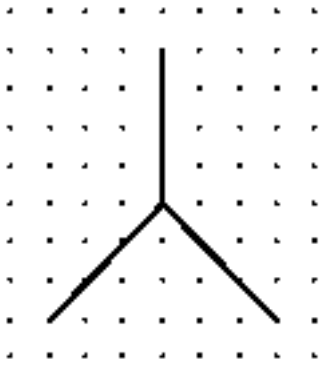
S00725



Name:	Reflector
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-02
Keywords:	electrodes, microwave tubes
Applied in:	S00752, S00751
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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S00726



Name:	Non-emitting sole for open slow-wave structure
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-03
Keywords:	microwave tubes
Applied in:	S00764, S00763, S00759, S00760
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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S00727



Name:	Non-emitting sole for closed slow-wave structure
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-04
Keywords:	microwave tubes
Applied in:	S00767
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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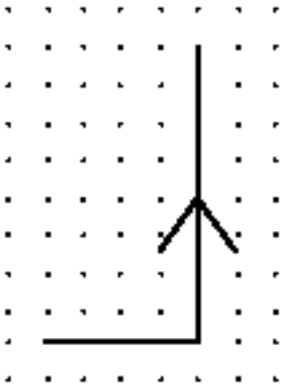
S00728



Name:	Emitting sole
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-05
Keywords:	microwave tubes
Applied in:	S00761, S00762
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The arrow indicates the direction of electron flow. Withdrawn because of obsolescence.

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S00729



Name:	Open slow-wave structure
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-06
Keywords:	microwave tubes
Applied in:	S00764, S00755, S00763, S00761, S00762, S00756, S00759, S00758, S00730, S00760
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The arrow indicates the direction of energy flow. Withdrawn because of obsolescence.

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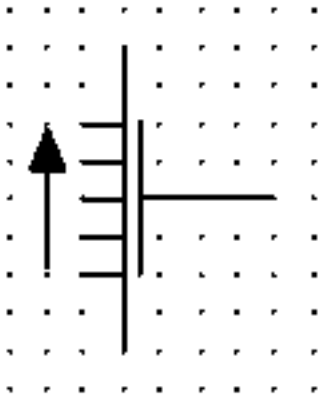
S00730



Name:	Single electrode for electrostatic focusing
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-07
Keywords:	microwave tubes
Applied in:	S00757
Applies:	S00729
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Single electrode for electrostatic focusing along open slow-wave structure. Withdrawn because of obsolescence.

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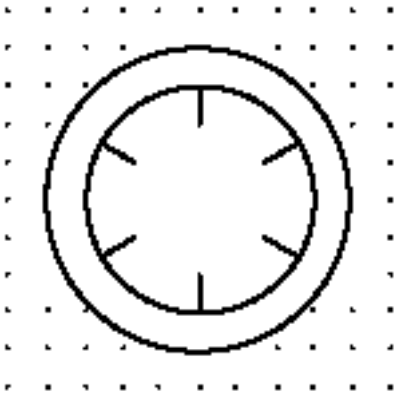
S00731



Name:	Closed slow-wave structure
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-08
Keywords:	microwave tubes
Applied in:	S00765
Applies:	S00062
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown with envelope.

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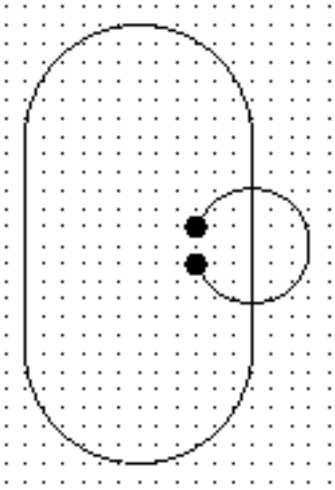

Name:	Cavity resonator forming an integral part of the tube
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-09
Keywords:	microwave tubes
Applied in:	S00752, S00751
Applies:	S00063; S01172
Shape class:	Dots (points), Half-circles, Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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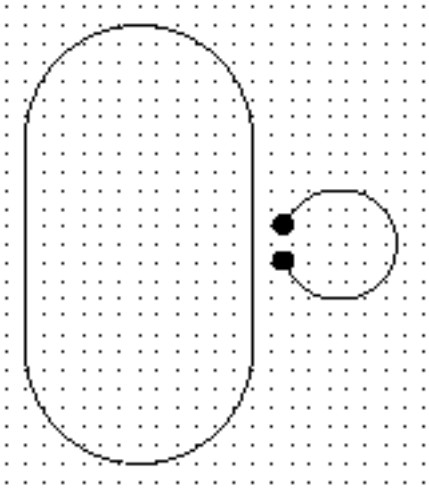

Name:	Cavity resonator, partly or wholly external to the tube
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-10
Keywords:	microwave tubes
Applied in:	S00753, S00754
Applies:	S00063; S01172
Shape class:	Circle segments, Dots (points), Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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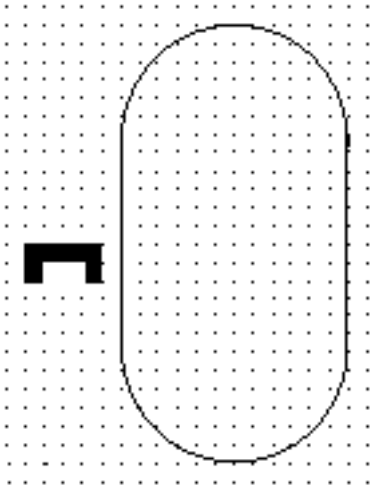

Name:	Permanent magnet producing a transverse field
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-11
Keywords:	magnetrons, microwave tubes
Applies:	S00063; S00210
Shape class:	Depicting shapes, Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Permanent magnet producing a transverse field in a crossed field or magnetron type tube. Withdrawn because of obsolescence.

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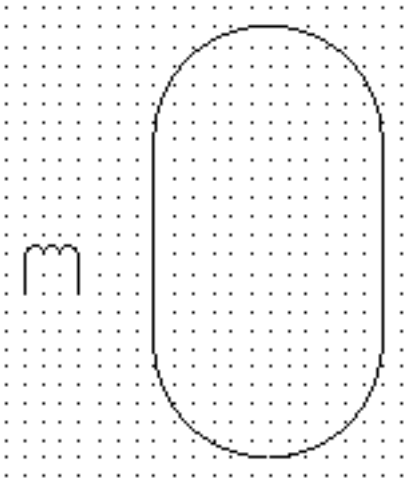

Name:	Electromagnet producing a transverse field
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-12
Keywords:	magnetrons, microwave tubes
Applies:	S00063; S00583
Shape class:	Half-circles, Ovals
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Electromagnet producing a transverse field in a crossed field or magnetron type tube. Withdrawn because of obsolescence.

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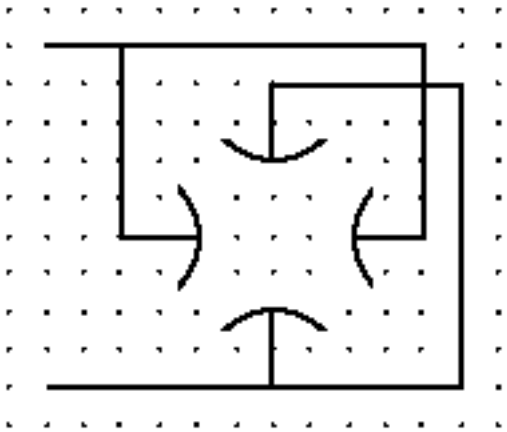

Name:	Tetrapole
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-13
Keywords:	electrodes, microwave tubes
Applied in:	S00737
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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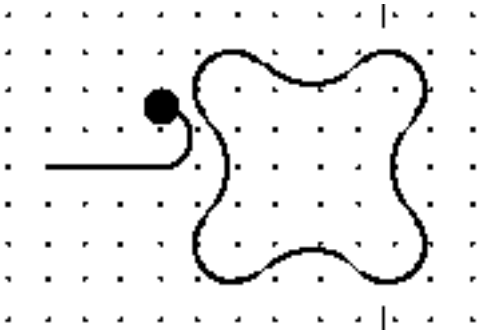
S00737



Name:	Tetrapole with loop coupler
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-14
Keywords:	electrodes, microwave tubes
Form:	Simplified form
Alternative forms:	S00736
Applies:	S00736; S01209
Shape class:	Circle segments, Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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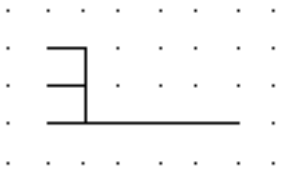
S00738



Name:	Slow-wave coupler
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-15
Keywords:	couplers, microwave tubes
Applied in:	S00757, S00756
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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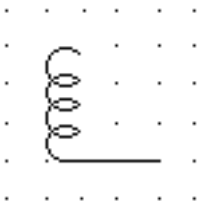

Name:	Helical coupler
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-09-16
Keywords:	couplers, microwave tubes
Applies:	S00583
Shape class:	Circle segments
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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S00740



Name:	X-ray tube anode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-10-01
Keywords:	anodes, electron tubes, electrodes
Applied in:	S00776
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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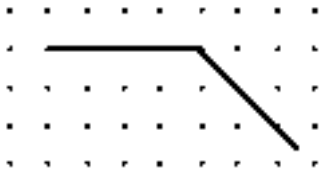
S00741



Name:	Starting electrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-10-02
Alternative names:	Trigger electrode; Igniting electrode
Keywords:	electron tubes, mercury arc rectifiers
Applied in:	S00779, S00771, S00778
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Withdrawn because of obsolescence.

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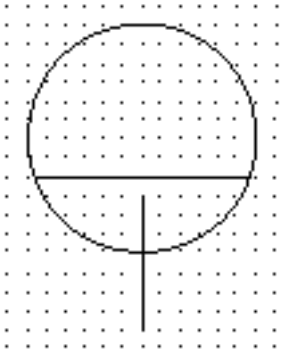
S00742



Name:	Pool cathode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-10-03
Keywords:	cathodes, electron tubes
Applied in:	S00779, S00743, S00778
Applies:	S00062
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown with an envelope. Withdrawn because of obsolescence.

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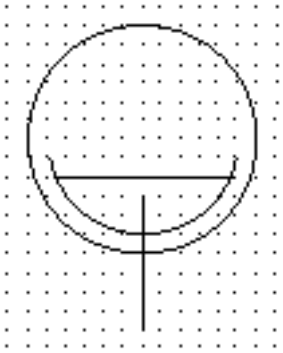
S00743



Name:	Insulated pool cathode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-10-04
Keywords:	cathodes, electron tubes, mercury arc rectifiers
Applies:	S00062; S00742
Shape class:	Circle segments, Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown within an envelope. Withdrawn because of obsolescence.

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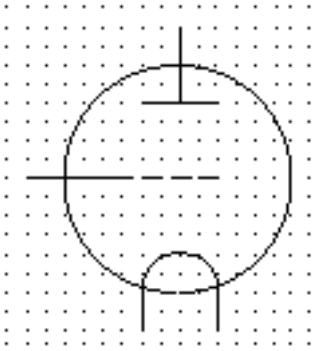
S00744



Name:	Triode, with directly heated cathode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-11-01
Keywords:	electron tubes
Applies:	S00062; S00698; S00703; S00705
Application notes:	A00248
Shape class:	Circles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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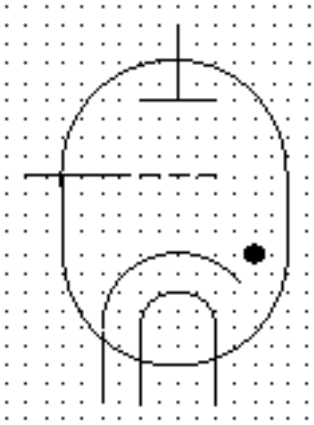
S00745



Name:	Triode, gasfilled with indirectly heated cathode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-11-02
Alternative names:	Thyratron
Keywords:	thyratrones, triodes
Applies:	S00063; S00116; S00696; S00698; S00703; S00705
Application notes:	A00248
Shape class:	Dots (points), Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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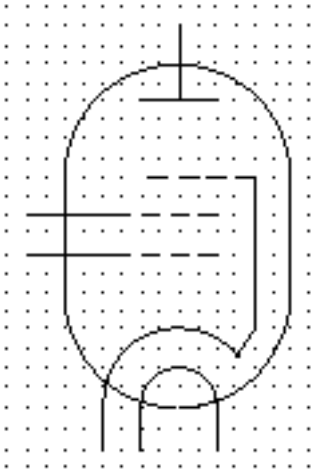
S00746



Name:	Pentode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-11-03
Keywords:	electron tubes
Applies:	S00063; S00696; S00698; S00703; S00705
Application notes:	A00248
Shape class:	Half-circles, Lines , Ovals
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Pentode, with indirectly heated cathode and internal strap between suppressor-grid and cathode.

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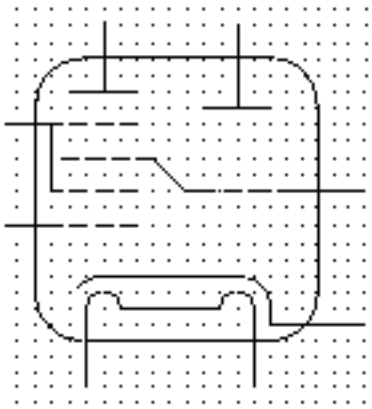
S00747



Name:	Triode hexode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-11-04
Keywords:	electron tubes
Applies:	S00063; S00696; S00698; S00703; S00705
Application notes:	A00248
Shape class:	Half-circles, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Triode hexode, indirectly heated. Withdrawn because of obsolescence.

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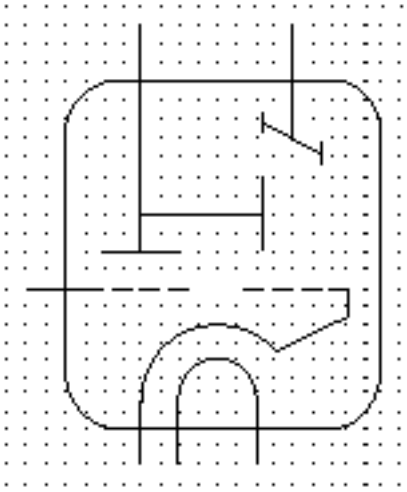

Name:	Tuning indicator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-11-05
Alternative names:	Magic eye
Keywords:	electron tubes
Applies:	S00696; S00698; S00703; S00704; S00705
Application notes:	A00248
Shape class:	Half-circles, Lines , Squares
Function class:	K Processing signals or information, P Presenting information
Application class:	Circuit diagrams
Remarks:	Tuning indicator (magic eye) with indirectly heated cathode. Withdrawn because of obsolescence.

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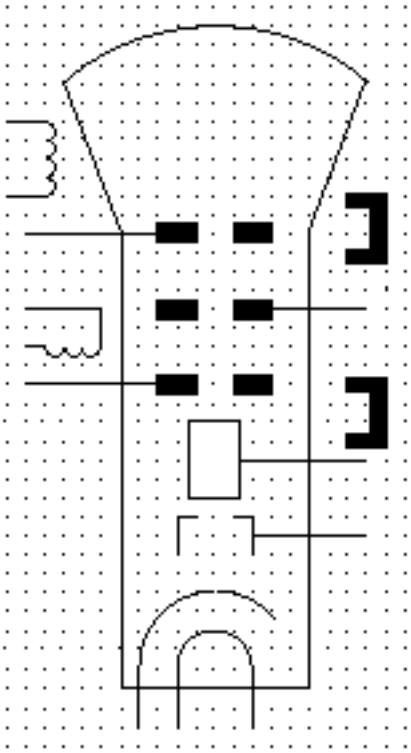
S00749



Name:	Cathode-ray tube with electromagnetic deviation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-12-01
Alternative names:	Television picture tube
Keywords:	cathode ray tubes, electron tubes, television tubes
Applies:	S00210; S00583; S00696; S00698; S00709; S00710; S00712
Application notes:	A00248
Shape class:	Depicting shapes
Function class:	K Processing signals or information, P Presenting information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - permanent magnet focusing and ion trap - intensity modulating electrode - indirectly heated cathode.

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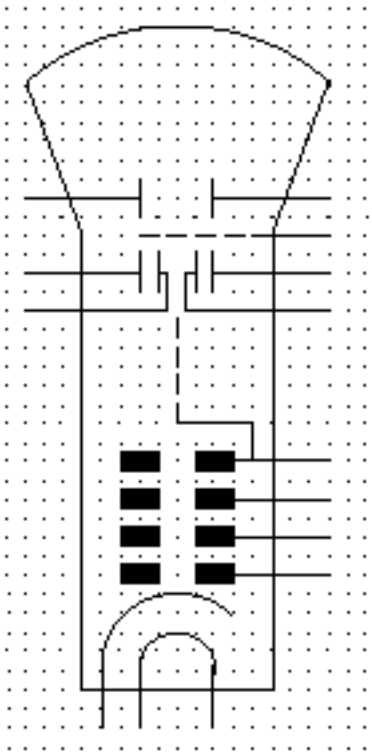
S00750



Name:	Double-beam cathode-ray tube, split-beam type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-12-02
Keywords:	cathode ray tubes, electron tubes
Applies:	S00696; S00698; S00705; S00707; S00710; S00711
Application notes:	A00248
Shape class:	Depicting shapes
Function class:	K Processing signals or information, P Presenting information
Application class:	Circuit diagrams

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Remarks: The symbol is shown with: - electrostatic deflection
- indirectly heated cathode.

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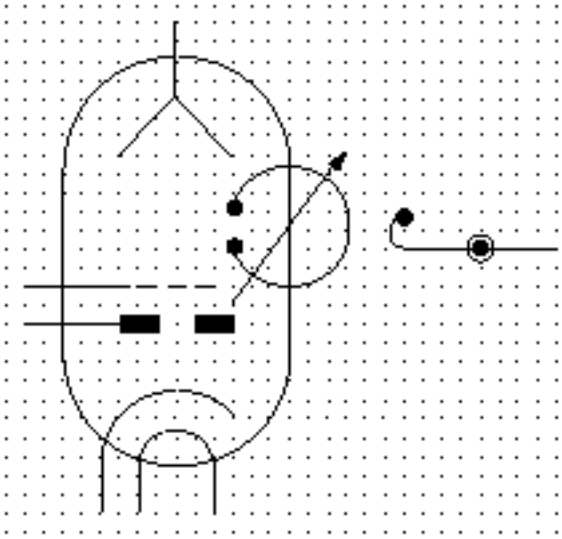
S00751



Name:	Reflex klystron
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-01
Keywords:	electron tubes, klystrons, microwave tubes
Alternative forms:	S00752
Applies:	S00063; S00081; S00696; S00698; S00705; S00710; S00725; S00732; S01209
Application notes:	A00248
Shape class:	Arrows, Circle segments, Dots (points), Lines , Ovals
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- beam-forming plate
- grid
- tunable integral cavity resonator
- reflector
- loop coupler to coaxial output. Withdrawn because of obsolescence.

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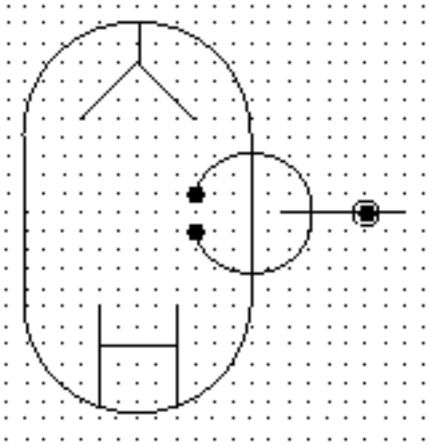
S00752



Name:	Reflex klystron
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-02
Keywords:	electron tubes, klystrons, microwave tubes
Form:	Simplified form
Alternative forms:	S00751
Applies:	S00063; S00724; S00725; S00732; S01142; S01203; S01204
Application notes:	A00248
Shape class:	Circles, Dots (points), Half-circles, Lines , Ovals
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- beam-forming plate
- grid
- tunable integral cavity resonator
- reflector
- loop coupler to coaxial output Withdrawn because of obsolescence.

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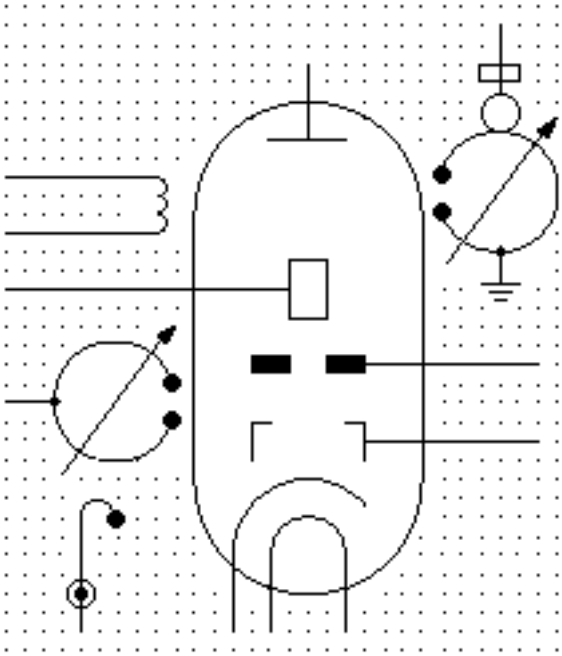
S00753



Name:	Reflex klystron
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-03
Keywords:	electron tubes, klystrons, microwave tubes
Alternative forms:	S00754
Applies:	S00063; S00081; S00200; S00583; S00696; S00698; S00703; S00709; S00710; S00712; S00733; S01138; S01142; S01172; S01207; S01209
Application notes:	A00248
Shape class:	Arrows, Circle segments, Circles, Dots (points), Lines , Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - external tunable input cavity resonator - drift space electrode - external tunable output cavity resonator with DC connection - collector - focusing coil - input loop coupler to coaxial waveguide - output window coupler to rectangular waveguide.

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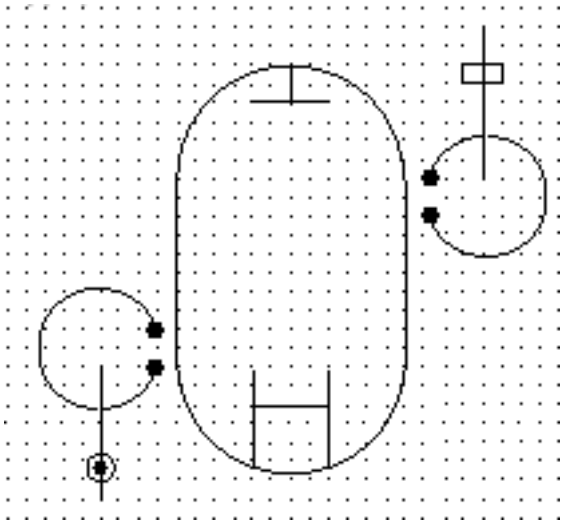
S00754



Name:	Reflex klystron
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-04
Keywords:	electron tubes, klystrons, microwave tubes
Form:	Simplified form
Alternative forms:	S00753
Applies:	S00063; S00703; S00724; S00733; S01138; S01142; S01172; S01203; S01204
Application notes:	A00248
Shape class:	Circle segments, Circles, Dots (points), Lines , Ovals
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - external tunable input cavity resonator - drift space electrode - external tunable output cavity resonator with DC connection - collector - focusing coil - input loop coupler to coaxial waveguide - output window coupler to rectangular waveguide. Withdrawn because of obsolescence.

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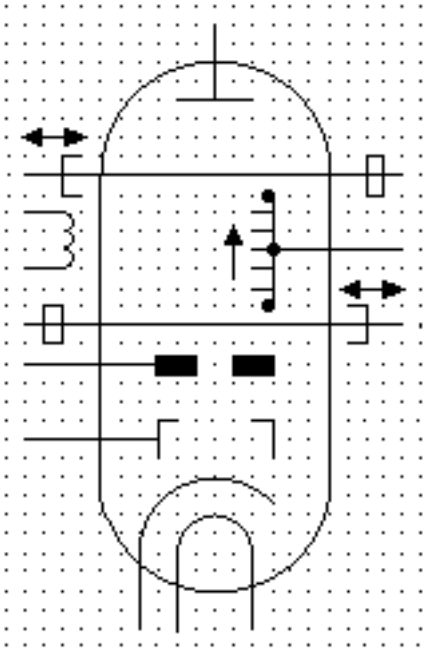
S00755



Name:	O-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-05
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00758
Applies:	S00063; S00583; S00696; S00698; S00703; S00709; S00710; S00729; S01138; S01179
Application notes:	A00248
Shape class:	Circles, Dots (points), Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - slow-wave structure with DC connection - collector - focusing coil - probe-couplers to rectangular waveguides each with sliding short. Withdrawn because of obsolescence.

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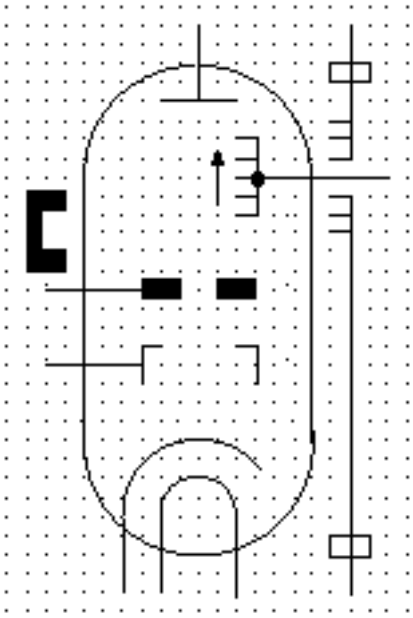
S00756



Name:	O-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-06
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00758
Applies:	S00063; S00210; S00696; S00698; S00703; S00709; S00710; S00729; S00738; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulation electrode - beam-forming plate - slow-wave structure with DC connection - collector - permanent focusing-magnet - slow-wave couplers to rectangular waveguides. Withdrawn because of obsolescence.

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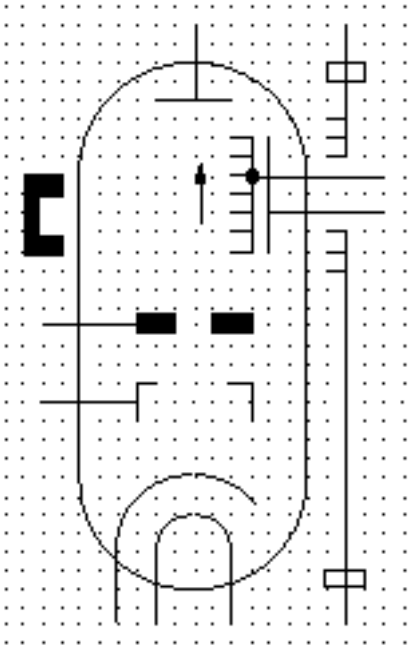
S00757



Name:	O-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-07
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00758
Applies:	S00063; S00210; S00696; S00698; S00703; S00709; S00710; S00730; S00738; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulation electrode - beam-forming plate - slow-wave structure with DC connection - electrostatic focusing electrode - collector - slow-wave couplers to rectangular waveguides. Withdrawn because of obsolescence.

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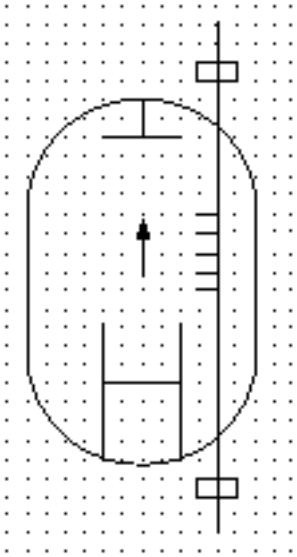
S00758



Name:	O-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-08
Keywords:	amplifiers, electron tubes, microwave tubes
Form:	Simplified form
Alternative forms:	S00755; S00756; S00757
Applies:	S00063; S00703; S00724; S00729; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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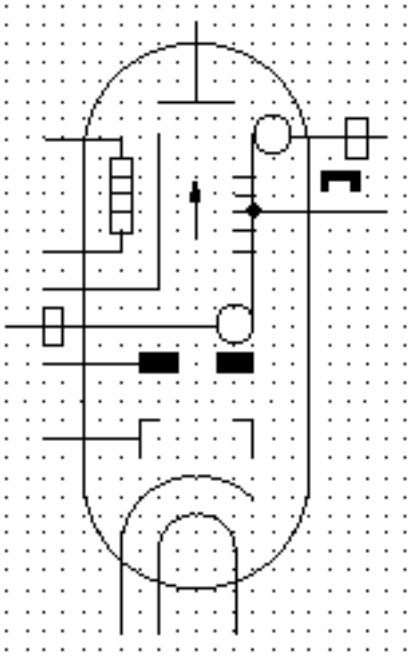
S00759



Name:	M-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-09
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00760
Applies:	S00063; S00210; S00566; S00696; S00698; S00703; S00709; S00710; S00726; S00729; S01138; S01207
Application notes:	A00248
Shape class:	Arrows, Circles, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - preheated non-emitting sole - slow-wave structure with DC connection - collector - permanent transverse field magnet - window couplers to rectangular waveguides. Withdrawn because of obsolescence.

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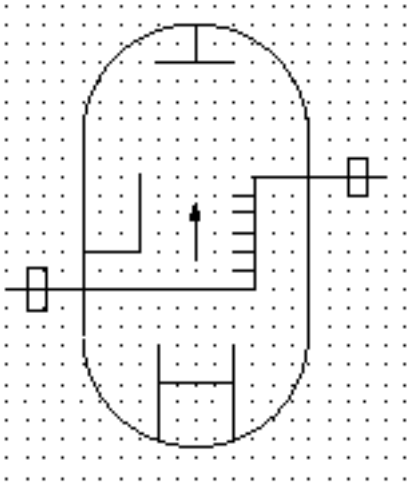
S00760



Name:	M-type forward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-10
Keywords:	amplifiers, electron tubes, microwave tubes
Form:	Simplified form
Alternative forms:	S00759
Applies:	S00063; S00703; S00724; S00726; S00729; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- intensity modulating electrode
- beam-forming plate
- preheated non-emitting sole
- slow-wave structure with DC connection
- collector
- permanent transverse field magnet
- window couplers to rectangular waveguides. Withdrawn because of obsolescence.

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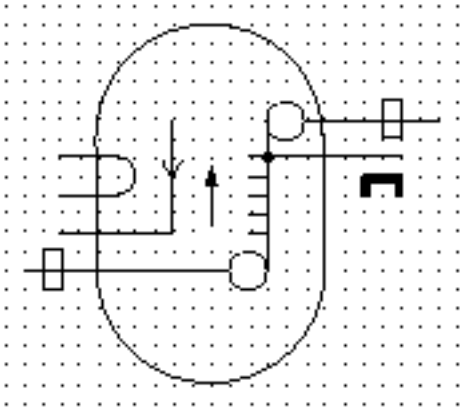
S00761



Name:	M-type backward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-11
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00762
Applies:	S00063; S00210; S00698; S00728; S00729; S01138; S01207
Application notes:	A00248
Shape class:	Arrows, Circles, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - filament-heated emitting sole
- slow-wave structure with DC connection
- permanent transverse field magnet
- window couplers to rectangular waveguides. Withdrawn because of obsolescence.

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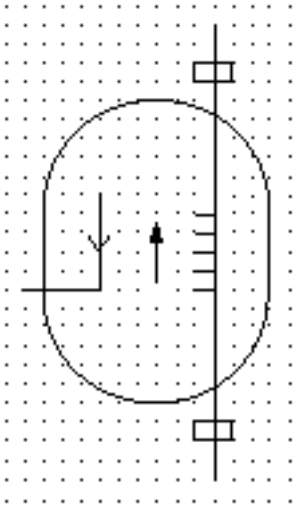
S00762



Name:	M-type backward travelling wave amplifier tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-12
Keywords:	amplifiers, electron tubes, microwave tubes
Form:	Simplified form
Alternative forms:	S00761
Applies:	S00063; S00728; S00729; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - filament-heated emitting sole
- slow-wave structure with DC connection
- permanent transverse field magnet
- window couplers to rectangular waveguides. Withdrawn because of obsolescence.

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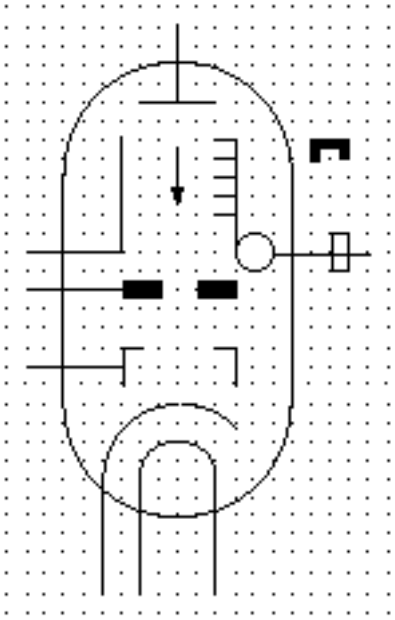
S00763



Name:	M-type backward travelling wave oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-13
Keywords:	amplifiers, electron tubes, microwave tubes
Alternative forms:	S00764
Applies:	S00063; S00210; S00696; S00698; S00703; S00709; S00710; S00726; S00729; S01138; S01207
Application notes:	A00248
Shape class:	Arrows, Circles, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information

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Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - non-emitting sole - slow-wave structure with DC connection via waveguide - collector - permanent transverse field magnet - window coupler to rectangular waveguide. Withdrawn because of obsolescence.

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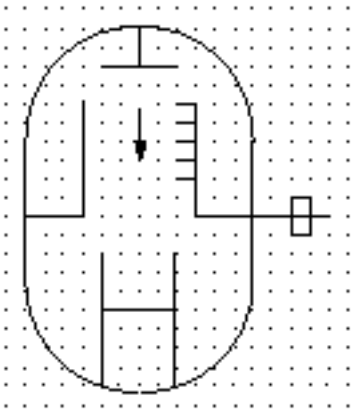
S00764



Name:	M-type backward travelling wave oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-14
Keywords:	amplifiers, electron tubes, microwave tubes
Form:	Simplified form
Alternative forms:	S00763
Applies:	S00063; S00703; S00724; S00726; S00729; S01138
Application notes:	A00248
Shape class:	Arrows, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy, K Processing signals or information
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- intensity modulating electrode
- beam-forming plate
- non-emitting sole
- slow-wave structure with DC connection via waveguide
- collector
- permanent transverse field magnet
- window coupler to rectangular waveguide. Withdrawn because of obsolescence.

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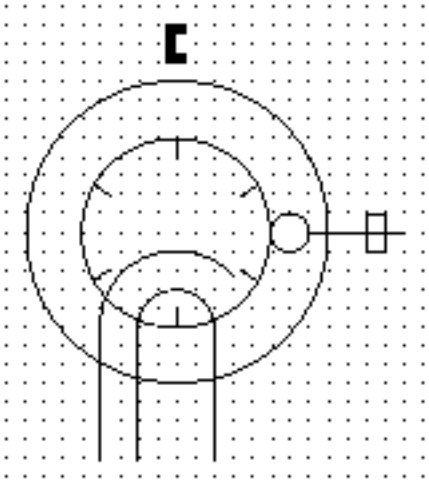
S00765



Name:	Magnetron oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-15
Keywords:	electron tubes, magnetrons, microwave tubes, oscillators
Alternative forms:	S00766
Applies:	S00210; S00696; S00698; S00731; S01138; S01207
Application notes:	A00248
Shape class:	Circles, Half-circles, Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- closed slow-wave structure with DC connection via waveguide
- permanent field magnet
- window-coupler to rectangular waveguide. Withdrawn because of obsolescence.

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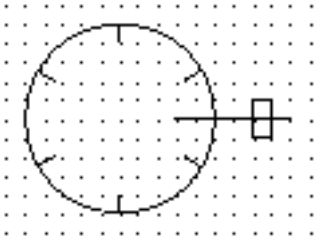

Name:	Magnetron oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-16
Keywords:	electron tubes, magnetrons, microwave tubes, oscillators
Form:	Simplified form
Alternative forms:	S00765
Applies:	S01138
Application notes:	A00248
Shape class:	Circles, Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - closed slow-wave structure with DC connection via waveguide - permanent field magnet - window-coupler to rectangular waveguide. Withdrawn because of obsolescence.

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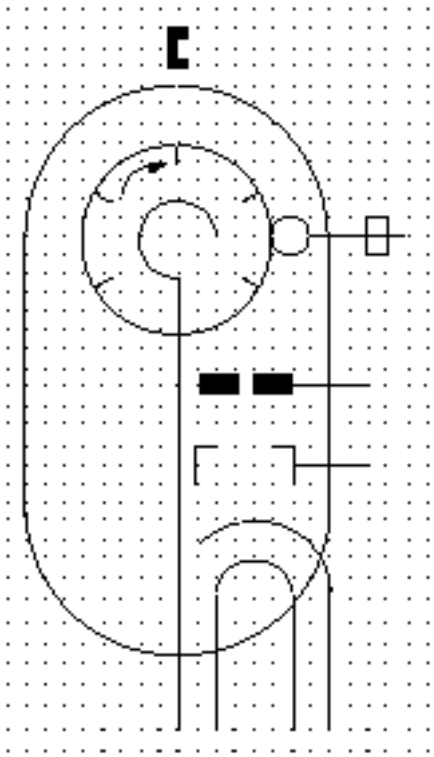

Name:	Backward travelling wave oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-17
Alternative names:	Voltage tunable magnetron
Keywords:	electron tubes, magnetrons, microwave tubes, oscillators
Alternative forms:	S00768
Applies:	S00063; S00095; S00210; S00696; S00698; S00709; S00710; S00727; S01138; S01207
Application notes:	A00248

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Shape class:	Arrows, Circles, Half-circles, Lines , Ovals, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - indirectly heated cathode - intensity modulating electrode - beam-forming plate - closed slow-wave structure with DC connection via waveguide - non-emitting sole - permanent field magnet - window-coupler to rectangular waveguide. Withdrawn because of obsolescence.

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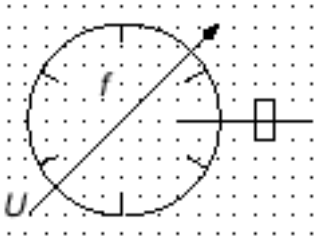

Name:	Backward travelling wave oscillator tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-13-18
Alternative names:	Voltage tunable magnetron
Keywords:	electron tubes, magnetrons, microwave tubes, oscillators
Form:	Simplified form
Alternative forms:	S00767
Applies:	S00081; S01138
Shape class:	Arrows, Characters, Circles, Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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Remarks:

The symbol is shown with: - indirectly heated cathode
- intensity modulating electrode
- beam-forming plate
- closed slow-wave structure with DC connection via waveguide
- non-emitting sole
- permanent field magnet
- window-coupler to rectangular waveguide. Withdrawn because of obsolescence.

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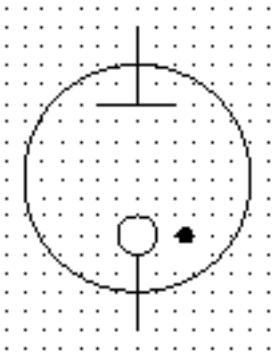

Name:	Cold-cathode tube, gas-filled
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-01
Alternative names:	Voltage stabilizer
Keywords:	cold-cathode tubes, voltage stabilizers
Applied in:	S00770, S01217
Applies:	S00062; S00116; S00693; S00701; S00703
Application notes:	A00248
Shape class:	Circles, Dots (points), Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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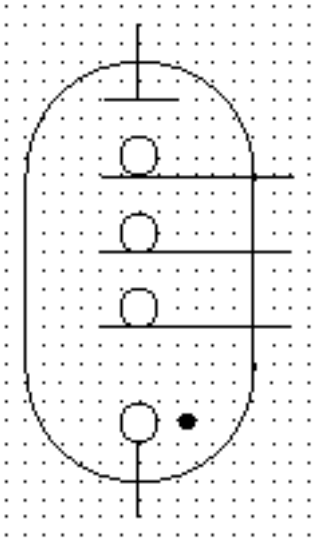

Name:	Voltage stabilizer, gas-filled, stabilizing several voltages
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-02
Keywords:	cold-cathode tubes, voltage stabilizers
Applies:	S00063; S00116; S00701; S00702; S00703; S00769
Application notes:	A00165, A00248
Shape class:	Circles, Dots (points), Lines , Ovals
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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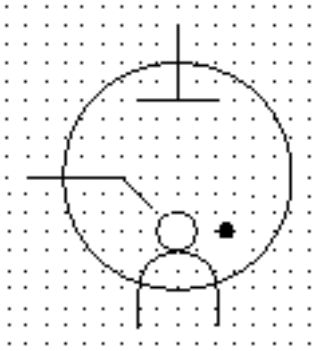

Name:	Trigger tube with ionically heated cathode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-03
Keywords:	electron tubes, trigger tubes
Applies:	S00062; S00116; S00693; S00698; S00703; S00741
Application notes:	A00248
Shape class:	Characters, Dots (points), Half-circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams
Remarks:	Trigger tube with ionically heated cathode and supplementary heating. Withdrawn because of obsolescence.

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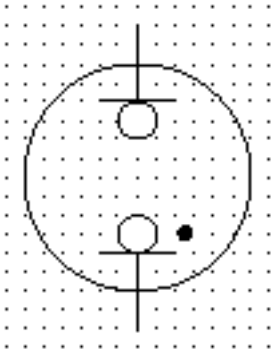

Name:	Cold-cathode gas-filled tube, symmetrical
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-04
Alternative names:	Neon indicator
Keywords:	cold-cathode tubes, electron tubes
Applies:	S00062; S00116; S00693; S00701; S00702
Application notes:	A00248
Shape class:	Circles, Dots (points), Lines
Function class:	P Presenting information
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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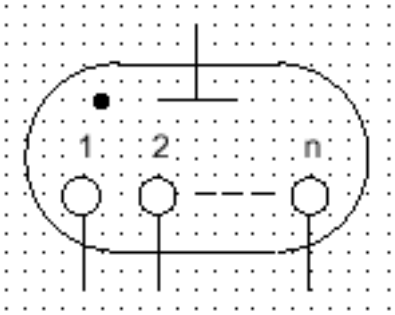

Name:	Character display tube, multi cold-cathode gas-filled
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-05
Keywords:	cold-cathode tubes, electron tubes
Applies:	S00063; S00116; S00701; S00703
Application notes:	A00248
Shape class:	Circles, Dots (points), Lines , Ovals
Function class:	P Presenting information
Application class:	Circuit diagrams
Remarks:	The characters displayed may be indicated above the cathodes as shown. Withdrawn because of obsolescence.

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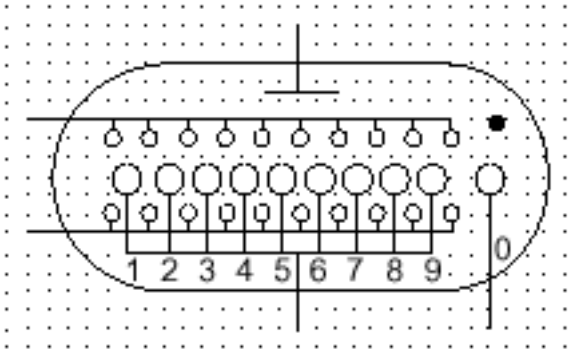

Name:	Counting tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-06
Keywords:	counters, electron tubes
Alternative forms:	S00775
Applies:	S00063; S00116; S00701; S00703
Application notes:	A00172, A00248
Shape class:	Circles, Dots (points), Lines , Ovals
Function class:	P Presenting information
Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - one set of main cathodes, - two sets of guide cathodes, - one output electrode. Withdrawn because of obsolescence.

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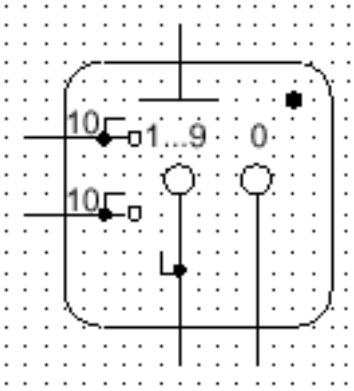

Name:	Counting tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-07
Keywords:	counters, electron tubes
Form:	Simplified form
Alternative forms:	S00774
Applies:	S00116; S00701; S00703
Application notes:	A00172
Shape class:	Characters, Circles, Dots (points), Lines
Function class:	P Presenting information
Application class:	Circuit diagrams
Remarks:	The symbol is shown with: - one set of main cathodes, - two sets of guide cathodes, - one output electrode. Withdrawn because of obsolescence.

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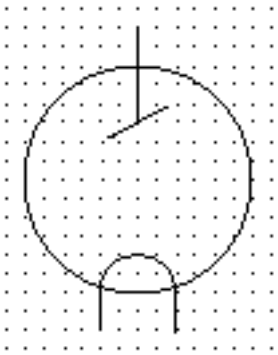

Name:	X-ray tube with directly heated cathode
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-08
Keywords:	electron tubes, X-ray tubes
Applies:	S00062; S00698; S00740
Shape class:	Circles, Half-circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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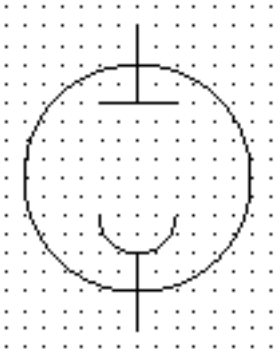

Name:	Phototube; Photoemissive diode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-09
Keywords:	electron tubes, photoelectric
Applies:	S00062; S00700; S00703
Shape class:	Circles, Half-circles, Lines
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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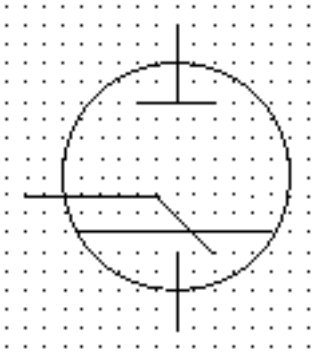

Name:	Ignitron
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-10
Keywords:	electron tubes, mercury arc rectifiers
Applies:	S00062; S00703; S00741; S00742
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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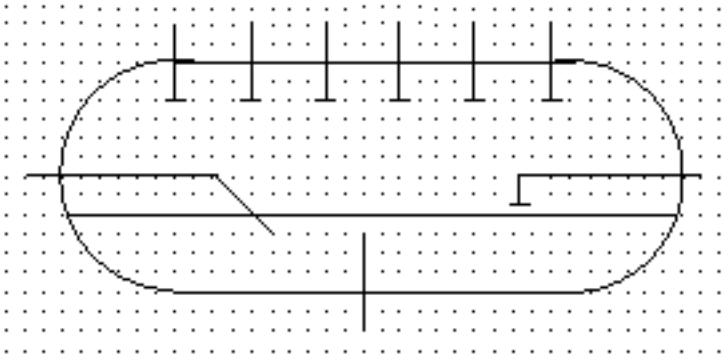

Name:	Rectifier with several main anodes
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-11
Keywords:	electron tubes, mercury arc rectifiers
Applies:	S00063; S00703; S00741; S00742
Shape class:	Half-circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams
Remarks:	Rectifier with six main anodes and with an ignitor and excitation anode shown. Withdrawn because of obsolescence.

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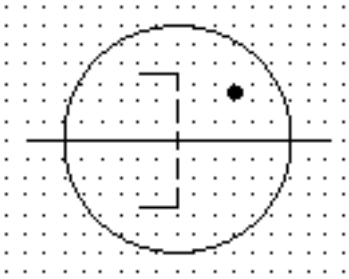

Name:	Transmit/receive tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-14-12
Alternative names:	T.R. tube
Keywords:	electron tubes
Applies:	S00062; S00116; S00693
Shape class:	Characters, Circles, Dots (points)
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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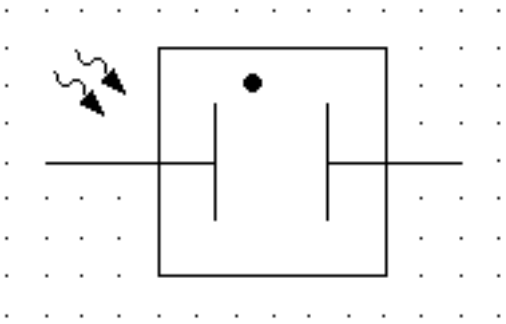

Name:	Ionization chamber
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-01
Keywords:	radiation detectors
Applies:	S00059; S00116; S00129; S00707
Shape class:	Arrows, Dots (points), Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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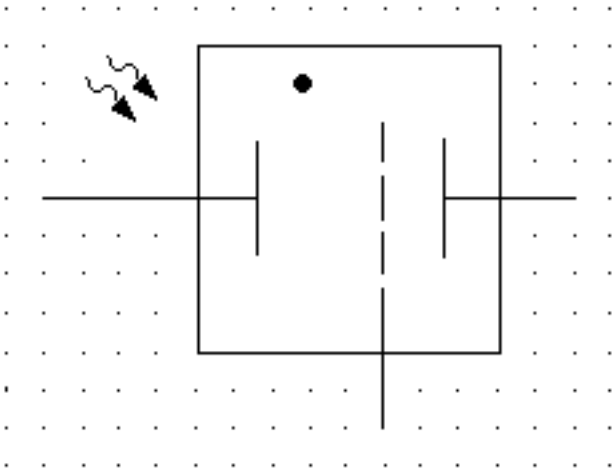

Name:	Ionization chamber with grid
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-02
Keywords:	radiation detectors
Applies:	S00116; S00129; S00705; S00707
Shape class:	Arrows, Dots (points), Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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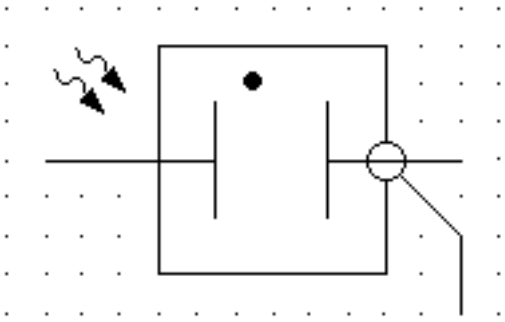
S00783



Name:	Ionization chamber with guard ring
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-03
Keywords:	radiation detectors
Applies:	S00007; S00059; S00116; S00129; S00707
Shape class:	Arrows, Dots (points), Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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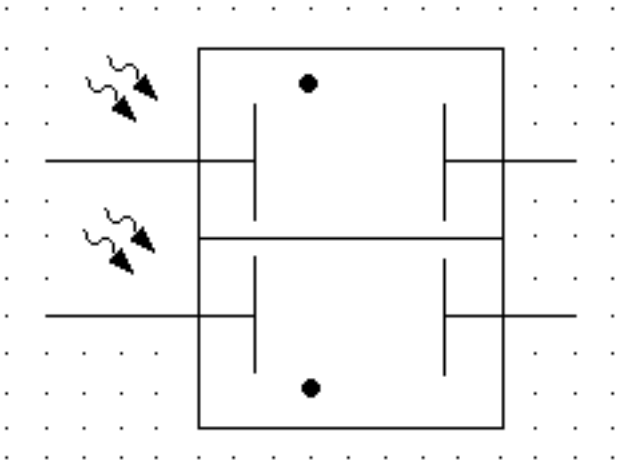
S00784



Name:	Ionization chamber, compensated type
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-04
Keywords:	radiation detectors
Applies:	S00060; S00116; S00129; S00707
Shape class:	Arrows, Dots (points), Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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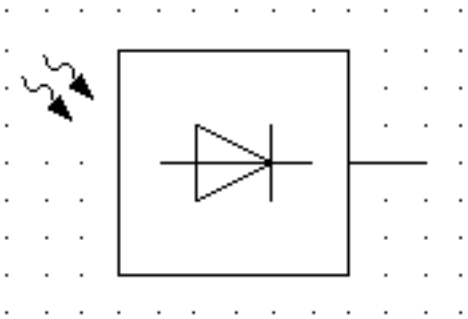

Name:	Detector, semiconductor type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-05
Keywords:	radiation detectors, semiconductors
Applies:	S00059; S00118; S00129; S00641
Shape class:	Arrows, Equilateral triangles, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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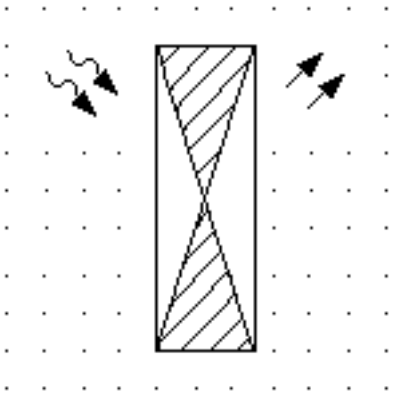
S00786



Name:	Scintillator detector
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-06
Keywords:	radiation detectors
Applies:	S00127; S00129
Shape class:	Arrows, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Function diagrams
Remarks:	Withdrawn because of obsolescence.

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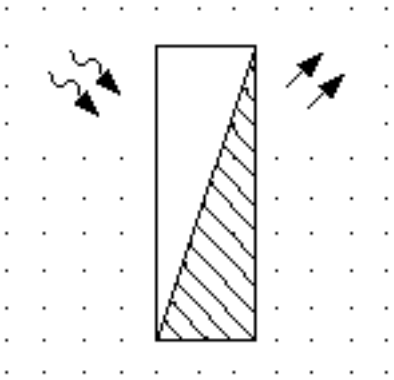

Name:	Cerenkov detector
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-07
Keywords:	detectors, radiation detectors
Applies:	S00127; S00129
Shape class:	Arrows, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Function diagrams
Remarks:	Withdrawn because of obsolescence.

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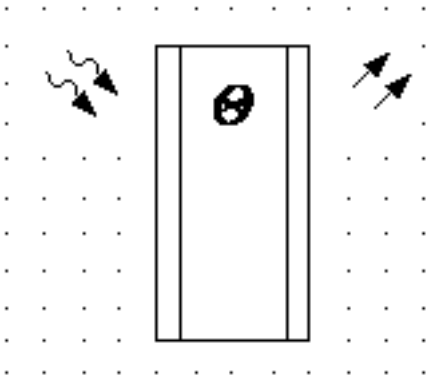
S00788



Name:	Thermoluminescence detector
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-08
Keywords:	detectors, radiation detectors
Applies:	S00127; S00129
Shape class:	Arrows, Characters, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Function diagrams
Remarks:	Withdrawn because of obsolescence.

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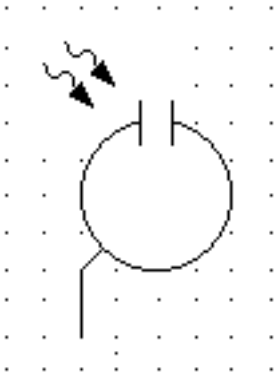

Name:	Faraday cup
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-09
Keywords:	detectors, radiation detectors
Applies:	S00062; S00129; S00567
Shape class:	Arrows, Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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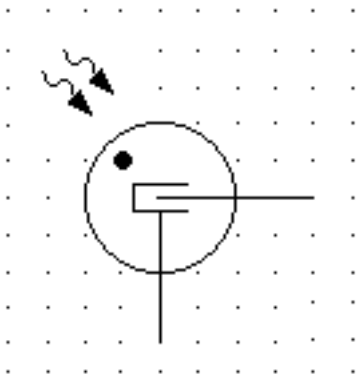
S00790



Name:	Counter tube
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-10
Keywords:	counters, radiation detectors
Applies:	S00062; S00116; S00129; S00693
Shape class:	Arrows, Circles, Dots (points), Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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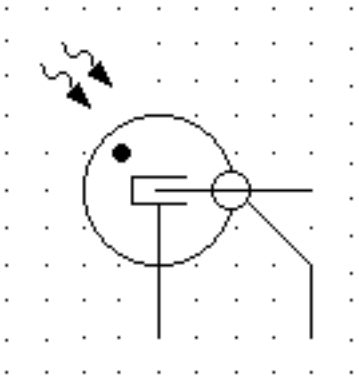

Name:	Counter tube with guard ring
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-15-11
Keywords:	counters, detectors, radiation detectors
Applies:	S00007; S00062; S00116; S00129; S00693
Shape class:	Arrows, Circles, Dots (points), Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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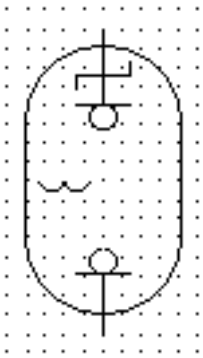

Name:	Coulomb accumulator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-16-01
Alternative names:	Electrochemical step-function device
Keywords:	accumulators, electrochemical devices
Applies:	S00063; S00115; S00135; S00702
Application notes:	A00169
Shape class:	Circles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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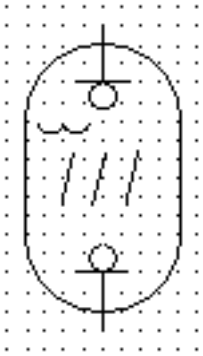
S00793



Name:	Solion diode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-16-02
Keywords:	diodes, electrochemical devices
Applies:	S00063; S00115; S00702; S00706
Shape class:	Circles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Withdrawn because of obsolescence.

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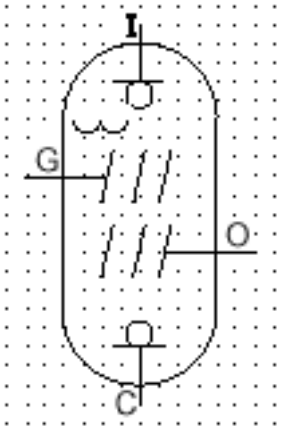

Name:	Solion tetrode
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-16-03
Keywords:	amplifiers, electrochemical devices
Applies:	S00063; S00115; S00702; S00706
Shape class:	Circles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	The shown letters are not part of the symbol: I = input G = grid O = output C = common Withdrawn because of obsolescence.

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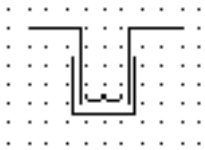
S00795



Name:	Conductivity cell
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-10-23
Earlier published in:	IEC 60617-5 (ed.2.0) 05-16-04
Keywords:	electrochemical devices
Applies:	S00115
Application notes:	A00171
Shape class:	Circle segments, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams
Remarks:	Element for measuring the conductivity of liquids. Withdrawn because of obsolescence.

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S00796



Name:	One winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-01
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Applied in:	S00797, S00798, S00800, S00799
Application notes:	A00120, A00122
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00797



Name:	Three separate windings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-02
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Applied in:	S00027, S00028, S00834
Applies:	S00796
Application notes:	A00120
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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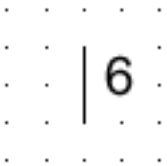
S00798



Name:	Six separate windings
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-03
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Applies:	S00796
Application notes:	A00120
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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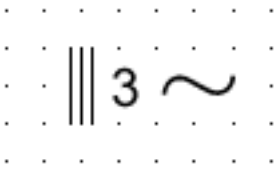
S00799



Name:	Three-phase winding, phases not interconnected
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-04
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Applies:	S00796; S01403
Application notes:	A00120, A00122
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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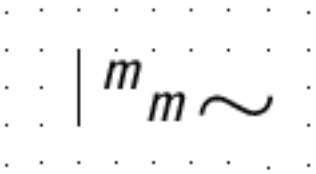
S00800



Name:	m-phase winding, phases not interconnected
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-05
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Applies:	S00796; S01403
Application notes:	A00122
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00801



Name:	Two-phase winding, four-wire
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-01-06
Keywords:	winding interconnections, windings - qualifying symbols, windings - separate
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00802



Name:	Two-phase winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-01
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00803



Name:	Three-phase winding, V (60°)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-02
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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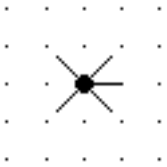
S00804



Name:	Four-phase winding with neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-03
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00805



Name:	Three-phase winding, T
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-04
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00806



Name:	Three-phase winding, delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-05
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Applied in:	S00302, S00868, S00858, S00862, S00864
Application notes:	A00121, A00135
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00807



Name:	Three-phase winding, open delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-06
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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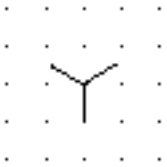
S00808



Name:	Three-phase winding, star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-07
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Applied in:	S00302, S00839, S00872, S00860, S00868, S00866, S00858, S00862, S00864
Application notes:	A00123, A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00809



Name:	Three-phase winding, star, with neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-08
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Applied in:	S00833
Application notes:	A00135
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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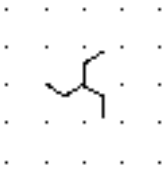
S00810



Name:	Three-phase winding, zigzag or interconnected star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-09
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Applied in:	S00866
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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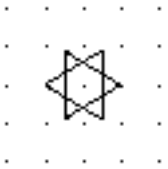
S00811



Name:	Six-phase winding, double delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-10
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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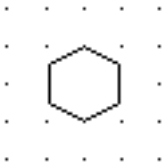
S00812



Name:	Six-phase winding, polygon
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-11
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Hexagons
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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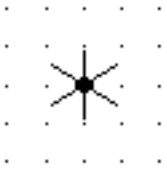
S00813



Name:	Six-phase winding, star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-12
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00814



Name:	Six-phase winding, fork with neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-02-13
Keywords:	winding interconnections, windings - internally connected, windings - qualifying symbols
Application notes:	A00135
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S00815



Name:	Winding of machine (different functions: commutating or compensating)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-6 (ed.2.0) 06-03-01
Alternative names:	Commutating winding; Compensating winding
Keywords:	machines - elements of, windings
Applies:	S00583
Replaced by:	S00583
Shape class:	Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For differentiation between windings having different functions, compare symbols S00815, S00816 and S00817. Replaced by symbol S00583 with application note A00263.

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S00816



Name:	Winding of machine (different functions: series winding)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-6 (ed.2.0) 06-03-02
Alternative names:	Series winding
Keywords:	machines - elements of, windings
Applies:	S00583
Replaced by:	S00583
Shape class:	Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For differentiation between windings having different functions, compare symbols S00815, S00816 and S00817. Replaced by symbol S00583 with application note A00263.

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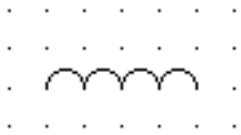
S00817



Name:	Winding of machine (different functions: shunt or separate winding)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-6 (ed.2.0) 06-03-03
Alternative names:	Shunt winding; Separate winding
Keywords:	machines - elements of, windings
Applies:	S00583
Replaced by:	S00583
Shape class:	Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	For differentiation between windings having different functions, compare symbols S00815, S00816 and S00817. Replaced by the symbol S00583 with application note A00263.

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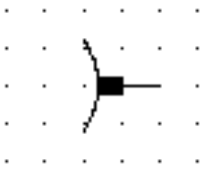
S00818



Name:	Brush (on slip-ring or commutator)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-03-04
Keywords:	brushes, machines - elements of
Applied in:	S00825
Application notes:	A00124
Shape class:	Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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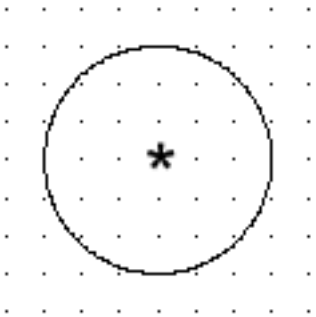
S00819



Name:	Machine, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-04-01
Alternative names:	Rotary converter; Generator; Synchronous generator; Motor; Synchronous motor
Keywords:	converters, generators, machines - types of, motors, power generators
Applied in:	S00027, S00028, S00165, S00164, S00192, S00830, S00839, S00828, S00822, S00834, S00837, S00823, S00825, S00829, S00824, S00827, S00833, S00831, S00820, S00821, S00836, S01009, S00838, S00832, S00826, S00835
Application notes:	A00125, A00126, A00191
Shape class:	Circles
Function class:	G Initiating a flow, M Providing mechanical energy, T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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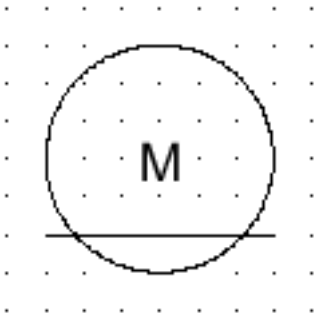

Name:	Linear motor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-04-02
Keywords:	machines - types of, motors
Applied in:	S00840
Applies:	S00819
Shape class:	Characters, Circles, Lines
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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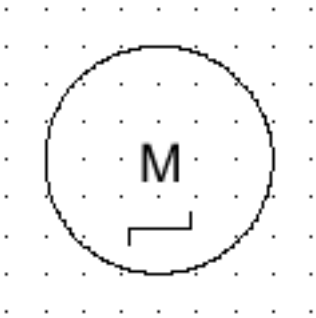

Name:	Stepping motor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-04-03
Keywords:	machines - types of, motors
Applies:	S00087; S00819
Shape class:	Circles, Lines
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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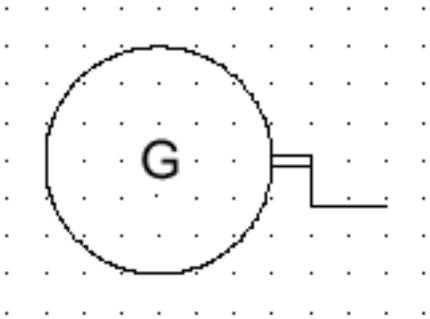
S00822



Name:	Hand-generator (magneto caller)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-6 (ed.2.0) 06-04-04
Keywords:	generators, machines - types of
Applies:	S00147; S00180; S00819
Shape class:	Circles, Lines
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Withdrawn because of technical obsolescence.

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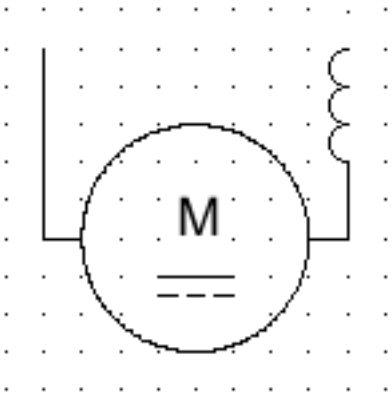

Name:	Series motor, DC
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-05-01
Keywords:	machines - direct current, motors
Applies:	S00583; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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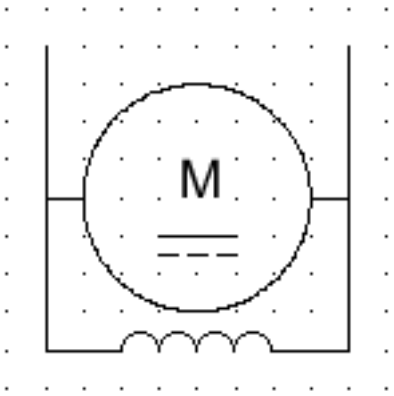

Name:	Shunt motor, DC
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-05-02
Keywords:	machines - direct current, motors
Applies:	S00583; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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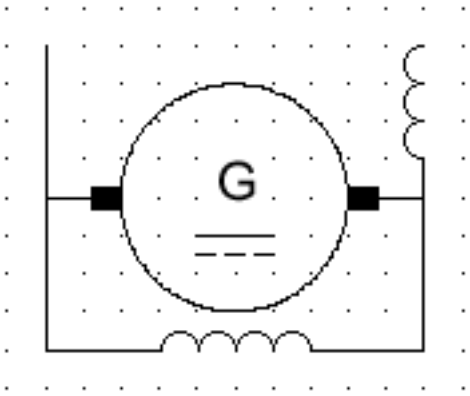
S00825



Name:	Generator, DC, compound excited (short shunt)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-05-03
Keywords:	generators, machines - direct current, power generators
Applies:	S00583; S00818; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	G Initiating a flow
Application class:	Circuit diagrams
Remarks:	Shown with terminals and brushes.

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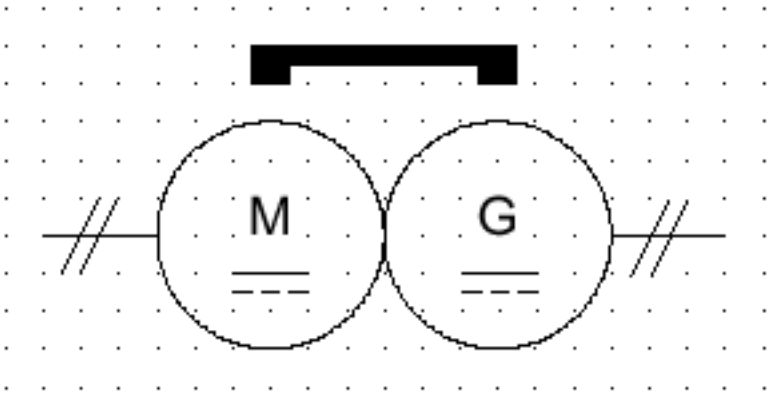

Name:	Rotary converter, DC/DC with common permanent magnet field
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-05-04
Keywords:	converters, machines - direct current
Applies:	S00001; S00210; S00819; S01401
Application notes:	A00126
Shape class:	Circles
Function class:	T Converting but maintaining kind
Application class:	Function diagrams, Overview diagrams

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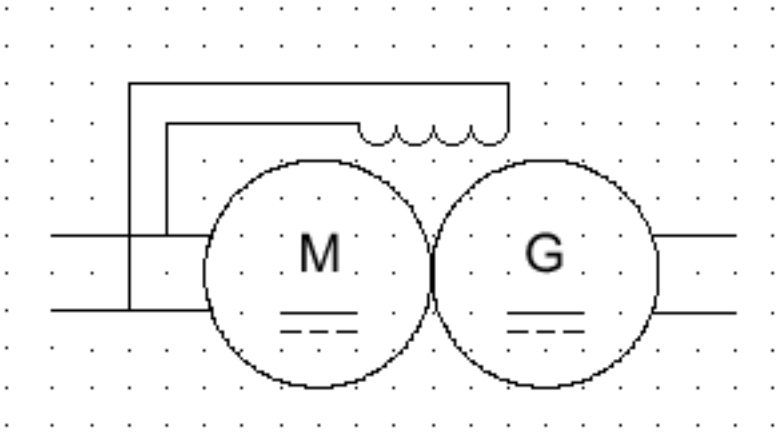

Name:	Rotary converter, DC/DC with common exitation winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-05-05
Keywords:	converters, machines - direct current
Applies:	S00583; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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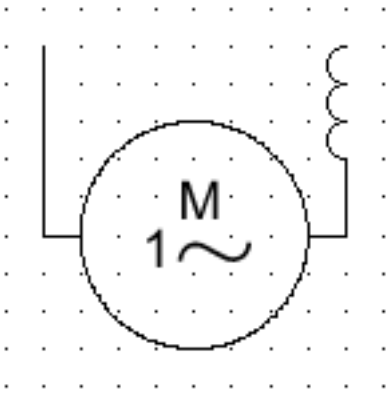

Name:	Series motor, single-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-06-01
Keywords:	commutator machines, machines - alternating current commutator, motors
Applies:	S00583; S00819; S01403
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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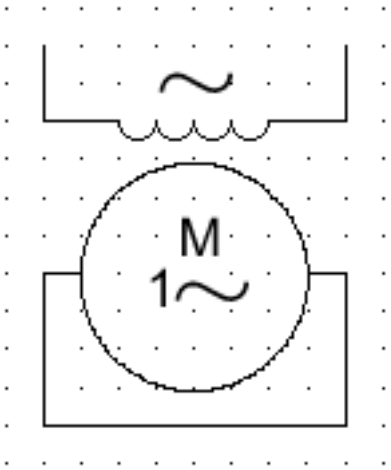

Name:	Repulsion motor, single-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-06-02
Keywords:	commutator machines, machines - alternating current commutator, motors
Applies:	S00583; S00819; S01403
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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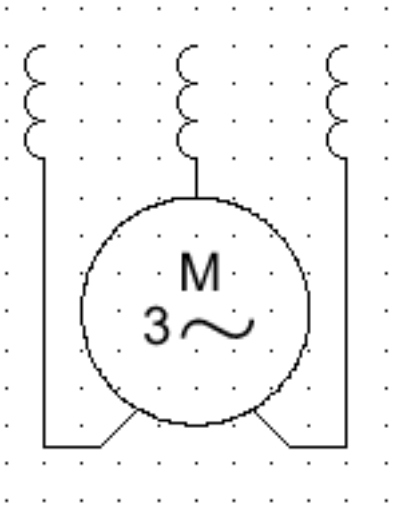

Name:	Series motor, three-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-06-03
Keywords:	commutator machines, machines - alternating current commutator, motors
Applies:	S00583; S00819; S01403
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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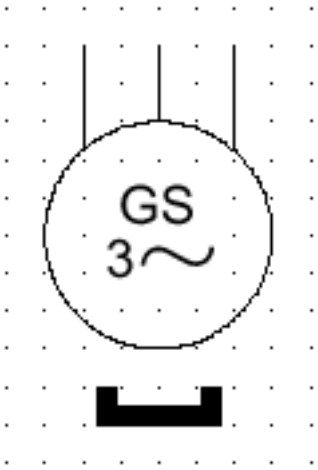

Name:	Synchronous generator, three-phase with permanent magnet
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-07-01
Keywords:	generators, machines - synchronous, power generators
Applies:	S00210; S00819; S01403
Application notes:	A00126
Shape class:	Circles, Depicting shapes
Function class:	G Initiating a flow
Application class:	Circuit diagrams

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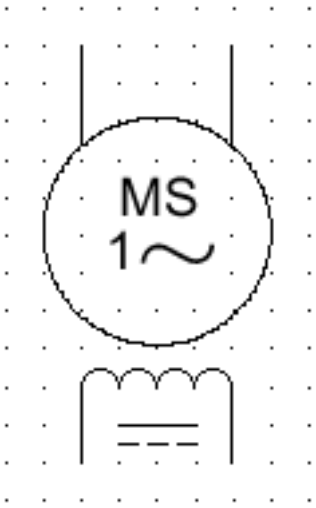

Name:	Synchronous motor, single-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-07-02
Keywords:	machines - synchronous, motors
Applies:	S00583; S00819; S01401; S01403
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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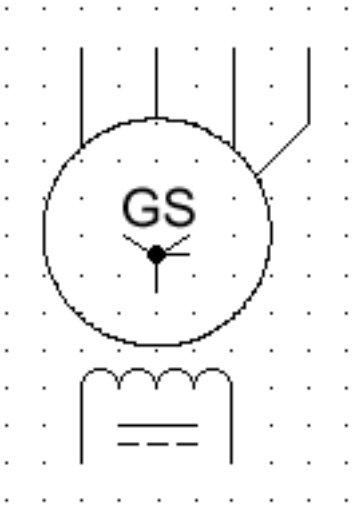
S00833



Name:	Synchronous generator, three-phase, star connected, neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-07-03
Keywords:	generators, machines - synchronous, power generators
Applies:	S00583; S00809; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	G Initiating a flow
Application class:	Circuit diagrams

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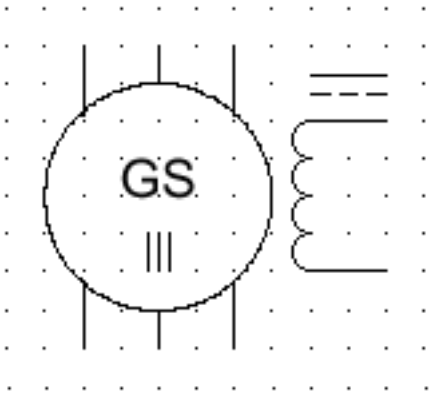
S00834



Name:	Synchronous generator, three-phase, both ends of each phase winding brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-07-04
Keywords:	generators, machines - synchronous, power generators
Applies:	S00583; S00797; S00819; S01401
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	G Initiating a flow
Application class:	Circuit diagrams

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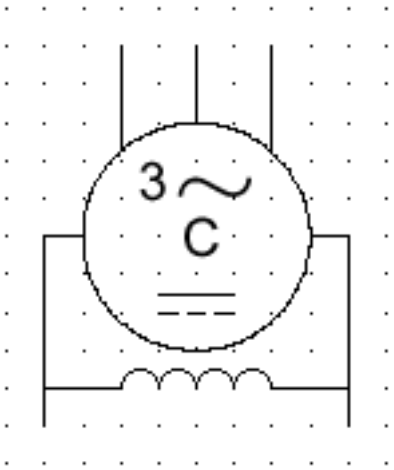
S00835



Name:	Synchronous rotary converter, three-phase, shunt-excited
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-07-05
Keywords:	converters, machines - synchronous
Applies:	S00583; S00819; S01401; S01403
Application notes:	A00126
Shape class:	Circles, Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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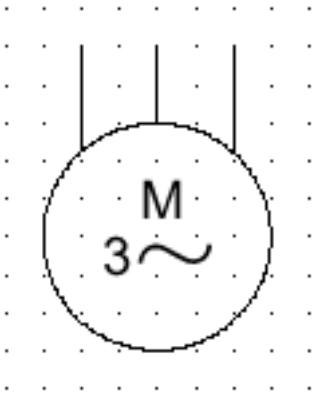
S00836



Name:	Induction motor, three-phase, squirrel cage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-08-01
Keywords:	asynchronous machines, machines - asynchronous, motors
Applies:	S00819; S01403
Application notes:	A00126, A00133
Shape class:	Circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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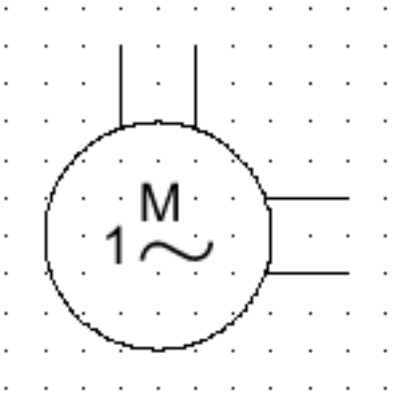
S00837



Name:	Induction motor, single-phase, squirrel-cage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-08-02
Keywords:	asynchronous machines, machines - asynchronous, motors
Applies:	S00819; S01403
Application notes:	A00126, A00133
Shape class:	Circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams
Remarks:	Ends of split-phase winding brought out.

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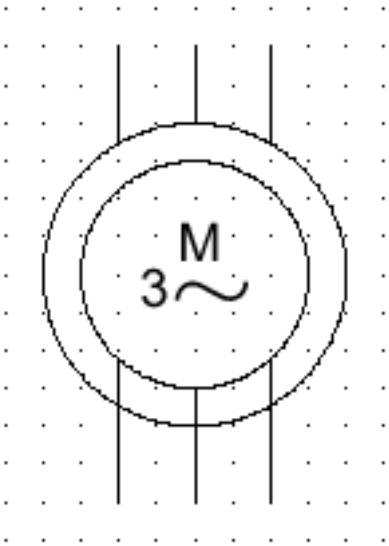
S00838



Name:	Induction motor, three-phase, with wound rotor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-08-03
Keywords:	asynchronous machines, machines - asynchronous, motors
Applies:	S00819; S01403
Application notes:	A00126, A00133
Shape class:	Circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams

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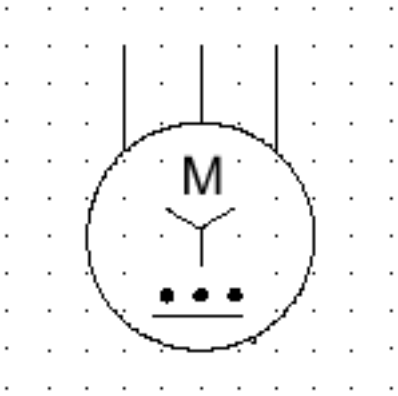

Name:	Induction motor, three-phase, star-connected
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-08-04
Keywords:	asynchronous machines, machines - asynchronous, motors
Applies:	S00808; S00819
Application notes:	A00126, A00133
Shape class:	Circles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams
Remarks:	With built-in automatic starter

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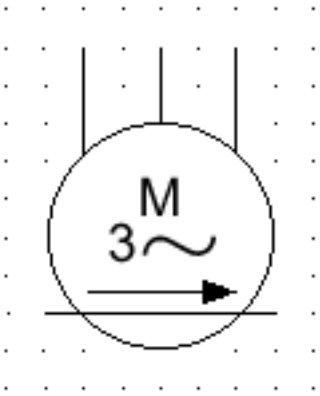

Name:	Linear induction motor, three-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-08-05
Keywords:	asynchronous machines, machines - asynchronous, motors
Applies:	S00093; S00820; S01403
Application notes:	A00126, A00133
Shape class:	Arrows, Circles, Lines
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams
Remarks:	Movement only in one direction

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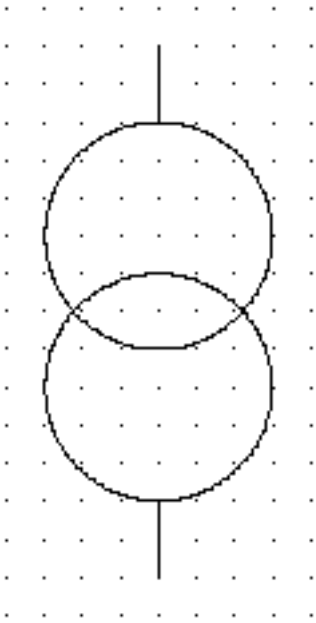

Name:	Transformer with two windings, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-01
Keywords:	transformers
Form:	Form 1
Alternative forms:	S00842
Applied in:	S00854, S00878, S00856, S00860, S00975, S00866, S00858, S00852, S00862, S00864, S01837
Application notes:	A00128, A00129
Shape class:	Circles
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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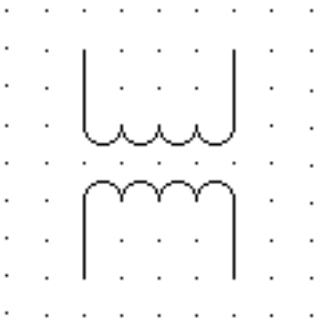

Name:	Transformer with two windings, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-02
Keywords:	transformers
Form:	Form 2
Alternative forms:	S00841
Applied in:	S00851, S00861, S00857, S01344, S00877, S00859, S00869, S00843, S00853, S00879, S00865, S00867, S00863, S00855, S01838
Applies:	S00583
Application notes:	A00127, A00128, A00129, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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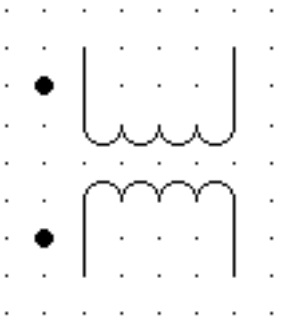

Name:	Transformer with two windings (and instantaneous voltage polarity indicators)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-03
Keywords:	polarity indicators, transformers
Form:	Form 2
Applies:	S00842
Application notes:	A00129, A00130
Shape class:	Dots (points), Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	Instantaneous currents entering the marked ends of the windings produce aiding fluxes.

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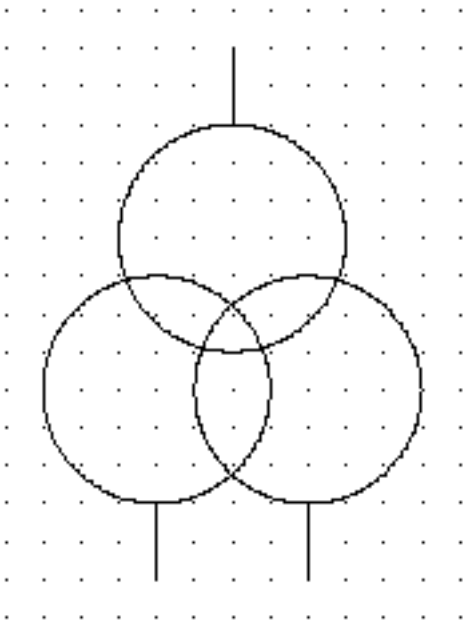

Name:	Transformer with three windings, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-04
Keywords:	transformers
Form:	Form 1
Alternative forms:	S00845
Applied in:	S00868
Application notes:	A00128, A00129
Shape class:	Circles
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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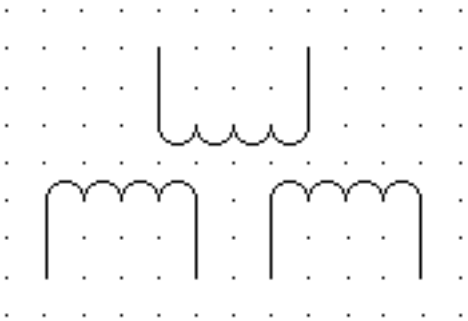
S00845



Name:	Transformer with three windings, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-05
Keywords:	transformers
Form:	Form 2
Alternative forms:	S00844
Applies:	S00583
Application notes:	A00127, A00128, A00129, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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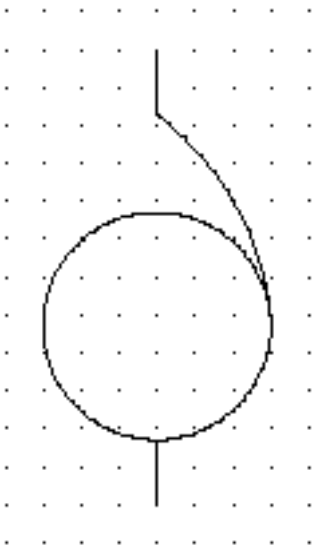
S00846



Name:	Auto-transformer, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-06
Keywords:	auto-transformers, transformers
Form:	Form 1
Alternative forms:	S00847
Applied in:	S00303, S00874, S00872, S00870
Application notes:	A00128
Shape class:	Circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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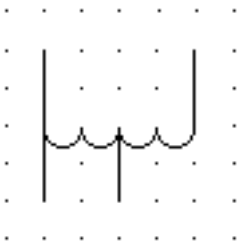

Name:	Auto-transformer, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-07
Keywords:	auto-transformers, transformers
Form:	Form 2
Alternative forms:	S00846
Applied in:	S00871, S00873, S00875
Applies:	S00583
Application notes:	A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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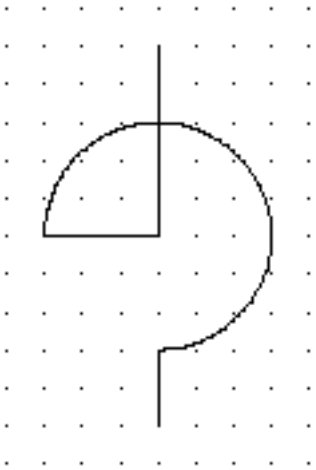

Name:	Reactor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-08
Alternative names:	Choke
Keywords:	chokes, reactors
Form:	Form 1
Alternative forms:	S00849
Application notes:	A00128
Shape class:	Circle segments, Circles, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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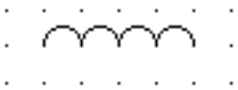

Name:	Reactor, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-09
Alternative names:	Choke
Keywords:	chokes, reactors
Form:	Form 2
Alternative forms:	S00848
Applies:	S00583
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams

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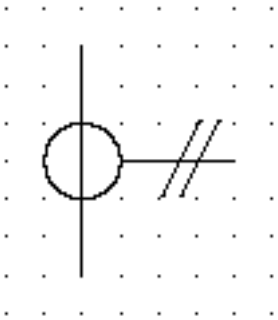

Name:	Current transformer, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-10
Keywords:	current transformers, transformers
Form:	Form 1
Alternative forms:	S00851
Applied in:	S00880, S00888, S00886, S00890, S00884, S00882, S01841
Application notes:	A00128, A00129
Shape class:	Circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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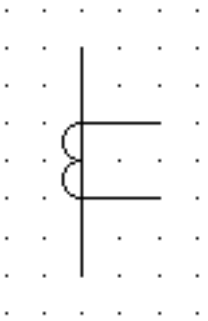

Name:	Current transformer, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-11
Keywords:	current transformers, transformers
Form:	Form 2
Alternative forms:	S00850
Applied in:	S00885, S00887, S00891, S00881, S00889, S00883, S01842
Applies:	S00842
Application notes:	A00127, A00128, A00129, A00130
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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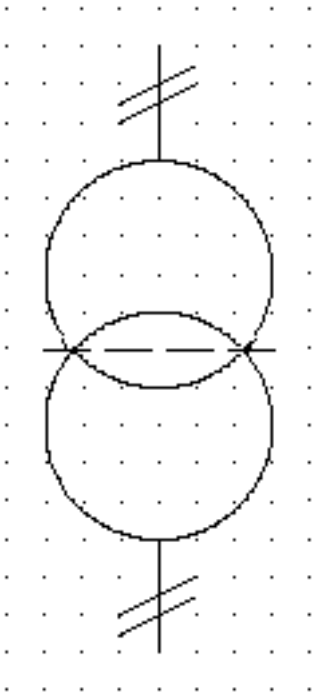

Name:	Transformer with two windings and screen
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-01
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00853
Applies:	S00002; S00065; S00841
Application notes:	A00128
Shape class:	Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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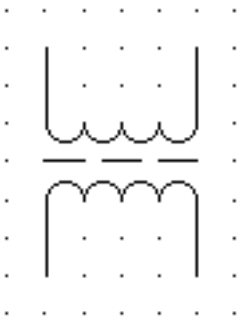

Name:	Transformer with two windings and screen
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-02
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00852
Applies:	S00065; S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles, Lines
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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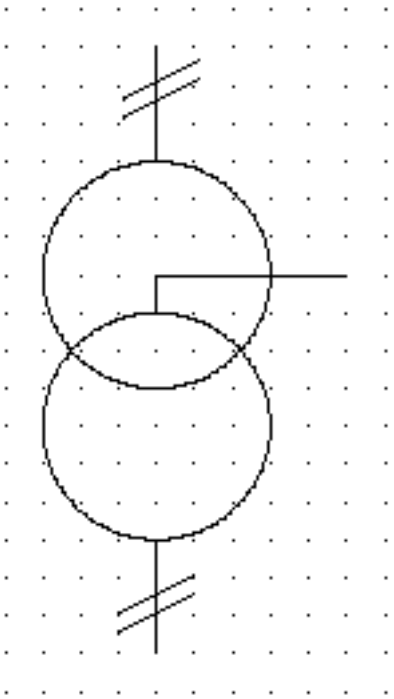
S00854



Name:	Transformer with centre tap on one winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-03
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00855
Applies:	S00002; S00841
Application notes:	A00128
Shape class:	Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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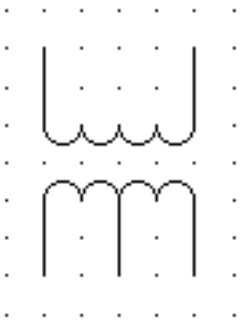
S00855



Name:	Transformer with centre tap on one winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-04
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00854
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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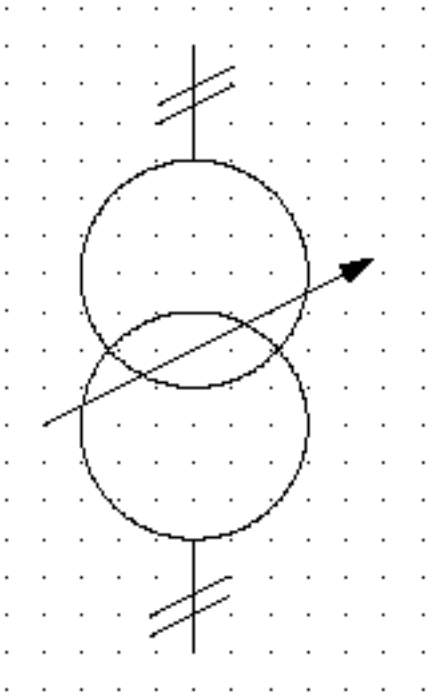

Name:	Transformer with variable coupling
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-05
Keywords:	transformers, transformers with separate windings, variability
Form:	Form 1
Alternative forms:	S00857
Applies:	S00002; S00081; S00841
Application notes:	A00128
Shape class:	Arrows, Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S00857



Name:	Transformer with variable coupling
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-06
Keywords:	transformers, transformers with separate windings, variability
Form:	Form 2
Alternative forms:	S00856
Applies:	S00081; S00842
Application notes:	A00127, A00128, A00130
Shape class:	Arrows, Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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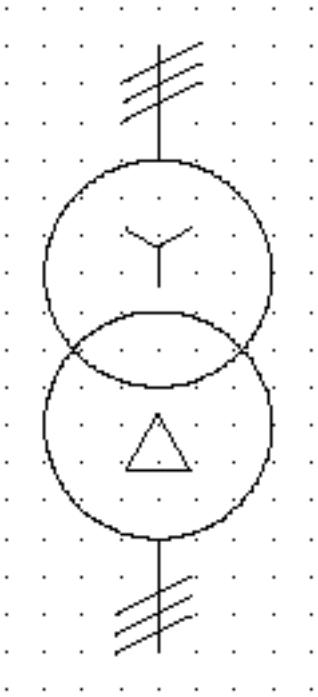
S00858



Name:	Three-phase transformer, connection star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-07
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00859
Applies:	S00002; S00806; S00808; S00841
Application notes:	A00128
Shape class:	Circles, Equilateral triangles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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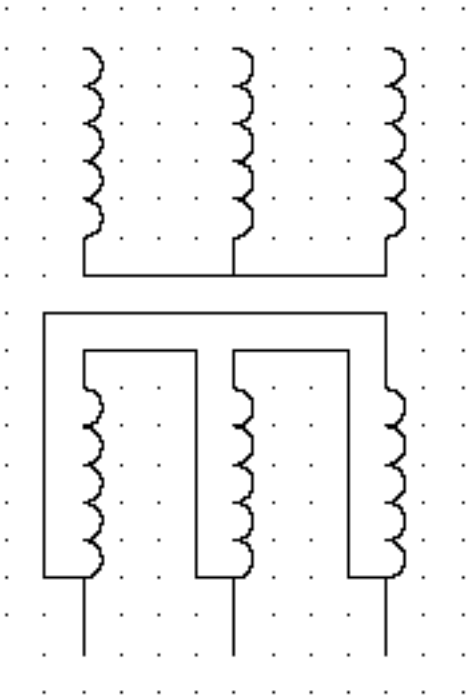
S00859



Name:	Three-phase transformer, connection star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-08
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00858
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind

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Application class: Circuit diagrams

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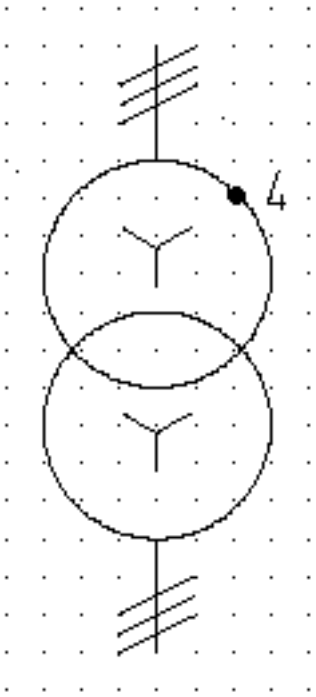
S00860



Name:	Three-phase transformer with four taps, connection: star-star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-09
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00861
Applies:	S00002; S00808; S00841
Application notes:	A00128
Shape class:	Characters, Circles, Dots (points), Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Each primary winding is shown with four available connection points in addition to those at the winding-ends.

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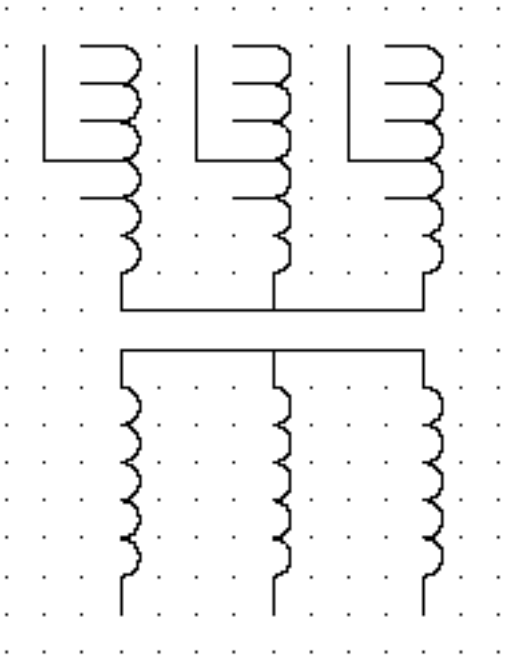

Name:	Three-phase transformer with four taps, connection: star-star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-10
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00860
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams
Remarks:	Each primary winding is shown with four available connection points in addition to those at the winding-ends.

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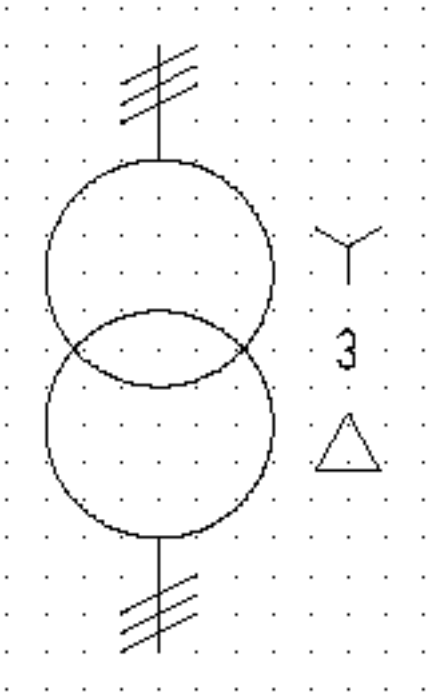

Name:	Three-phase bank of single-phase transformers, connection star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-11
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00863
Applies:	S00002; S00806; S00808; S00841
Application notes:	A00128
Shape class:	Characters, Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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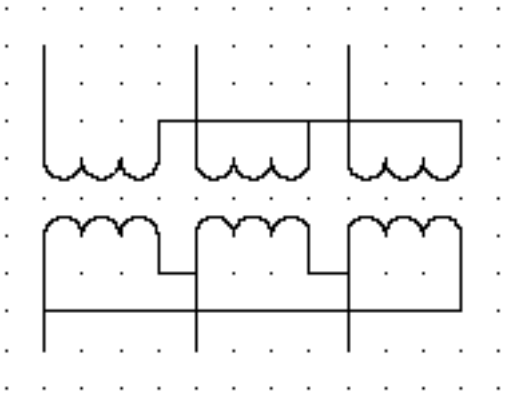

Name:	Three-phase bank of single-phase transformers, connection star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-12
Keywords:	transformers
Form:	Form 2
Alternative forms:	S00862
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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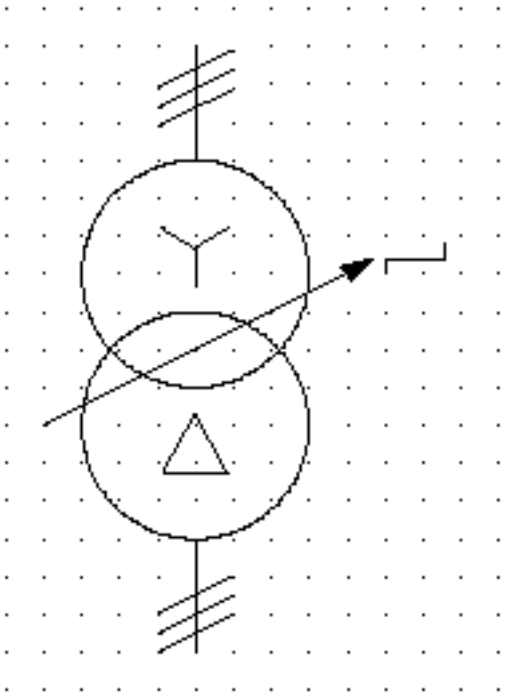

Name:	Three-phase transformer with tap changer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-13
Keywords:	tap changers, transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00865
Applies:	S00002; S00081; S00087; S00806; S00808; S00841
Application notes:	A00128
Shape class:	Arrows, Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	On-load tap changer, connection star-delta

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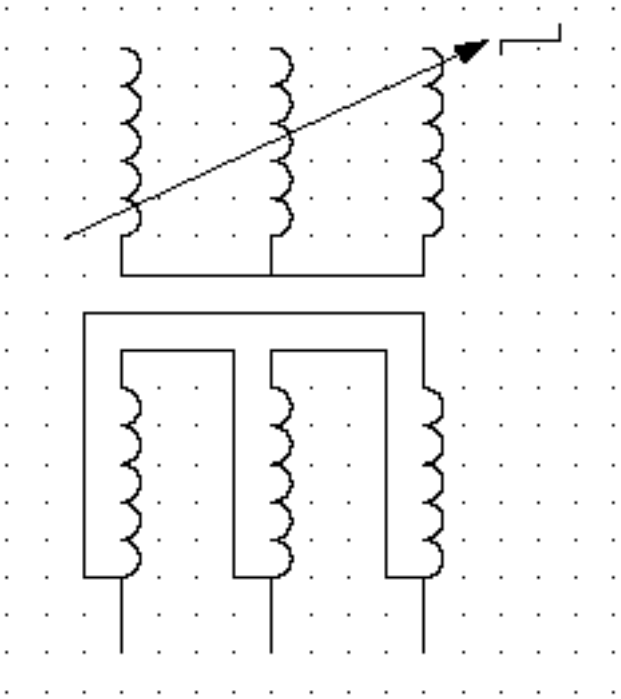
S00865



Name:	Three-phase transformer with tap changer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-14
Keywords:	tap changers, transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00864
Applies:	S00081; S00087; S00842
Application notes:	A00127, A00128, A00130
Shape class:	Arrows, Half-circles
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams
Remarks:	On-load tap changer, connection star-delta

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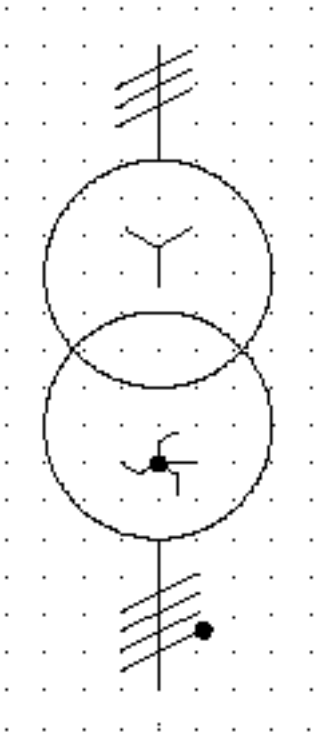
S00866



Name:	Three-phase transformer, connection star-zigzag with the neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-15
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00867
Applies:	S00002; S00446; S00808; S00810; S00841
Application notes:	A00128
Shape class:	Circles, Lines

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Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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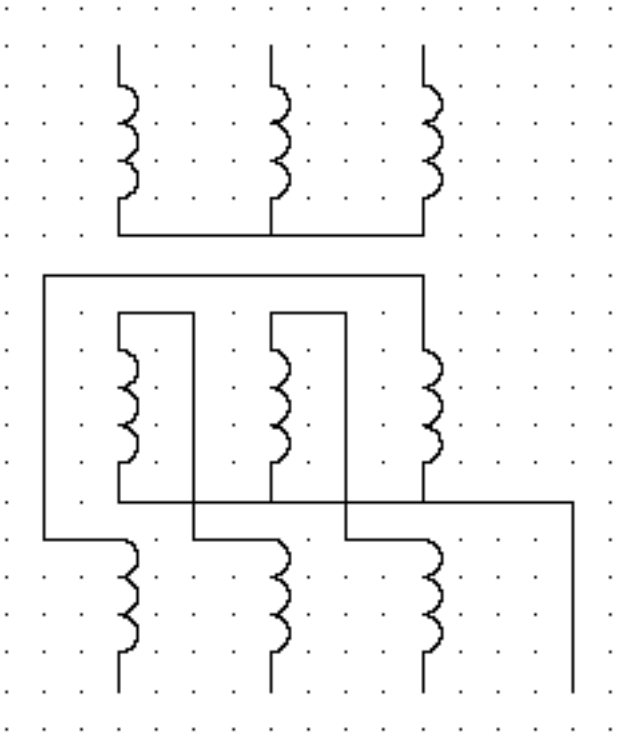

Name:	Three-phase transformer, connection star-zigzag with the neutral brought out
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-16
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00866
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles

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Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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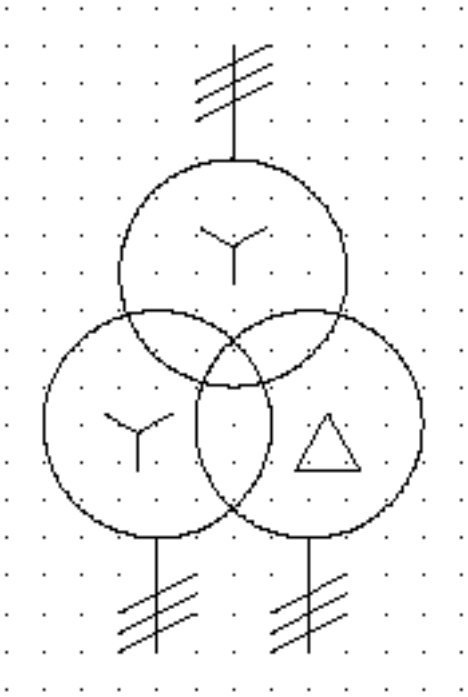

Name:	Three-phase transformer, connection star-star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-17
Keywords:	transformers, transformers with separate windings
Form:	Form 1
Alternative forms:	S00869
Applies:	S00002; S00806; S00808; S00844
Application notes:	A00128
Shape class:	Circles, Equilateral triangles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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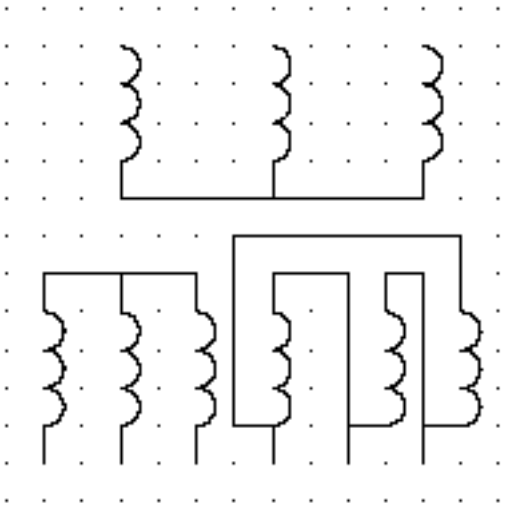

Name:	Three-phase transformer, connection star-star-delta
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-10-18
Keywords:	transformers, transformers with separate windings
Form:	Form 2
Alternative forms:	S00868
Applies:	S00842
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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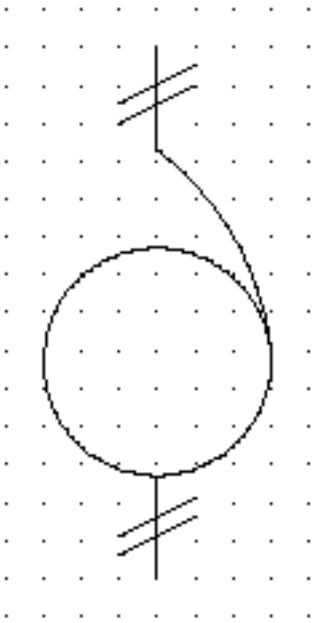

Name:	Auto-transformer, single-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-01
Keywords:	auto-transformers, transformers
Form:	Form 1
Alternative forms:	S00871
Applied in:	S00874
Applies:	S00002; S00846
Application notes:	A00128
Shape class:	Circles
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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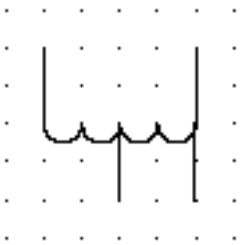
S00871



Name:	Auto-transformer, single-phase
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-02
Keywords:	auto-transformers, transformers
Form:	Form 2
Alternative forms:	S00870
Applies:	S00847
Application notes:	A00127, A00128
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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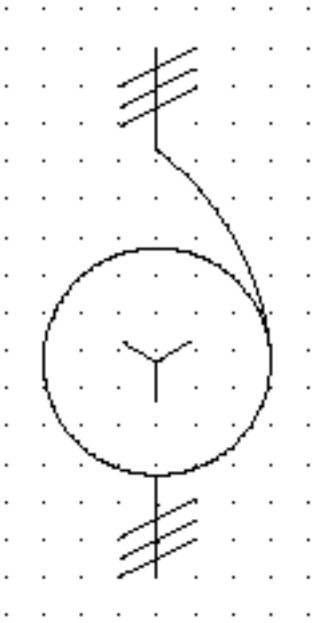

Name:	Auto-transformer, three-phase, connection star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-03
Keywords:	auto-transformers, transformers
Form:	Form 1
Alternative forms:	S00873
Applies:	S00002; S00808; S00846
Application notes:	A00128
Shape class:	Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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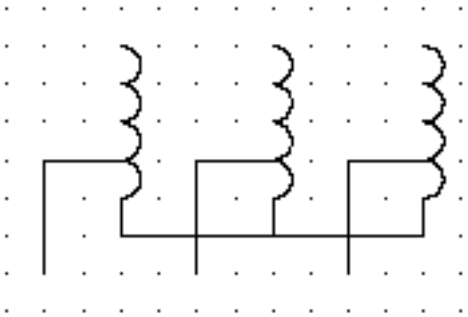

Name:	Auto-transformer, three-phase, connection star
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-04
Keywords:	auto-transformers, transformers
Form:	Form 2
Alternative forms:	S00872
Applies:	S00847
Application notes:	A00127, A00128, A00130
Shape class:	Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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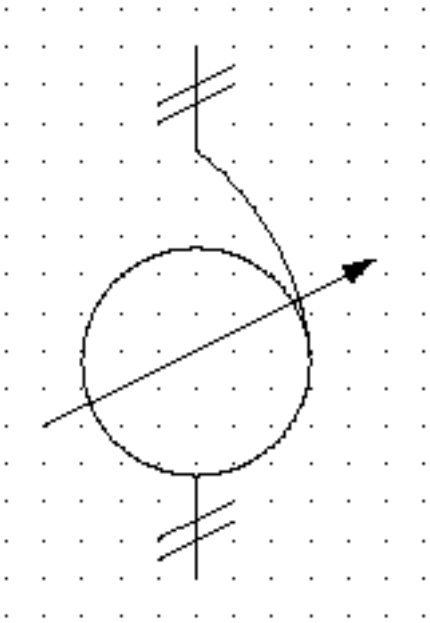
S00874



Name:	Auto-transformer, single-phase with voltage regulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-05
Keywords:	auto-transformers, transformers
Form:	Form 1
Alternative forms:	S00875
Applies:	S00002; S00081; S00846; S00870
Application notes:	A00128
Shape class:	Arrows, Circles
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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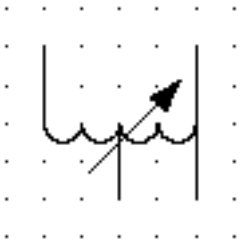
S00875



Name:	Auto-transformer, single-phase with voltage regulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-11-06
Keywords:	auto-transformers, transformers
Form:	Form 2
Alternative forms:	S00874
Applies:	S00081; S00847
Application notes:	A00127, A00128
Shape class:	Arrows, Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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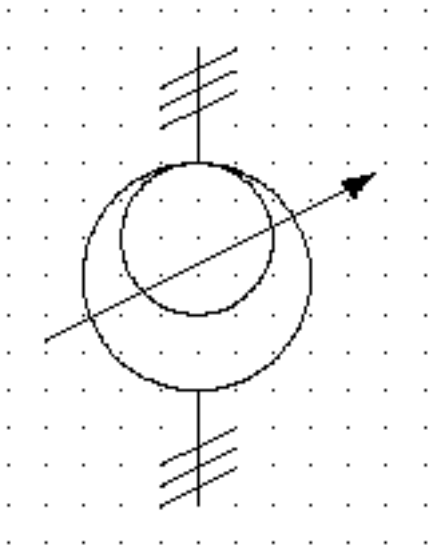
S00876



Name:	Three-phase induction regulator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-12-01
Keywords:	induction regulators, inductors, reactors
Form:	Form 1
Alternative forms:	S00877
Applies:	S00002; S00081
Application notes:	A00128
Shape class:	Arrows, Circles, Lines
Function class:	R Restricting or stabilising, T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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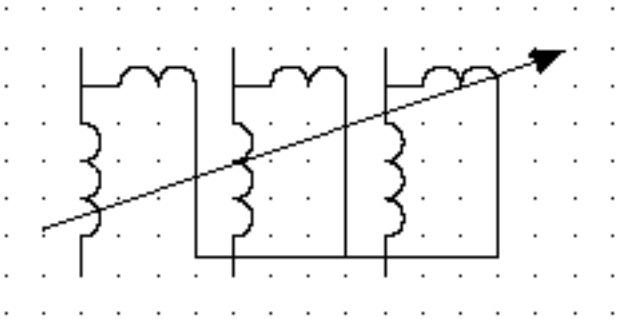
S00877



Name:	Three-phase induction regulator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-12-02
Keywords:	induction regulators, inductors, reactors
Form:	Form 2
Alternative forms:	S00876
Applies:	S00081; S00842
Application notes:	A00127, A00128, A00130
Shape class:	Arrows, Half-circles
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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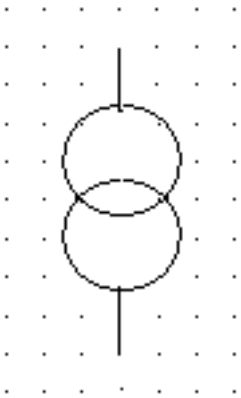
S00878



Name:	Voltage transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-01A
Alternative names:	Measuring transformer
Keywords:	measuring transformers, transformers, voltage transformers
Form:	Form 1
Alternative forms:	S00879
Applied in:	S01839, S01840
Applies:	S00841
Application notes:	A00128, A00134
Shape class:	Circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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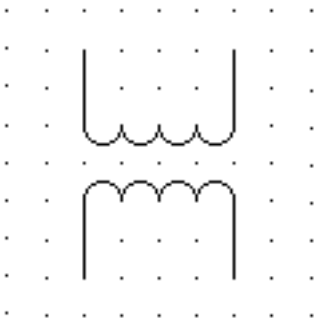
S00879



Name:	Voltage transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-01B
Alternative names:	Measuring transformer
Keywords:	measuring transformers, transformers, voltage transformers
Form:	Form 2
Alternative forms:	S00878
Applies:	S00842
Application notes:	A00127, A00128, A00130, A00134
Shape class:	Half-circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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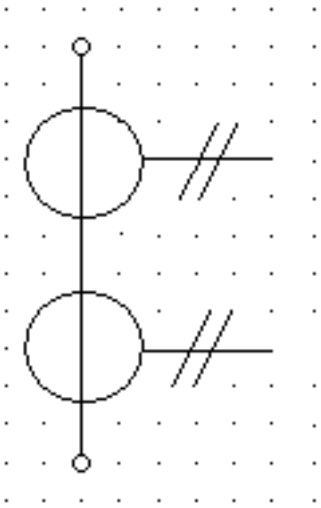
S00880



Name:	Current transformer with two cores with one secondary winding on each core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-02
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 1
Alternative forms:	S00881
Applies:	S00002; S00017; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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Remarks: The terminal symbols shown at each end of the primary circuit indicate that only a single device is represented. The terminal symbols may be omitted if terminal designations are used.

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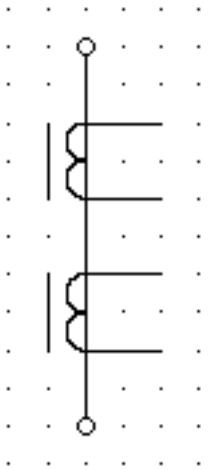
S00881



Name:	Current transformer with two cores with one secondary winding on each core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-03
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 2
Alternative forms:	S00880
Applies:	S00017; S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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Remarks:

The terminal symbols shown at each end of the primary circuit indicate that only a single device is represented. The terminal symbols may be omitted if terminal designations are used
In form 2, core symbols may be omitted.

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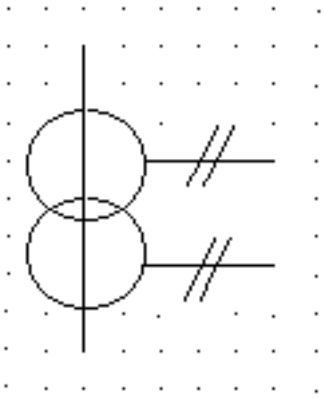
S00882



Name:	Current transformer with two secondary windings on one core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-04
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 1
Alternative forms:	S00883
Applies:	S00002; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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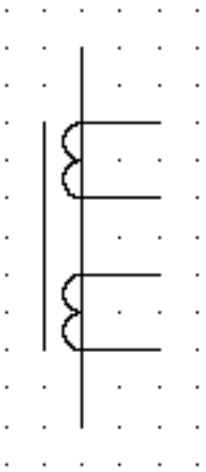
S00883



Name:	Current transformer with two secondary windings on one core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-05
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 2
Alternative forms:	S00882
Applies:	S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	In form 2, the core symbol shall be drawn

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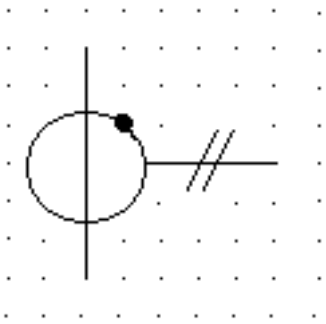
S00884



Name:	Current transformer with one secondary winding with one tap
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-06
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 1
Alternative forms:	S00855
Applies:	S00002; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Dots (points), Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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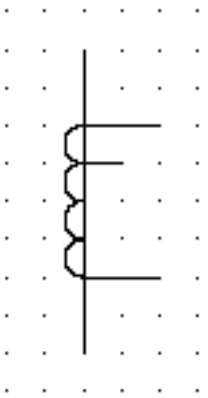

Name:	Current transformer with one secondary winding with one tap
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-07
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 2
Alternative forms:	S00884
Applies:	S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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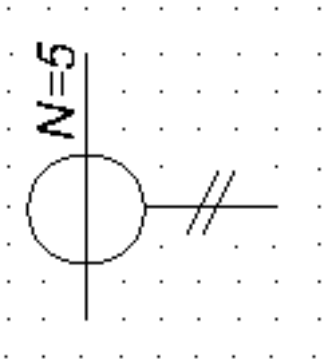

Name:	Current transformer with five passages of a conductor acting as a primary winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-08
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 1
Alternative forms:	S00887
Applies:	S00002; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	This kind of current transformer has no built-in primary winding

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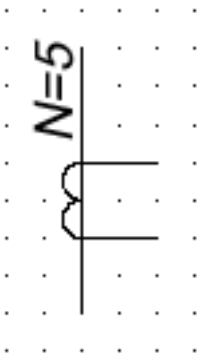
S00887



Name:	Current transformer with five passages of a conductor acting as a primary winding
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-09
Keywords:	current transformers, measuring transformers, transformers
Form:	Form 2
Alternative forms:	S00886
Applies:	S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	This kind of current transformer has no built-in primary winding

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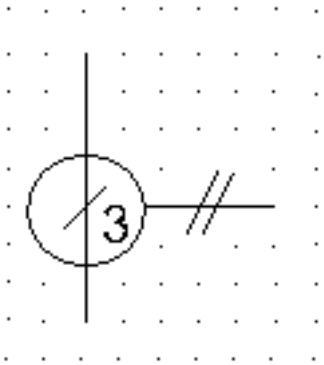
S00888



Name:	Pulse or current transformer with three threaded primary conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-10
Keywords:	current transformers, measuring transformers, pulse transformers, transformers
Form:	Form 1
Alternative forms:	S00889
Applies:	S00002; S00003; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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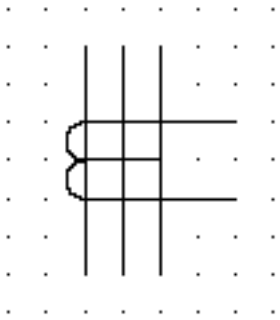

Name:	Pulse or current transformer with three threaded primary conductors
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-11
Keywords:	current transformers, measuring transformers, pulse transformers, transformers
Form:	Form 2
Alternative forms:	S00888
Applies:	S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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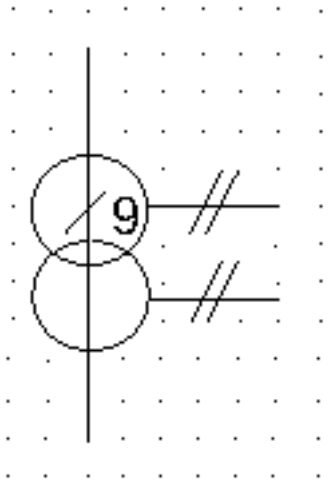

Name:	Pulse or current transformer with two secondary windings on the same core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-12
Keywords:	current transformers, measuring transformers, pulse transformers, transformers
Form:	Form 1
Alternative forms:	S00891
Applies:	S00002; S00003; S00850
Application notes:	A00128, A00129, A00134
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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Remarks: Shown with nine threaded primary conductors

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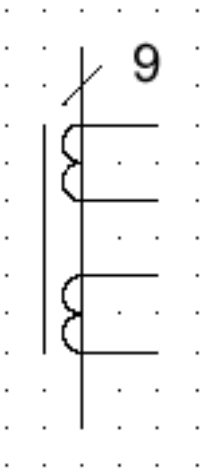

Name:	Pulse or current transformer with two secondary windings on the same core
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-13-13
Keywords:	current transformers, measuring transformers, pulse transformers, transformers
Form:	Form 2
Alternative forms:	S00890
Applies:	S00851
Application notes:	A00127, A00128, A00129, A00130, A00134
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Remarks:	Shown with nine threaded primary conductors

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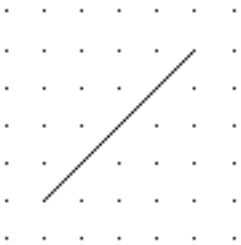
S00892



Name:	Converter, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-01
Keywords:	converters, power converters
Replaced by:	S00214
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Replaced by symbol S00214.

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S00893



Name:	DC/DC converter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-02
Alternative names:	Chopper
Keywords:	converters, power converters, choppers
Applies:	S00059; S00214; S01401
Shape class:	Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00894



Name:	Rectifier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-03
Keywords:	power converters, rectifiers
Applies:	S00059; S00213; S00214; S01401; S01403
Shape class:	Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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Name:	Rectifier in full wave (bridge) connection
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-04
Keywords:	power converters, rectifiers
Applies:	S00641
Shape class:	Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00896



Name:	Inverter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-05
Keywords:	inverters, power converters
Applies:	S00059; S00214; S01401; S01403
Shape class:	Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00897



Name:	Rectifier/inverter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-14-06
Keywords:	inverters, power converters, rectifiers
Applies:	S00059; S00101; S00214; S01401; S01403
Shape class:	Arrows, Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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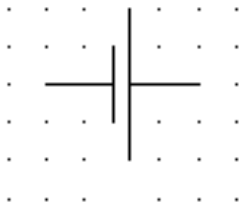
S00898



Name:	Primary cell
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-15-01
Alternative names:	Battery
Keywords:	primary cells
Applied in:	S01366, S01365, S00686
Shape class:	Lines
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The longer line represents the positive pole, the shorter one the negative pole

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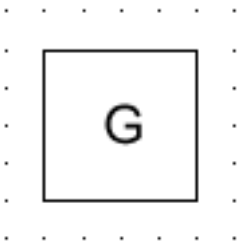
S00899



Name:	Static generator, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-16-01
Keywords:	generators, power generators, static generators
Applied in:	S00903, S00907, S00904, S01217, S00908, S01226, S00906, S01216, S01215, S00905
Applies:	S00059
Application notes:	A00131
Shape class:	Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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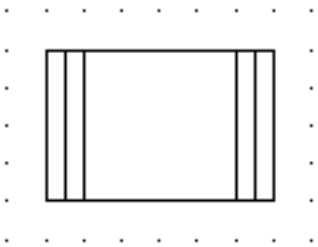
S00900



Name:	Heat source, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-17-01
Keywords:	heat sources
Applied in:	S00901, S00902, S00903, S00907, S00904, S00906, S00905
Applies:	S00059
Shape class:	Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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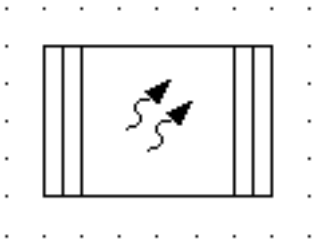
S00901



Name:	Radio-isotope heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-17-02
Keywords:	heat sources
Applied in:	S00907, S00905
Applies:	S00129; S00900
Application notes:	A00041, A00042
Shape class:	Arrows, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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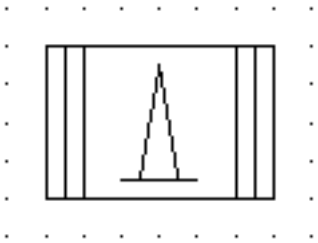

Name:	Combustion heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-17-03
Keywords:	heat sources
Applied in:	S00903
Applies:	S00900
Shape class:	Equilateral triangles, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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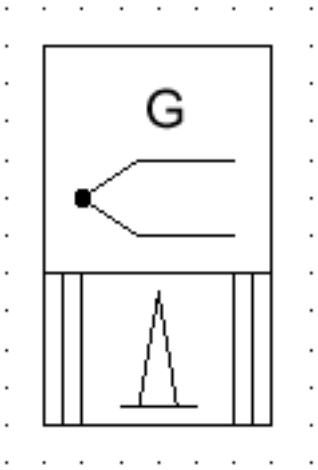

Name:	Thermoelectric generator, with combustion heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-01
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00899; S00900; S00902; S00952
Shape class:	Equilateral triangles, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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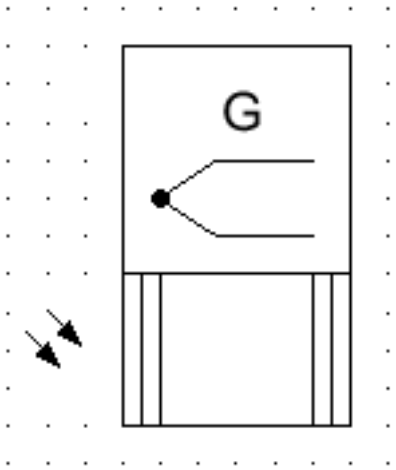
S00904



Name:	Thermoelectric generator with non-ionizing radiation heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-02
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00127; S00899; S00900; S00952
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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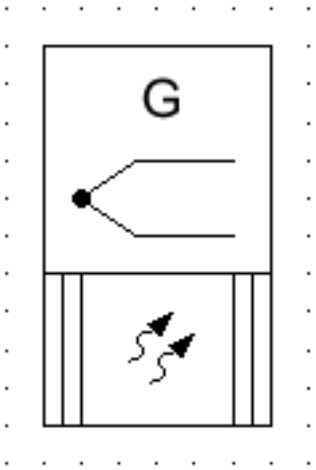
S00905



Name:	Thermoelectric generator with radio-isotope heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-03
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00129; S00899; S00900; S00901; S00952
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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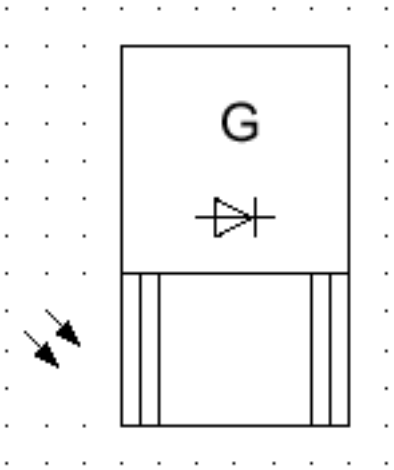
S00906



Name:	Thermionic diode generator with non-ionizing radiation heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-04
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00127; S00641; S00899; S00900
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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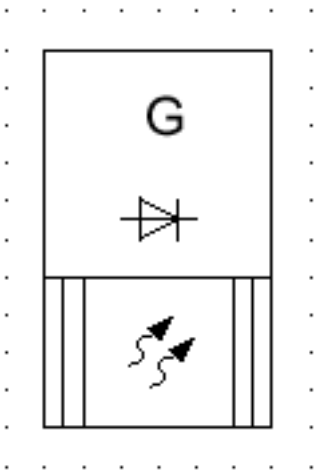
S00907



Name:	Thermionic diode generator with radio-isotope heat source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-05
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00129; S00641; S00899; S00900; S00901
Shape class:	Arrows, Rectangles, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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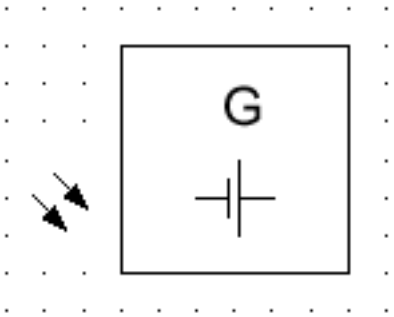
S00908



Name:	Photovoltaic generator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-18-06
Keywords:	generators, non-rotary power generators, power generators
Applies:	S00127; S00899; S01342
Shape class:	Arrows, Lines , Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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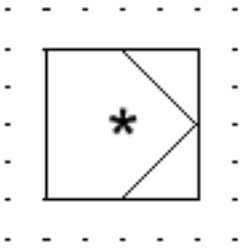

Name:	Closed-loop controller
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-19-01
Keywords:	closed-loop controllers, controllers
Application notes:	A00132, A00256
Shape class:	Equilateral triangles, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	See A00256 for an example of use.

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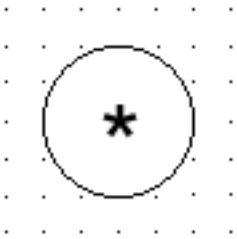

Name:	Indicating instrument, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-01-01
Alternative names:	Instrument
Keywords:	indicating instruments, instruments, measuring instruments
Applied in:	S01426, S01428, S01427, S00924, S00916, S00927, S00925, S00921, S00917, S00914, S00913, S00920, S00922, S00923, S00915, S00918, S00919, S00926, S01843
Application notes:	A00144, A00145, A00146, A00147
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced in accordance with the application note A00144.

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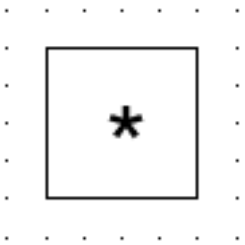
S00911



Name:	Recording instrument, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-01-02
Alternative names:	Instrument
Keywords:	instruments, measuring instruments, recording instruments
Applied in:	S00928, S00929, S00930
Application notes:	A00144, A00145, A00146, A00147
Shape class:	Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced in accordance with the rules in application note A00144.

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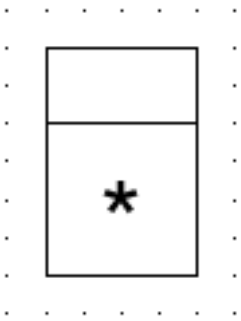
S00912



Name:	Integrating instrument, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-01-03
Alternative names:	Energy meter
Keywords:	instruments, integrating instruments, measuring instruments
Applied in:	S00935, S00940, S00942, S00931, S00937, S00944, S00932, S00939, S00936, S00941, S00934, S00933, S00943, S00945, S00938
Application notes:	A00144, A00145, A00146, A00147, A00148
Shape class:	Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced in accordance with the rules given in application note A00144.

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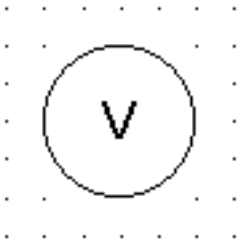
S00913



Name:	Voltmeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-01
Keywords:	indicating instruments, instruments, measuring instruments, voltmeters
Applied in:	S01429, S01843
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00914



Name:	Reactive current ammeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-02
Keywords:	indicating instruments, instruments, measuring instruments, ammeters
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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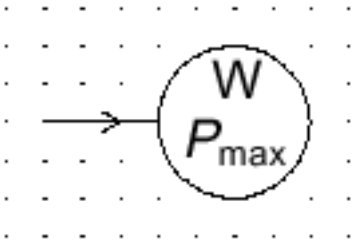
S00915



Name:	Maximum demand indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-03
Keywords:	indicating instruments, indicators, instruments, maximum demand, measuring instruments
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Actuated by an integrating meter.

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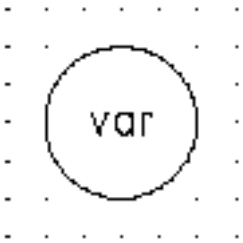
S00916



Name:	Varmeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-04
Keywords:	indicating instruments, instruments, measuring instruments, varmeters
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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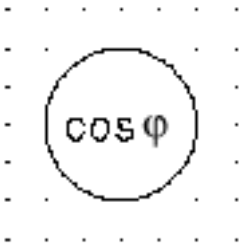
S00917



Name:	Power-factor meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-05
Keywords:	indicating instruments, instruments, measuring instruments, power-factor meters
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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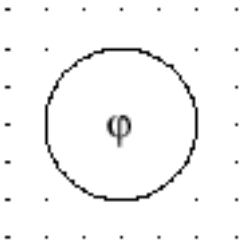
S00918



Name:	Phase meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-06
Keywords:	indicating instruments, instruments, measuring instruments, phase meters
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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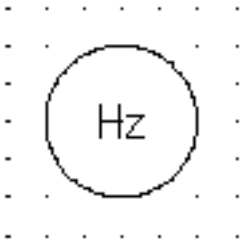
S00919



Name:	Frequency meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-07
Keywords:	frequency meters, indicating instruments, instruments, measuring instruments
Applies:	S00910
Application notes:	A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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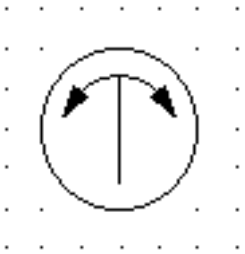
S00920



Name:	Synchronoscope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-08
Keywords:	indicating instruments, instruments, measuring instruments, synchronoscopes
Applies:	S00910
Application notes:	A00144
Shape class:	Arrows, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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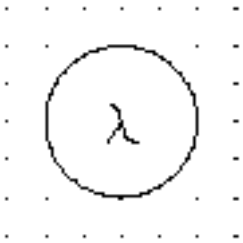

Name:	Wavemeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-09
Keywords:	indicating instruments, instruments, measuring instruments, wavemeters
Applies:	S00910
Application notes:	A00144
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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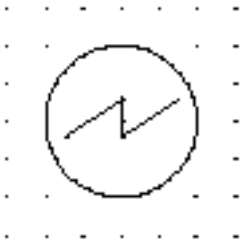

Name:	Oscilloscope
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-10
Keywords:	indicating instruments, instruments, measuring instruments, oscilloscopes
Applies:	S00910
Application notes:	A00144
Shape class:	Circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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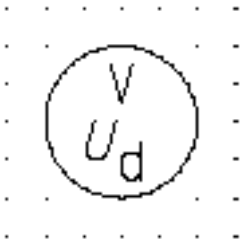

Name:	Differential voltmeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-11
Keywords:	indicating instruments, instruments, measuring instruments, voltmeters
Applies:	S00910
Application notes:	A00144, A00145, A00146
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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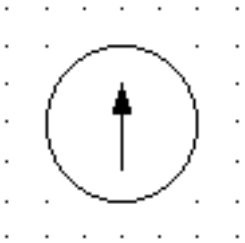

Name:	Galvanometer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-12
Keywords:	galvanometers, indicating instruments, instruments, measuring instruments
Applies:	S00910
Application notes:	A00144, A00145
Shape class:	Arrows, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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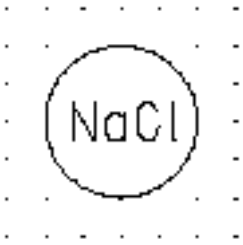

Name:	Salinity meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-13
Keywords:	indicating instruments, instruments, measuring instruments
Applies:	S00910
Application notes:	A00144
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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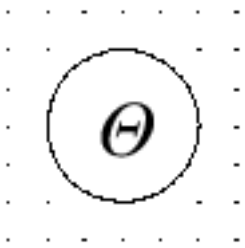

Name:	Thermometer, Pyrometer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-14
Keywords:	indicating instruments, instruments, measuring instruments, pyrometers, thermometers
Applies:	S00910
Application notes:	A00144, A00145
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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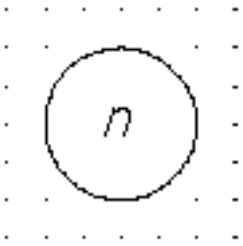

Name:	Tachometer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-02-15
Keywords:	indicating instruments, instruments, measuring instruments, tachometers
Applies:	S00910
Application notes:	A00144
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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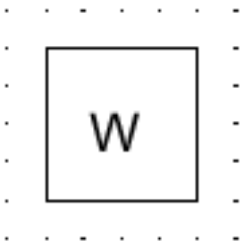

Name:	Recording wattmeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-03-01
Keywords:	instruments, measuring instruments, recording instruments, wattmeters
Applies:	S00911
Application notes:	A00144, A00145
Shape class:	Characters, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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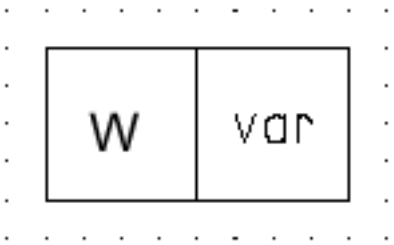

Name:	Combined recording wattmeter and varmeter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-03-02
Keywords:	instruments, measuring instruments, recording instruments, varmeters, wattmeters
Applies:	S00911
Application notes:	A00144, A00145, A00147
Shape class:	Characters, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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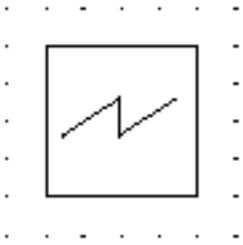

Name:	Oscillograph
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-03-03
Keywords:	instruments, measuring instruments, oscillographs, recording instruments
Applies:	S00911
Application notes:	A00144
Shape class:	Lines , Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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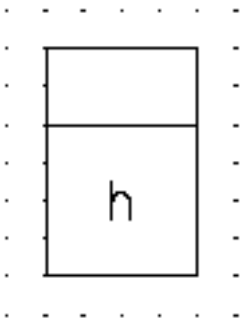

Name:	Hour meter; Hour counter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-01
Keywords:	hour meters, instruments, integrating instruments, measuring instruments
Applies:	S00912
Application notes:	A00144
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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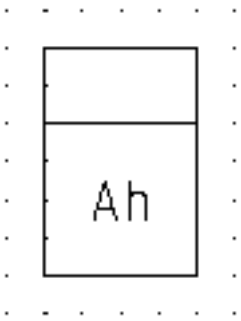

Name:	Ampere-hour meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-02
Keywords:	ampere-hour meters, instruments, integrating instruments, measuring instruments
Applies:	S00912
Application notes:	A00144, A00145
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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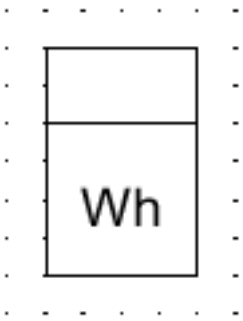

Name:	Watt-hour meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-03
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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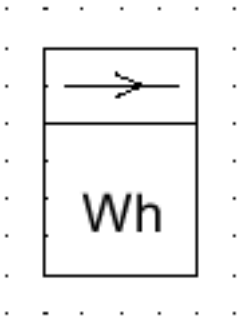

Name:	Watt-hour meter, measuring energy transmitted in one direction only
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-04
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00099; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Arrows, Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	measuring energy transmitted in one direction only

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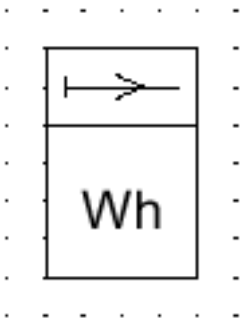

Name:	Watt-hour meter, counting the energy flow from the busbars
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-05
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00104; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Arrows, Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Counting the energy flow from the busbars

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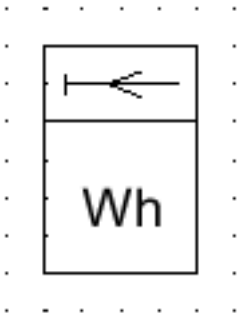

Name:	Watt-hour meter, counting the energy flow towards the busbars
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-06
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00105; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Arrows, Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Counting the energy flow towards the busbars.

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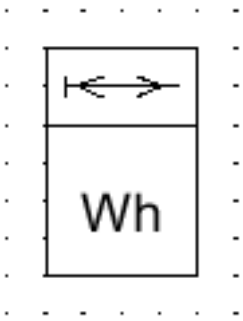

Name:	Watt-hour meter, counting in both energy flow directions
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-07
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00106; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Arrows, Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Towards or from bus bars.

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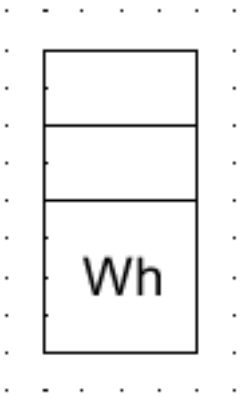

Name:	Multi-rate watt-hour meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-08
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Two-rate shown

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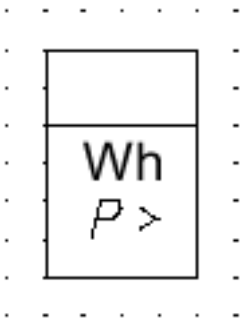

Name:	Excess watt-hour meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-09
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams, Installation diagrams, Overview diagrams

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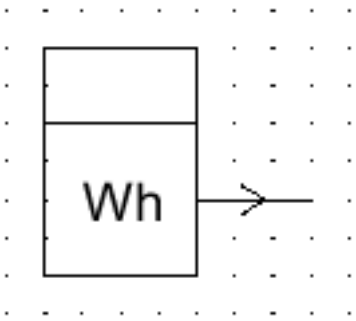

Name:	Watt-hour meter with transmitter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-10
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00099; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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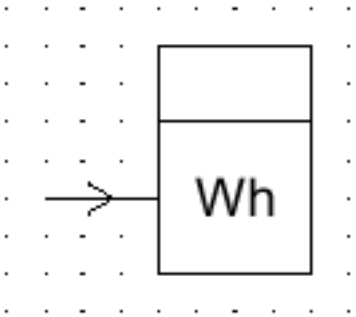

Name:	Slave watt-hour meter (repeater)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-11
Keywords:	instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00099; S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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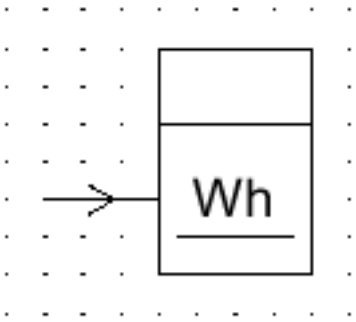
S00942



Name:	Slave watt-hour meter (repeater) with printing device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-12
Keywords:	instruments, integrating instruments, measuring instruments, printing, watt-hour meters
Applies:	S00099; S00138; S00912
Application notes:	A00144, A00146
Shape class:	Characters, Lines , Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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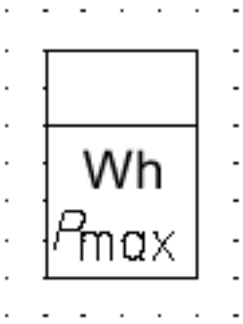
S00943



Name:	Watt-hour meter with maximum demand indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-13
Keywords:	indicators, instruments, integrating instruments, measuring instruments, watt-hour meters
Applies:	S00912
Application notes:	A00144, A00145, A00146
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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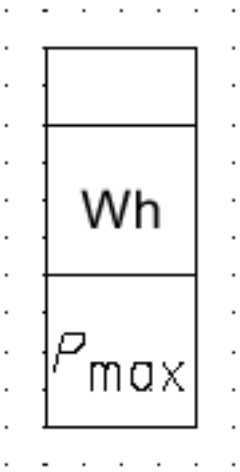
S00944



Name:	Watt-hour meter with maximum demand recorder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-14
Keywords:	instruments, integrating instruments, measuring instruments, recording instruments, watt-hour meters
Applies:	S00912
Application notes:	A00145, A00146, A00147, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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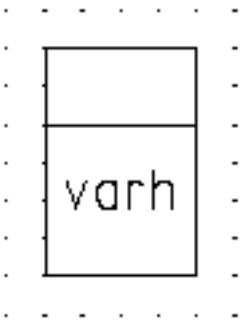
S00945



Name:	Var-hour meter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-04-15
Keywords:	instruments, integrating instruments, measuring instruments, var-hour meters
Applies:	S00912
Application notes:	A00144, A00145, A00148
Shape class:	Characters, Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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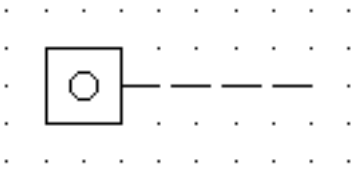
S00946



Name:	Counting function of a number of events
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-01
Keywords:	counters, measuring instruments
Applied in:	S00196, S00949, S00948, S00947, S00951, S00950
Shape class:	Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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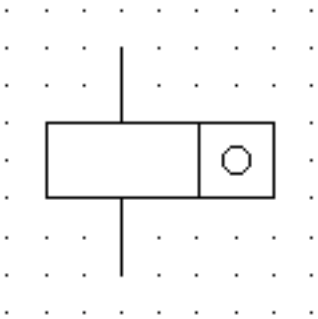
S00947



Name:	Pulse counting device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-02
Alternative names:	Electrically operated counting device
Keywords:	counters, measuring instruments, pulse counters
Applied in:	S00949, S00948, S00950
Applies:	S00946
Shape class:	Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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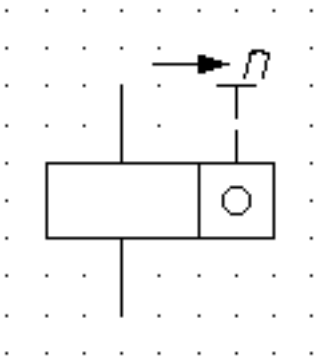
S00948



Name:	Pulse counting device, manually pre-set to n
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-03
Alternative names:	Manually presettable pulse counter
Keywords:	counters, measuring instruments, pulse counters
Applies:	S00093; S00167; S00946; S00947
Shape class:	Lines , Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Shown with pre-set to n (reset if n = 0)

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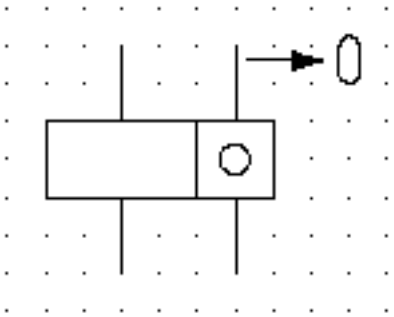
S00949



Name:	Pulse counting device, electrically reset to 0
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-04
Keywords:	counters, measuring instruments, pulse counters
Applies:	S00093; S00946; S00947
Shape class:	Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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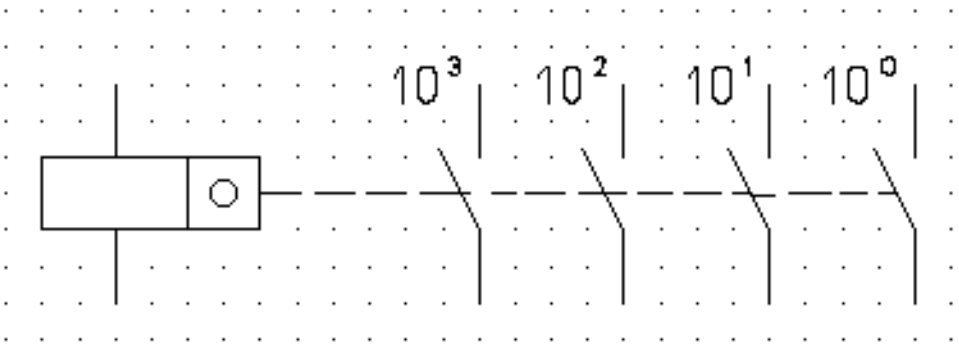
S00950



Name:	Pulse counting device with multiple contacts
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-05
Keywords:	counters, measuring instruments, pulse counters
Applies:	S00227; S00946; S00947
Shape class:	Lines , Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Respective contacts close once at every unit(10 exp0), ten (10 exp1), hundred (10 exp2), thousand (10 exp3)events registered by the counter.

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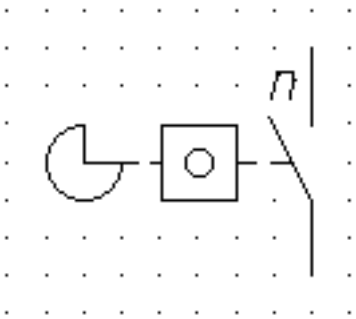
S00951



Name:	Counting device, cam driven
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-05-06
Keywords:	counters, measuring instruments
Applies:	S00182; S00227; S00946
Shape class:	Circle segments, Lines , Rectangles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Closing a contact for each n events.

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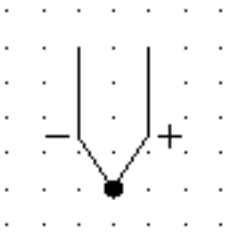
S00952



Name:	Thermocouple
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-01
Keywords:	temperature sensor, thermocouples
Alternative forms:	S00953
Applied in:	S00955, S00954, S00957, S00903, S00904, S00956, S00905
Applies:	S00016; S00077; S00078
Replacing:	S00953
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Shown with polarity symbols.

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S00953



Name:	Thermocouple
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-02
Keywords:	temperature sensor, thermocouples
Form:	Old form
Alternative forms:	S00952
Replaced by:	S00952
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Direct indication of polarity, the negative pole being represented by the thick line.

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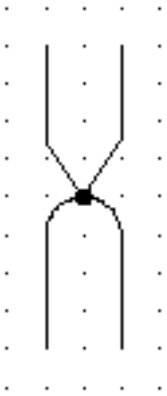
S00954



Name:	Thermocouple with non-insulated heating element
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-03
Keywords:	thermocouples
Alternative forms:	S00955
Applies:	S00698; S00952
Replacing:	S00955
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Symbol S00699 may be used to represent the heating element instead of symbol S00698.

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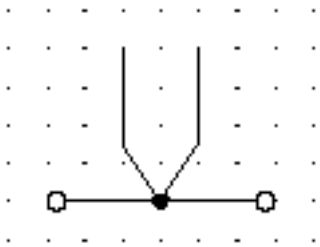
S00955



Name:	Thermocouple with non-insulated heating element
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-04
Keywords:	thermocouples
Form:	Old form
Alternative forms:	S00954
Applies:	S00017; S00698; S00952
Replaced by:	S00954
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Symbol S00699 may be used to represent the heating element instead of symbol S00698.

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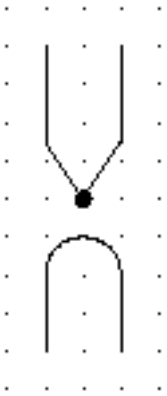
S00956



Name:	Thermocouple with insulated heating element
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-05
Keywords:	thermocouples
Alternative forms:	S00957
Applies:	S00698; S00952
Replacing:	S00957
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Symbol S00699 may be used to represent the heating element instead of symbol S00698.

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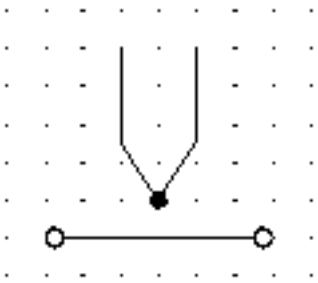
S00957



Name:	Thermocouple with insulated heating element
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-8 (ed.2.0) 08-06-06
Keywords:	thermocouples
Form:	Old form
Alternative forms:	S00956
Applies:	S00017; S00698; S00952
Replaced by:	S00956
Shape class:	Circles, Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Symbol S00699 may be used to represent the heating element instead of symbol S00698.

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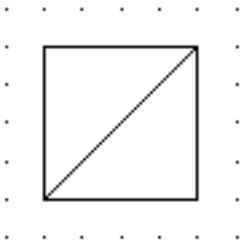
S00958



Name:	Signal translator, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-03-23
Earlier published in:	IEC 60617-8 (ed.2.0) 08-07-01
Keywords:	signal converters, telemetring devices
Applied in:	S01377, S01378
Applies:	S00213
Replaced by:	S00213
Shape class:	Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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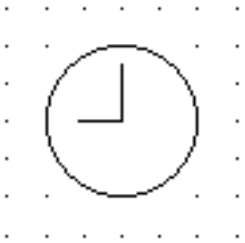
S00959



Name:	Clock, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-08-01
Alternative names:	secondary clock
Keywords:	clocks
Applied in:	S00193, S01237, S00479, S00961, S00495, S00960
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams

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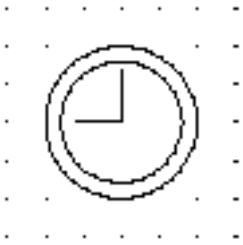
S00960



Name:	Master clock
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-08-02
Keywords:	clocks
Applies:	S00959
Shape class:	Circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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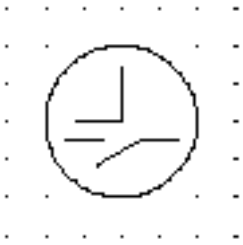
S00961



Name:	Clock with contact
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-08-03
Keywords:	clocks
Applies:	S00227; S00959
Shape class:	Circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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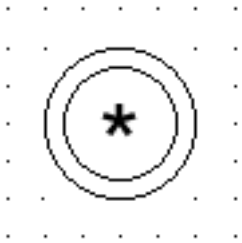
S00962



Name:	Synchronous device, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-09-02
Keywords:	instruments, measuring instruments
Applied in:	S00963
Application notes:	A00173
Shape class:	Circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	Withdrawn because of obsolescence.

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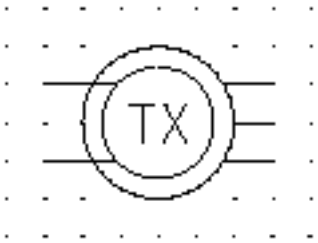

Name:	Torque transmitter
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-09-03
Keywords:	instruments, measuring instruments
Applies:	S00962
Application notes:	A00173
Shape class:	Characters, Circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	Withdrawn because of obsolescence.

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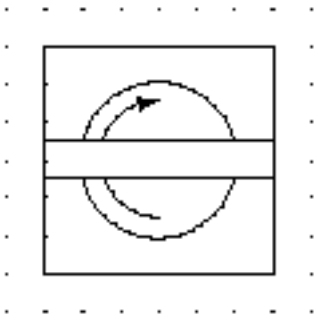

Name:	Gyro
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-09-04
Keywords:	gyros, instruments, measuring instruments
Applies:	S00095
Shape class:	Arrows, Circles, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Withdrawn because of obsolescence.

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S00965



Name:	Lamp, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-01
Alternative names:	lamp, general symbol; signal lamp, general symbol
Keywords:	installations in buildings, lamps, lightning outlets and fittings, signal lamps, signalling devices
Applied in:	S00975, S00487, S00476, S00966, S00467
Application notes:	A00174
Replacing:	S00483
Shape class:	Circles
Function class:	E Providing radiant or thermal energy, P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams

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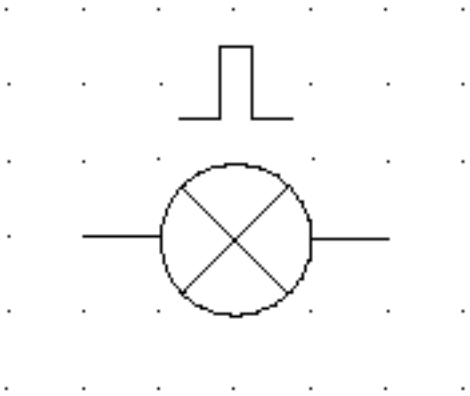
S00966



Name:	Signal lamp, flashing type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-02
Keywords:	signal lamps, signalling devices
Applies:	S00132; S00965
Application notes:	A00174
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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S00967



Name:	Indicator, electromechanical; annunciator element
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-03
Keywords:	signalling devices
Shape class:	Circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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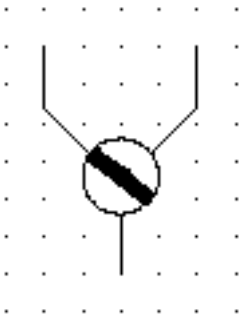
S00968



Name:	Electromechanical position indicator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-04
Keywords:	position indicators, signalling devices
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	Shown with one deenergized and two operated positions.

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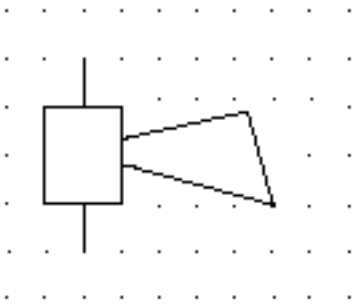
S00969



Name:	Horn
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-05
Keywords:	horns, signalling devices
Replaced by:	S01417
Shape class:	Depicting shapes, Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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S00970



Name:	Bell
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-06
Keywords:	bells, indicators, signalling devices
Applied in:	S00971
Replacing:	S01384
Replaced by:	S01417
Shape class:	Half-circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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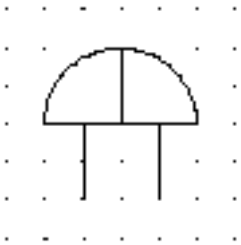
S00971



Name:	Single-stroke bell
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-08
Keywords:	bells, indicators, signalling devices
Applies:	S00970
Replaced by:	S01417
Shape class:	Half-circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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S00972



Name:	Siren
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-09
Keywords:	indicators, signalling devices, sirens
Shape class:	Right-angled triangle
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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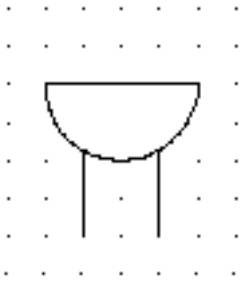

Name:	Buzzer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-10
Keywords:	buzzers, indicators, signalling devices
Replacing:	S01385
Shape class:	Half-circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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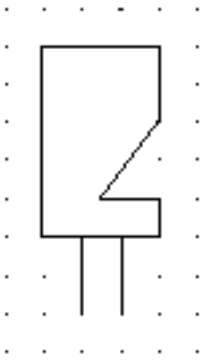
S00974



Name:	Whistle, electrically operated
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2003-01-24
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-12
Keywords:	indicators, signalling devices, whistles
Replaced by:	S01417
Shape class:	Depicting shapes
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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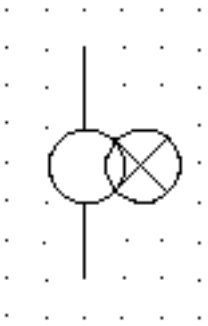
S00975



Name:	Signalling lamp energized by a built-in transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-8 (ed.2.0) 08-10-13
Keywords:	indicator lamps, signal lamps, signalling devices
Applies:	S00841; S00965
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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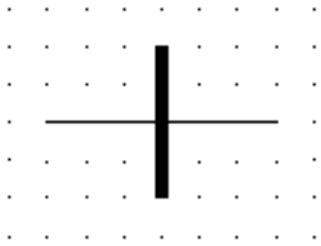
S00981



Name:	Connecting stage, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-01
Keywords:	connecting, switching
Applied in:	S00991, S00992, S00993, S00989, S00982, S00987, S00990, S00994, S00986, S00984, S00988
Application notes:	A00195, A00196, A00200
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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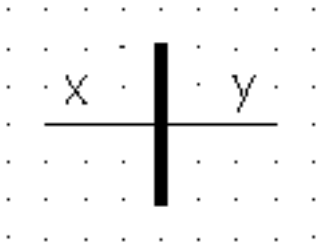
S00982



Name:	Connecting stage with x inlets and y outlets
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-02
Keywords:	connecting, switching
Applied in:	S00983
Applies:	S00981
Application notes:	A00195, A00196, A00200
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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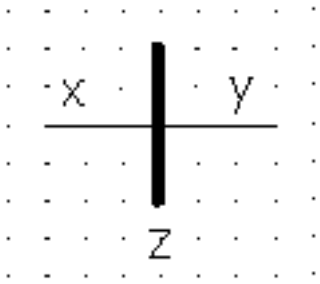
S00983



Name:	Connecting stage composed of z grading groups
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-03
Keywords:	connecting, switching
Applies:	S00982
Application notes:	A00195, A00196, A00200
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Symbol restrictions:	Each grading group consist of x inlets and y outlets

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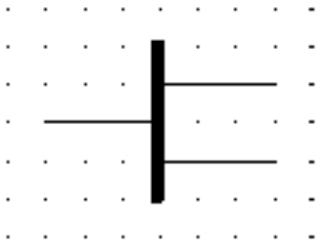
S00984



Name:	Connecting stage with one group of inlets and two groups of outlets
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-04
Keywords:	connecting, switching
Applied in:	S00991, S00985
Applies:	S00981
Application notes:	A00195, A00196, A00200, A00201
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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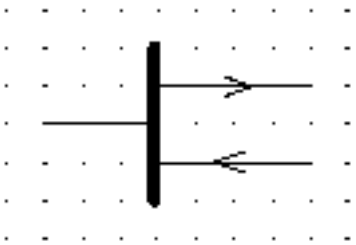
S00985



Name:	Connecting stage interconnecting one group of bothway trunks with two groups of unidirectional trunks of opposite sense
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-05
Keywords:	connecting, switching
Applies:	S00099; S00984
Application notes:	A00195, A00196, A00200
Shape class:	Arrows, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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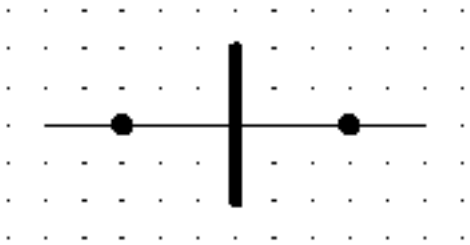
S00986



Name:	Marking stage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-06
Keywords:	switching, marking stage
Applied in:	S00992
Applies:	S00981
Application notes:	A00195, A00197, A00202
Shape class:	Dots (points), Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The outgoing calls are via one connecting stage

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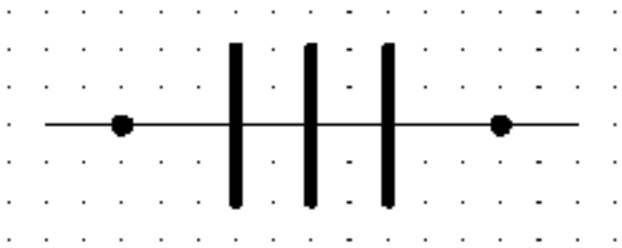
S00987



Name:	Marking stage - outgoing calls via several connecting stages
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-07
Keywords:	marking stage, switching
Applies:	S00981
Application notes:	A00195, A00197, A00202
Shape class:	Dots (points), Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol is shown with three connecting stages

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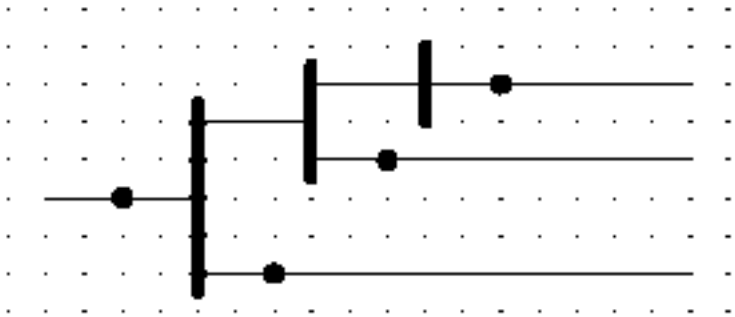
S00988



Name:	Mixed marking stage - outgoing calls via different connecting stages
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-08
Keywords:	marking stage, switching
Applies:	S00981
Application notes:	A00195, A00197, A00202
Shape class:	Dots (points), Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol is shown with outgoing calls via one, two and three connecting stages.

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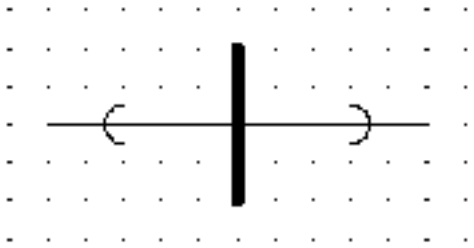
S00989



Name:	Switching stage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-09
Keywords:	switching stage
Applied in:	S00993
Applies:	S00981
Application notes:	A00195, A00198, A00203
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol is shown with outgoing calls via one connecting stage.

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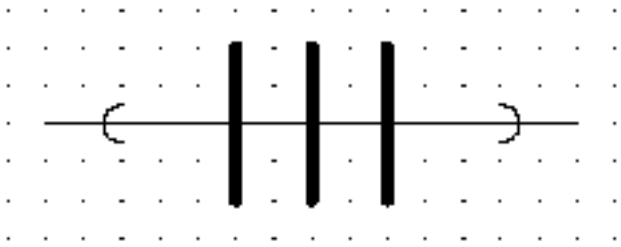
S00990



Name:	Switching stage - outgoing calls via several connecting stage
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-10
Keywords:	switching stage
Applies:	S00981
Application notes:	A00195, A00198, A00203
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Symbol restrictions:	The symbol is shown with three connecting stages.

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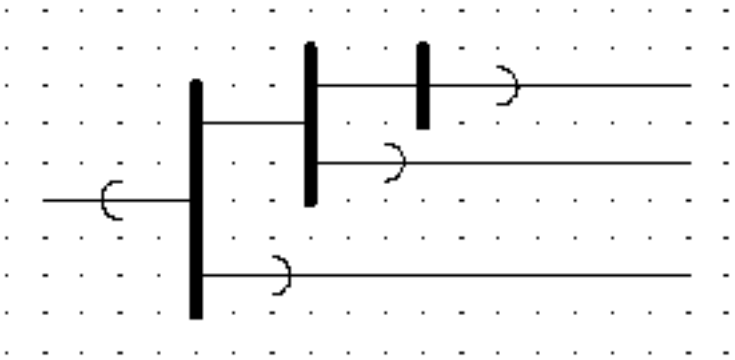
S00991



Name:	Mixed switching state - outgoing calls via different connecting stages
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-11
Keywords:	switching stage
Applies:	S00981; S00984
Application notes:	A00195, A00198, A00203
Shape class:	Half-circles, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol is shown woth outgoing calls via one, two and three connecting stages.

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S00992

Name:	Trunking diagram of a switching system
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-12
Keywords:	switching
Applies:	S00059; S00981; S00986; S01020
Application notes:	A00196, A00197, A00198, A00199, A00257
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Overview diagrams
Remarks:	This "symbol" has been moved to Application note A00257.

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S00993

Name:	Trunking diagram of a switching system
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-01-13
Keywords:	switching
Applies:	S00059; S00981; S00989; S00995; S01020
Application notes:	A00196, A00197, A00198, A00199, A00257
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Overview diagrams
Remarks:	This "symbol" has been moved to Application note A00257.

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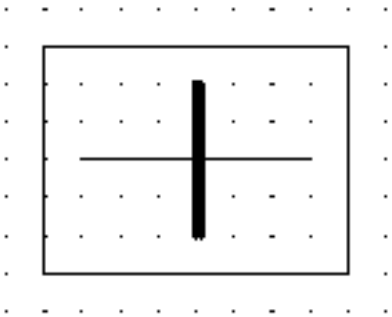
S00994



Name:	Automatic switching equipment
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-02-01
Keywords:	switching
Applies:	S00060; S00981
Application notes:	A00205
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Function diagrams, Overview diagrams

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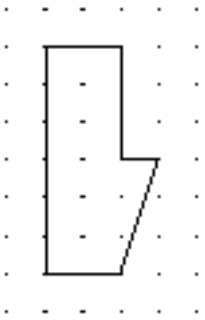
S00995



Name:	Manual switchboard
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-02-02
Keywords:	switching
Applied in:	S00993
Application notes:	A00205
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Overview diagrams

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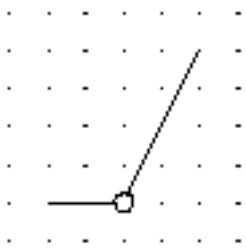
S00996



Name:	Selector wiper, non-bridging
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-01
Keywords:	selectors
Alternative forms:	S01005
Applied in:	S01007, S01013, S01005, S01012, S01006, S00997, S01008
Application notes:	A00206
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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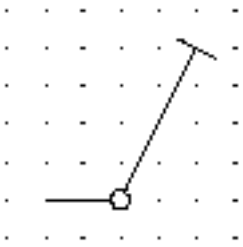
S00997



Name:	Selector wiper, bridging
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-02
Keywords:	selectors
Applied in:	S01004
Applies:	S00996
Application notes:	A00206
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00998



Name:	Arc or bank of single-motion selector
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-03
Keywords:	selectors
Applied in:	S01007, S01010, S00999, S01012, S01006, S01009, S01000
Shape class:	Circle segments
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S00999



Name:	Arc or bank of two-motion selector
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-04
Keywords:	selectors
Applied in:	S01013, S01008
Applies:	S00998
Shape class:	Circle segments
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01000



Name:	Selector arc with one special position
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-05
Keywords:	selectors
Applies:	S00998
Shape class:	Circle segments
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	An example of a special position is the home position.

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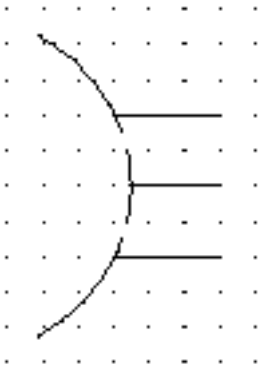
S01001



Name:	Selector bank or level
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-06
Keywords:	selectors
Application notes:	A00207
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol shows groups of outlets or contacts.

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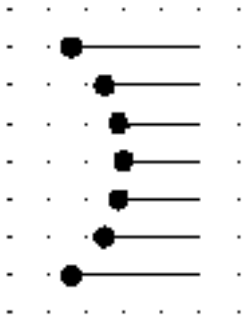
S01002



Name:	Selector level showing individual outlets or contacts
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-07
Keywords:	selectors
Applied in:	S01005, S01004
Application notes:	A00208
Shape class:	Dots (points)
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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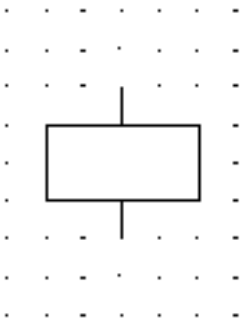
S01003



Name:	Operating coil of a selector
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-03-09
Keywords:	selectors
Replacing:	S01386
Replaced by:	S00305
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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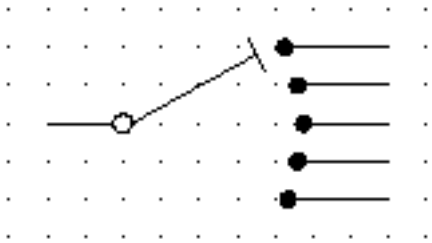
S01004



Name:	Selector level with bridging wiper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-01
Keywords:	selectors
Applies:	S00997; S01002
Shape class:	Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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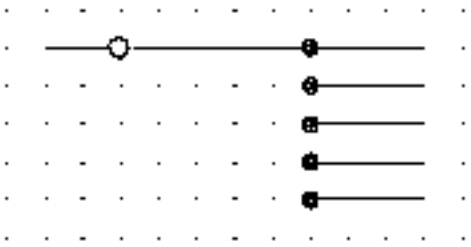
S01005



Name:	Selector level with non-bridging wiper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-02
Keywords:	selectors
Applies:	S00996; S01002
Shape class:	Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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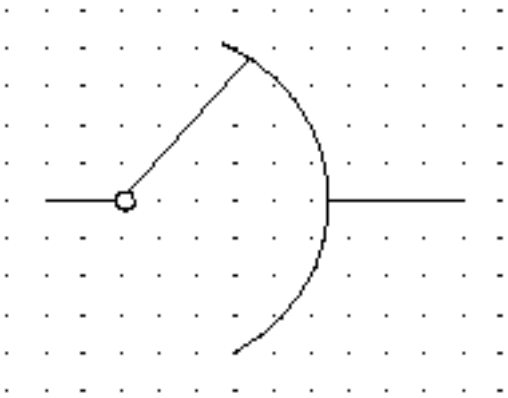
S01006



Name:	Single-motion selector, non-homing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-03
Keywords:	selectors
Applied in:	S01351, S01011
Applies:	S00996; S00998
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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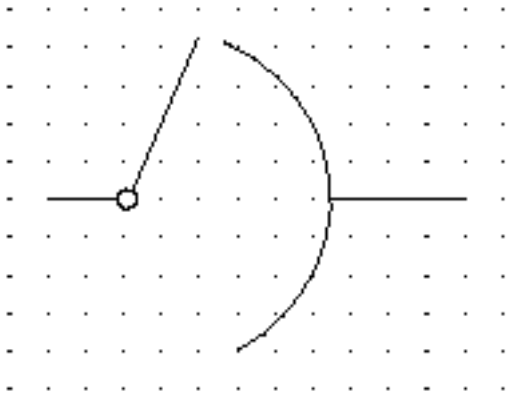
S01007



Name:	Single-motion selector, homing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-04
Keywords:	selectors
Applies:	S00996; S00998
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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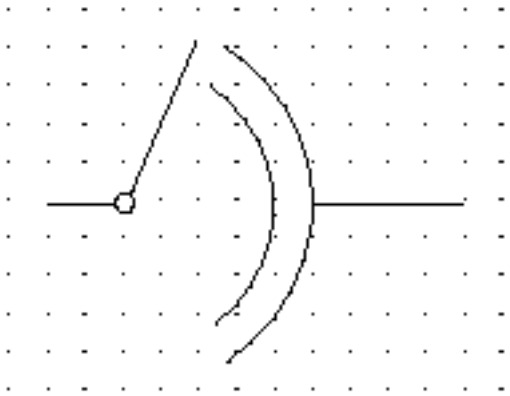
S01008



Name:	Two-motion selector, homing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-05
Keywords:	selectors
Applies:	S00996; S00999
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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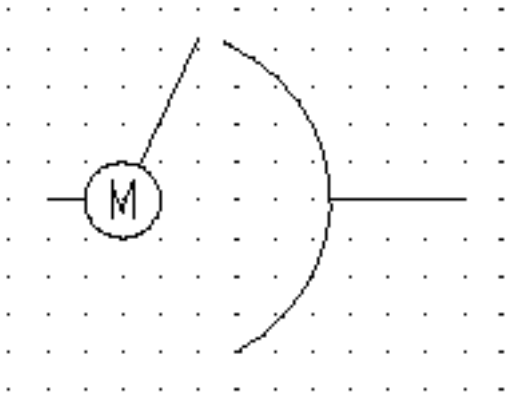
S01009



Name:	Selector, motor driven, homing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-06
Keywords:	selectors
Applies:	S00819; S00998
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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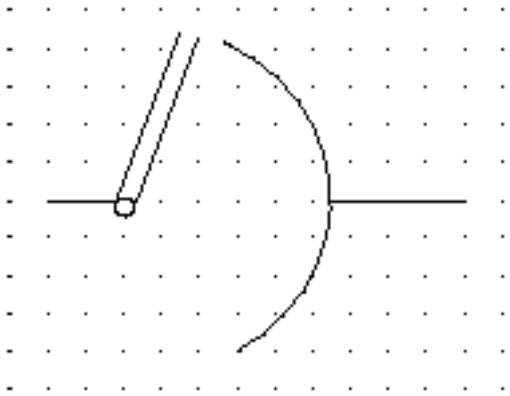
S01010



Name:	Selector for four-wire switching, homing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-07
Keywords:	selectors
Applies:	S00998
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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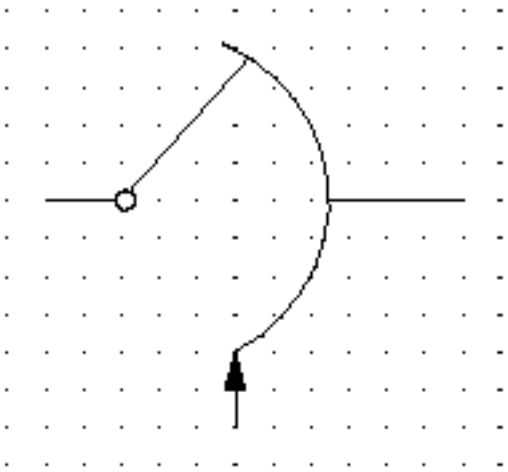
S01011



Name:	Single-motion selector, set
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-08
Keywords:	selectors
Applies:	S01006
Shape class:	Arrows, Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The selector is set via marked bank contact(s), non homing

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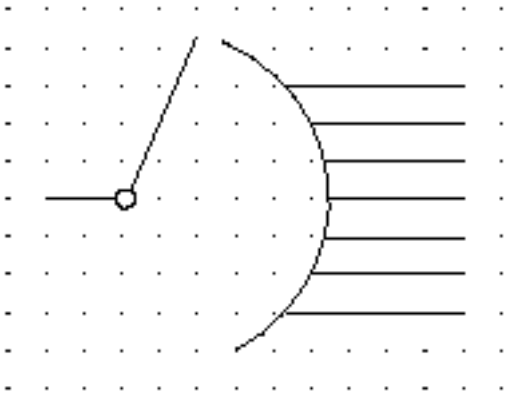
S01012



Name:	Single-motion homing selector with individual outlets
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-09
Keywords:	selectors
Applies:	S00996; S00998
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The individual outlets could also be groups of outlets.

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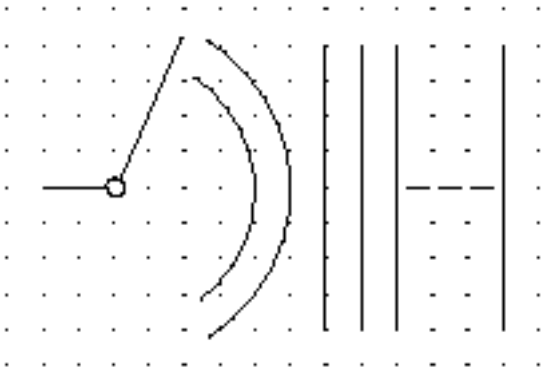
S01013



Name:	Two-motion selector showing levels
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-10
Keywords:	selectors
Applies:	S00996; S00999
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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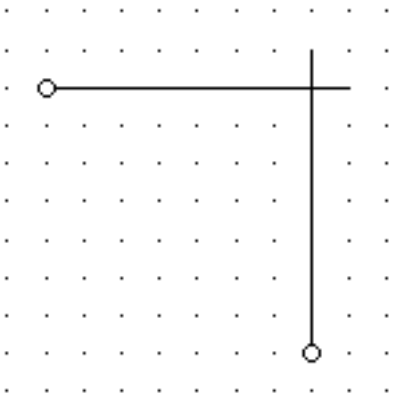
S01014



Name:	Crossbar selector, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-11
Keywords:	selectors
Applied in:	S01015
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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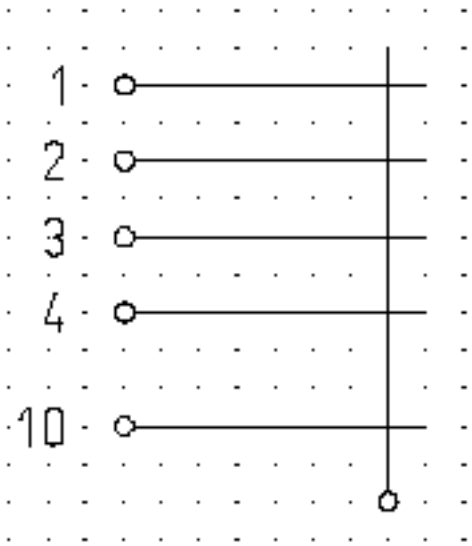
S01015



Name:	Crossbar selector, single connecting unit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-12
Keywords:	selectors
Applies:	S01014
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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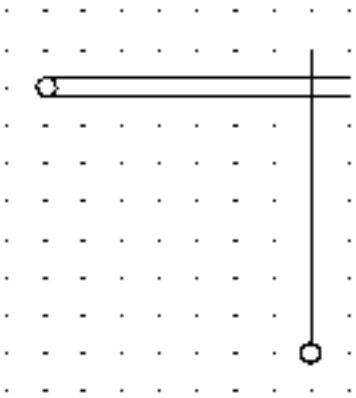
S01016



Name:	Crossbar selector, four-wire switching
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-04-13
Keywords:	selectors
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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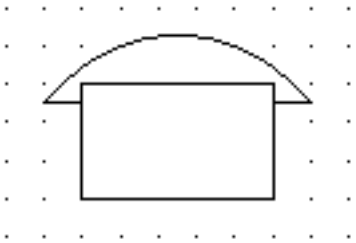
S01017



Name:	Telephone set, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-01
Keywords:	telephone sets
Applied in:	S01028, S01019, S01025, S01024, S01027, S01026, S01018, S01022, S01023, S01020, S01021
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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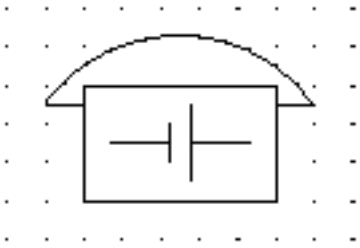
S01018



Name:	Telephone set with local battery
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-02
Keywords:	telephone sets
Applies:	S01017; S01342
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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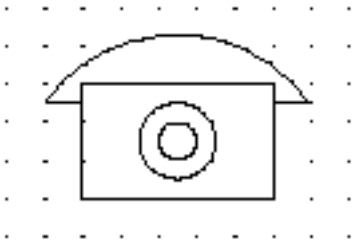
S01019



Name:	Telephone set, common battery
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-03
Keywords:	telephone sets
Applies:	S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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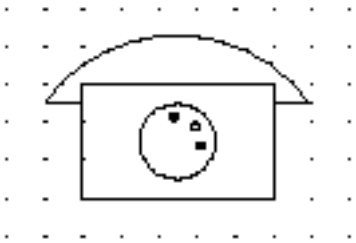
S01020



Name:	Telephone set with dial
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-04
Keywords:	telephone sets
Applied in:	S00992, S00993
Applies:	S01017
Application notes:	A00209
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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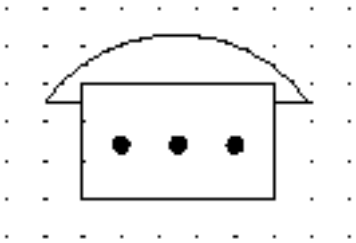

Name:	Telephone set with push-button dialling
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-05
Keywords:	telephone sets
Applies:	S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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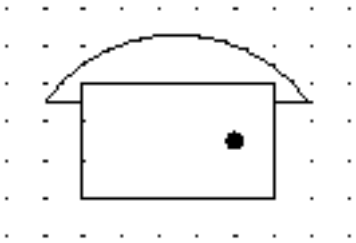

Name:	Telephone set with push-buttons or keys for special purposes
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-06
Keywords:	telephone sets
Applies:	S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams
Remarks:	The key(s) or push-button(s) should provide facilities other than dialling or multi-line working .

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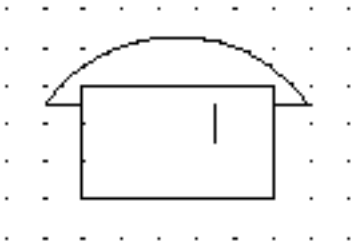

Name:	Telephone set, paying
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-07
Keywords:	telephone sets
Applies:	S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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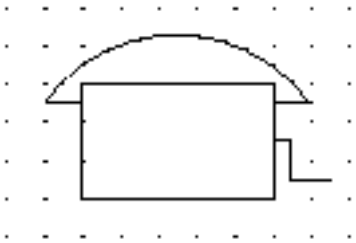

Name:	Telephone set with ringing generator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-08
Keywords:	telephone sets
Applies:	S00180; S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams
Remarks:	The ringing generator could be a magneto

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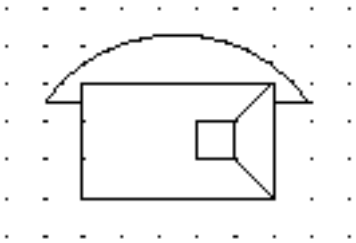

Name:	Telephone set with loudspeaker
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-09
Keywords:	telephone sets
Applies:	S01017; S01059
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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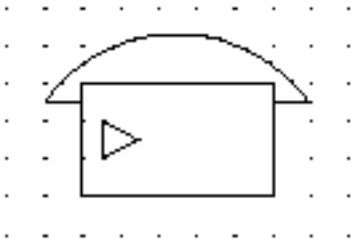

Name:	Telephone set with amplifier
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-10
Keywords:	telephone sets
Applies:	S01017; S01239
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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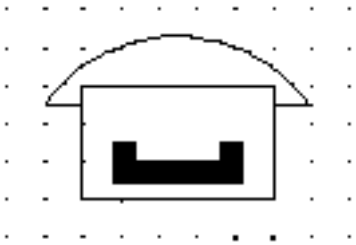

Name:	Telephone set, sound-powered
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-11
Keywords:	telephone sets
Applies:	S00210; S01017
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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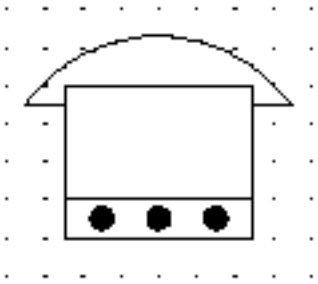

Name:	Telephone set for several lines
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-05-12
Keywords:	telephone sets
Applies:	S01017
Application notes:	A00211
Shape class:	Depicting shapes
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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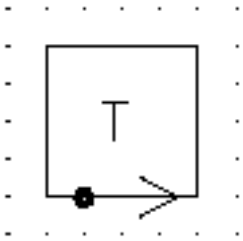

Name:	Telecommunication transmitting apparatus
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-01
Keywords:	telegraphy, telecommunication
Applies:	S00059; S00102; S01081
Application notes:	A00212
Shape class:	Arrows, Characters, Dots (points), Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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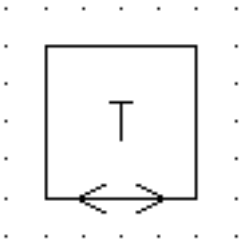

Name:	Telecommunication transmitting and receiving apparatus, two-way simplex
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-02
Keywords:	telecommunication, telegraphy
Applies:	S00059; S00101; S01081
Application notes:	A00212
Shape class:	Arrows, Characters, Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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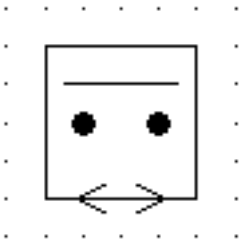

Name:	Tape-printing receiver with keyboard transmitter
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-03
Keywords:	telegraphy
Applies:	S00059; S00101; S00138; S00142
Application notes:	A00212
Shape class:	Dots (points), Lines , Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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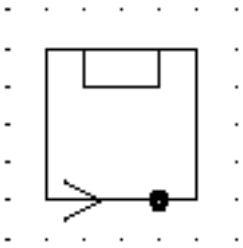

Name:	Page-printing receiver
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-04
Keywords:	telegraphy
Applies:	S00059; S00103; S00141
Application notes:	A00212
Shape class:	Arrows, Dots (points), Squares
Function class:	P Presenting information
Application class:	Installation diagrams, Overview diagrams

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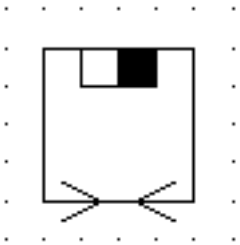

Name:	Telefax
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-05
Keywords:	facsimile, receivers, telefax
Applies:	S00059; S00103; S00143
Application notes:	A00212
Shape class:	Arrows, Dots (points), Rectangles, Squares
Function class:	P Presenting information
Application class:	Installation diagrams, Overview diagrams

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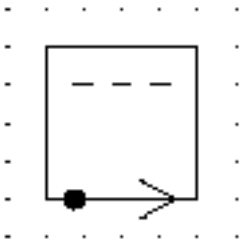

Name:	Automatic transmitter using perforated tape
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-06
Keywords:	telegraphy
Applies:	S00059; S00102; S00139
Application notes:	A00212
Shape class:	Arrows, Dots (points), Lines , Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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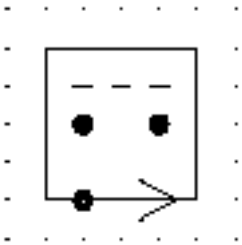

Name:	Keyboard perforator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-07
Keywords:	telegraphy
Applies:	S00059; S00102; S00139; S00142
Application notes:	A00212
Shape class:	Arrows, Dots (points), Lines , Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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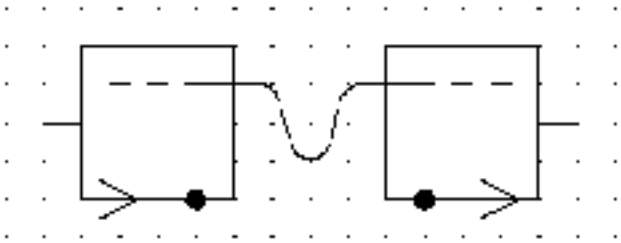

Name:	Separate reperforator and automatic transmitter
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-08
Keywords:	telegraphy
Applies:	S00059; S00102; S00103; S00139
Application notes:	A00213
Shape class:	Arrows, Dots (points), Lines , Squares
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams

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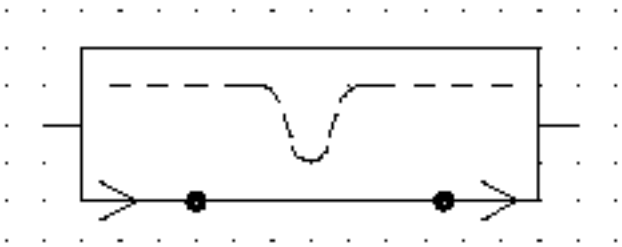

Name:	Combined reperforator and automatic transmitter
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-06-09
Keywords:	telegraphy
Applies:	S00059; S00102; S00103; S00139
Application notes:	A00212
Shape class:	Arrows, Dots (points), Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Installation diagrams, Overview diagrams
Remarks:	The symbol is shown with continuous tape feed.

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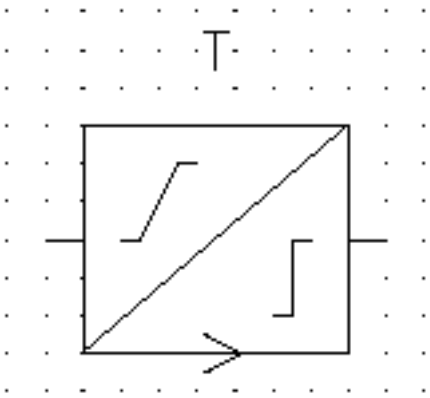

Name:	Telegraph repeater, regenerative
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-07-01
Keywords:	repeaters, telegraphy
Applies:	S00099; S00135; S00213; S01081
Application notes:	A00214
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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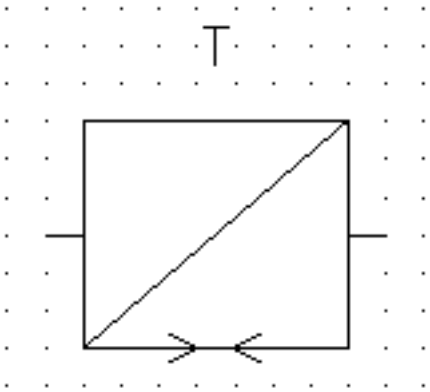

Name:	Telegraph repeater, duplex
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-07-02
Keywords:	repeaters, telegraphy
Applies:	S00100; S00213; S01081
Application notes:	A00214
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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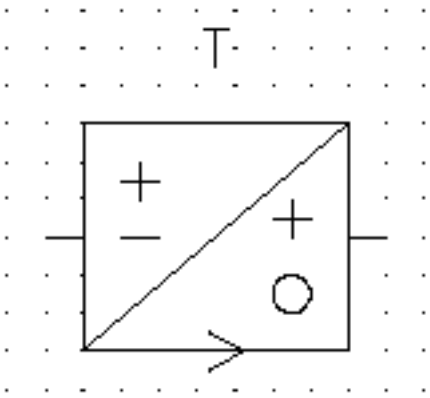

Name:	Telegraph repeater, one-way, double-current/single_current
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-07-03
Keywords:	repeaters, telegraphy
Applies:	S00099; S00213; S01081
Application notes:	A00214
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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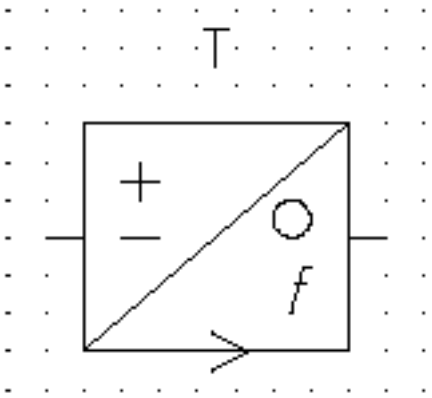

Name:	Telegraph repeater, double-current/alternating current
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-07-04
Keywords:	repeaters, telegraphy
Applies:	S00099; S00213; S01081
Application notes:	A00214
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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S01042



Name:	Magnetic type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-01
Keywords:	magnetic
Applied in:	S01076, S01067, S01072, S01069, S01068, S01071, S01070
Application notes:	A00215
Shape class:	Circle segments
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01043



Name:	Moving coil indication; Ribbon type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-02
Keywords:	coils
Application notes:	A00215
Shape class:	Half-circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01044



Name:	Moving iron type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-03
Keywords:	coils
Application notes:	A00215
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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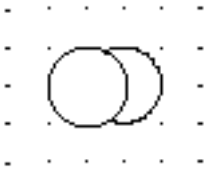
S01045



Name:	Stereo type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-04
Keywords:	stereo
Applied in:	S01062
Application notes:	A00215
Replacing:	S01387
Shape class:	Circle segments, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01046



Name:	Disc type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-05
Keywords:	discs
Applied in:	S01065, S01066, S01079
Application notes:	A00215
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01047



Name:	Tape type indication; Film type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-06
Keywords:	films, tapes
Applied in:	S01078
Application notes:	A00215
Shape class:	Circles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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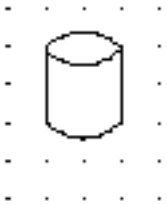
S01048



Name:	Drum type indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-07
Keywords:	drums
Applied in:	S01076
Application notes:	A00215
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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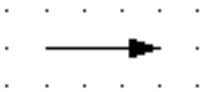
S01049



Name:	Recording indication; Reproducing indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-08
Keywords:	recording, reproducing
Applied in:	S01067, S01068, S01063, S01062
Application notes:	A00215, A00217
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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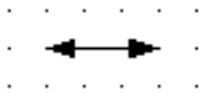
S01050



Name:	Recording and reproducing indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-09
Keywords:	recording, reproducing
Applied in:	S01076, S01072, S01071, S01060
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01051



Name:	Erasing indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-10
Keywords:	erasing
Applied in:	S01064, S01073, S01072, S01069, S01071, S01070
Application notes:	A00215
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01052



Name:	Surface-acoustic-wave (SAW) indication
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-08-11
Keywords:	SAW
Applied in:	S01181, S01184, S01074, S01266, S01265, S01264
Application notes:	A00215
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01053



Name:	Microphone, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-01
Keywords:	microphones
Applied in:	S01055, S01054, S01058
Application notes:	A00216
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams

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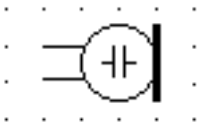
S01054



Name:	Electrostatic microphone; Capacitor microphone
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-02
Keywords:	microphones
Applies:	S00567; S01053
Application notes:	A00216
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams

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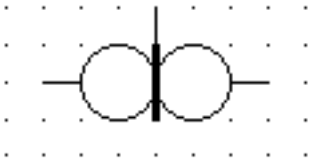
S01055



Name:	Microphone, push-pull
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-03
Keywords:	microphones
Applies:	S01053
Application notes:	A00216
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams

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S01056



Name:	Earphone, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-04
Keywords:	earphones
Applied in:	S01057, S01058
Application notes:	A00216
Shape class:	Lines , Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams

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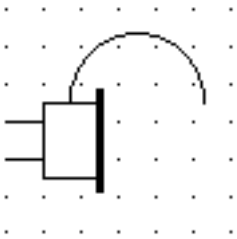
S01057



Name:	Headset
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-05
Keywords:	earphones, headsets
Applies:	S01056
Application notes:	A00216
Shape class:	Half-circles, Lines , Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with one earphone

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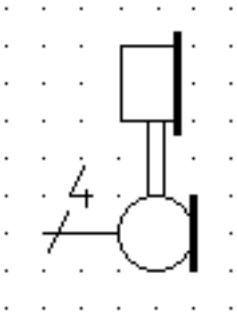
S01058



Name:	Handset
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-04
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-06
Keywords:	earphones, microphones
Applies:	S01053; S01056
Application notes:	A00216
Shape class:	Circles, Lines , Rectangles
Function class:	B Converting variable to signal, P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with 4 connections.

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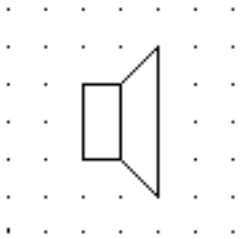
S01059



Name:	Loudspeaker, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-07
Keywords:	loudspeakers
Applied in:	S01025, S01060
Application notes:	A00216
Shape class:	Depicting shapes, Lines , Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams

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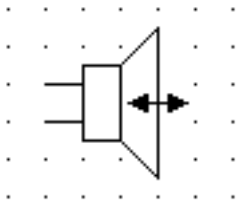
S01060



Name:	Loudspeaker-microphone
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-08
Keywords:	loudspeakers, microphones
Applied in:	S00497
Applies:	S01050; S01059
Application notes:	A00216
Shape class:	Arrows, Depicting shapes, Lines , Rectangles
Function class:	B Converting variable to signal, P Presenting information
Application class:	Circuit diagrams, Function diagrams

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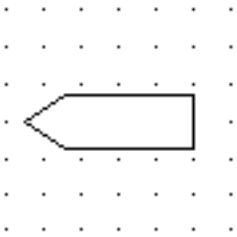
S01061



Name:	Transducer head, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-09
Keywords:	transducers
Applied in:	S01064, S01078, S01065, S01067, S01069, S01071, S01063, S01062, S01075, S01079
Application notes:	A00216
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams

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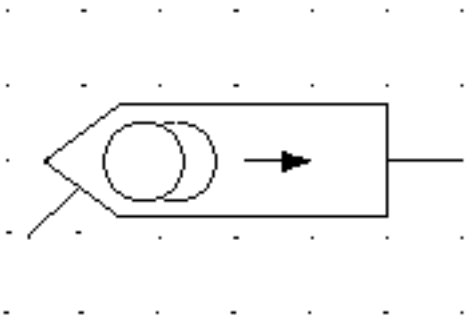
S01062



Name:	Reproducing head, stereophonic, stylus operated
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-10
Keywords:	transducers
Applies:	S01045; S01049; S01061
Application notes:	A00216
Shape class:	Arrows, Circle segments, Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	Reproducing includes reading and playback.

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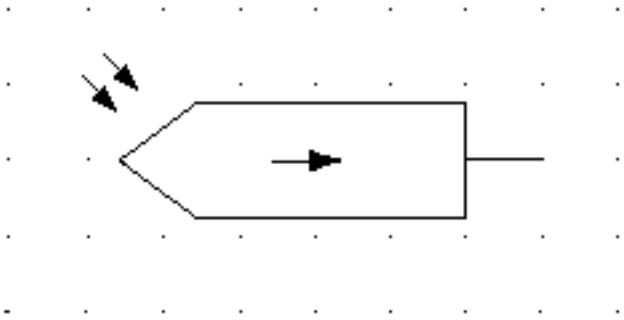
S01063



Name:	Light sensitive reproducing head, monophonic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-11
Keywords:	transducers
Applies:	S00127; S01049; S01061
Application notes:	A00216
Shape class:	Arrows, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Function diagrams

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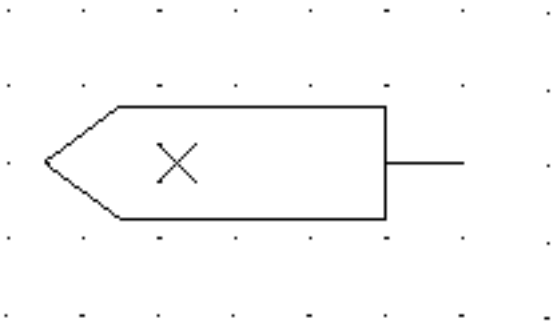
S01064



Name:	Erasing head
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-12
Keywords:	transducers
Applies:	S01051; S01061
Application notes:	A00216
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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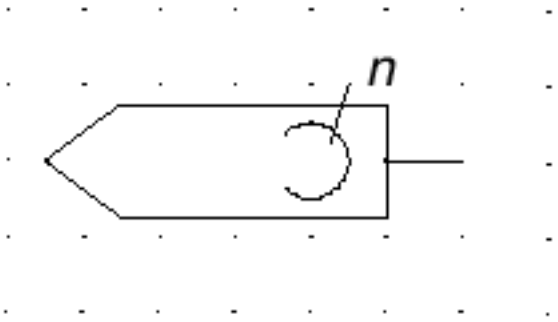
S01065



Name:	Magnetic head
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-13
Keywords:	transducers
Form:	Complete form
Alternative forms:	S01066
Applies:	S01046; S01061
Application notes:	A00216, A00218
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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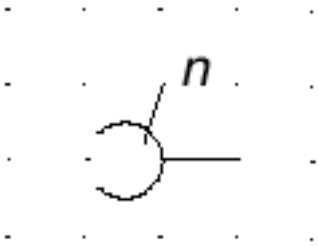
S01066



Name:	Magnetic head
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-14
Keywords:	transducers
Form:	Simplified form
Alternative forms:	S01065
Applies:	S01046
Application notes:	A00216, A00218
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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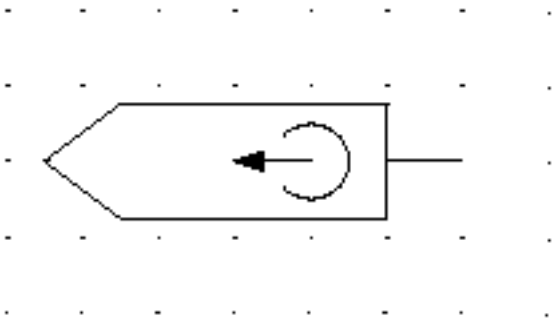
S01067



Name:	Magnetic head for writing, monophonic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-15
Keywords:	transducers
Form:	Complete form
Alternative forms:	S01068
Applies:	S01042; S01049; S01061
Application notes:	A00216
Shape class:	Arrows, Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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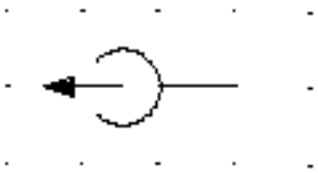
S01068



Name:	Magnetic head for writing, monophonic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-16
Keywords:	transducers
Form:	Simplified form
Alternative forms:	S01067
Applies:	S01042; S01049
Application notes:	A00216
Shape class:	Arrows, Circle segments
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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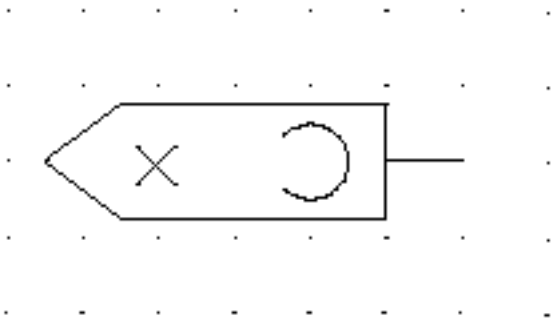
S01069



Name:	Magnetic head for erasing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-17
Keywords:	transducers
Form:	Complete form
Alternative forms:	S01070
Applies:	S01042; S01051; S01061
Application notes:	A00216
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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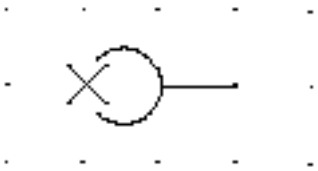
S01070



Name:	Magnetic head for erasing
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-18
Keywords:	transducers
Form:	Simplified form
Alternative forms:	S01069
Applies:	S01042; S01051
Application notes:	A00216
Shape class:	Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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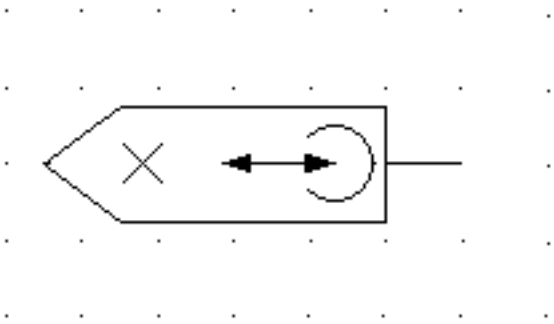
S01071



Name:	Magnetic head for writing, reading and erasing, monophonic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-19
Keywords:	transducers
Form:	Complete form
Alternative forms:	S01072
Applies:	S01042; S01050; S01051; S01061
Application notes:	A00216
Shape class:	Arrows, Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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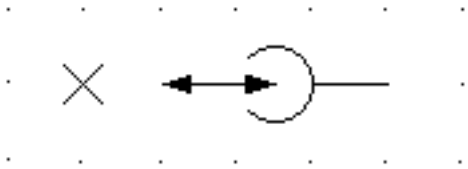
S01072



Name:	Magnetic head for writing, reading and erasing, monophonic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-20
Keywords:	transducers
Form:	Simplified form
Alternative forms:	S01071
Applies:	S01042; S01050; S01051
Application notes:	A00216
Shape class:	Arrows, Circle segments, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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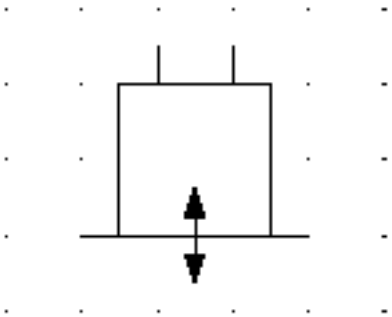
S01073



Name:	Ultrasound transmitter-receiver; Hydrophone
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-21
Keywords:	hydrophones, receivers, transmitters
Applies:	S01051
Application notes:	A00216
Shape class:	Arrows, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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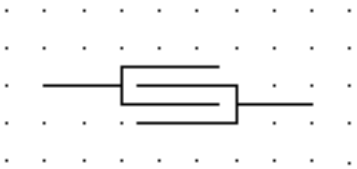
S01074



Name:	Surface-acoustic-wave (SAW) transducer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-09-22
Keywords:	SAW, transducers
Applies:	S01052
Application notes:	A00216
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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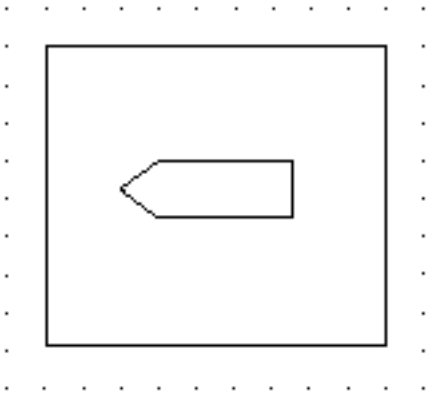
S01075



Name:	Recorder, general symbol; reproducer; general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-10-01
Keywords:	recorders, reproducers
Applied in:	S01077
Applies:	S00059; S01061
Application notes:	A00216, A00219
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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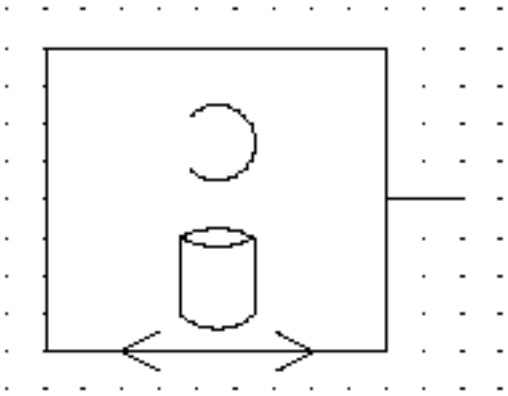
S01076



Name:	Recorder and reproducer, magnetic drum type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-10-02
Keywords:	recorders, reproducers
Applies:	S00059; S01042; S01048; S01050
Application notes:	A00216
Shape class:	Arrows, Circle segments, Depicting shapes, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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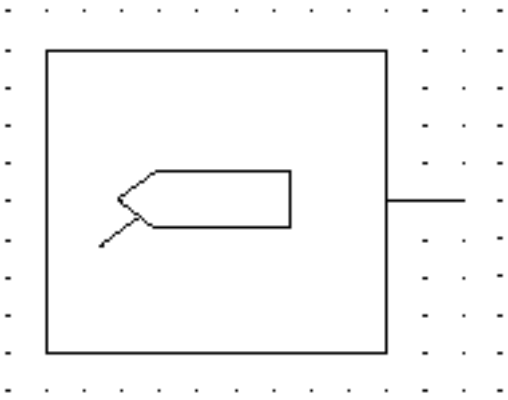
S01077



Name:	Stylus-type reproducer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-10-03
Keywords:	reproducers
Applies:	S01075
Application notes:	A00216
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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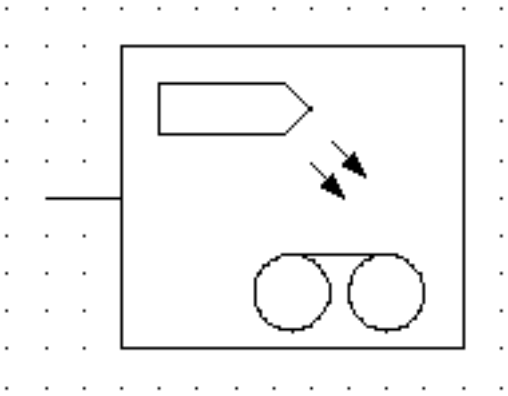
S01078



Name:	Optical file-type recorder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-10-04
Keywords:	recorders
Applies:	S00059; S00127; S01047; S01061
Application notes:	A00216
Shape class:	Arrows, Circles, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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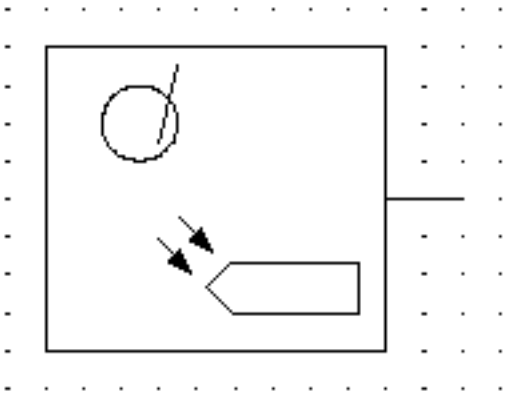
S01079



Name:	Optical disc-type reproducer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-9 (ed.2.0) 09-10-05
Keywords:	reproducers
Applies:	S00059; S00127; S01046; S01061
Application notes:	A00216
Shape class:	Arrows, Circles, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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S01080



Name:	Telephony
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-01
Keywords:	telephony, transmission
Applied in:	S01084, S01085
Applies:	S00001
Application notes:	A00233
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Replaced by the modified application note A109.

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S01081



Name:	Telegraphy and transmission of data
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-02
Keywords:	transmission, telegraphy
Applied in:	S01030, S01039, S01038, S01040, S01041, S01029
Applies:	S00001
Application notes:	A00233
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Replaced by the modified application note A109.

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S01082



Name:	Video channel; Television
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-03
Keywords:	transmission, video
Applied in:	S01093, S01085
Applies:	S00001
Application notes:	A00233
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Replaced by the modified application note A109.

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S01083



Name:	Sound channel
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-04
Keywords:	sound, transmission
Applied in:	S01085
Applies:	S00001
Application notes:	A00233
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Sound channel in the context of television and radio broadcasting. Replaced by the modified application note A109.

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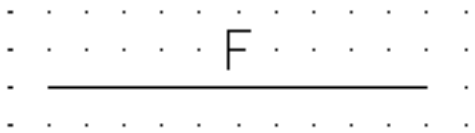
S01084



Name:	Telephone line; Telephone circuit
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-05
Keywords:	telephony, transmission
Applied in:	S01085
Applies:	S00001; S01080
Application notes:	A00234
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Telephone circuit shown. Replaced by the modified application note A109.

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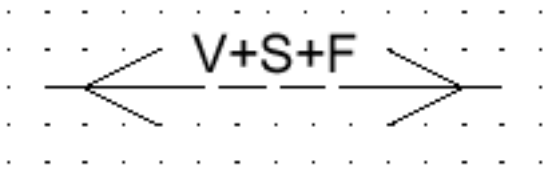
S01085



Name:	Radio link
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-06
Keywords:	links, transmission lines
Applies:	S01080; S01082; S01083; S01084; S01102
Shape class:	Characters, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown for a radio link carrying television (video and sound) and telephony. Replaced by the modified application note A109.

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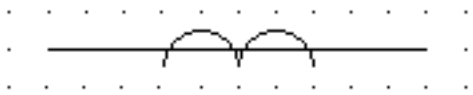
S01086



Name:	Coil-loaded transmission line; Inductively loaded line
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-01-07
Keywords:	coils, lines, transmission lines
Applies:	S00001; S00583
Shape class:	Half-circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Replaced by the modified application note A109.

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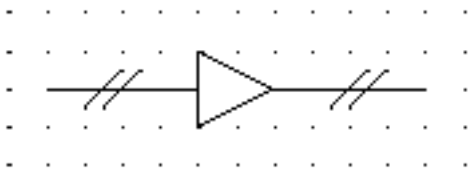
S01087



Name:	Transmission circuit with unidirectional amplification, two wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-01
Keywords:	amplifiers, lines, transmission lines
Applied in:	S01090
Applies:	S00002; S01239
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps
Remarks:	Withdrawn because of obsolescence.

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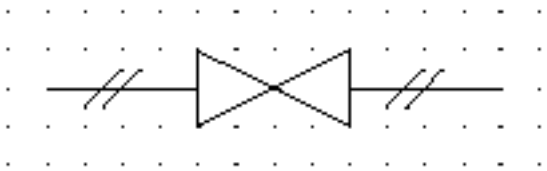
S01088



Name:	Transmission circuit with both-way amplification, two wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-02
Keywords:	amplifiers, lines, transmission lines
Applies:	S00002; S01239
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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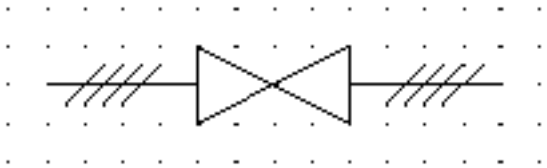
S01089



Name:	Transmission circuit with both-way amplification, four wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-03
Keywords:	amplifiers, lines, transmission lines
Form:	Form 1
Alternative forms:	S01090
Applies:	S00002; S01239
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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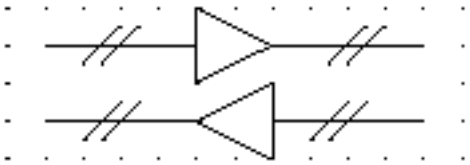
S01090



Name:	Transmission circuit with both-way amplification, four wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-04
Keywords:	amplifiers, lines, transmission
Form:	Form 2
Alternative forms:	S01089
Applies:	S01087
Shape class:	Equilateral triangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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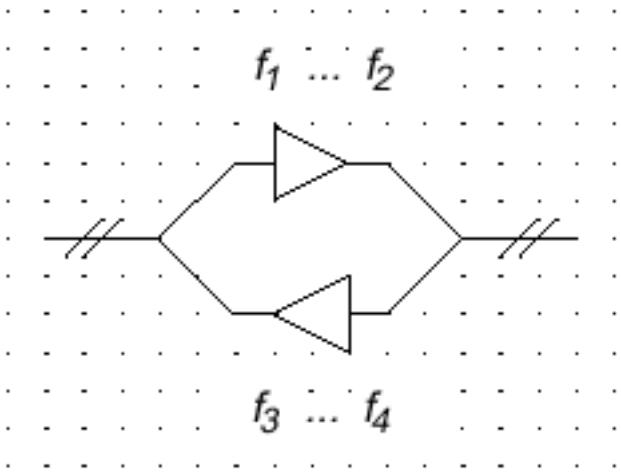
S01091



Name:	Transmission circuit with frequency separation, four wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-05
Keywords:	amplifiers, lines, transmission
Applies:	S00002; S01239
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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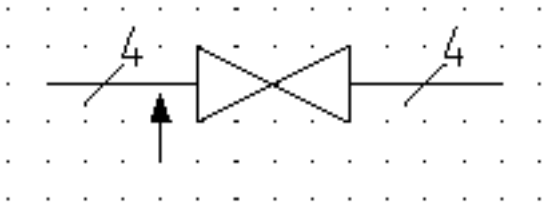
S01092



Name:	Transmission circuit with both-way terminals amplification with echo suppression, four wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-06
Keywords:	amplifiers, echo suppression, lines, transmission
Form:	Form 1
Alternative forms:	S01093
Applies:	S00003; S01239
Shape class:	Arrows, Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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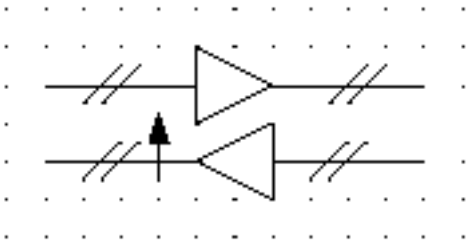
S01093



Name:	Transmission circuit with both-way terminals amplification with echo suppression, four wires
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-02-07
Keywords:	amplifiers, echo suppression, lines, transmission
Form:	Form 2
Alternative forms:	S01092
Applies:	S00002; S01082
Shape class:	Arrows, Equilateral triangles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Withdrawn because of obsolescence.

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S01094



Name:	Plane polarization
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-01
Keywords:	antennas, polarisation
Applied in:	S01108, S01105
Application notes:	A00235
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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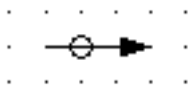
S01095



Name:	Circular polarization
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-02
Keywords:	antennas, polarisation
Applied in:	S01103
Shape class:	Arrows, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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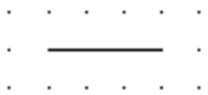
S01096



Name:	Direction of radiation fixed in azimuth
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-03
Keywords:	antennas
Applied in:	S01108, S01097, S01109, S01100, S01105
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01097



Name:	Direction of radiation variable in azimuth
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-04
Keywords:	antennas
Applied in:	S01104
Applies:	S00081; S01096
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01098



Name:	Direction of radiation fixed in elevation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-05
Keywords:	antennas
Applied in:	S01099, S01109, S01100
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01099



Name:	Direction of radiation variable in elevation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-06
Keywords:	antennas
Applied in:	S01106
Applies:	S00081; S01098
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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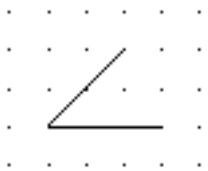
S01100



Name:	Direction of radiation fixed in azimuth and elevation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-07
Keywords:	antennas
Applies:	S01096; S01098
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01101



Name:	Direction finder; Radio beacon
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-03-08
Keywords:	antennas, beacons
Applied in:	S01136, S01127, S01128, S01107
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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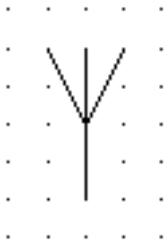
S01102



Name:	Antenna, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-01
Keywords:	antennas
Applied in:	S00428, S01110, S01108, S01103, S01134, S01085, S01106, S01109, S01125, S01104, S01114, S01107, S01105
Application notes:	A00236
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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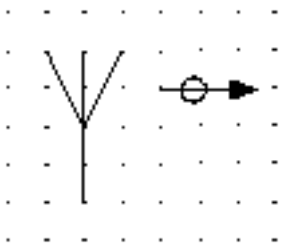
S01103



Name:	Antenna with circular polarization
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-02
Keywords:	antennas, polarisation
Applies:	S01095; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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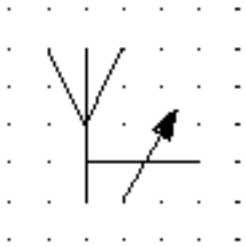
S01104



Name:	Antenna with direction of radiation variable in azimuth
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-03
Keywords:	antennas
Applies:	S01097; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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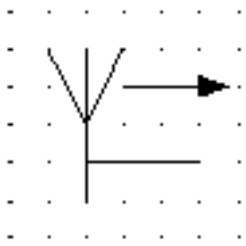
S01105



Name:	Directional antenna fixed in azimuth, horizontal polarization
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-04
Keywords:	antennas
Applies:	S01094; S01096; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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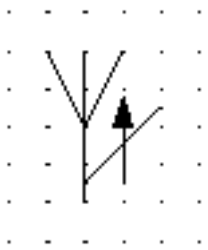
S01106



Name:	Antenna with direction of radiation variable in elevation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-05
Keywords:	antennas
Applies:	S01099; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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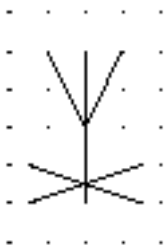
S01107



Name:	Direction finding antenna
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-06
Alternative names:	Radiogoniometric antenna, Radio beacon
Keywords:	antennas
Applies:	S01101; S01102
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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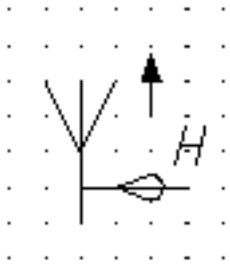
S01108



Name:	Directional antenna
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-07
Keywords:	antennas
Applies:	S01094; S01096; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Directional antenna shown fixed in azimuth, vertically polarized, with horizontal polar diagram.

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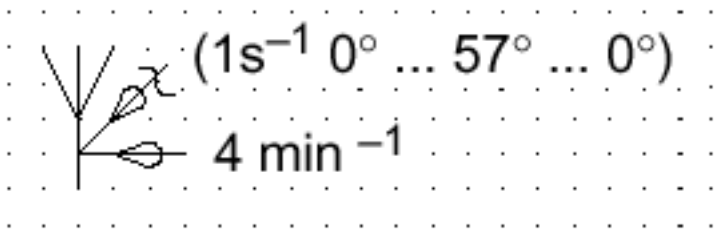
S01109



Name:	Radar antenna
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-08
Keywords:	antennas
Applies:	S00098; S01096; S01098; S01102
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Radar antenna shown rotating four times per minute in azimuth and reciprocating in elevation between 0° ... 57° ... 0° in 1 s.

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S01110



Name:	Antenna, turnstile
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-04-09
Keywords:	antennas
Applies:	S01102
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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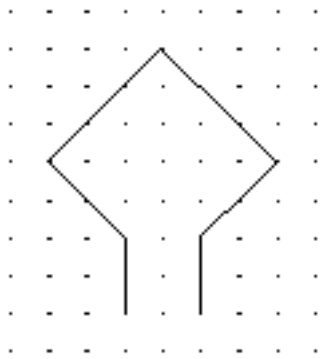
S01111



Name:	Antenna, loop; Antenna, frame
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-01
Keywords:	antennas
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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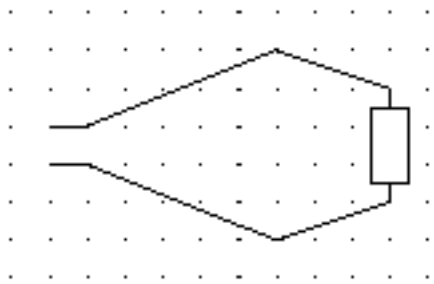
S01112



Name:	Antenna, rombic
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-02
Keywords:	antennas
Applies:	S00555
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown terminated by a resistor.

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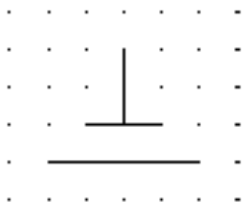
S01113



Name:	Counterpoise
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-03
Keywords:	antennas
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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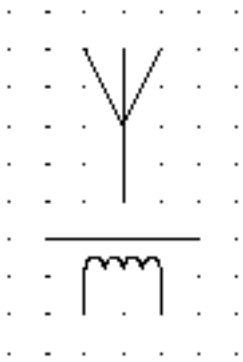
S01114



Name:	Antenna, magnetic rod
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-04
Alternative names:	Ferrite antenna
Keywords:	antennas
Applies:	S00585; S01102
Application notes:	A00237
Shape class:	Half-circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S01115



Name:	Dipole
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-05
Keywords:	antennas
Applied in:	S01116
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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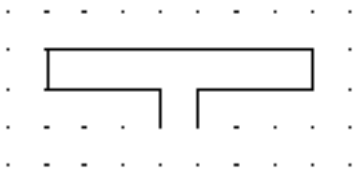
S01116



Name:	Dipole, folded
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-06
Keywords:	antennas
Applied in:	S01117, S01119
Applies:	S01115
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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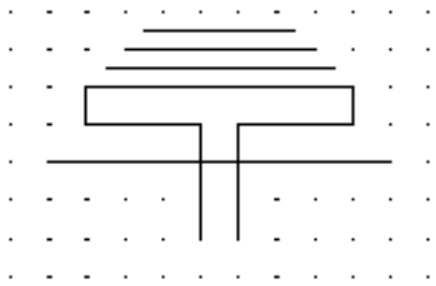
S01117



Name:	Dipole, folded with directors and reflectors
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-07
Keywords:	antennas
Applies:	S01116
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown with three directors and one reflector.

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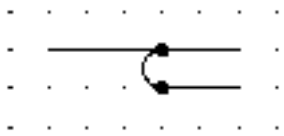
S01118



Name:	Balancing unit; Balun
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-08
Keywords:	antennas
Replaced by:	S01418
Shape class:	Dots (points), Half-circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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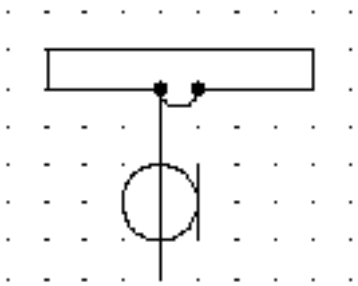
S01119



Name:	Dipole, folded, with balun and feeder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-09
Keywords:	antennas
Applies:	S00011; S01116; S01418
Shape class:	Circles, Half-circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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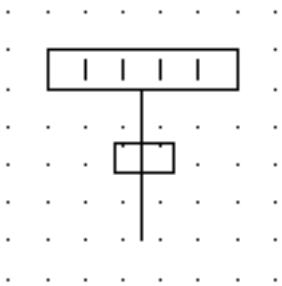
S01120



Name:	Antenna, slot type, with feeder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-10
Keywords:	antennas
Applies:	S01138
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown with rectangular waveguide feeder.

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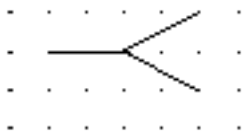
S01121



Name:	Antenna, horn type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-11
Keywords:	antennas
Applied in:	S01122
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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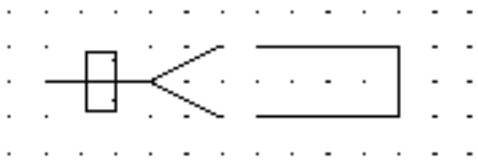
S01122



Name:	Reflector, cheese type, with horn feeder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-12
Keywords:	antennas
Applies:	S01121; S01138
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown with rectangular waveguide feeder.

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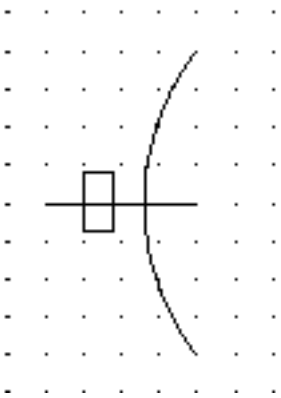
S01123



Name:	Antenna, parabolic, with feeder
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-13
Keywords:	antennas
Applies:	S01138
Shape class:	Circle segments, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown with rectangular waveguide feeder.

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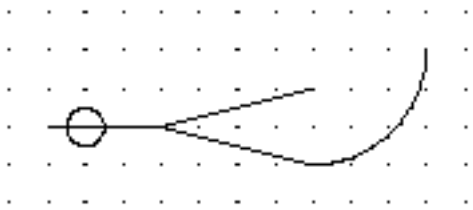
S01124



Name:	Antenna with reflector, horn type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-05-14
Keywords:	antennas
Applies:	S01140
Shape class:	Circle segments, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Shown with circular waveguide feeder.

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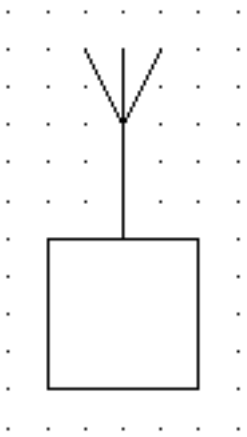
S01125



Name:	Radio station, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-01
Keywords:	radios, stations
Applied in:	S01126, S01129, S01127, S01128, S01131, S01130, S01137
Applies:	S00059; S01102
Application notes:	A00220
Shape class:	Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams

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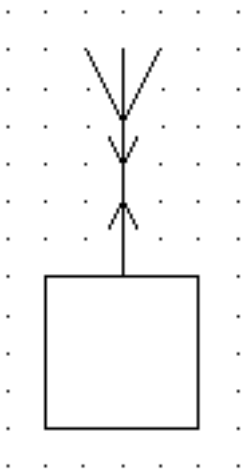
S01126



Name:	Radio station, transmitting and receiving
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-02
Keywords:	radios, stations
Applies:	S00100; S01125
Shape class:	Arrows, Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams
Remarks:	Simultaneous transmission and reception on the same antenna

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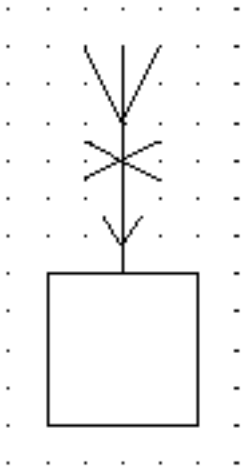
S01127



Name:	Radio station, direction finding receiving
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-03
Keywords:	radios, stations
Applies:	S00103; S01101; S01125
Shape class:	Arrows, Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams

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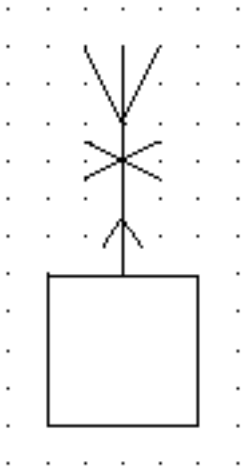
S01128



Name:	Radio station, beacon transmitting
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-04
Keywords:	radios, stations
Applies:	S00102; S01101; S01125
Shape class:	Arrows, Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams

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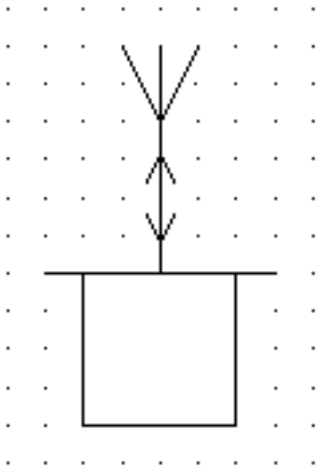
S01129



Name:	Radio station, portable
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-05
Keywords:	radios, stations
Applies:	S00101; S01125
Shape class:	Arrows, Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams
Remarks:	Alternate transmission and reception on the same antenna

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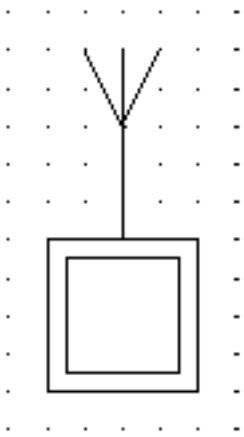
S01130



Name:	Radio station, controlling
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-06
Keywords:	radios, stations
Applies:	S00059; S01125
Shape class:	Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams

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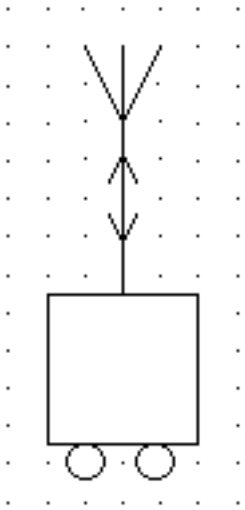
S01131



Name:	Radio station, mobile
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-07
Keywords:	radios, stations
Applies:	S00101; S01125
Shape class:	Arrows, Circles, Lines , Squares
Function class:	G Initiating a flow
Application class:	Network maps, Overview diagrams
Remarks:	Alternate transmission and reception on the same antenna

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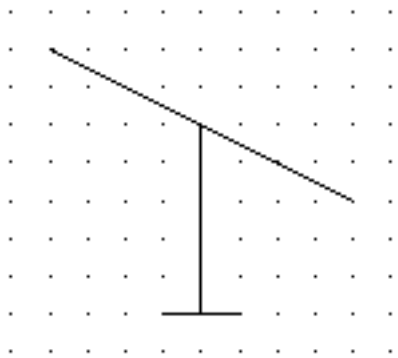
S01132



Name:	Passive relay station, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-08
Keywords:	radios, stations
Applied in:	S01135
Shape class:	Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams

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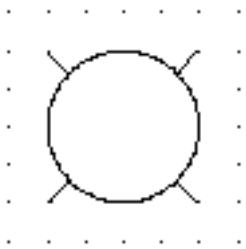
S01133



Name:	Space station
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-09
Keywords:	radios, stations
Applied in:	S01136, S01134, S01135, S01137
Applies:	S00061
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams

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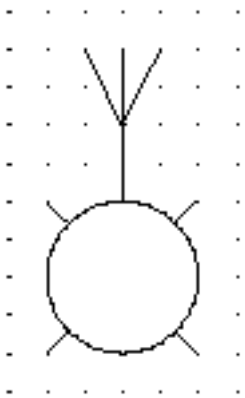
S01134



Name:	Space station, active
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-10
Keywords:	radios, space, stations
Applies:	S01102; S01133
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams

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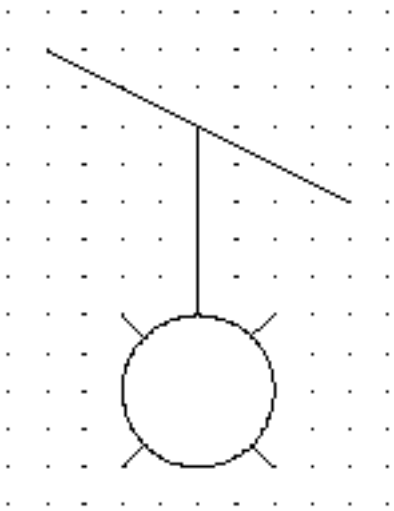
S01135



Name:	Space station, passive
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-11
Keywords:	radios, stations
Applies:	S01132; S01133
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams

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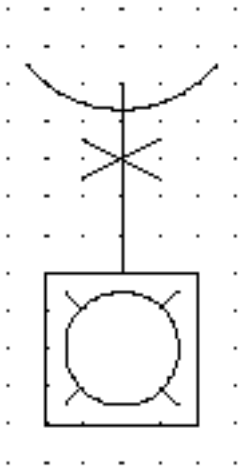
S01136



Name:	Earth station only for space station tracking
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-12
Keywords:	radios, stations
Applies:	S00059; S01101; S01133
Shape class:	Circle segments, Circles, Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams
Remarks:	The symbols is shown with a parabolic antenna.

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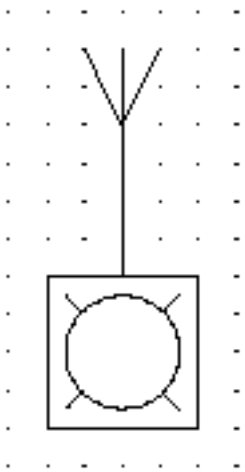
S01137



Name:	Earth station for communication with a space station
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-06-13
Keywords:	radios, stations
Applies:	S01125; S01133
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Network maps, Overview diagrams

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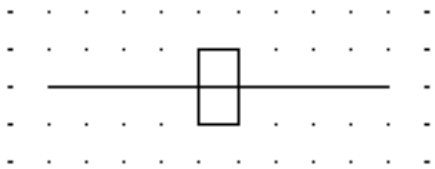
S01138



Name:	Waveguide, rectangular
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-01
Keywords:	waveguides
Applied in:	S00766, S01122, S01146, S00764, S00768, S00765, S01171, S00755, S00763, S00761, S00762, S00757, S01139, S01205, S00756, S00759, S00758, S01123, S00767, S00753, S00760, S00754, S01170, S01120
Applies:	S00001
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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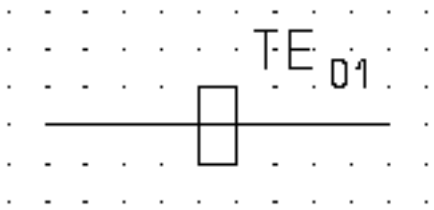
S01139



Name:	Waveguide, rectangular
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-02
Keywords:	waveguides
Applies:	S01138
Shape class:	Characters, Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The symbol is shown with propagation in the TE01 mode

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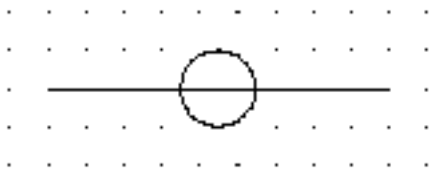
S01140



Name:	Waveguide, circular
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-03
Keywords:	waveguides
Applied in:	S01171, S01124, S01170
Applies:	S00001
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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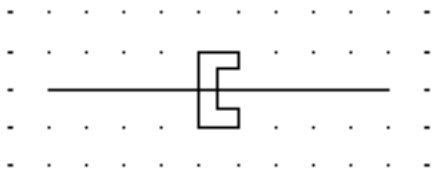
S01141



Name:	Waveguide, ridged
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-04
Keywords:	waveguides
Applies:	S00001
Shape class:	Depicting shapes, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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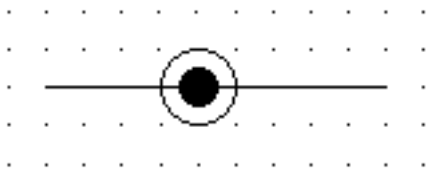
S01142



Name:	Waveguide, coaxial
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-05
Keywords:	waveguides
Applied in:	S00752, S00753, S00754
Applies:	S00001
Shape class:	Circles, Dots (points), Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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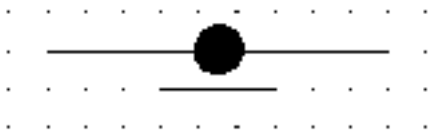
S01143



Name:	Stripline
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-06
Keywords:	waveguides
Applied in:	S01144
Applies:	S00001
Shape class:	Dots (points), Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Two conductors shown.

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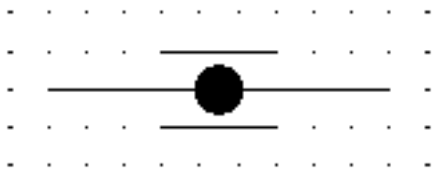
S01144



Name:	Stripline
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-07
Keywords:	waveguides
Applies:	S01143
Shape class:	Dots (points), Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Three conductors shown.

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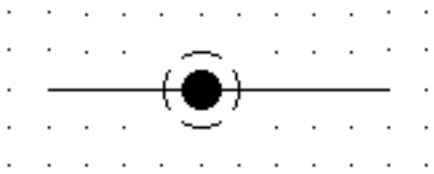
S01145



Name:	Goubau line
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-08
Alternative names:	Single wire transmission line within solid dielectric
Keywords:	waveguides
Applies:	S00001
Shape class:	Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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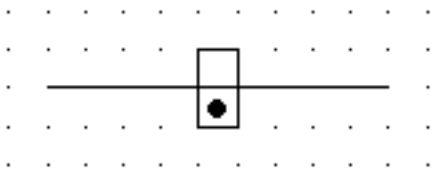
S01146



Name:	Waveguide, rectangular, gas-filled
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-09
Keywords:	waveguides
Applies:	S01138
Shape class:	Dots (points), Lines , Rectangles
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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S01147



Name:	Waveguide, flexible
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-10
Keywords:	waveguides
Applies:	S00006
Shape class:	Depicting shapes
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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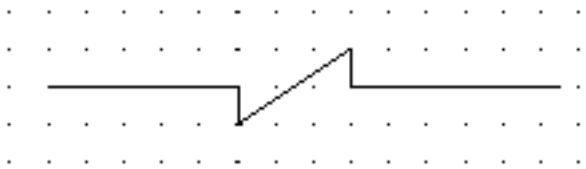
S01148



Name:	Waveguide, twisted
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-11
Keywords:	waveguides
Applies:	S00001
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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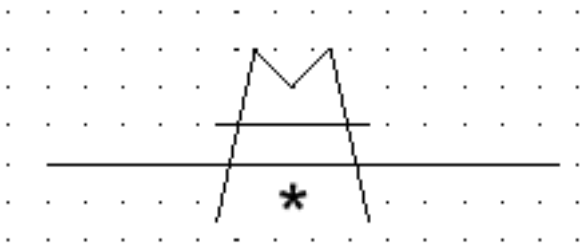
S01149



Name:	Mode suppression
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-12
Keywords:	waveguides
Applied in:	S01174
Applies:	S00001
Application notes:	A00221
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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S01150



Name:	Waveguide, symmetrical connectors
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-13
Keywords:	waveguides
Applied in:	S01152
Applies:	S00001
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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S01151



Name:	Waveguide, asymmetric connectors
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-14
Keywords:	waveguides
Applies:	S00001
Application notes:	A00222
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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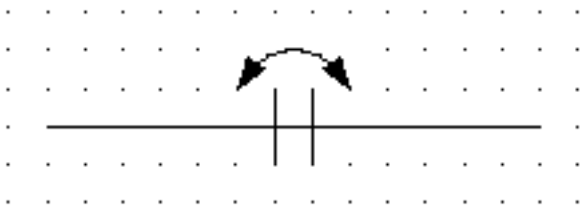
S01152



Name:	Rotatable joint, symmetrical connectors
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-15
Keywords:	joints, waveguides
Applies:	S00096; S01150
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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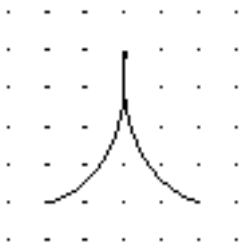
S01153



Name:	Resonator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-16
Keywords:	resonators
Applied in:	S01265
Shape class:	Circle segments
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01154



Name:	Reflector, reflecting totally
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-17
Keywords:	reflectors
Applied in:	S01181, S01182, S01183
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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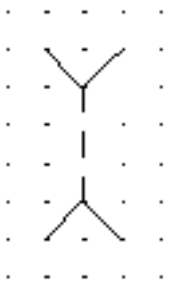
S01155



Name:	Reflector, reflecting partially
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-07-18
Keywords:	reflectors
Applied in:	S01183
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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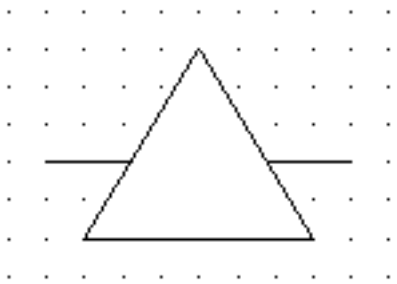
S01156



Name:	Discontinuity, two-port, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-01
Keywords:	port devices
Applied in:	S01157, S01162, S01161
Shape class:	Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	Introducing intentional wave reflection.

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S01157



Name:	Matching device, adjustable; Discontinuity, adjustable;
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-02
Keywords:	port devices
Applied in:	S01159, S01158, S01160
Applies:	S00081; S01156
Shape class:	Arrows, Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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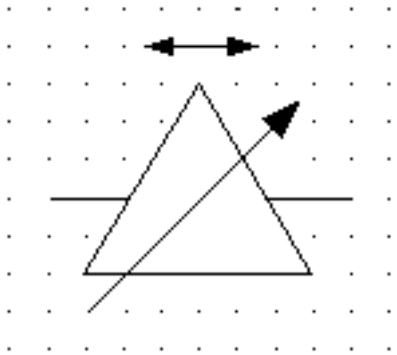
S01158



Name:	Matching device, adjustable, slide screw
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-03
Alternative names:	Tuner
Keywords:	port devices
Applies:	S00094; S01157
Shape class:	Arrows, Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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S01159



Name:	Matching device, adjustable, E-H
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-04
Alternative names:	Tuner
Keywords:	port devices
Applies:	S01157
Shape class:	Arrows, Characters, Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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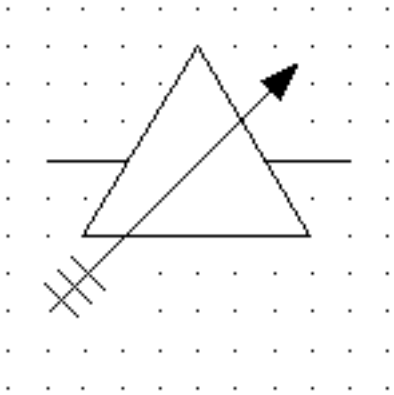
S01160



Name:	Matching device, adjustable, multi-stub
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-05
Alternative names:	Tuner
Keywords:	port devices
Applies:	S01157
Shape class:	Arrows, Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with three stubs.

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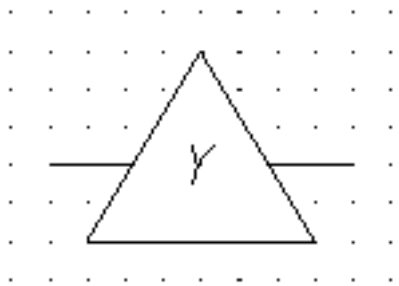
S01161



Name:	Discontinuity, in shunt with transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-06
Keywords:	port devices
Applied in:	S01164, S01163
Applies:	S01156
Application notes:	A00223
Shape class:	Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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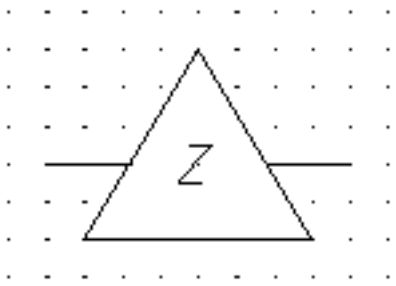
S01162



Name:	Discontinuity, in series with transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-07
Keywords:	port devices
Applied in:	S01165
Applies:	S01156
Application notes:	A00224
Shape class:	Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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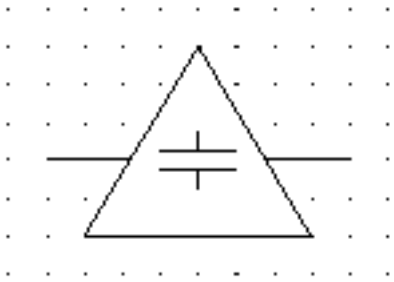
S01163



Name:	Discontinuity, capacitive, in shunt with the transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-08
Keywords:	port devices
Applies:	S00567; S01161
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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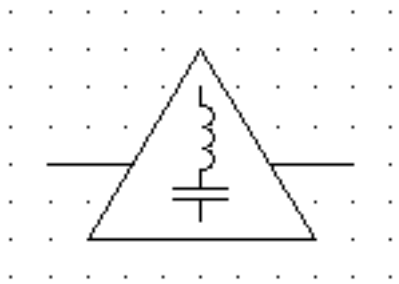
S01164



Name:	Discontinuity, series resonant, in shunt with the transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-09
Keywords:	port devices
Applies:	S00567; S00583; S01161
Shape class:	Equilateral triangles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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S01165



Name:	Discontinuity, parallel resonant, in series with the transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-10
Keywords:	port devices
Applies:	S00567; S00583; S01162
Shape class:	Equilateral triangles, Half-circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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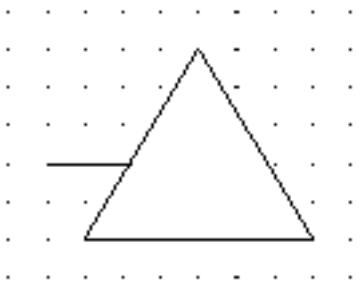
S01166



Name:	Discontinuity, terminal
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-11
Keywords:	port devices
Shape class:	Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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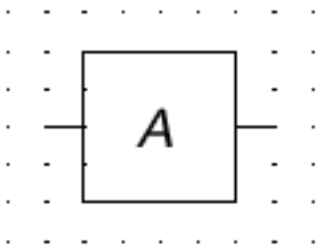
S01167



Name:	Attenuator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-12
Keywords:	attenuators
Form:	Other form
Alternative forms:	S01168
Applies:	S00059
Replaced by:	S01244
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Function diagrams

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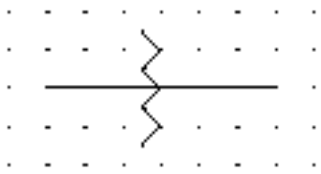
S01168



Name:	Attenuator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-13
Keywords:	attenuators
Form:	Other form
Alternative forms:	S01244
Replaced by:	S00442; S01244
Shape class:	Lines
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Function diagrams

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S01169



Name:	Transition, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-14
Keywords:	transitions
Applied in:	S01171, S01170
Application notes:	A00225
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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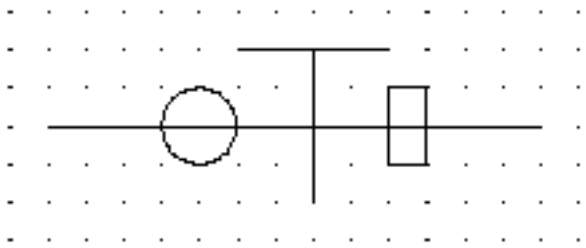
S01170



Name:	Transition, from circular to rectangular waveguide
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-15
Keywords:	transitions, waveguides
Applies:	S01138; S01140; S01169
Shape class:	Circles, Lines , Rectangles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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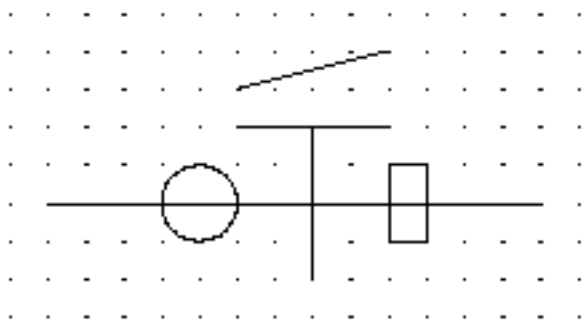
S01171



Name:	Transition, taper, from circular to rectangular waveguide
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-16
Keywords:	transitions, waveguides
Applies:	S01138; S01140; S01169
Shape class:	Circles, Lines , Rectangles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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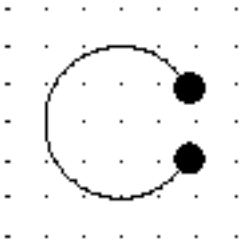
S01172



Name:	Cavity resonator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-17
Keywords:	resonators
Applied in:	S00732, S00733, S00753, S00754
Shape class:	Circle segments, Dots (points)
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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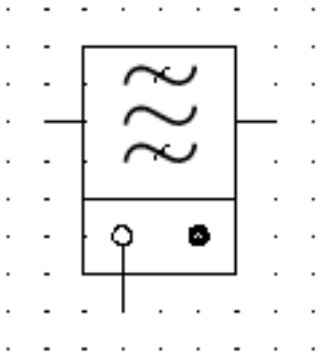
S01173



Name:	Band-pass filter switched by gas discharge
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-18
Keywords:	filters
Applies:	S00075
Shape class:	Depicting shapes, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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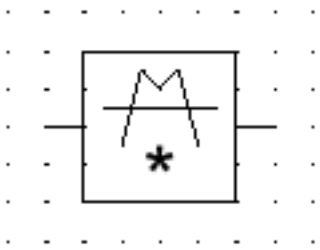
S01174



Name:	Mode filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-19
Keywords:	filters
Applies:	S00059; S01149
Application notes:	A00221
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams

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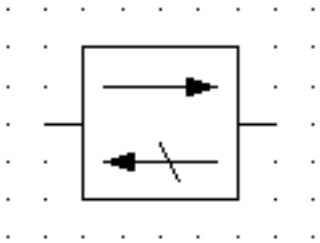
S01175



Name:	Isolator for microwaves
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-20
Keywords:	isolators, microwave devices
Applies:	S00059; S00093
Shape class:	Arrows, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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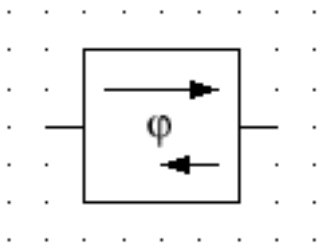
S01176



Name:	Directional phase changer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-21
Keywords:	changers, phases
Applied in:	S01177
Applies:	S00059; S00093
Application notes:	A00227
Shape class:	Arrows, Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The longer arrow indicates the direction of propagation in which the required phase change occurs.

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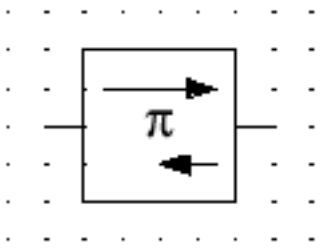
S01177



Name:	Gyrator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-22
Keywords:	gyrators
Applies:	S00059; S00093; S01176
Shape class:	Arrows, Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams
Remarks:	The symbol is a special variant of the symbol S01176.

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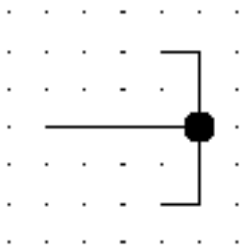
S01178



Name:	Termination, short-circuit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-23
Keywords:	short circuits, terminations
Shape class:	Dots (points), Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Overview diagrams
Remarks:	The dot is optional.

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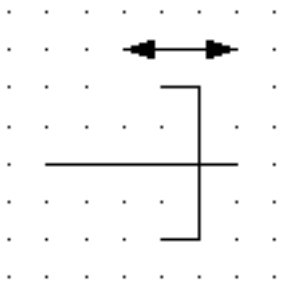
S01179



Name:	Terminations, slided short circuit
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-24
Keywords:	short circuits, terminations
Applied in:	S00755
Applies:	S00094
Shape class:	Arrows, Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Overview diagrams

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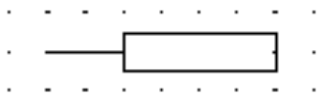
S01180



Name:	Termination, matched
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-25
Keywords:	terminations
Replacing:	S01389
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Function diagrams

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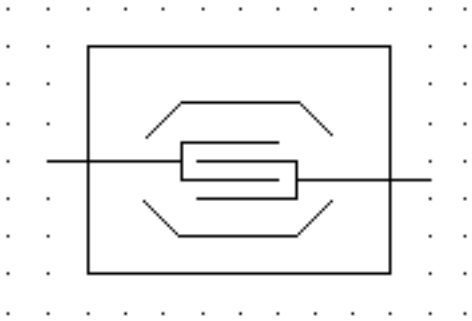
S01181



Name:	Surface-acoustic-wave (SAW) device, one-port
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-27
Keywords:	port devices, SAW
Applies:	S00059; S01052; S01154
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with reflectors.

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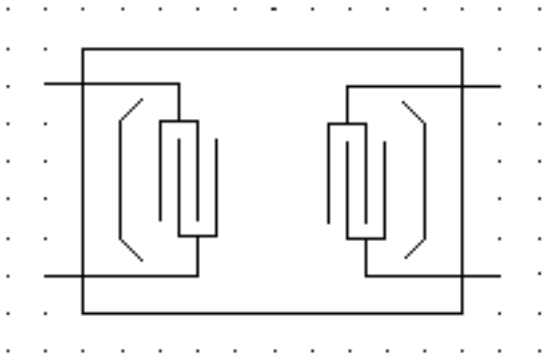
S01182



Name:	Surface-acoustic-wave (SAW) device, two-port, reflecting totally
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-28
Keywords:	port devices, SAW
Applies:	S01154; S01184
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with two reflectors.

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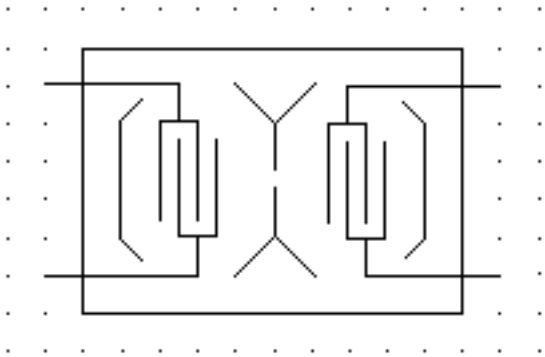
S01183



Name:	Surface-acoustic-wave (SAW) device, two-port, reflecting partially and totally
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-29
Keywords:	port devices, SAW
Applies:	S01154; S01155; S01184
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The symbol is shown with one reflector reflecting totally and one reflector reflecting partially.

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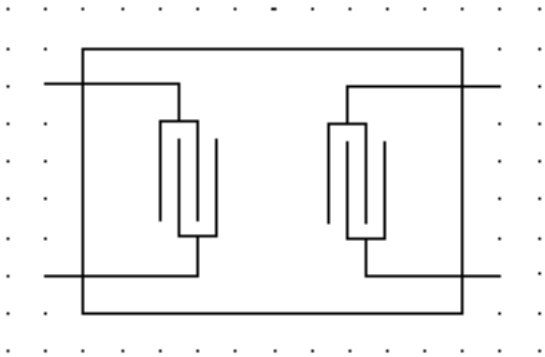
S01184



Name:	Surface-acoustic-wave (SAW) device, two-port
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-08-30
Keywords:	port devices, SAW
Applied in:	S01182, S01183
Applies:	S00059; S01052
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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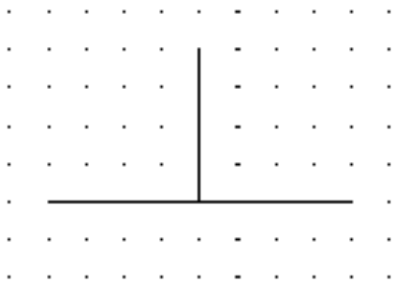
S01185



Name:	Three-port junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-01
Keywords:	microwave devices, multi-port devices (microwave)
Applied in:	S01187, S01186, S01188
Applies:	S00001
Application notes:	A00136
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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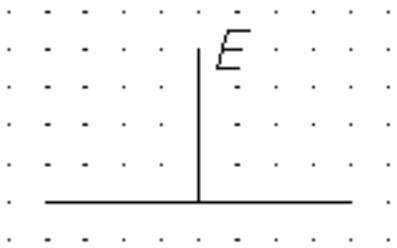
S01186



Name:	Three-port junction (Series T, E-plane T)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-02
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S01185
Application notes:	A00136
Shape class:	Characters, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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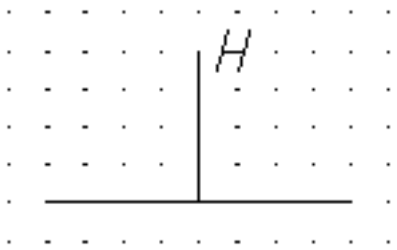
S01187



Name:	Three-port junction (Shunt T, H-plane T)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-03
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S01185
Application notes:	A00136
Shape class:	Characters, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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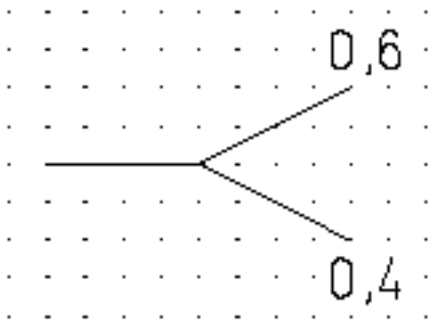
S01188



Name:	Three-port junction (power divider)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-04
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S01185
Application notes:	A00136
Shape class:	Characters, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams
Remarks:	Power divided in ratio 6:4

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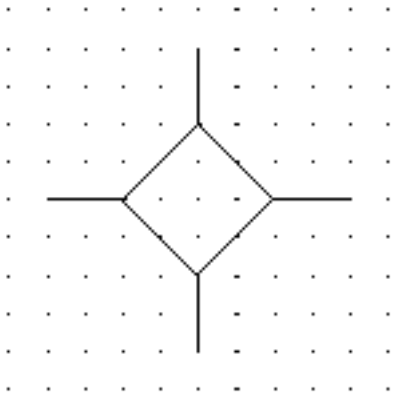
S01189



Name:	Four-port junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-05
Keywords:	microwave devices, multi-port devices (microwave)
Form:	Form 1
Alternative forms:	S01190
Applied in:	S01191, S01192
Application notes:	A00136, A00137
Shape class:	Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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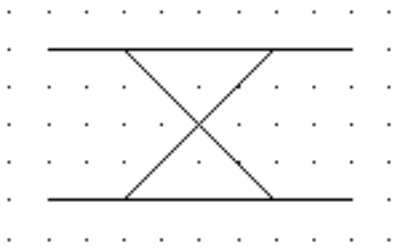
S01190



Name:	Four-port junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-06
Keywords:	microwave devices, multi-port devices (microwave)
Form:	Form 2
Alternative forms:	S01189
Applied in:	S01194, S01193
Application notes:	A00136, A00137
Shape class:	Equilateral triangles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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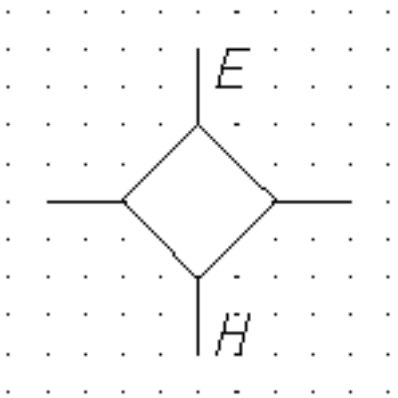
S01191



Name:	Four-port junction (magic T hybrid junction)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-07
Keywords:	microwave devices, multi-port devices (microwave)
Form:	(Form 1)
Alternative forms:	S01192
Applies:	S01189
Application notes:	A00136, A00137
Shape class:	Characters, Lines , Squares
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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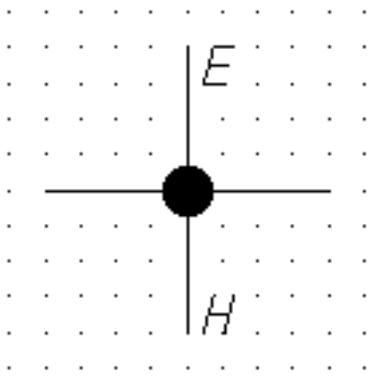
S01192



Name:	Four-port junction (magic T hybrid junction)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-08
Keywords:	microwave devices, multi-port devices (microwave)
Form:	(Form 1 simplified)
Alternative forms:	S01191
Applies:	S01189
Application notes:	A00136, A00137
Shape class:	Characters, Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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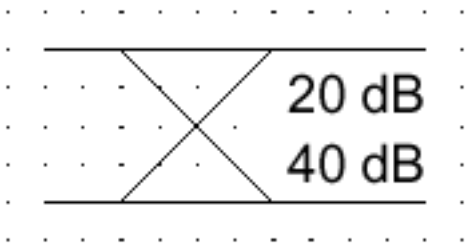
S01193



Name:	Four-port junction; Directional coupler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-09
Keywords:	microwave devices, multi-port devices (microwave)
Form:	(Form 2)
Applies:	S01190
Application notes:	A00136, A00137
Shape class:	Characters, Equilateral triangles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams
Remarks:	First value: coupling loss Second value: directivity

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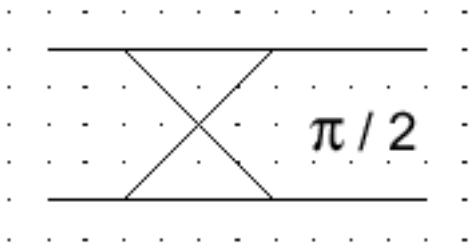
S01194



Name:	Four-port junction; Quadrature hybrid junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-10
Keywords:	microwave devices, multi-port devices (microwave)
Form:	(Form 2)
Applies:	S01190
Application notes:	A00136, A00137
Shape class:	Characters, Equilateral triangles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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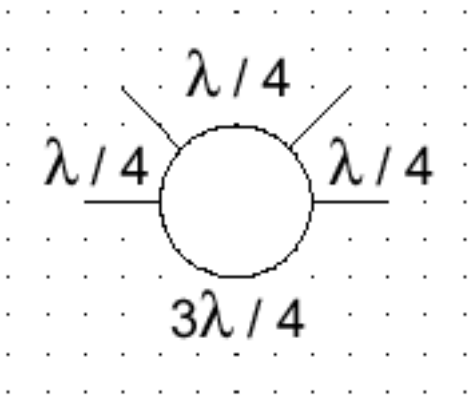
S01195



Name:	Hybrid ring junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-11
Keywords:	microwave devices, multi-port devices (microwave)
Application notes:	A00136
Shape class:	Characters, Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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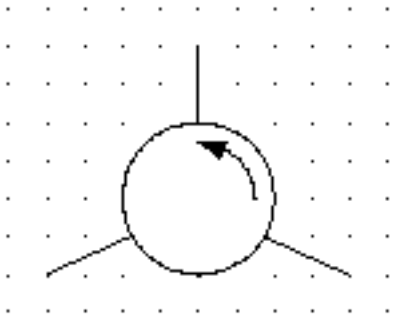
S01196



Name:	Circulator, three-port
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-12
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00095
Application notes:	A00136
Shape class:	Arrows, Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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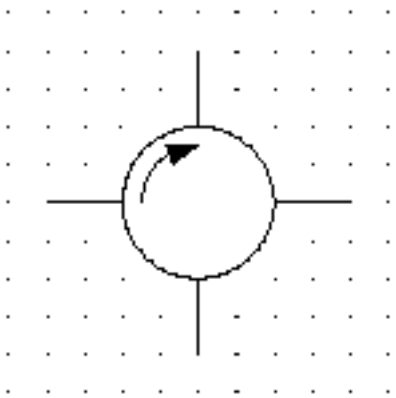
S01197



Name:	Circulator, four-port
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-13
Keywords:	microwave devices, multi-port devices (microwave)
Applied in:	S01198
Applies:	S00095
Shape class:	Arrows, Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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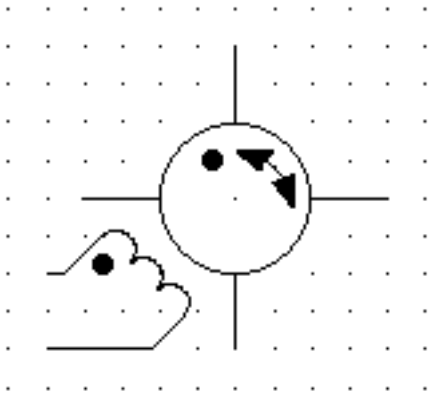
S01198



Name:	Circulator, four-port, with reversible direction of circulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-14
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00096; S00583; S01197
Shape class:	Arrows, Circles, Half-circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams
Remarks:	Current entering the coil at the end marked with the dot causes the energy in the circulator to flow in the direction of the arrowhead marked with a dot.

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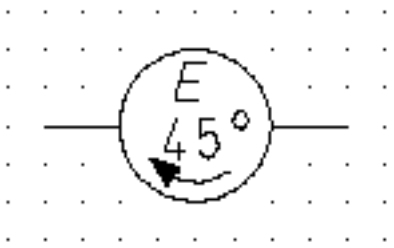

Name:	Field-polarization rotator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-15
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00095
Shape class:	Arrows, Characters, Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams
Remarks:	Shown for 45°. The arrow indicates the direction of rotation of electric field when viewed in the direction of signal flow.

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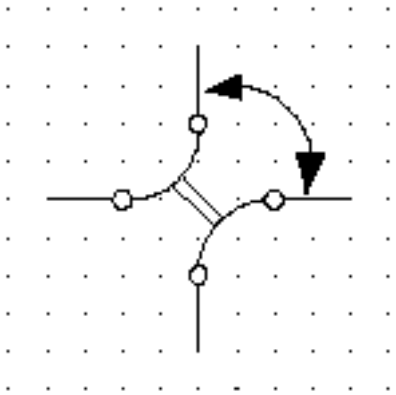

Name:	Two-position microwave switch (90° step)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-16
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00017; S00096; S00147
Shape class:	Arrows, Circle segments
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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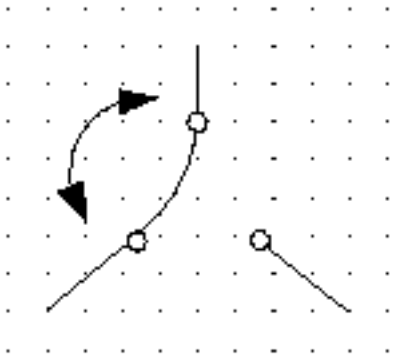
S01201



Name:	Three-position microwave switch (120° step)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-17
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00017; S00096
Shape class:	Arrows, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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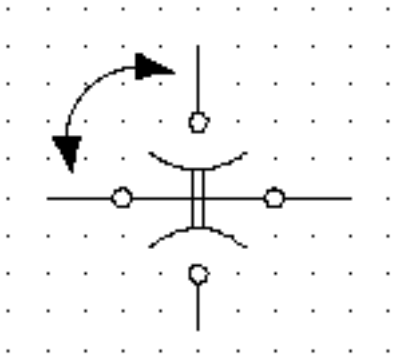

Name:	Four-position microwave switch (45° step)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-09-18
Keywords:	microwave devices, multi-port devices (microwave)
Applies:	S00017; S00096; S00147
Shape class:	Arrows, Circle segments
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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S01203



Name:	Coupler (or feed) type unspecified, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-01
Keywords:	couplers, microwave devices
Applied in:	S00752, S01209, S01207, S01205, S01204, S01210, S00754
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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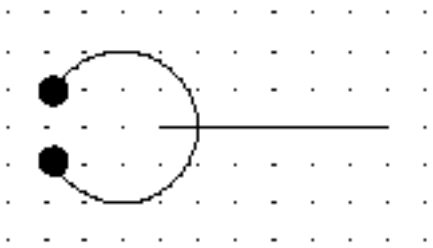
S01204



Name:	Coupler to a cavity resonator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-02
Keywords:	couplers, microwave devices
Applied in:	S00752, S00754
Applies:	S01203
Shape class:	Circle segments, Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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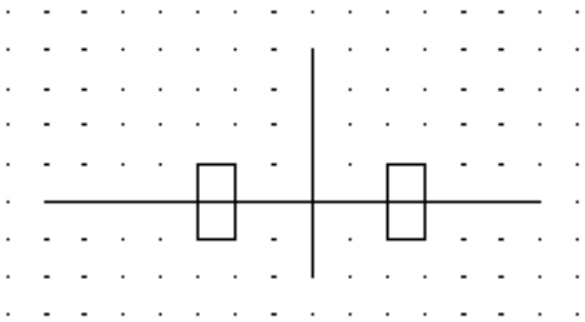
S01205



Name:	Coupler to a rectangular waveguide
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-03
Keywords:	couplers, microwave devices
Applies:	S01138; S01203
Shape class:	Lines , Rectangles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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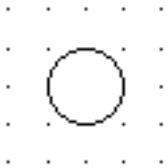
S01206



Name:	Window (aperture) coupler, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-04
Keywords:	couplers, microwave devices
Applied in:	S01207, S01208
Shape class:	Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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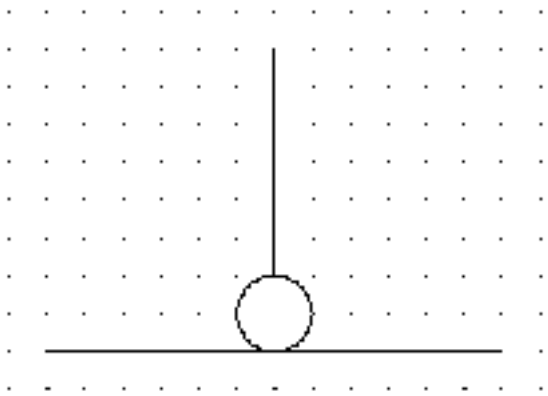
S01207



Name:	Window (aperture) coupler at a junction
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-05
Keywords:	couplers
Applied in:	S00765, S00763, S00761, S00759, S00767, S00753
Applies:	S01203; S01206
Shape class:	Circles, Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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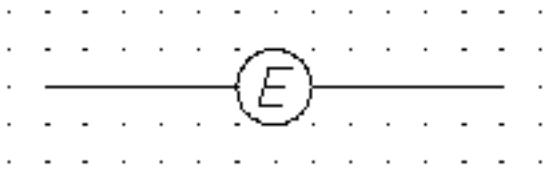
S01208



Name:	E-plane window (aperture) coupler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-06
Keywords:	couplers, microwave devices
Applies:	S01206
Shape class:	Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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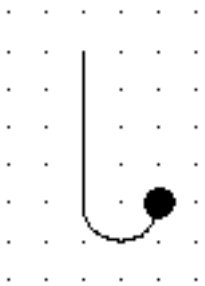
S01209



Name:	Loop coupler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-07
Keywords:	couplers, microwave devices
Applied in:	S00751, S01211, S00737, S00753
Applies:	S01203
Shape class:	Dots (points), Half-circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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S01210



Name:	Probe coupler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-08
Keywords:	couplers, microwave devices, probes
Applies:	S01203
Shape class:	Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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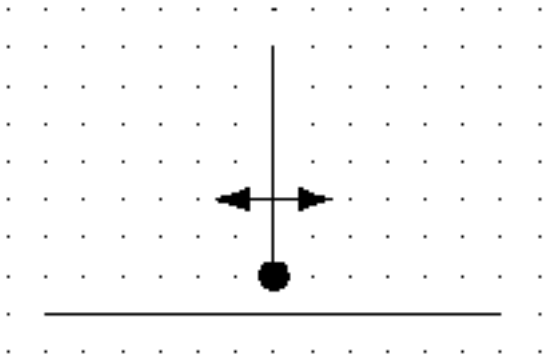
S01211



Name:	Sliding probe coupled to a transmission path
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-10-09
Keywords:	couplers, microwave devices, probes
Applies:	S00094; S01209
Shape class:	Arrows, Dots (points), Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams

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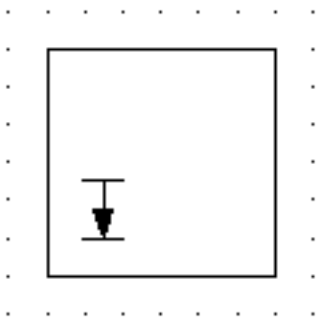
S01212



Name:	Maser, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-01
Keywords:	masers
Applied in:	S01213
Application notes:	A00138
Shape class:	Arrows, Lines , Squares
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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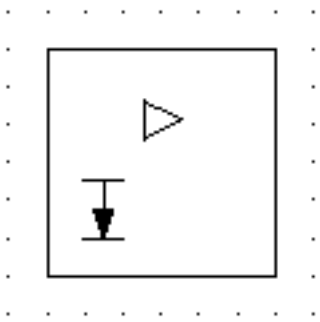
S01213



Name:	Maser used as an amplifier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-02
Alternative names:	Amplifier
Keywords:	amplifiers, masers
Applies:	S01212; S01239
Application notes:	A00138
Shape class:	Arrows, Equilateral triangles, Lines , Squares
Function class:	E Providing radiant or thermal energy, K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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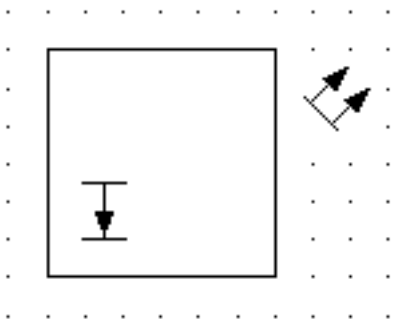
S01214



Name:	Laser (optical maser), general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-03
Keywords:	lasers
Applied in:	S01217, S01216, S01215
Applies:	S00128
Application notes:	A00138
Shape class:	Arrows, Lines , Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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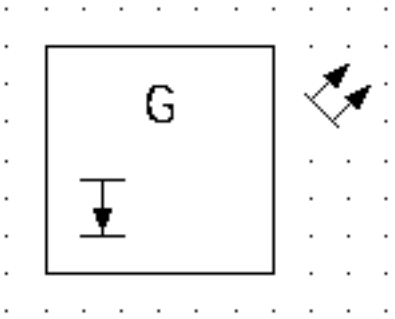
S01215



Name:	Laser used as a generator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-04
Keywords:	generators, lasers
Applied in:	S01217, S01216
Applies:	S00128; S00899; S01214; S01225
Application notes:	A00138
Shape class:	Arrows, Characters, Lines , Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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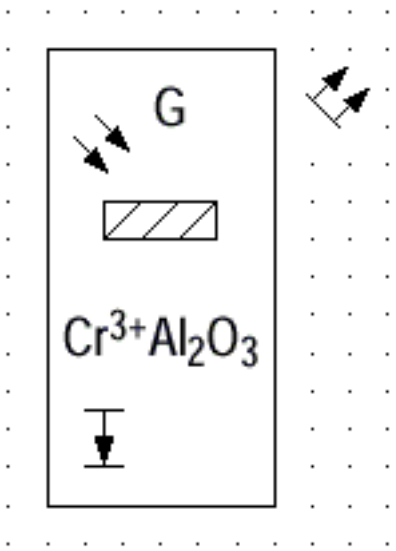
S01216



Name:	Ruby laser generator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-05
Keywords:	generators, lasers
Applies:	S00114; S00127; S00899; S01214; S01215; S01225
Application notes:	A00040, A00138
Shape class:	Arrows, Characters, Lines , Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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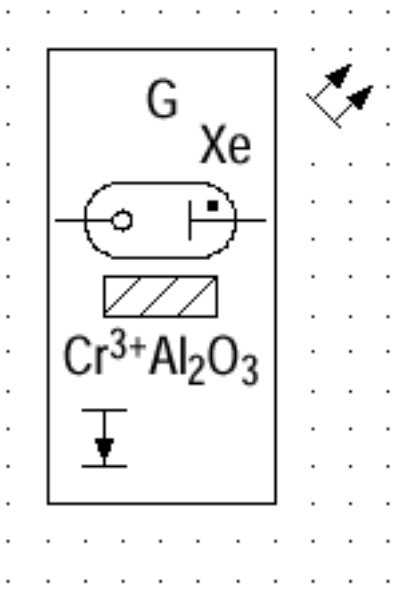
S01217



Name:	Ruby laser generator with xenon lamp as pumping source
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-11-06
Keywords:	generators, lasers
Applies:	S00114; S00769; S00899; S01214; S01215; S01225
Application notes:	A00040, A00138
Shape class:	Arrows, Characters, Lines , Ovals, Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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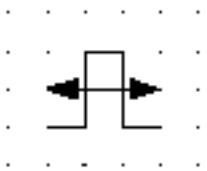
S01218



Name:	Pulse-position or pulse-phase modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-01
Keywords:	pulse modulation - types of
Applies:	S00094; S00132
Shape class:	Arrows, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01219



Name:	Pulse-frequency modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-02
Keywords:	pulse modulation - types of
Applies:	S00132; S01403
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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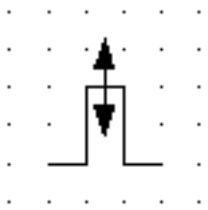
S01220



Name:	Pulse-amplitude modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-03
Keywords:	pulse modulation - types of
Applies:	S00094; S00132
Shape class:	Arrows, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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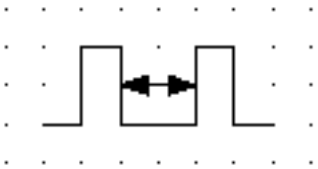
S01221



Name:	Pulse-interval modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-04
Keywords:	pulse modulation - types of
Applies:	S00094; S00132
Shape class:	Arrows, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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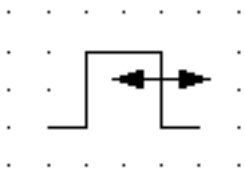
S01222



Name:	Pulse-duration modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-05
Keywords:	pulse modulation - types of
Alternative forms:	S00094
Applied in:	S01412
Applies:	S00094; S00132
Shape class:	Arrows, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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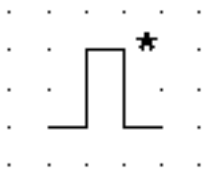
S01223



Name:	Pulse-code modulation
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-06
Keywords:	PCM, pulse modulation - types of
Applied in:	S01280, S01224
Applies:	S00132
Application notes:	A00141
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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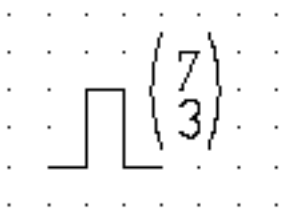
S01224



Name:	Pule-code modulation in 3-out-of-7 code
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-12-07
Keywords:	pulse modulation - types of
Applies:	S01223
Application notes:	A00141
Shape class:	Characters, Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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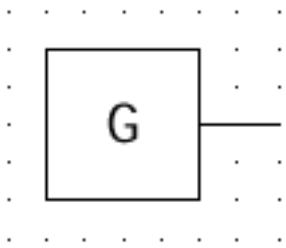
S01225



Name:	Signal generator, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-01
Alternative names:	Waveform generator
Keywords:	signal generators, waveform generators
Applied in:	S01425, S01678, S01230, S01229, S01227, S01217, S01226, S01216, S01215, S01228
Applies:	S00059
Application notes:	A00013
Shape class:	Characters, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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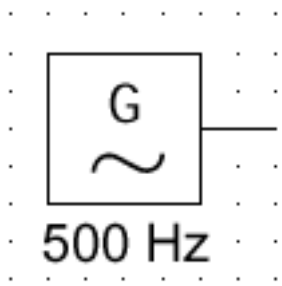
S01226



Name:	Sine-wave generator, 500 Hz
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-02
Keywords:	signal generators, waveform generators
Applies:	S00899; S01225; S01403
Shape class:	Characters, Depicting shapes, Squares
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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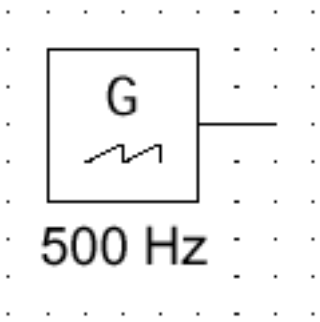
S01227



Name:	Saw-tooth generator, 500 Hz
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-03
Keywords:	signal generators, waveform generators
Applies:	S00137; S01225
Shape class:	Characters, Depicting shapes, Lines , Squares
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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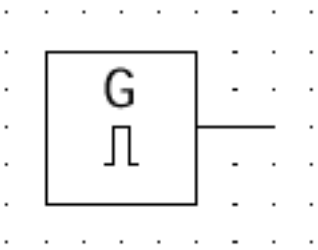
S01228



Name:	Pulse generator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-04
Keywords:	pulse generators, signal generators, waveform generators
Applied in:	S01280
Applies:	S00132; S01225
Shape class:	Characters, Depicting shapes, Squares
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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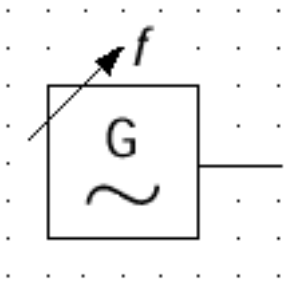
S01229



Name:	Sine-wave generator with adjustable frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-05
Keywords:	signal generators, waveform generators
Applies:	S00081; S01225; S01403
Shape class:	Arrows, Characters, Depicting shapes, Rectangles
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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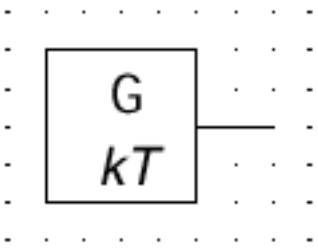
S01230



Name:	Noise generator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-13-06
Keywords:	signal generators
Applies:	S01225
Shape class:	Characters, Squares
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	k = Boltzmann's constant T = absolute temperature

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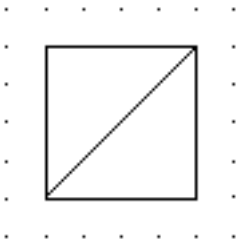
S01231



Name:	Converter, general symbol
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-01-27
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-01
Keywords:	converters
Applied in:	S01740
Applies:	S00213
Replaced by:	S00213
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Replaced by symbol S00213.

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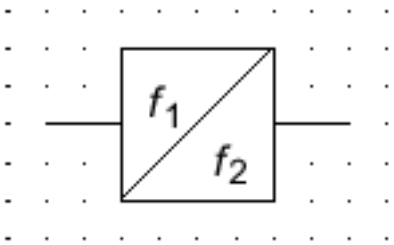
S01232



Name:	Frequency converter, changing from f1 to f2
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-02
Keywords:	converters
Applies:	S00213
Application notes:	A00143
Shape class:	Characters, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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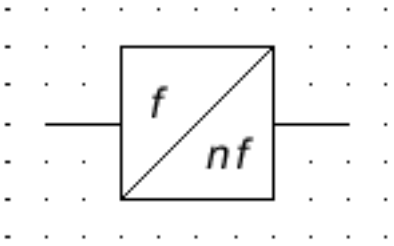
S01233



Name:	Frequency multiplier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-03
Keywords:	converters
Applies:	S00213
Application notes:	A00142
Shape class:	Characters, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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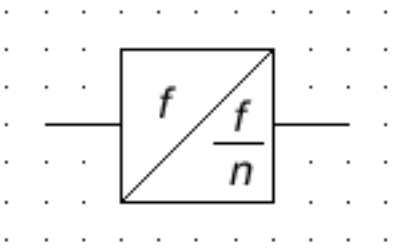
S01234



Name:	Frequency divider
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-04
Keywords:	converters
Applies:	S00213
Application notes:	A00140
Shape class:	Characters, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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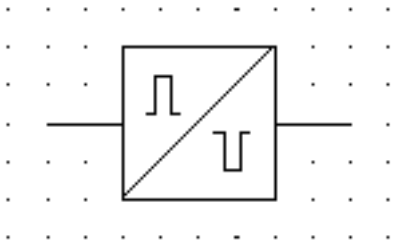
S01235



Name:	Pulse inverter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-05
Keywords:	converters
Applies:	S00132; S00133; S00213
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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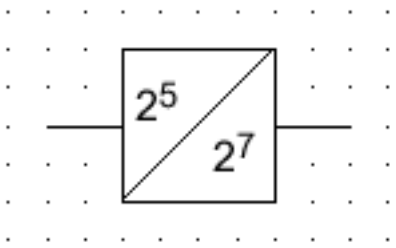
S01236



Name:	Code converter of binary code
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-06
Keywords:	converters
Applies:	S00213
Shape class:	Characters, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Code converter, five-unit binary code to seven-unit binary code shown

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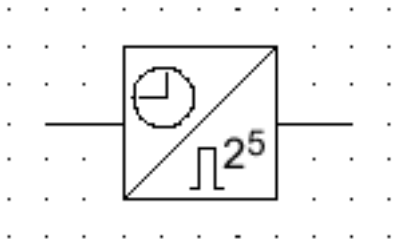
S01237



Name:	Converter giving clock-time indication in five-digit binary code
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-07
Keywords:	converters
Applies:	S00132; S00213; S00959
Shape class:	Characters, Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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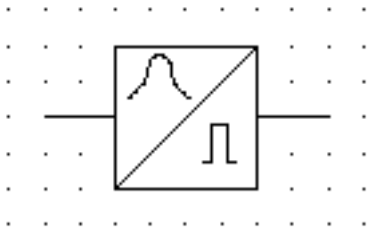
S01238



Name:	Pulse regenerator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-14-08
Keywords:	converters
Applies:	S00132; S00213
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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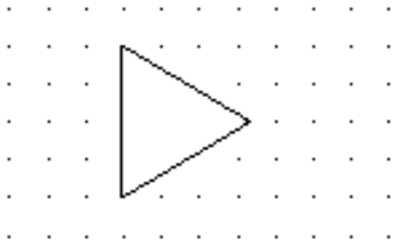
S01239



Name:	Amplifier, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-15-01
Alternative names:	Repeater, general symbol
Keywords:	amplifiers, repeaters
Form:	Form 1
Alternative forms:	S01240; S01781
Applied in:	S00420, S00428, S00432, S00431, S00429, S00430, S00433, S01213, S01087, S01243, S01241, S01242, S01026, S01088, S01089, S01092, S01091
Applies:	S01457
Application notes:	A00238, A00351
Shape class:	Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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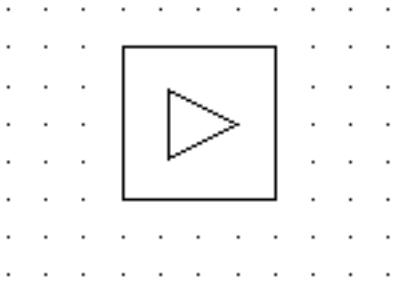
S01240



Name:	Amplifier, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-15-02
Alternative names:	Repeater, general symbol
Keywords:	amplifiers, repeaters
Form:	Form 2
Alternative forms:	S01239; S01781
Applied in:	S00092, S01683
Applies:	S01457
Application notes:	A00238
Shape class:	Equilateral triangles, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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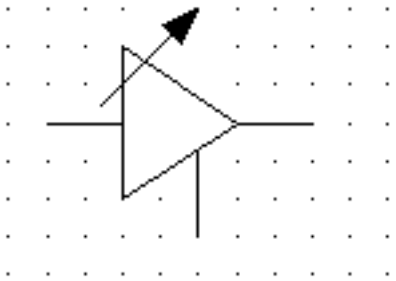
S01241



Name:	Amplifier with external adjustability
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-15-03
Keywords:	amplifiers
Applies:	S00081; S01239
Application notes:	A00239
Shape class:	Arrows, Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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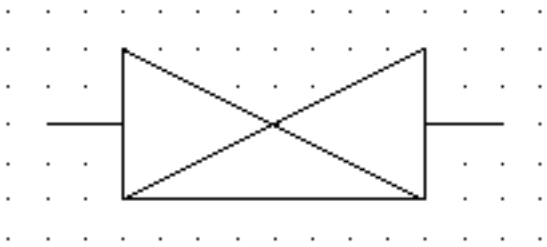
S01242



Name:	Amplifier, both ways, with negative impedance
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-15-04
Keywords:	amplifiers
Applies:	S01239
Shape class:	Equilateral triangles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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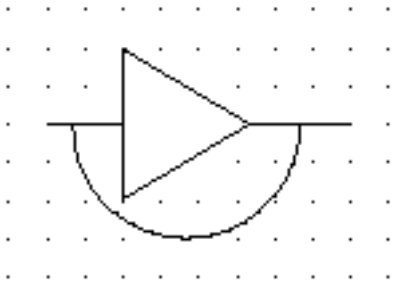
S01243



Name:	Amplifier with by-pass
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-15-05
Keywords:	amplifiers
Applies:	S01239
Shape class:	Circle segments, Equilateral triangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Amplifier shown with by-pass used for signalling and/or power feeding.

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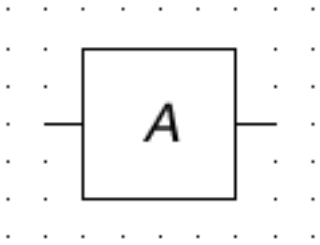
S01244



Name:	Attenuator, fixed loss
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-01
Keywords:	attenuators, networks
Alternative forms:	S00442
Applied in:	S01331, S01245
Applies:	S00059
Replacing:	S01167; S01168
Shape class:	Characters, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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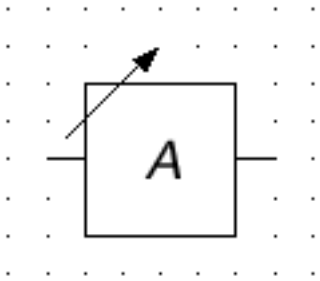
S01245



Name:	Attenuator, variable loss
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-02
Keywords:	attenuators, networks
Applies:	S00081; S01244
Shape class:	Arrows, Characters, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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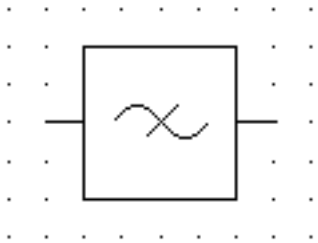
S01246



Name:	Filter, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-03
Keywords:	filters, networks
Applied in:	S01249, S01250, S01247, S01248, S01264
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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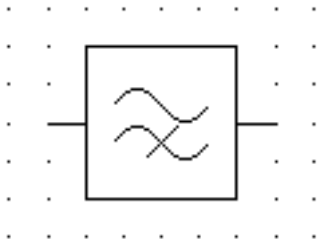
S01247



Name:	High-pass filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-04
Keywords:	filters, networks
Applies:	S01246
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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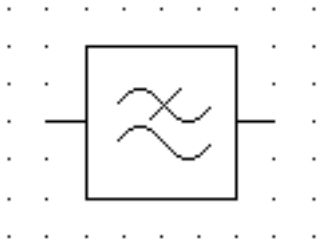
S01248



Name:	Low-pass filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-05
Keywords:	filters, networks
Applies:	S01246
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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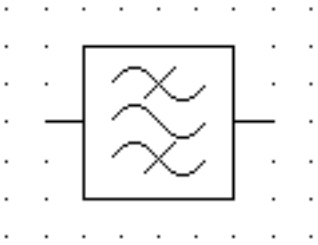
S01249



Name:	Band-pass filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-06
Keywords:	filters, networks
Applied in:	S01429
Applies:	S01246
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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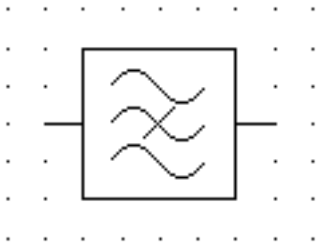
S01250



Name:	Band-stop filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-07
Keywords:	filters, networks
Applies:	S01246
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information, R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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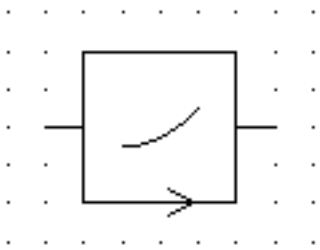
S01251



Name:	Device for pre-emphasis of higher frequencies
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-08
Keywords:	networks
Applies:	S00099
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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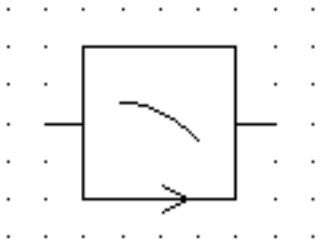
S01252



Name:	Device for de-emphasis of higher frequencies
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-09
Keywords:	networks
Applies:	S00099
Shape class:	Arrows, Depicting shapes, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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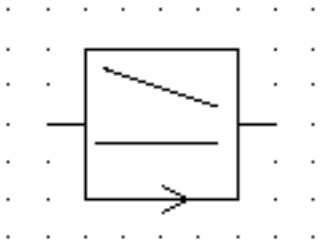
S01253



Name:	Compressor
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-10
Keywords:	networks
Applies:	S00099
Shape class:	Arrows, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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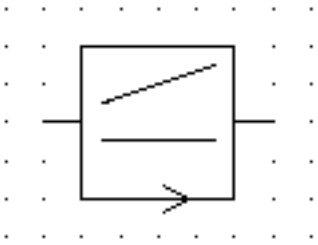

Name:	Expander
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-11
Keywords:	networks
Applies:	S00099
Shape class:	Arrows, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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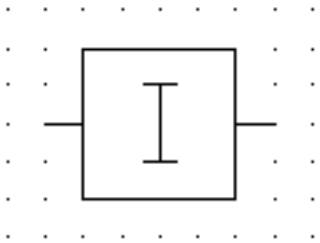

Name:	Artificial line
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-12
Keywords:	networks
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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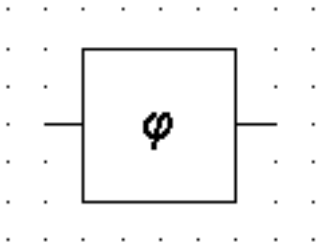
S01256



Name:	Phase-changing network
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-13
Keywords:	networks
Application notes:	A00241
Shape class:	Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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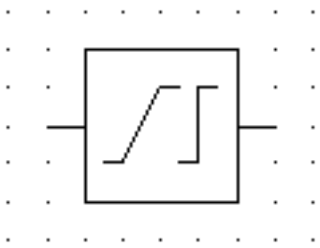
S01257



Name:	Distortion corrector, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-14
Keywords:	networks
Applied in:	S01259, S01260, S01258
Applies:	S00135
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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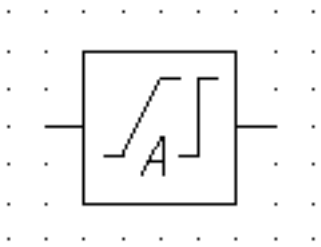
S01258



Name:	Attenuation equalizer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-15
Keywords:	attenuators, networks
Applies:	S01257
Shape class:	Characters, Depicting shapes, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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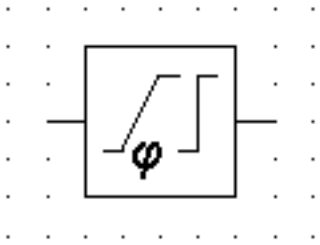
S01259



Name:	Phase distortion corrector
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-16
Keywords:	networks
Applies:	S01257
Application notes:	A00244
Shape class:	Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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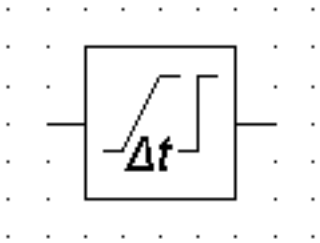
S01260



Name:	Delay distortion corrector; Delay equalizer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-17
Keywords:	networks
Applies:	S01257
Shape class:	Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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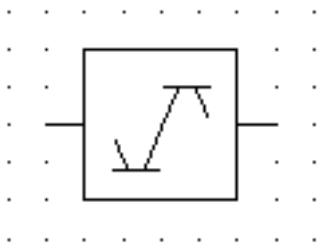
S01261



Name:	Amplitude limiter without distortion
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-18
Keywords:	networks
Shape class:	Depicting shapes, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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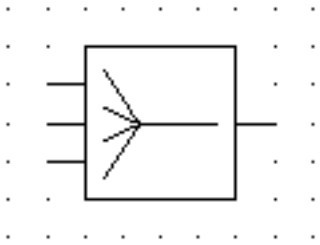
S01262



Name:	Mixing network
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-19
Keywords:	networks
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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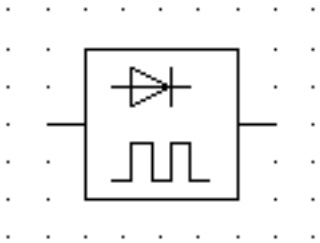
S01263



Name:	Electronic chopping device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-20
Alternative names:	Chopper
Keywords:	choppers, networks
Applies:	S00132; S00641
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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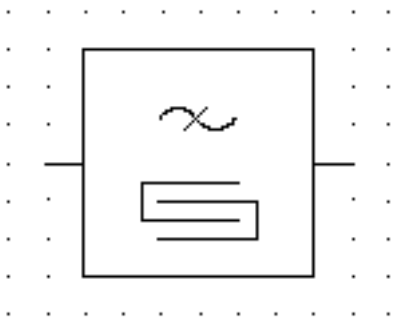
S01264



Name:	Surface acoustic wave (SAW) filter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-21
Keywords:	filters, networks
Applies:	S01052; S01246
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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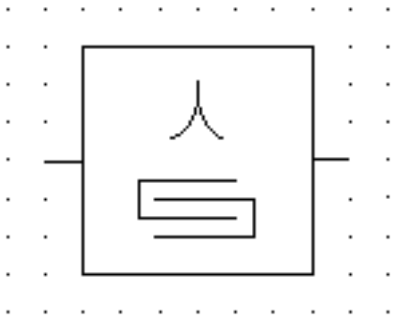
S01265



Name:	Surface acoustic wave (SAW) resonator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-22
Keywords:	filters, networks
Applies:	S01052; S01153
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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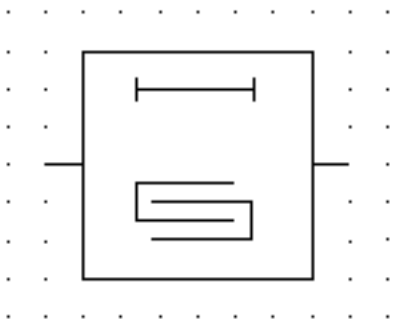
S01266



Name:	Surface acoustic wave (SAW) delay line
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-16-23
Keywords:	delay lines, networks
Applies:	S00124; S01052
Shape class:	Depicting shapes, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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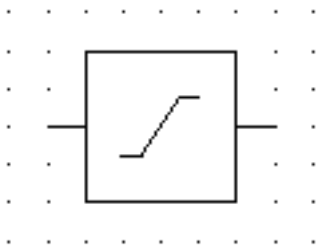
S01267



Name:	Clipper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-17-01
Keywords:	limiters
Applied in:	S01271, S01269, S01268, S01270
Application notes:	A00245
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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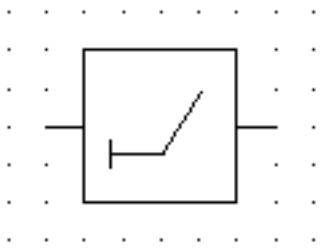
S01268



Name:	Base limiter; Threshold device
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-17-02
Keywords:	limiters
Applies:	S01267
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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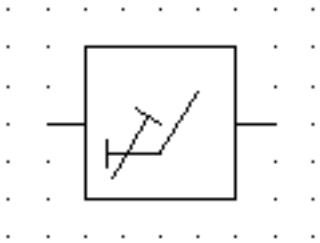
S01269



Name:	Base limiter with preset of the threshold adjustment; Threshold device with preset adjustment of the threshold
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-17-03
Keywords:	limiters
Applies:	S01267
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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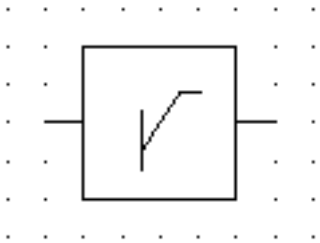
S01270



Name:	Positive peak clipper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-17-04
Keywords:	limiters
Applies:	S01267
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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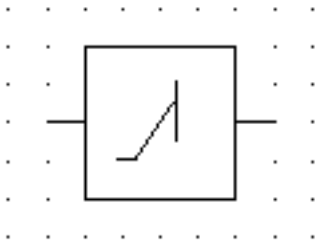
S01271



Name:	Negative peak clipper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-17-05
Keywords:	limiters
Applies:	S01267
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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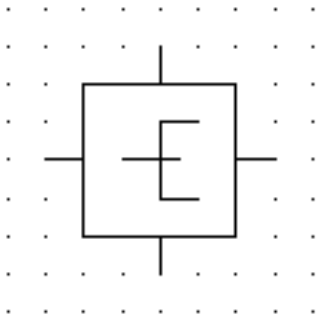
S01272



Name:	Terminating set
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-01
Keywords:	hybrid transformers, terminating sets
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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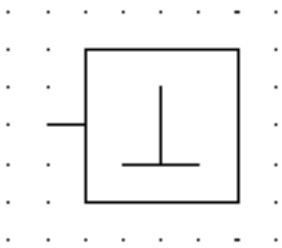
S01273



Name:	Balancing network
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-02
Keywords:	hybrid transformers, terminating sets
Applied in:	S01276
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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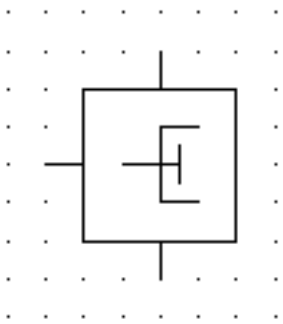
S01274



Name:	Terminating set with balancing network
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-03
Keywords:	hybrid transformers, terminating sets
Applied in:	S01277
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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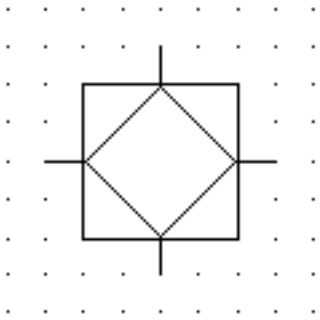
S01275



Name:	Hybrid transformer
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-04
Keywords:	hybrid transformers, terminating sets
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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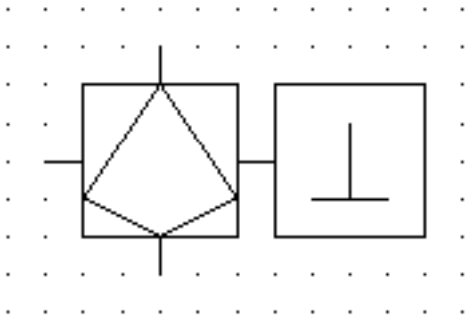
S01276



Name:	Asymmetric (skew) hybrid transformer
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-05
Keywords:	hybrid transformers, terminating sets
Applies:	S01273
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with balancing network.

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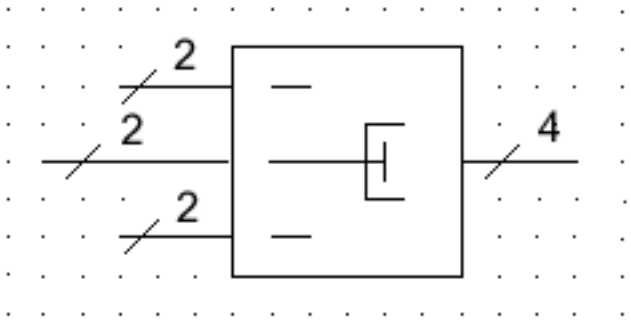
S01277



Name:	Termination device (complex)
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-18-06
Keywords:	hybrid transformers, terminating sets
Applies:	S00003; S01274
Shape class:	Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Equipment for connecting a four-wire circuit to either a two-wire circuit or a four-wire circuit depending upon the reception of a control signal.

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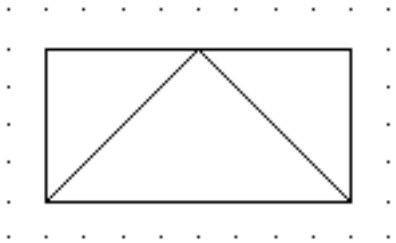
S01278



Name:	Modulator, general symbol; Demodulator, general symbol; Discriminator, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-19-01
Keywords:	demodulators, discriminators, modulators
Applied in:	S01280, S01279, S01281
Applies:	S00214
Application notes:	A00246
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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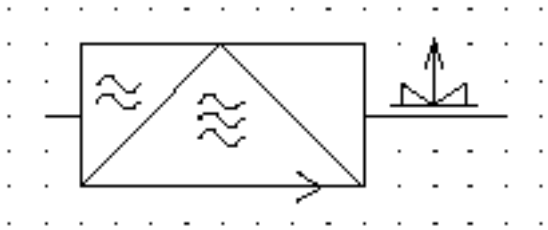
S01279



Name:	Modulator, double sideband output
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-19-02
Keywords:	modulators
Applies:	S00074; S00075; S00099; S01278; S01308
Shape class:	Arrows, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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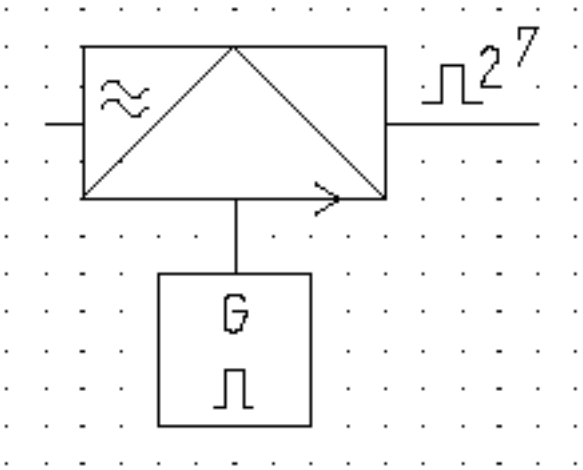
S01280



Name:	Pulse code modulator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-19-03
Keywords:	modulators
Applies:	S00074; S00099; S01223; S01228; S01278
Shape class:	Depicting shapes, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with seven-unit binary code output.

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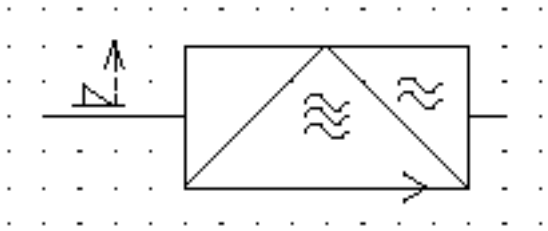
S01281



Name:	Demodulator, single sideband
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-19-04
Keywords:	demodulators
Applies:	S00074; S00075; S00099; S01278; S01312
Shape class:	Depicting shapes, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Demodulator, single sideband with suppressed amplitude of the carrier-frequency, with audio-output, shown.

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S01282



Name:	Concentrating function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-01
Keywords:	concentrators
Applied in:	S00512, S01285, S01284
Shape class:	Trapezoids
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Concentrating function from left to right.

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S01283



Name:	Expanding function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-02
Keywords:	concentrators
Applied in:	S00512
Shape class:	Trapezoids
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Expanding function from left to right.

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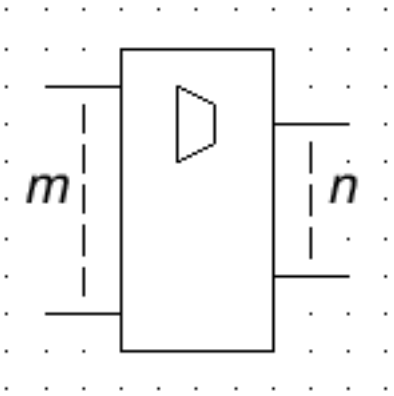
S01284



Name:	Concentrator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-03
Keywords:	concentrators
Form:	Form 1
Alternative forms:	S01285
Applies:	S01282
Shape class:	Characters, Rectangles, Trapezoids
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Concentrator, shown with m input circuits and n output circuits.

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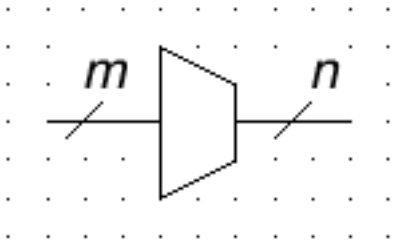
S01285



Name:	Concentrator
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-04
Keywords:	concentrators
Form:	Form 2
Alternative forms:	S01284
Applies:	S00003; S01282
Shape class:	Characters, Trapezoids
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Concentrator, shown with m input circuits and n output circuits

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S01286



Name:	Multiplexing function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-05
Keywords:	multiplexers
Applied in:	S01289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01287



Name:	Demultiplexing function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-06
Keywords:	multiplexers
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If confusion can arise, DX may be replaced by DMUX.

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S01288



Name:	Multiplexing and demultiplexing function
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-07
Keywords:	multiplexers
Applied in:	S01290
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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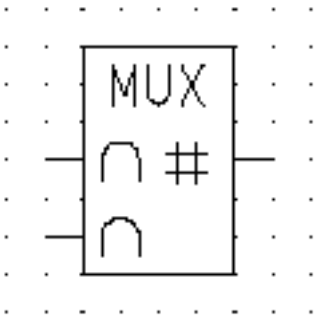
S01289



Name:	Multiplexer with analog/digital conversion
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-08
Keywords:	multiplexers
Applies:	S00216; S00217; S01286
Shape class:	Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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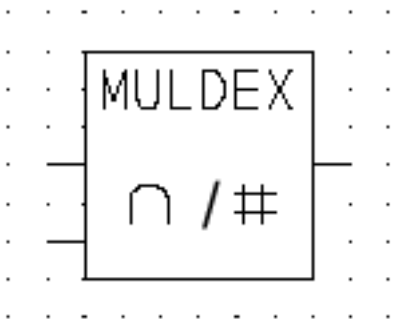
S01290



Name:	Multiplexer/demultiplexer with analog/digital conversion
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-07-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-20-09
Keywords:	multiplexers
Applies:	S00214; S00216; S00217; S01288
Shape class:	Characters, Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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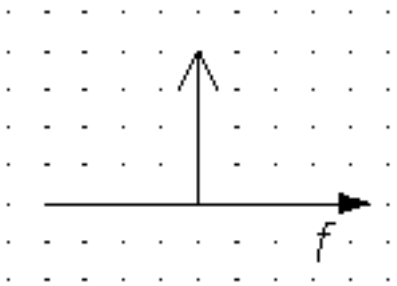
S01291



Name:	Carrier frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-01
Keywords:	frequency spectra
Applied in:	S01311, S01308, S01310, S01309, S01315
Application notes:	A00149, A00185
Shape class:	Arrows, Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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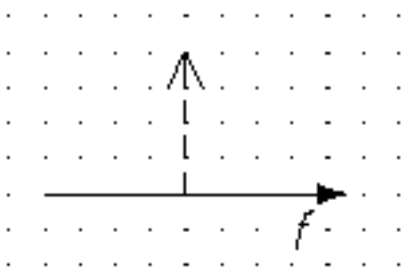
S01292



Name:	Suppressed-carrier frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-02
Keywords:	frequency spectra
Applied in:	S01312, S01314
Application notes:	A00149
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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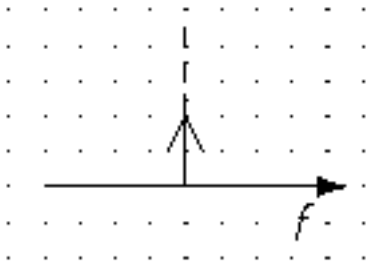
S01293



Name:	Reduced-carrier frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-03
Keywords:	frequency spectra
Applied in:	S01313
Application notes:	A00149
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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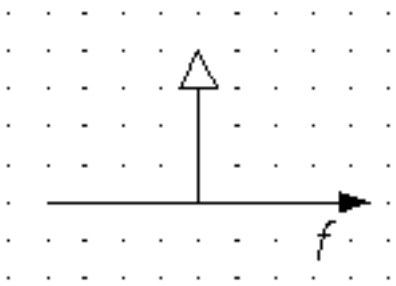
S01294



Name:	Pilot frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-04
Keywords:	frequency spectra
Applied in:	S01317, S01295
Application notes:	A00149, A00187
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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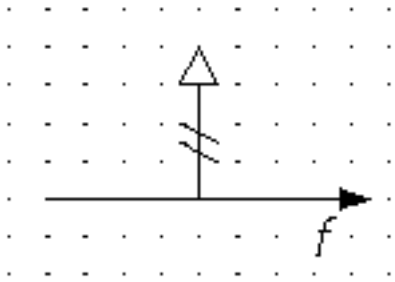
S01295



Name:	Pilot frequency; Supergroup pilot frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-05
Keywords:	frequency spectra
Applies:	S01294
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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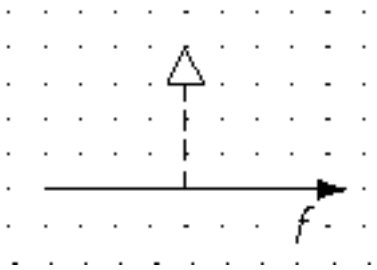
S01296



Name:	Suppressed pilot frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-06
Keywords:	frequency spectra
Application notes:	A00149
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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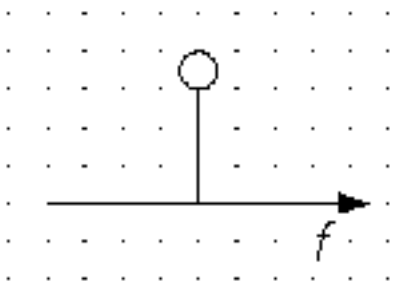
S01297



Name:	Additional measuring frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-07
Keywords:	frequency spectra
Application notes:	A00149
Shape class:	Arrows, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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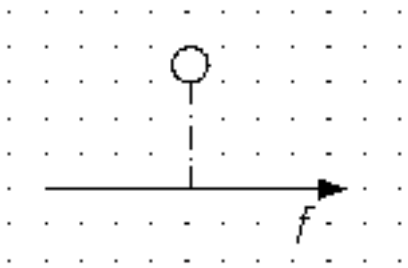
S01298



Name:	Additional measuring frequency (on request)
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-08
Keywords:	frequency spectra
Application notes:	A00149
Shape class:	Arrows, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Additional measuring frequency, transmitted or measured on request.

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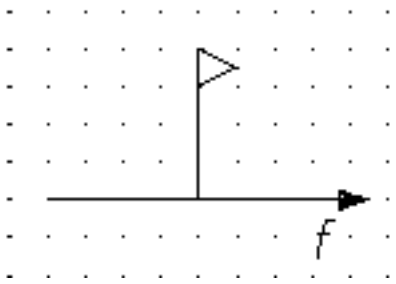
S01299



Name:	Signalling frequency
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-09
Keywords:	frequency spectra
Application notes:	A00149
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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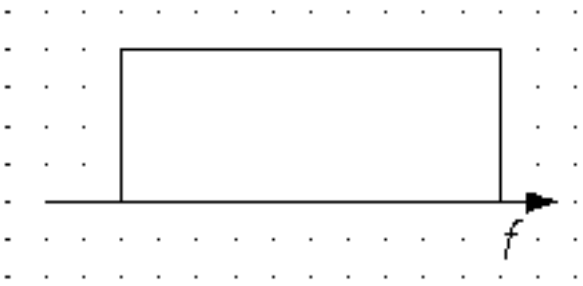
S01300



Name:	Frequency band, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-10
Keywords:	frequency spectra
Applied in:	S01310, S01309, S01301, S01302
Application notes:	A00149, A00188
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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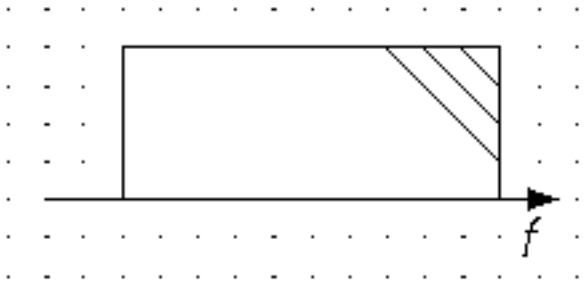
S01301



Name:	Frequency band, mastergroup
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-11
Keywords:	frequency spectra
Applies:	S01300
Application notes:	A00149, A00188
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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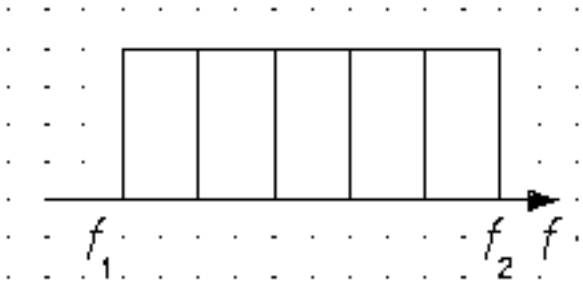
S01302



Name:	Band of frequencies
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-12
Keywords:	frequency spectra
Applied in:	S01317
Applies:	S01300
Application notes:	A00149, A00188
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Band of frequencies from f1 to f2 divided into five channels, groups, etc. is shown.

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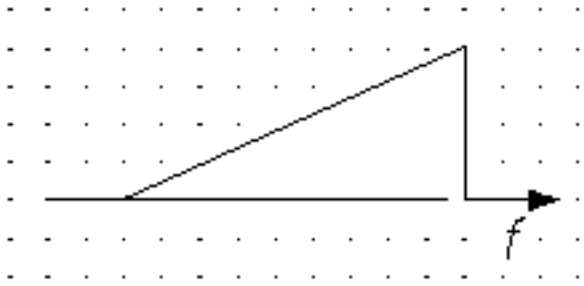
S01303



Name:	Erect band of frequencies
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-13
Keywords:	frequency spectra
Applied in:	S01311, S01308, S01310, S01304, S01307, S01314, S01305, S01313, S01316, S01315
Application notes:	A00149, A00162
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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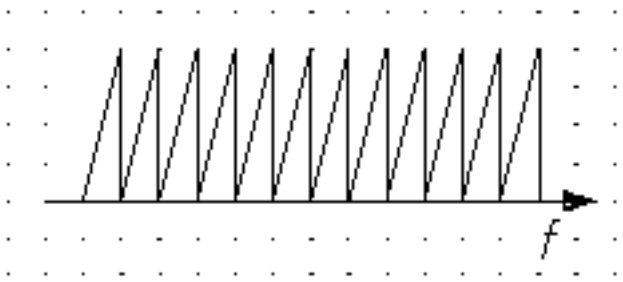
S01304



Name:	Erect band of frequencies, a group of several channels
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-14
Keywords:	frequency spectra
Alternative forms:	S01305
Applies:	S01303
Application notes:	A00149, A00162
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Band of frequencies consisting of a group of 12 erect channels is shown.

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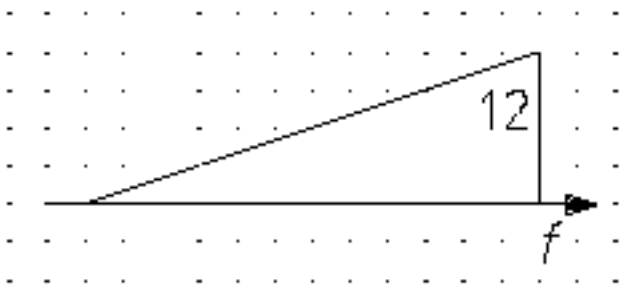
S01305



Name:	Erect band of frequencies, a group of several channels
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-15
Keywords:	frequency spectra
Form:	Simplified Form
Alternative forms:	S01304
Applies:	S01303
Application notes:	A00149, A00162
Shape class:	Characters, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Band of frequencies consisting of a group of 12 erect channels is shown.

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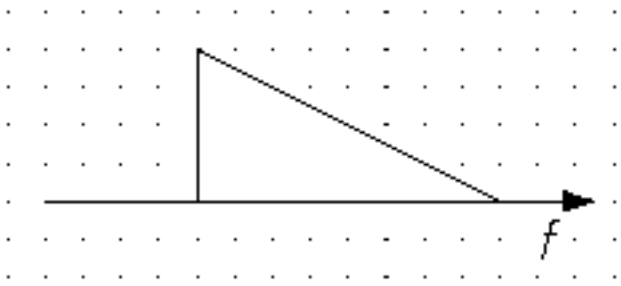
S01306



Name:	Inverted band of frequencies
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-16
Keywords:	frequency spectra
Applied in:	S01312, S01311, S01308, S01310, S01307, S01314, S01316, S01315
Application notes:	A00149, A00162
Shape class:	Characters, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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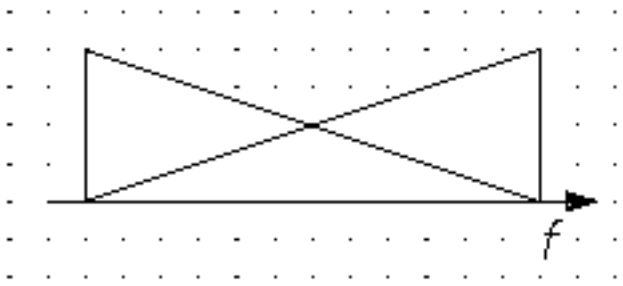
S01307



Name:	Band of mixed channels
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-21-17
Keywords:	frequency spectra
Applies:	S01303; S01306
Application notes:	A00149
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Band of mixed channels, groups etc., some erect, remainder inverted is shown.

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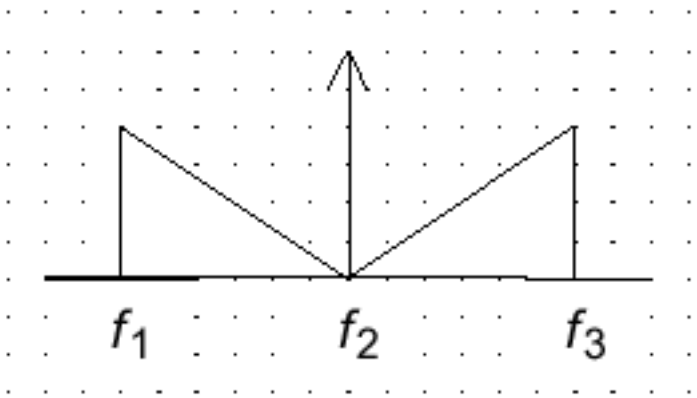
S01308



Name:	Amplitude-modulated carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-01
Keywords:	frequency spectra
Applied in:	S01279
Applies:	S01291; S01303; S01306
Shape class:	Arrows, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Amplitude-modulated carrier wave with both sidebands shown.

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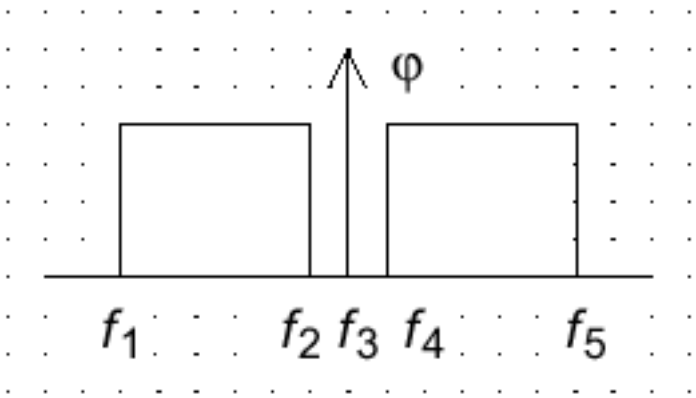
S01309



Name:	Phase modulated carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-02
Keywords:	frequency spectra
Applies:	S01291; S01300
Application notes:	A00190
Shape class:	Arrows, Characters, Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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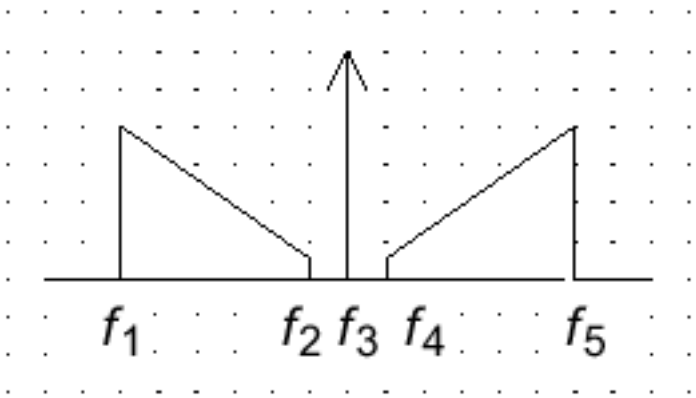
S01310



Name:	Amplitude-modulated carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-03
Keywords:	frequency spectra
Applies:	S01291; S01300; S01303; S01306
Shape class:	Arrows, Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Amplitude-modulated carrier wave with both sidebands, lower modulating frequencies not being transmitted.

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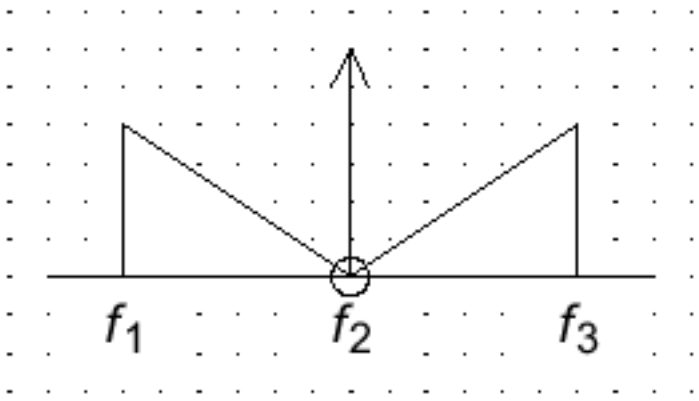
S01311



Name:	Amplitude-modulated carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-04
Keywords:	frequency spectra
Applied in:	S01315
Applies:	S01291; S01303; S01306
Shape class:	Arrows, Circles, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Amplitude-modulated carrier wave with both sidebands, modulating frequencies down to zero being transmitted.

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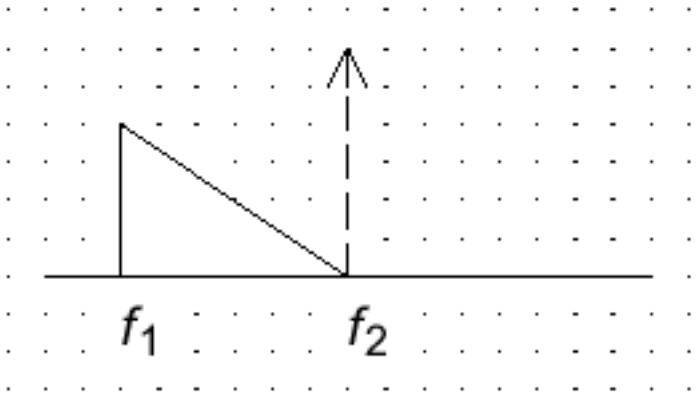
S01312



Name:	Single-sideband, suppressed carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-05
Keywords:	frequency spectra
Applied in:	S01281
Applies:	S01292; S01306
Shape class:	Arrows, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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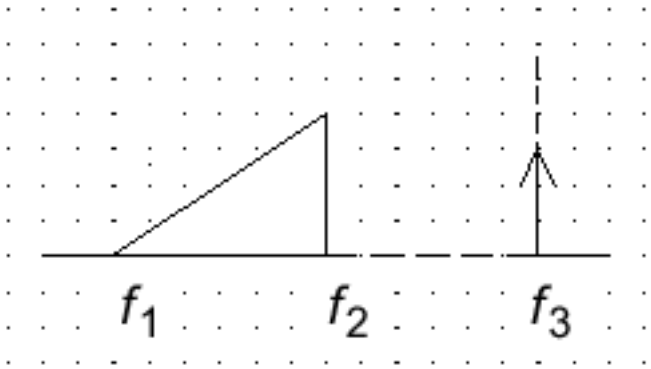
S01313



Name:	Reduced-carrier wave, single erect sideband
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-06
Keywords:	frequency spectra
Applies:	S01293; S01303
Shape class:	Arrows, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Reduced-carrier wave with single, lower, erect sideband.

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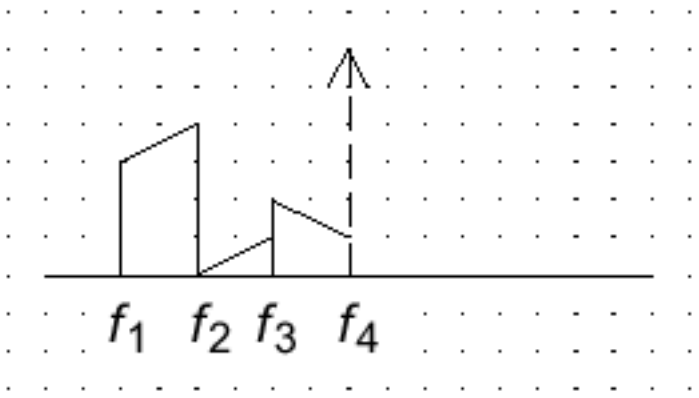
S01314



Name:	Suppressed-carrier, scrambled
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-07
Keywords:	frequency spectra
Applies:	S01292; S01303; S01306
Shape class:	Arrows, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Suppressed-carrier wave with single-sideband scrambled for secrecy.

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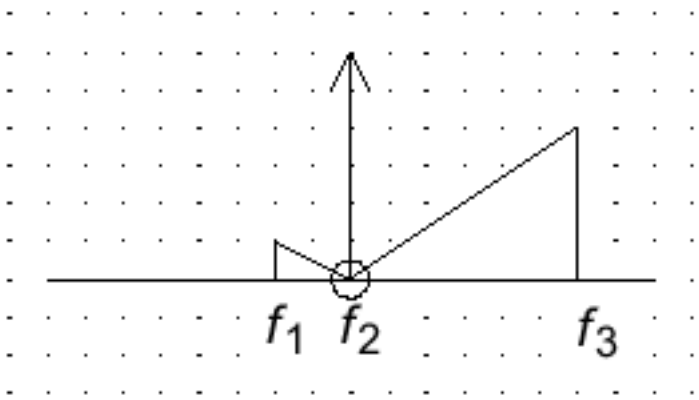
S01315



Name:	Amplitude-modulated carrier
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-08
Keywords:	frequency spectra
Applies:	S01291; S01303; S01306; S01311
Shape class:	Arrows, Circles, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Amplitude-modulated carrier wave with upper sideband and lower vestigial sideband, modulating frequencies down to zero being transmitted.

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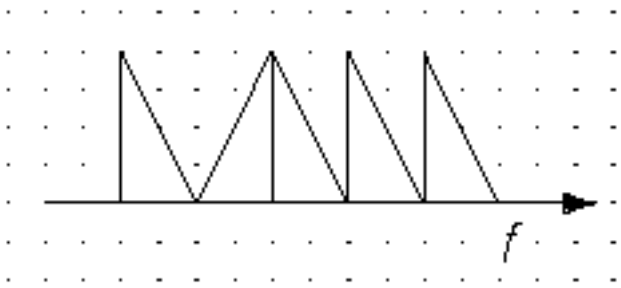
S01316



Name:	Band of five channels
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-09
Keywords:	frequency spectra
Applies:	S01303; S01306
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Band of five channels, groups, etc., four of which are inverted and one erect is shown.

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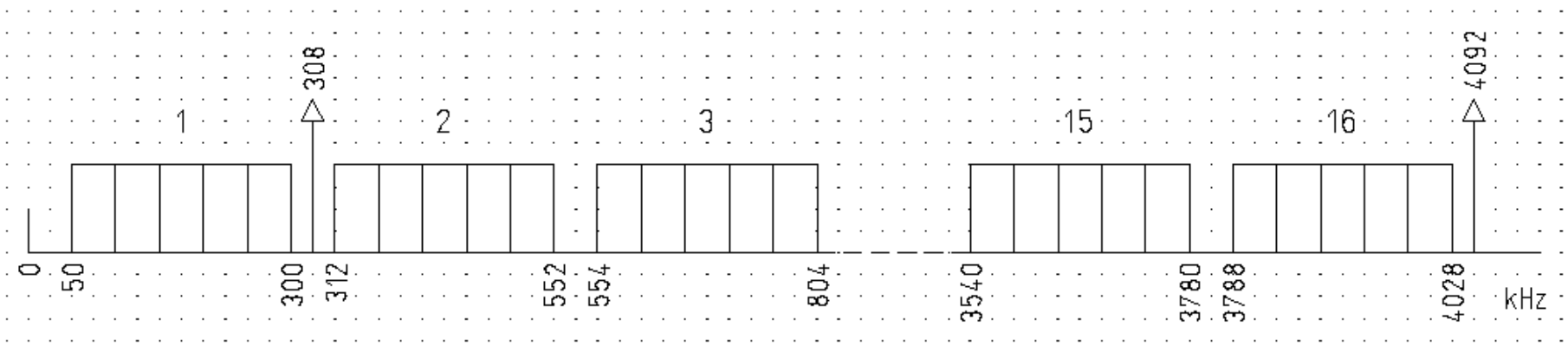
S01317



Name:	Transmission system
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-22-10
Keywords:	frequency spectra
Applies:	S01294; S01302
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	4 MHz transmission system showing supergroups and pilot frequencies.

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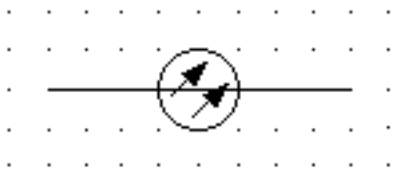
S01318



Name:	Optical fibre, general symbol; Optical fibre cable, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-01
Keywords:	cables, fibre optics, transmission lines
Applied in:	S01329, S01320, S01331, S01321, S01322, S01330, S01319
Applies:	S00001; S00127
Application notes:	A00151
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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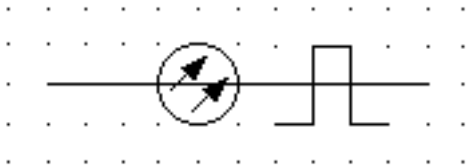
S01319



Name:	Optical fibre, multimode stepped index
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-02
Keywords:	fibre optics, transmission lines
Applied in:	S01323
Applies:	S01318
Application notes:	A00152
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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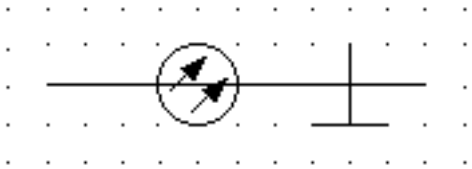

Name:	Optical fibre, single mode stepped index
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-03
Keywords:	fibre optics, transmission lines
Applies:	S01318
Application notes:	A00152
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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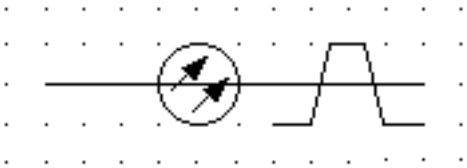
S01321



Name:	Optical fibre, graded index
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-04
Keywords:	fibre optics, transmission lines
Applies:	S01318
Application notes:	A00152
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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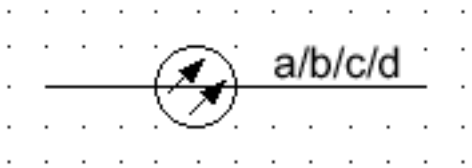
S01322



Name:	Optical fibre cable with dimentional data
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-05
Keywords:	cables, fibre optics, transmission lines
Applied in:	S01323
Applies:	S01318
Application notes:	A00153
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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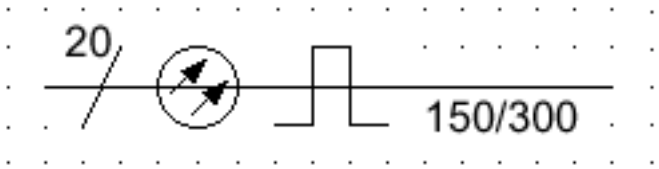
S01323



Name:	Optical fibre cable with dimensional data (example)
Status level:	Standard
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-06
Keywords:	cables, fibre optics, transmission lines
Applied in:	S01324
Applies:	S00003; S01319; S01322
Application notes:	A00153, A00154
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Optical fibre cable containing 20 multimode stepped index optical fibres, each with a core diameter of 150 micro meter and a cladding diameter of 300 micro meter.

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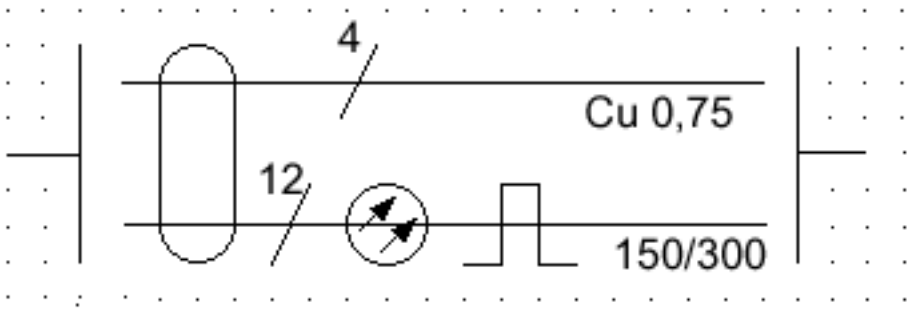
S01324



Name:	Composite cable
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-07
Keywords:	cables, fibre optics, transmission lines
Applies:	S00003; S00009; S01323
Application notes:	A00153, A00154
Shape class:	Arrows, Circles, Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	Example of a composite cable containing both copper conductors and optical fibres.

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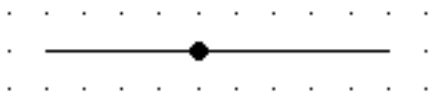

Name:	Permanent joint
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-23-08
Keywords:	connections, fibre optics, joints, transmission lines
Applies:	S00016
Shape class:	Circles, Lines
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Installation diagrams

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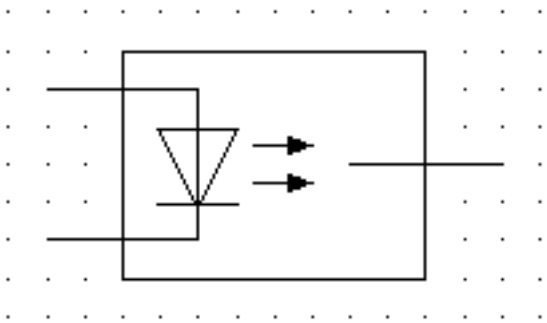

Name:	Guided light transmitter
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-01
Keywords:	fibre optics, transmission devices, transmitters
Applies:	S00060; S00127; S00641
Shape class:	Arrows, Equilateral triangles, Rectangles
Function class:	B Converting variable to signal, E Providing radiant or thermal energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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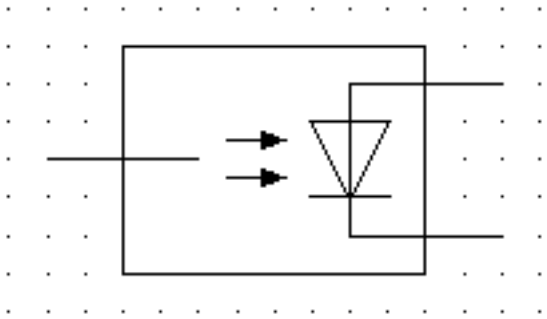

Name:	Guided light receiver
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-02
Keywords:	fibre optics, receivers, transmission devices
Applies:	S00060; S00127; S00641
Shape class:	Arrows, Equilateral triangles, Lines , Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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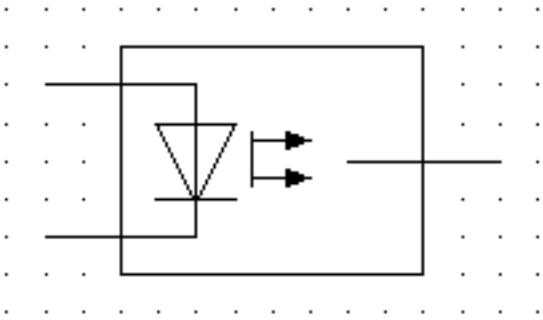
S01328



Name:	Guided light transmitter, coherent light
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-03
Keywords:	coherent light, fibre optics, lasers, transmission devices, transmitters
Applies:	S00060; S00128; S00641
Shape class:	Arrows, Equilateral triangles, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Coherent guided light transmitter with laser diode.

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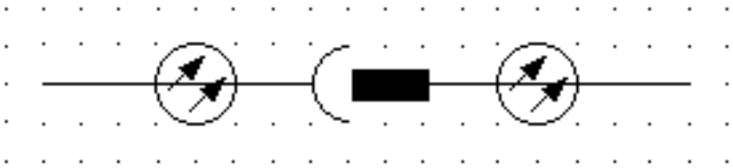
S01329



Name:	Optical connection female - male
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-04
Keywords:	connection devices, fibre optics, plugs, sockets
Applies:	S00031; S00032; S00033; S01318
Shape class:	Half-circles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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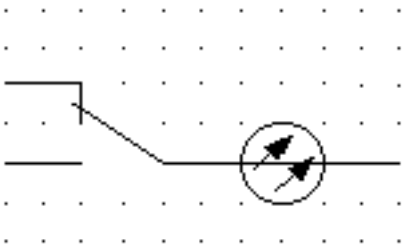
S01330



Name:	Change-over contact in optical fibre circuit
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-05
Keywords:	contacts, fibre optics, transmission devices
Applies:	S00230; S01318
Shape class:	Arrows, Circles, Lines
Function class:	K Processing signals or information, X Connecting
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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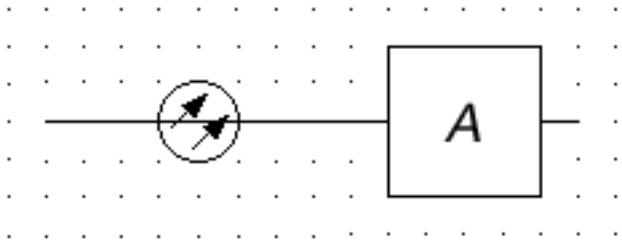

Name:	Optical attenuator
Status level:	Obsolete - for reference only
Released on:	2001-07-01
Obsolete from:	2002-08-04
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-06
Keywords:	attenuators, fibre optics, transmission devices
Applies:	S01244; S01318
Shape class:	Arrows, Circles, Squares
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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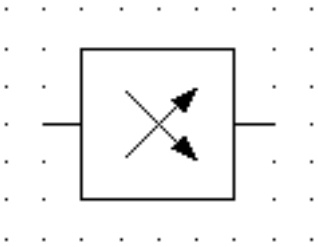

Name:	Mode scrambler
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-07
Keywords:	fibre optics, transmission devices
Shape class:	Arrows, Rectangles, Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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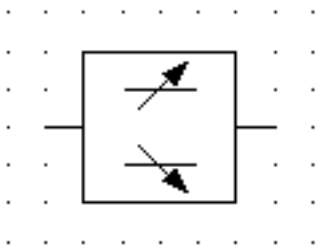
S01333



Name:	Cladding mode stripper
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-08
Keywords:	fibre optics, transmission devices
Shape class:	Arrows, Lines , Squares
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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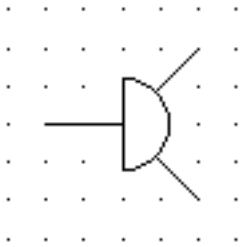
S01334



Name:	Splitter, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-09
Alternative names:	Splitter, two-way
Keywords:	cabled sound and television, connection devices, fibre optics, splitters, transmission devices
Applied in:	S00435, S01335
Application notes:	A00157
Replacing:	S00434
Shape class:	Half-circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Two-way splitter shown.

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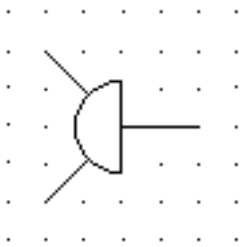
S01335



Name:	Combiner, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-10
Keywords:	connection devices, fibre optics, transmission devices
Applies:	S01334
Application notes:	A00157
Shape class:	Half-circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Two-way combiner shown. Information flow from left to right.

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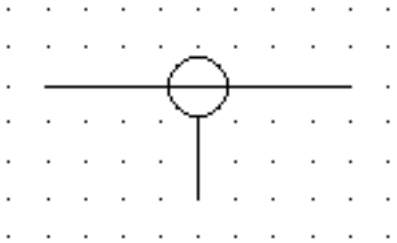
S01336



Name:	Tap-off, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-11
Alternative names:	Subscriber's tap-off
Keywords:	cabled sound and television, connection devices, fibre optics, tap-off, transmission devices
Applies:	S00001
Application notes:	A00103, A00104
Replacing:	S00437
Shape class:	Circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Single tap-off shown.

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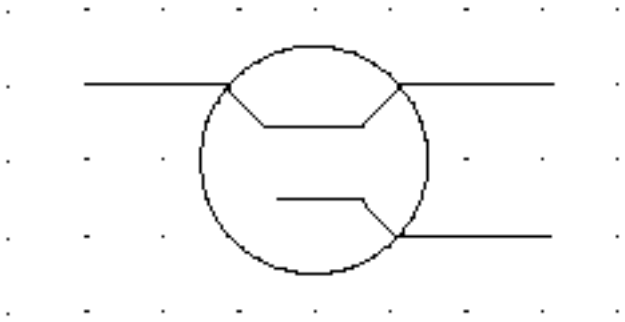
S01337



Name:	Fused tap
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-12
Alternative names:	Fused coupler
Keywords:	connection devices, fibre optics, transmission devices
Application notes:	A00158, A00159
Shape class:	Circles, Depicting shapes
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	Fused tap, dividing a signal into two, shown.

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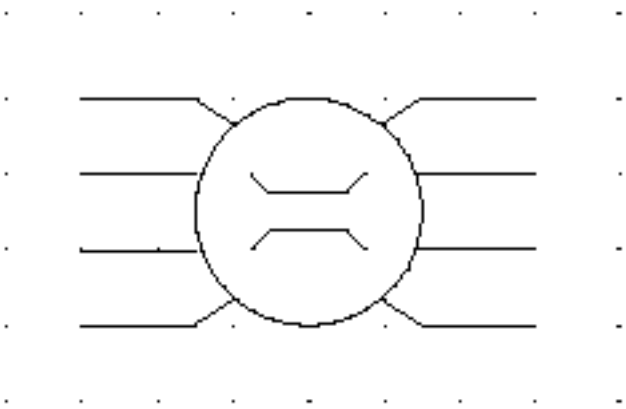
S01338



Name:	Fused star coupler, transmissive type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-13
Keywords:	fibre optics, transmission devices, connection devices
Shape class:	Circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	A star coupler of this type connects each input with all outputs, whereas there is isolation between different inputs.

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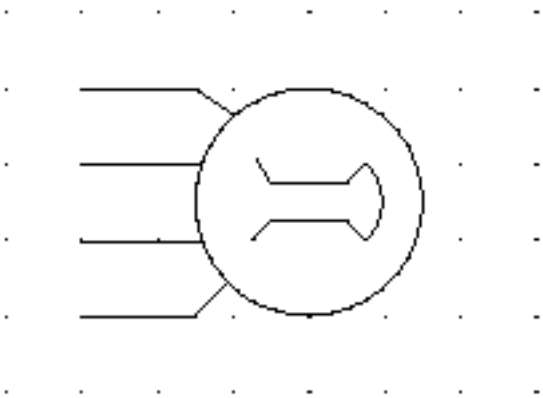
S01339



Name:	Fused star coupler, reflective type
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-14
Keywords:	fibre optics, transmission devices, connection devices
Shape class:	Circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	In a star coupler of this type each port is bidirectional and may be used as input and output at the same time. Each port feeds every other port.

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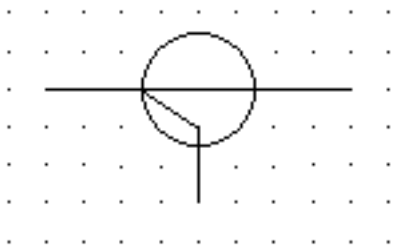
S01340



Name:	Directional coupler, general symbol
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-10 (ed.2.0) 10-24-15
Keywords:	cabled sound and television, connection devices, couplers, fibre optics, transmission devices
Replacing:	S00436
Shape class:	Circles
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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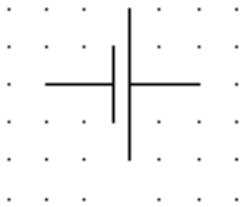
S01341



Name:	Secondary cell
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-15-01
Keywords:	secondary cells
Applied in:	S01366, S01365
Shape class:	Lines
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The longer line represents the positive pole, the shorter one the negative pole.

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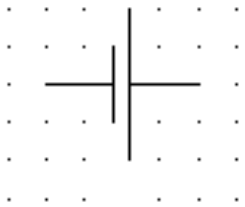
S01342



Name:	Battery of primary or secondary cells
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-15-01
Keywords:	accumulators, batteries, primary cells, secondary cells
Applied in:	S01018, S00908
Replacing:	S01365; S01366
Shape class:	Lines
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The longer line represents the positive pole, the shorter one the negative pole.

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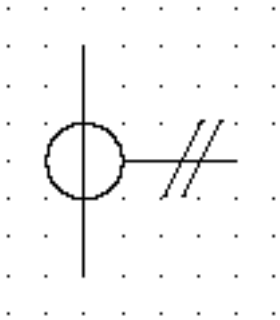
S01343



Name:	Pulse transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-10
Keywords:	pulse transformers, transformers
Form:	Form 1
Alternative forms:	S01344
Application notes:	A00128, A00129
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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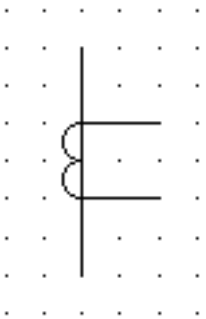
S01344



Name:	Pulse transformer
Status level:	Standard
Released on:	2001-07-01
Earlier published in:	IEC 60617-6 (ed.2.0) 06-09-11
Keywords:	pulse transformers, transformers
Form:	Form 2
Alternative forms:	S01343
Applies:	S00842
Application notes:	A00127, A00128, A00129, A00130
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams

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S01347



Name:	Direct current
Status level:	Obsolete - for reference only
Released on:	1996-05
Obsolete from:	2001-07-01
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-03
Keywords:	current, voltage
Replaced by:	S00067
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Publication error: This symbol, published in IEC 60617-2 Ed. 2, was for reasons of incapability of the used drawing system published with two dashed lines below the straight line instead of three. It is replaced by symbol S00067.

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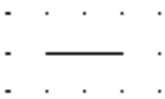
S01348



Name:	Direct current
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-A1-01
Keywords:	current, voltage
Applied in:	S01349
Replaced by:	S00067
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Old form. Use symbol S00067 instead.

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S01349



Name:	Direct current (example)
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-2 (ed.2.0) 02-A1-02
Keywords:	current, voltage
Applies:	S01348
Application notes:	A00022
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Symbol restrictions:	This example is withdrawn since it is applying symbol S01348. See application note A0022 to symbol S00067.

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S01350



Name:	Conductor joint; In-line splice
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-3 (ed.2.0) 03-A1-01
Keywords:	connection devices
Replaced by:	S00016
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00016 instead.

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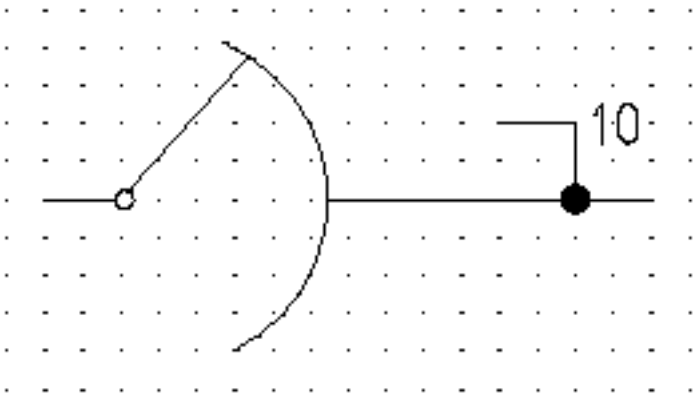
S01351



Name:	Branching
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-3 (ed.2.0) 03-A1-02
Alternative names:	Junction; Multipled uniselector banks
Keywords:	branchings, connections, junctions
Applies:	S00023; S01006
Application notes:	A00003
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Symbol restrictions:	This example is withdrawn since it does not obey application note A0003 fully.
Remarks:	Multipled uniselector banks shown for 10 banks.

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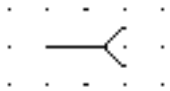
S01352



Name:	Contact, female (of a socket or plug)
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-3 (ed.2.0) 03-A2-01
Alternative names:	Socket
Keywords:	connection devices
Applied in:	S01354
Application notes:	A00006
Replaced by:	S00031
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00031 instead.

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S01353



Name:	Contact, male (of a socket or plug)
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-3 (ed.2.0) 03-A2-02
Alternative names:	Plug
Keywords:	connection devices
Applied in:	S01354
Application notes:	A00007
Replaced by:	S00032
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00032 instead.

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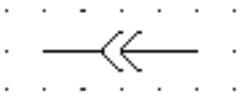
S01354



Name:	Plug and socket
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-3 (ed.2.0) 03-A2-03
Keywords:	connection devices
Applies:	S01352; S01353
Application notes:	A00006, A00007
Replaced by:	S00033
Shape class:	Lines
Function class:	X Connecting
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00033 instead.

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S01355



Name:	Resistor
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A1-01
Keywords:	resistors
Applied in:	S00442, S01389
Replaced by:	S00555
Shape class:	Lines
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00555 instead.

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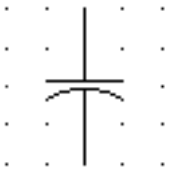
S01356



Name:	Capacitor
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-01
Keywords:	capacitors
Replaced by:	S00567
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00567 instead.

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S01357



Name:	Lead-through capacitor; Feed-through capacitor
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-02
Keywords:	capacitors
Replaced by:	S00569
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00569 instead.

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S01358



Name:	Polarized capacitor, for example electrolytic
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-03
Keywords:	capacitors
Replaced by:	S00571
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00571 instead.

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S01359



Name:	Adjustable capacitor
Status level:	Obsolete - for reference only
Obsolete from:	1999-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-04
Keywords:	capacitors
Replaced by:	S00573
Shape class:	Arrows, Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00573 instead.

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S01360



Name:	Capacitor with the preset adjustment
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-05
Keywords:	capacitors
Replaced by:	S00575
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00575 instead.

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S01361



Name:	Differential capacitor, adjustable
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-06
Keywords:	capacitors
Replaced by:	S00577
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00577 instead.

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S01362



Name:	Split capacitor, adjustable
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A2-07
Keywords:	capacitors
Replaced by:	S00579
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00579 instead.

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S01363



Name:	Inductor
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-4 (ed.2.0) 04-A3-01
Alternative names:	Coil; Winding; Choke
Keywords:	chokes, coils, inductors, windings
Applied in:	S00490
Replaced by:	S00583
Shape class:	Rectangles
Function class:	R Restricting or stabilising
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S00583 instead.

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S01364



Name:	Rectifying junction
Status level:	Obsolete - for reference only
Obsolete from:	1996-06
Earlier published in:	IEC 60617-5 (ed.2.0) 05-A-01
Keywords:	junctions, semiconductors
Replaced by:	S00619
Shape class:	Equilateral triangles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Old form. Use symbol S00619 instead.

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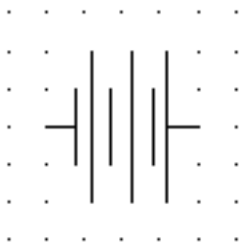
S01365



Name:	Battery of primary or secondary cells
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-6 (ed.2.0) 06-A1-01
Keywords:	accumulators, batteries, primary cells, secondary cells
Applies:	S00898; S01341
Replaced by:	S01342
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use the simplified symbol S01342 instead.
Remarks:	The longer line represents the positive pole, the shorter one the negative pole.

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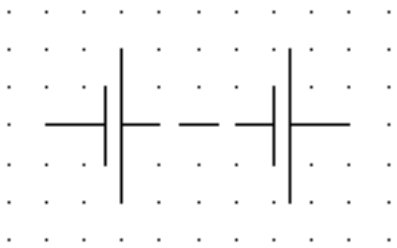
S01366



Name:	Battery of primary or secondary cells
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-6 (ed.2.0) 06-A1-02
Keywords:	accumulators, batteries, primary cells, secondary cells
Applies:	S00898; S01341
Replaced by:	S01342
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use the symbol symbol S01342 instead.
Remarks:	The longer line represents the positive pole, the shorter one the negative pole.

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S01367



Name:	Inertia switch (operated by sudden deceleration)
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A1-01
Keywords:	contacts, switches
Shape class:	Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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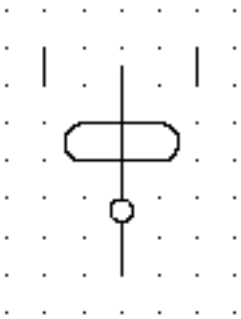
S01368



Name:	Mercury switch; Levelling switch
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A1-02
Keywords:	switches
Shape class:	Depicting shapes, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Three terminals shown.

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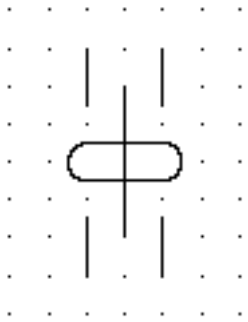
S01369



Name:	Mercury switch; Levelling switch
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A1-03
Keywords:	contacts, switches
Shape class:	Depicting shapes, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	Four terminals shown.

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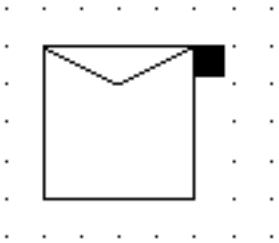
S01370



Name:	Starter with automatic release
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A2-01
Keywords:	motor starters
Shape class:	Equilateral triangles, Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams

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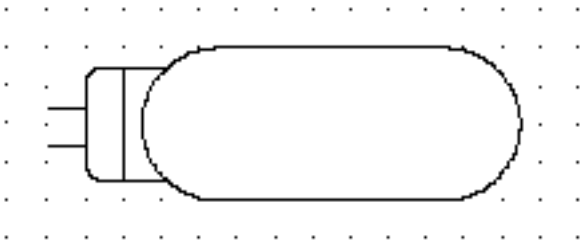
S01371



Name:	Fire-extinguisher
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A3-01
Keywords:	fire extinguishers
Shape class:	Depicting shapes, Ovals
Function class:	C Storing
Application class:	Circuit diagrams
Remarks:	Single head with connector shown.

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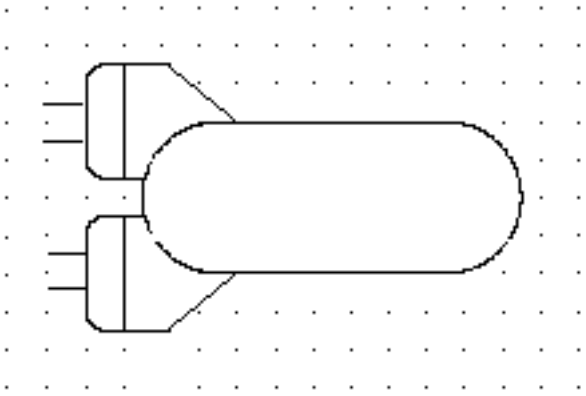
S01372



Name:	Fire-extinguisher
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A3-02
Keywords:	fire extinguisher
Shape class:	Depicting shapes, Ovals
Function class:	C Storing
Application class:	Circuit diagrams
Remarks:	Double head with connectors shown.

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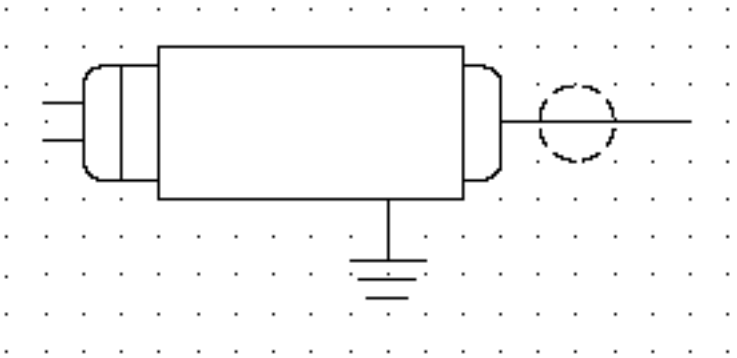

Name:	Ignition unit, high energy
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A4-01
Keywords:	inductors
Shape class:	Depicting shapes
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams

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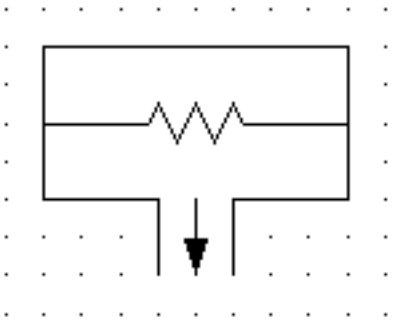

Name:	Squib igniter
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A4-02
Keywords:	resistors
Shape class:	Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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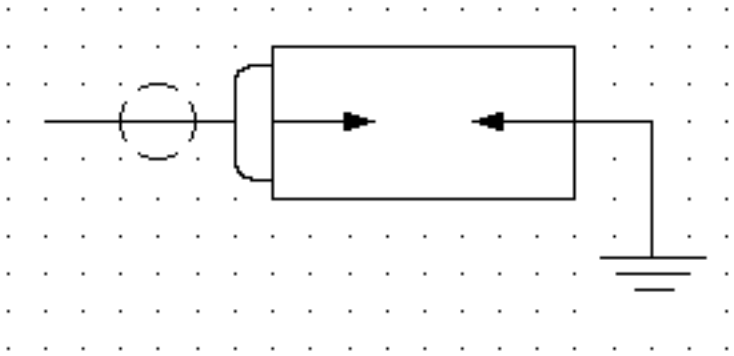

Name:	Igniter plug
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A4-03
Keywords:	spark gaps
Shape class:	Arrows, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Circuit diagrams

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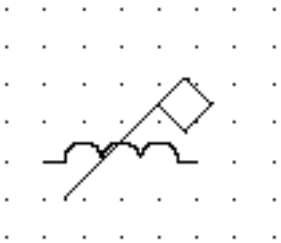
S01376



Name:	Coil-operated flag indicator
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-7 (ed.2.0) 07-A4-04
Keywords:	indicators
Shape class:	Half-circles, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams

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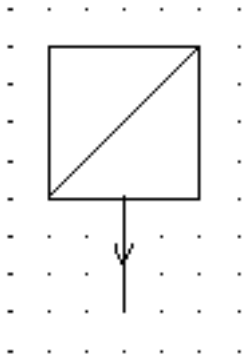
S01377



Name:	Telemetering transmitter
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A1-01
Alternative names:	transmitter
Keywords:	transmitters
Applies:	S00001; S00099; S00958
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	This symbol is withdrawn. It is just an application of symbol S00958, combined with S00001 and S00099.

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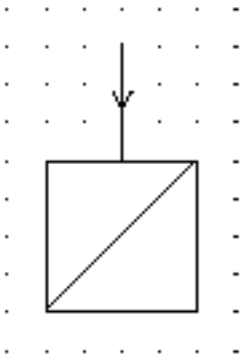
S01378



Name:	Telemetering receiver
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A1-02
Keywords:	receivers
Applies:	S00001; S00099; S00958
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	This symbol is withdrawn. It is just an application of symbol S00958, combined with S00001 and S00099.

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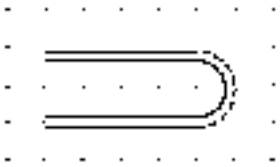
S01379



Name:	Temperature sensor, continuous loop
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A2-01
Alternative names:	For fire detection
Keywords:	temperature sensor
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams

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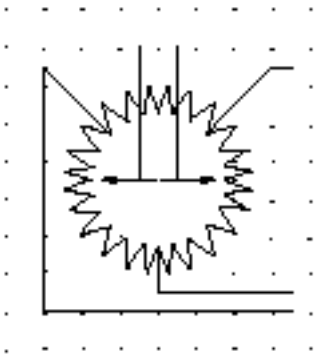
S01380



Name:	Angular position transmitter; Pressure transmitter
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A2-02
Keywords:	angular position transmitters, pressure transmitters
Shape class:	Circles, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Desynn type (d.c. type).

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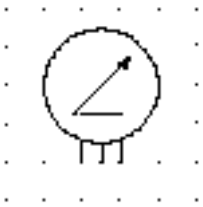
S01381



Name:	Angular position indicator; Pressure indicator
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A2-03
Keywords:	angular position indicators, pressure indicators
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Desynn type (d.c. type)

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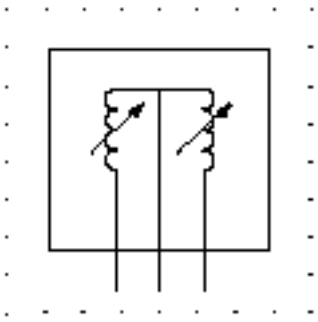
S01382



Name:	Angular position transmitter; Pressure transmitter
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A2-04
Keywords:	angular position transmitters, pressure transmitters
Shape class:	Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Inductor type.

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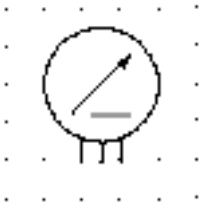
S01383



Name:	Angular position indicator; Pressure indicator
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A2-05
Keywords:	angular position indicators, pressure indicators
Shape class:	Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Remarks:	Inductor type.

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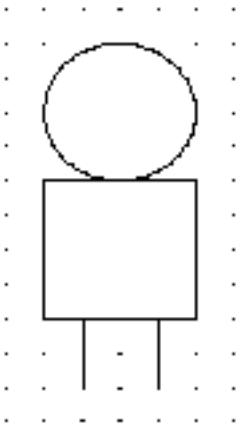
S01384



Name:	Bell
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A3-01
Keywords:	indicating instruments
Replaced by:	S00970
Shape class:	Circles, Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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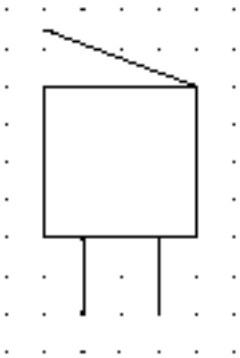
S01385



Name:	Buzzer
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-8 (ed.2.0) 08-A3-02
Keywords:	indicating instruments
Replaced by:	S00973
Shape class:	Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams
Symbol restrictions:	Old form. Use S00973 instead.

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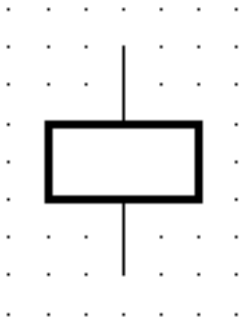
S01386



Name:	Operating coil of a selector
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-9 (ed.2.0) 09-A1-01
Keywords:	actuators
Replaced by:	S01003
Shape class:	Rectangles
Function class:	M Providing mechanical energy
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S01003.
Remarks:	Heavy outline is generally used to distinguish this symbol from that for the operating coil of a relay.

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S01387



Name:	Stereo type
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-9 (ed.2.0) 09-A2-01
Keywords:	stereo
Replaced by:	S01045
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Old form. Use symbol S01045 instead.

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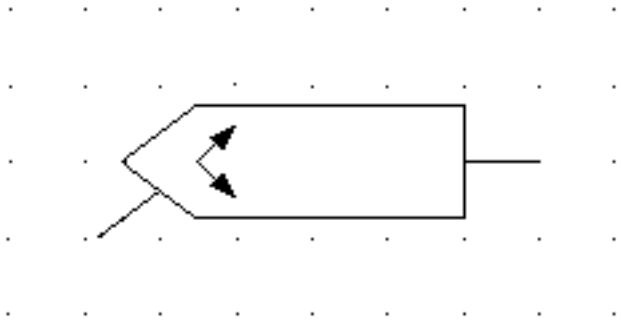
S01388



Name:	Stylus operated stereophonic head
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-9 (ed.2.0) 09-A3-01
Keywords:	stereo
Shape class:	Arrows, Depicting shapes, Rectangles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams
Symbol restrictions:	Old form.

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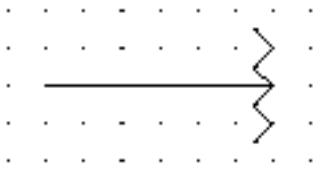
S01389



Name:	Matched termination
Status level:	Obsolete - for reference only
Obsolete from:	1996-05
Earlier published in:	IEC 60617-10 (ed.2.0) 10-A1-01
Keywords:	terminations
Applies:	S01355
Replaced by:	S01180
Shape class:	Lines
Function class:	E Providing radiant or thermal energy, R Restricting or stabilising
Application class:	Circuit diagrams
Symbol restrictions:	Old form. Use symbol S01180 instead.

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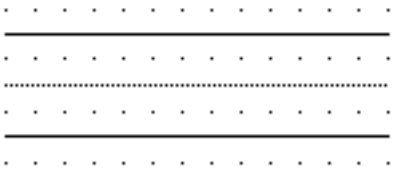
S01391



Name:	Gas insulated enclosure with internal conductor
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	conductors, gas insulated enclosures, gas zones
Applied in:	S01400, S01399
Applies:	S00001; S00063
Application notes:	A00262
Shape class:	Lines
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	The internal conductor is indicated with a dotted line.

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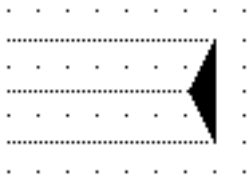
S01392



Name:	Gas insulated enclosure - gas-sealing end of compartment
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	gas insulated enclosures, gas zones, sealings
Applied in:	S01396, S01393, S01397
Application notes:	A00262
Shape class:	Equilateral triangles
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01393



Name:	Gas insulated enclosure - partition between compartments
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	gas insulated enclosures, gas zones
Applied in:	S01398
Applies:	S01392
Application notes:	A00262
Shape class:	Equilateral triangles, Parallelograms
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01396



Name:	Gas insulated conductor - boundary with air insulated bushing
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	conductors, gas insulated conductors, gas insulated enclosures, gas zones
Applies:	S01392
Application notes:	A00262
Shape class:	Equilateral triangles, Rectangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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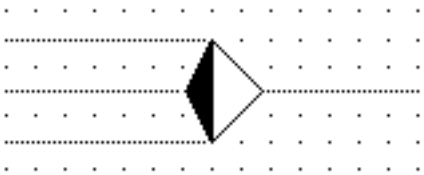
S01397



Name:	Gas insulated conductor - boundary with cable sealing end
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	cable fittings, conductors, gas insulated conductors, gas insulated enclosures, gas zones, sealings
Applies:	S00050; S01392
Application notes:	A00262
Shape class:	Equilateral triangles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01398



Name:	Gas insulated conductor - boundary with transformer or reactor bushing
Status level:	Standard
Released on:	2002-09-21
Earlier published in:	Not applicable
Keywords:	bushings, conductors, gas insulated conductors, gas insulated enclosures, gas zones
Applies:	S01393
Application notes:	A00262
Shape class:	Equilateral triangles, Half-circles
Function class:	X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01399



Name:	Conductor support insulator without gas boundary
Status level:	Standard
Released on:	2003-01-16
Earlier published in:	Not applicable
Keywords:	conductors, gas insulated conductors, gas insulated enclosures, gas zones
Applies:	S01391
Application notes:	A00262
Shape class:	Lines
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	This kind of support allows gas flow.

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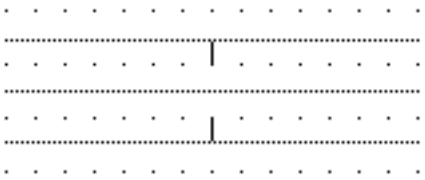
S01400



Name:	Straight flange
Status level:	Standard
Released on:	2003-01-16
Earlier published in:	Not applicable
Keywords:	conductors, gas insulated conductors, gas insulated enclosures, gas zones
Applies:	S01391
Application notes:	A00262
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Flange without insulator.

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S01401



Name:	Direct current
Status level:	Standard
Released on:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-03
Keywords:	current, kind of curent and voltage, voltage
Form:	Form 1
Alternative forms:	S01402
Applied in:	S00004, S00405, S00406, S00418, S00896, S00894, S00834, S00823, S00825, S00893, S00824, S00827, S00833, S00832, S00826, S00897, S00835
Application notes:	A00259
Replacing:	S00067
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The shape of this symbol is defined as character 3/15 of IEC 61286 "DIRECT CURRENT SYMBOL FORM TWO", equivalent to UCS 2393 (Table 63) of ISO/IEC 10646 "DIRECT CURRENT SYMBOL FORM TWO", according to IEC 61286.

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S01402

DC

Name:	Direct current
Status level:	Standard
Released on:	2001-09-15
Earlier published in:	Not applicable
Keywords:	current, kind of curent and voltage, voltage
Form:	Form 2
Alternative forms:	S01401
Application notes:	A00259
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Note that "DC" (written with uppe-case letters, without any dots and language independant) is a letter symbol in accordance with IEC 61293. The estblished abbreviation, on the other hand, for "direct current" is "d.c." (with lower-case letters and dots).

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S01403



Name:	Alternating current
Status level:	Standard
Released on:	2001-09-15
Earlier published in:	IEC 60617-2 (ed.2.0) 02-02-04
Keywords:	current, kind of curent and voltage, voltage
Form:	Form 1
Alternative forms:	S01404
Applied in:	S00005, S00069, S00316, S00405, S00406, S00417, S00443, S00830, S00828, S00896, S00894, S00837, S01219, S00840, S00829, S01229, S00800, S00799, S00831, S00836, S00838, S01226, S00832, S00897, S00835
Application notes:	A00258, A00260
Replacing:	S00069; S00070; S00071; S00072; S00107
Shape class:	Depicting shapes
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The shape of this symbol is defined as character 5/13 of IEC 61286 "ALTERNATING CURRENT SYMBOL LOW-FREQUENCY RANGE", equivalent to UCS 2248 (Table 60) of ISO/IEC 10646 "TILDE OPERATOR" according to IEC 61286.

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S01404

AC

Name:	Alternating current
Status level:	Standard
Released on:	2001-09-15
Earlier published in:	Not applicable
Keywords:	current, kind of curent and voltage, voltage
Form:	Form 2
Alternative forms:	S01403
Application notes:	A00258
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Note that "AC" (written with uppe-case letters, without any dots and language independant) is a letter symbol in accordance with IEC 61293. The estblished abbreviation, on the other hand, for "alternating current" is "a.c." (with lower-case letters and dots).

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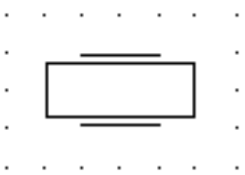
S01405



Name:	Piezo-electric effect
Status level:	Standard
Released on:	2001-10-13
Earlier published in:	Not applicable
Keywords:	dependence, effect, piezoelectric
Applied in:	S00602, S00601, S00600
Shape class:	Lines , Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01406



Name:	Spring-operated device
Status level:	Standard
Released on:	2001-10-13
Earlier published in:	Not applicable
Keywords:	mechanical control, other control, springs
Applied in:	S00295
Applies:	S00186
Shape class:	Lines , Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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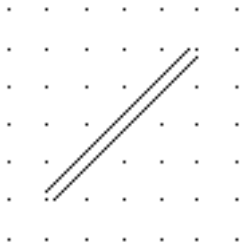
S01407



Name:	Conversion with electrical separation
Status level:	Standard
Released on:	2001-10-13
Earlier published in:	Not applicable
Keywords:	conversion, converters, power converters, signal converters
Applied in:	S01788, S01791
Applies:	S00214
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01408



Name:	Functional earthing; Functional grounding (US)
Status level:	Standard
Released on:	2001-11-10
Earlier published in:	Not applicable
Alternative names:	Functional earthing conductor; Functional earthing terminal
Keywords:	earth connection, equipotentiality, frame connection
Applies:	S00200
Replacing:	S00201
Shape class:	Half-circles, Lines
Function class:	- Functional elements or attributes, W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams, Conceptual elements or qualifiers
Remarks:	For the definition of "functional earthing", see IEV 195-01-13.

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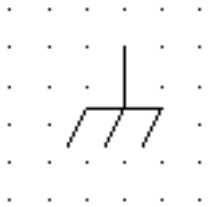
S01409



Name:	Functional equipotential bonding
Status level:	Standard
Released on:	2001-11-10
Earlier published in:	Not applicable
Alternative names:	Functional bonding conductor; Functional bonding terminal
Keywords:	equipotentiality, frame connection, functional bonding
Alternative forms:	S01410
Replacing:	S00203
Shape class:	Lines
Function class:	- Functional elements or attributes, W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams, Conceptual elements or qualifiers
Remarks:	For the definition of "functional equipotential bonding", see IEV 195-01-16".

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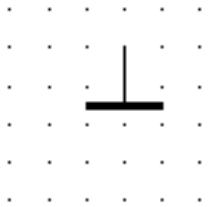
S01410



Name:	Functional equipotential bonding
Status level:	Standard
Released on:	2001-11-10
Earlier published in:	Not applicable
Alternative names:	Functional bonding conductor; Functional bonding terminal
Keywords:	equipotentiality, frame connection, functional bonding
Form:	Simplified form
Alternative forms:	S01409
Replacing:	S00203
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Remarks:	For the definition of "functional equipotential bonding", see IEV 195-01-16".

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S01411



Name:	Capacitor, lead-through
Status level:	Standard
Released on:	2001-11-10
Earlier published in:	Not applicable
Alternative names:	Capacitor, feed-through
Keywords:	capacitors
Replacing:	S00569
Shape class:	Lines
Function class:	C Storing
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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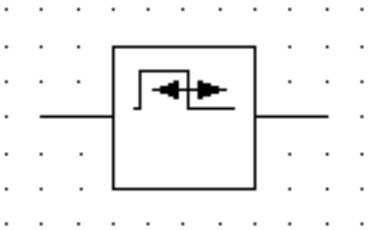
S01412



Name:	Chopper
Status level:	Rejected
Earlier published in:	Not applicable
Applies:	S01222
Shape class:	Arrows, Lines
Function class:	T Converting but maintaining kind
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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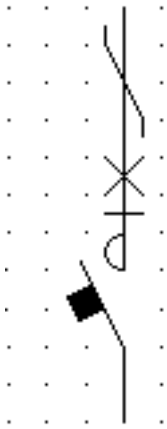
S01413



Name:	Multiple-function switching device
Status level:	Standard
Released on:	2003-11-10
Earlier published in:	Not applicable
Alternative names:	Control and protective switching device (CPS); Reversing CPS
Keywords:	circuit breakers, contactors, isolators, reversing
Applies:	S00024; S00218; S00219; S00220; S00222; S00227
Shape class:	Half-circles, Lines , Squares
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The represented multi-function switching device contains: reversing function, circuit breaker function, disconnector function, contactor function and automatic tripping function, as indicated through application of the relevant function symbols. The reversing function is indicated by the symbol for phase interchange. When the symbol is used, the symbol elements for not applicable functions shall be omitted.

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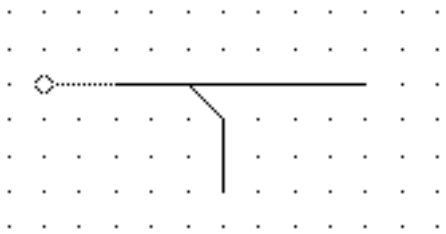
S01414



Name:	Directed connection
Status level:	Standard
Released on:	2003-01-24
Earlier published in:	Not applicable
Keywords:	branchings, cables, conductors, connections
Applies:	S00001; S00058
Application notes:	A00192, A00262, A00264
Shape class:	Lines
Function class:	W Guiding or transporting, X Connecting
Application class:	Circuit diagrams, Connection diagrams, Installation diagrams, Overview diagrams
Symbol restrictions:	This symbol shall not be used if there is no electrical connection, e.g. at bundling.
Remarks:	The slanting line shall point in the direction of the the connection point. The symbol is shown with a conductor coming from the right side going to the left side, with a connection going to the bottom through a connection point situated to the left.

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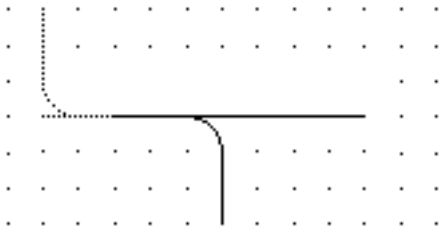
S01415



Name:	Point of access to a bundle
Status level:	Standard
Released on:	2003-01-24
Earlier published in:	Not applicable
Keywords:	branchings, bundles, cables
Applies:	S00001
Application notes:	A00192, A00262
Shape class:	Circle segments, Lines
Function class:	- Functional elements or attributes, W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams
Symbol restrictions:	This symbol shall not be used to represent an electrical connection.
Remarks:	In diagrams with topgraphical layout this symbol indicates a point of access to a physical bundle of conductors. In diagrams with functional layout, this symbol represent "graphical bundling", i.e. two or more connecting lines are partly occupying the same space on the diagram.

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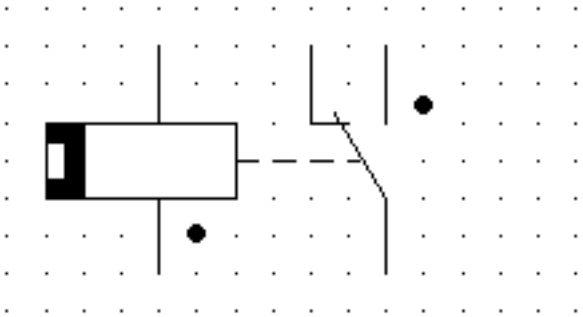
S01416



Name:	Polarized relay, stable positions
Status level:	Standard
Released on:	2002-03-23
Earlier published in:	IEC 60617-2 (ed.2.0)
Keywords:	all-or-nothing relays, operating devices
Applies:	S00230; S00319
Replacing:	S00322
Shape class:	Dots (points), Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Remarks:	Shown with two stable positions.

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S01417



Name:	Acoustic signalling device, general symbol
Status level:	Standard
Released on:	2003-01-24
Earlier published in:	Not applicable
Alternative names:	Horn; Bell; Single-stroke bell; Whistle
Keywords:	bells, horns, indicators, signalling devices, whistles
Replacing:	S00969; S00970; S00971; S00974
Shape class:	Half-circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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S01418



Name:	Balancing unit; Balun
Status level:	Standard
Released on:	2002-07-01
Earlier published in:	Not applicable
Keywords:	antennas
Applied in:	S01119
Replacing:	S01118
Shape class:	Circle segments, Dots (points)
Function class:	W Guiding or transporting
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams

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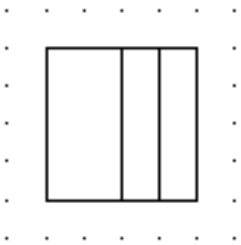
S01419



Name:	Combined electric and heat generated station, planned
Status level:	Standard
Released on:	2002-07-05
Earlier published in:	Not applicable
Keywords:	generating station
Applies:	S00060
Application notes:	A00071
Replacing:	S00387
Shape class:	Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Network maps

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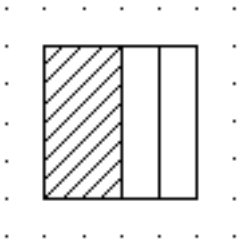
S01420



Name:	Combined electric and heat generating station, in service or unspecified
Status level:	Standard
Released on:	2002-07-05
Earlier published in:	Not applicable
Keywords:	generating station
Applies:	S00060
Application notes:	A00071, A00072
Replacing:	S00388
Shape class:	Rectangles, Squares
Function class:	E Providing radiant or thermal energy, G Initiating a flow
Application class:	Network maps

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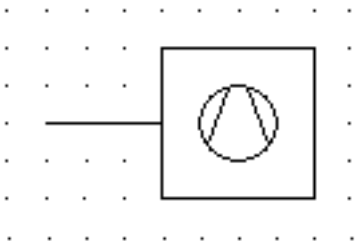
S01421



Name:	Fan
Status level:	Standard
Released on:	2002-07-01
Earlier published in:	Not applicable
Keywords:	fans, installations in buildings, ventilators
Applied in:	S01824, S01827, S01821
Applies:	S00059
Replacing:	S00494
Shape class:	Circles, Lines , Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring. The symbol applies symbol 2302 of ISO 14617.

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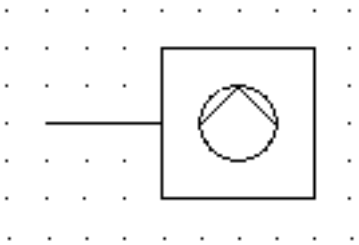
S01422



Name:	Pump
Status level:	Standard
Released on:	2002-07-01
Earlier published in:	Not applicable
Keywords:	installations in buildings, pumps
Shape class:	Circles, Lines , Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams
Remarks:	The symbol is shown with wiring. The symbol applies symbol 2301 of ISO 14617.

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S01423



Name:	DC supply function, general symbol
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Keywords:	power generators
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The longer line represents the positive pole, the shorter one (with the same line width) the negative pole.

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S01424



Name:	Bit pattern
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	signal waveform
Applied in:	S01425
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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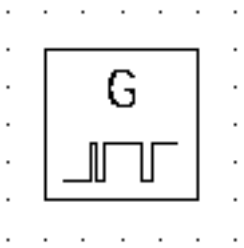
S01425



Name:	Bit pattern generator
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	signal generators, waveform generators
Applies:	S01225; S01424
Shape class:	Characters, Depicting shapes, Squares
Function class:	G Initiating a flow, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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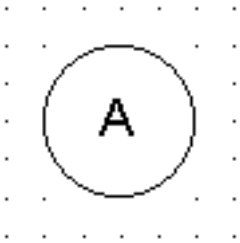
S01426



Name:	Ammeter
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Current meter
Keywords:	indicating instruments, instruments, measuring instruments
Applies:	S00910
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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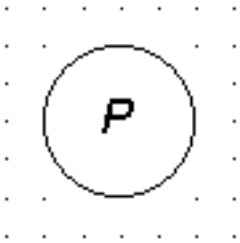
S01427



Name:	Power meter
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Wattmeter
Keywords:	indicating instruments, instruments, measuring instruments
Applies:	S00910
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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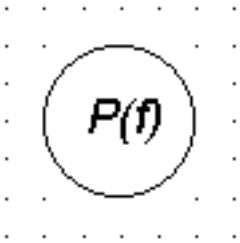
S01428



Name:	Spectrum analyser
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	indicating instruments, instruments, measuring instruments
Applies:	S00910
Shape class:	Characters, Circles
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams
Symbol restrictions:	The symbol is shown for an analyser of the power distribution over the frequency spectrum.

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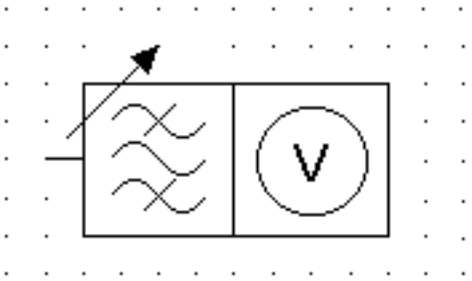
S01429



Name:	Selective voltmeter
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	indicating instruments, instruments, measuring instruments
Applies:	S00081; S00913; S01249
Shape class:	Arrows, Characters, Circles, Depicting shapes, Squares
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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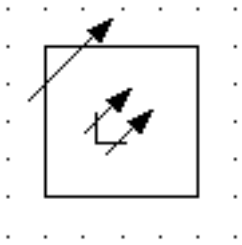
S01430



Name:	Polarization control device
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	fibre optics, light
Applies:	S00081; S01431
Shape class:	Arrows, Lines , Squares
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Network maps, Overview diagrams

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S01431



Name:	Polarized light
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	light, radiation
Applied in:	S01430
Applies:	S00127
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01432



Name:	Heat detector
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applied in:	S01433
Application notes:	A00266
Shape class:	Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01433



Name:	Heat detector, differentiating
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applied in:	S01434
Applies:	S01432
Application notes:	A00266
Shape class:	Lines , Squares
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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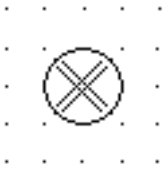
S01434



Name:	Heat detector, enclosed
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applies:	S01433
Application notes:	A00266
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01435



Name:	Smoke detector, ionizing
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applied in:	S01436, S01447
Application notes:	A00266
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01436



Name:	Smoke detector, optical
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applies:	S01435
Application notes:	A00266
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01437



Name:	Flame detector
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Circles, Equilateral triangles
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01438



Name:	Motion detector, general symbol
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Circle segments, Squares
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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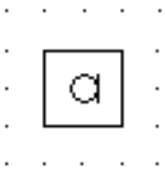
S01439



Name:	Acoustic detector, general symbol
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Circles, Lines , Squares
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01440



Name:	Mounting location in hidden space
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms
Applied in:	S01442, S01447, S01441
Application notes:	A00265
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01441



Name:	Mounting location in hidden space - above ceiling
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms
Applies:	S01440
Application notes:	A00265
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01442



Name:	Mounting location in hidden space - beneath floor
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms
Applies:	S01440
Application notes:	A00265
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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S01443



Name:	Bolt switch, burglar alarm
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Circles, Equilateral triangles
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01444



Name:	Vibration switch, burglar alarm
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Equilateral triangles, Squares
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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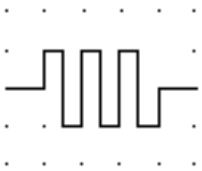
S01445



Name:	Glass break detector (window foil), burglar alarm
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Application notes:	A00266
Shape class:	Depicting shapes, Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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S01446



Name:	By-pass switch for alarm
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, switches
Shape class:	Circle segments, Lines , Squares
Function class:	S Converting a manual operation into a signal
Application class:	Installation diagrams

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S01447



Name:	Smoke detector, ionizing - in hidden space
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	alarms, detectors
Applies:	S01435; S01440
Application notes:	A00266
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Installation diagrams

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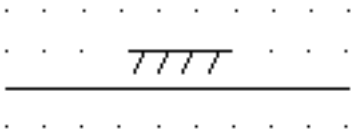
S01448



Name:	Connection, surface mounted
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Alternative names:	Line, surface monted
Keywords:	connections, lines
Applies:	S00001
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams

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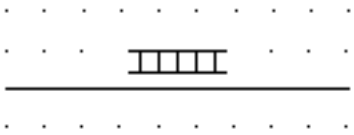
S01449



Name:	Connection on cable ladder
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Alternative names:	Line on cable ladder
Keywords:	connections, ladders, lines
Applies:	S00001
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	Cable ladder (IEV 826-06-08): A table support consisting of a series of transverse supporting elements rigidly fixed to main longitudinal supporting members.

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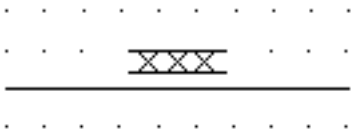
S01450



Name:	Connection within cable tray
Status level:	Standard
Released on:	2002-08-12
Earlier published in:	Not applicable
Alternative names:	Line within cable tray
Keywords:	connections, lines
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	Cable tray (IEV 826-06-07): A table support consisting of a continuous base and raised edges and no covering. A table tray may be perforated or non perforated.

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S01451



Name:	Connection within wall mounted cable channel
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Keywords:	connections, lines
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams
Remarks:	Cable channel (IEV 826-06-05): An element of a wiring system above or in the ground or floor, open, ventilated or closed, and having dimensions which do not permit the entry of persons but allow access to the conduits and/or tables throughout their length during and after installation. A table channel may or may not form part of the building construction.

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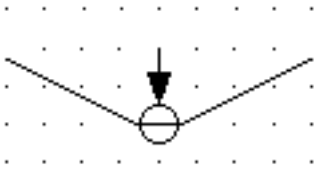
S01452



Name:	Overhead line on pole with strut
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Keywords:	connections, lines
Applies:	S00093; S00409
Shape class:	Lines
Function class:	X Connecting
Application class:	Network maps

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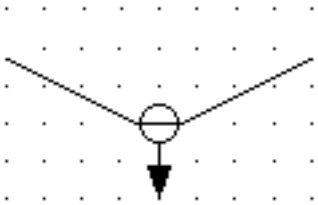
S01453



Name:	Overhead line on pole with stay
Status level:	Standard
Released on:	2003-08-12
Earlier published in:	Not applicable
Keywords:	connections, lines
Applies:	S00093; S00409
Shape class:	Arrows, Lines
Function class:	X Connecting
Application class:	Network maps

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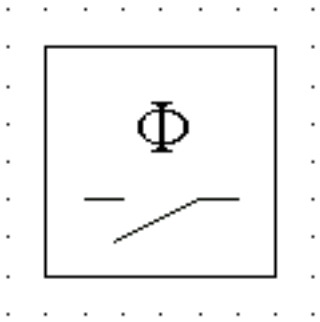
S01454



Name:	Complex switch, general symbol
Status level:	Standard
Released on:	2003-03-03
Earlier published in:	Not applicable
Keywords:	complex switches, switches
Applies:	S00227; S01808
Application notes:	A00268
Replacing:	S00273; S00274; S00275; S00276; S00277; S00280
Shape class:	Characters, Lines , Rectangles
Function class:	B Converting variable to signal, S Converting a manual operation into a signal
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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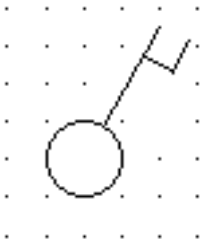
S01455



Name:	Two-way single pole switch
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	installations in buildings, switches
Form:	Form 2
Alternative forms:	S00471
Applies:	S00466
Replacing:	S00471
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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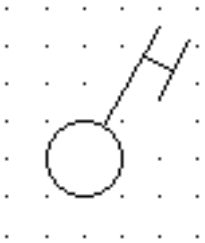
S01456



Name:	Intermediate switch
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	installations in buildings, switches
Form:	Form 2
Alternative forms:	S00472
Applies:	S00466
Application notes:	A00254
Replacing:	S00472
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying, S Converting a manual operation into a signal
Application class:	Installation diagrams

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S01457



Name:	Amplification, general symbol
Status level:	Standard
Released on:	2003-03-31
Earlier published in:	Not applicable
Keywords:	amplification, amplifiers
Applied in:	S01499, S01500, S01598, S01595, S01594, S01596, S01601, S01597, S01602, S01603, S01600, S01599, S01618, S01737, S01781, S01240, S01239
Application notes:	A00238
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The shape of the left-to-right pointing symbol is defined as character 4/7 of IEC 61286 "AMPLIFICATION SYMBOL LEFT-TO-RIGHT", equivalent to UCS 25B7 (Table 69) of ISO/IEC 10646 "WHITE RIGHT-POINTING TRIANGLE". The shape of the right-to-left pointing symbol is defined as character 4/5 of IEC 61286 "AMPLIFICATION SYMBOL RIGHT-TO-LEFT", equivalent to UCS 25C1 (Table 69) of ISO/IEC 10646 "WHITE LEFT-POINTING TRIANGLE".

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S01458



Name:	Gas insulated enclosure - gas through spacer
Status level:	Standard
Released on:	2003-03-31
Earlier published in:	Not applicable
Keywords:	gas insulated conductors, gas insulated enclosures, gas zones
Application notes:	A00262
Shape class:	Equilateral triangles
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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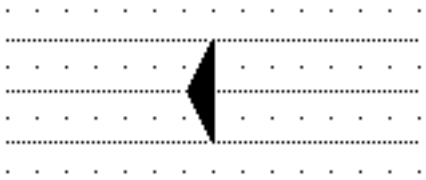
S01459



Name:	Gas insulated enclosure - partition between two compartments
Status level:	Standard
Released on:	2003-03-31
Earlier published in:	Not applicable
Keywords:	gas insulated conductors, gas insulated enclosures, gas zones
Form:	Form 2
Alternative forms:	S01393
Application notes:	A00262
Shape class:	Equilateral triangles
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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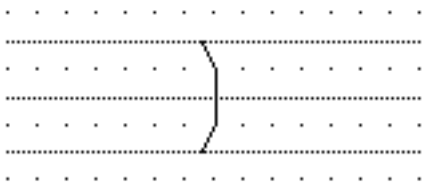
S01460



Name:	Gas insulated enclosure - support insulator, inside module
Status level:	Standard
Released on:	2003-03-31
Earlier published in:	Not applicable
Keywords:	gas insulated conductors, gas insulated enclosures, gas zones
Application notes:	A00262
Shape class:	Lines
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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S01461



Name:	Gas insulated enclosure - support insulator, external module
Status level:	Standard
Released on:	2003-03-31
Earlier published in:	Not applicable
Keywords:	gas insulated conductors, gas insulated enclosures, gas zones
Application notes:	A00262
Shape class:	Lines
Function class:	U Keeping in defined position
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Overview diagrams

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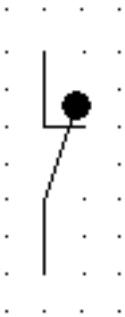
S01462



Name:	Mirror contact
Status level:	Standard
Released on:	2003-08-27
Earlier published in:	Not applicable
Keywords:	contacts
Applied in:	S01720, S01719
Applies:	S00229
Shape class:	Dots (points), Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	A mirror contact is a normally closed auxiliary contact, which cannot be in closed position simultaneously with the normally open main contact, not even during abnormal conditions like welding of the main contact.

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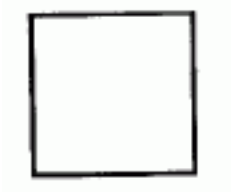
S01463



Name:	Element outline
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-05-01
Keywords:	elements, envelopes, outlines, binary logic elements
Applied in:	S01566, S01567, S01568, S01571, S01569, S01570, S01572, S01573, S01578, S01610, S01607, S01626, S01623, S01629, S01627, S01628, S01637, S01638, S01636, S01640, S01641, S01639, S01660, S01663, S01659, S01662, S01661, S01664, S01665, S01669, S01670, S01675, S01668, S01674, S01678, S01687, S01685, S01686, S01709, S01706, S01708, S01707, S01710, S01723, S01731, S01734, S01778, S01781, S01791, S01796, S01800
Applies:	S00059
Application notes:	A00269, A00270, A00271
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Square shown.

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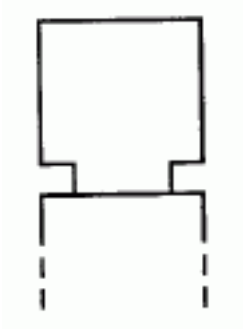
S01464



Name:	Common control block outline
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-05-02
Keywords:	binary logic elements, elements, envelopes, outlines
Applied in:	S01699, S01701, S01738, S01586, S01592, S01588, S01598, S01593, S01602, S01624, S01631, S01632, S01635, S01634, S01654, S01653, S01669, S01670, S01684, S01690, S01692, S01698, S01691, S01693, S01696, S01694, S01720, S01717, S01713, S01711, S01728, S01719, S01721, S01730, S01734
Applies:	S00059
Application notes:	A00269, A00270, A00271
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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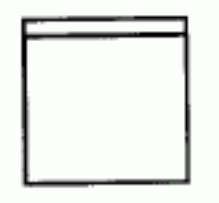
S01465



Name:	Common output element outline
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-05-03
Keywords:	binary logic elements, elements, envelopes, outlines
Applied in:	S01587
Applies:	S00059
Application notes:	A00269, A00270, A00271
Shape class:	Rectangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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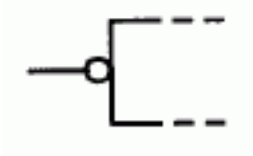
S01466



Name:	Logic negation, input
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-01
Keywords:	binary logic elements, combinative elements
Applied in:	S01705, S01473, S01478, S01593, S01597, S01603, S01599, S01619, S01620, S01616, S01630, S01633, S01647, S01649, S01654, S01652, S01646, S01666, S01664, S01665, S01669, S01670, S01677, S01690, S01712, S01715, S01711, S01714, S01726, S01728, S01716, S01730, S01735, S01734, S01746, S01745, S01789, S01793, S01792, S01806, S01805, S01809
Application notes:	A00272, A00351
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an input. The internal 1-state corresponds to the external 0-state. The connecting line may extend through the circle.

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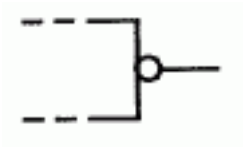
S01467



Name:	Logic negation, output
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-02
Keywords:	binary logic elements, combinative elements
Applied in:	S01579, S01580, S01582, S01586, S01593, S01595, S01597, S01599, S01614, S01624, S01616, S01630, S01633, S01647, S01654, S01646, S01659, S01665, S01677, S01688, S01730, S01734, S01746, S01793
Application notes:	A00272, A00351
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an output. The internal 1-state corresponds to the external 0-state. The connecting line may extend through the circle.

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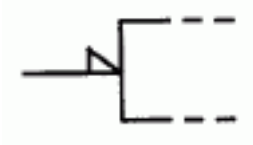
S01468



Name:	Polarity indicator, input
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-03
Alternative names:	Logic polarity, input
Keywords:	binary logic elements, combinative elements
Applied in:	S01740, S01738, S01474, S01744, S01584, S01598, S01596, S01602, S01600, S01605, S01606, S01615, S01618, S01621, S01625, S01634, S01644, S01648, S01650, S01653, S01666, S01683, S01676, S01684, S01698, S01712, S01720, S01717, S01715, S01718, S01713, S01727, S01719, S01721, S01729, S01741, S01743, S01736, S01739, S01787, S01802, S01803
Application notes:	A00272, A00351
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an input. The internal 1-state corresponds to the L-level on the connecting line.

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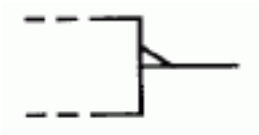
S01469



Name:	Polarity indicator, output
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-04
Alternative names:	Logic polarity, output
Keywords:	binary logic elements, combinative elements
Applied in:	S01583, S01581, S01584, S01590, S01585, S01594, S01596, S01602, S01600, S01608, S01611, S01612, S01615, S01618, S01613, S01644, S01660, S01662, S01661, S01668, S01683, S01676, S01720, S01719, S01736, S01737, S01742
Application notes:	A00272, A00351
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an output. The internal 1-state corresponds to the L-level on the connecting line.

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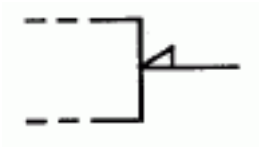
S01470



Name:	Polarity indicator, input, right to the left
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-05
Alternative names:	Logic polarity, input, right to left
Keywords:	binary logic elements, combinative elements
Applied in:	S01596
Application notes:	A00272, A00351
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an input in the case of signal flow from right to left. The internal 1-state corresponds to the L-level on the connecting line.

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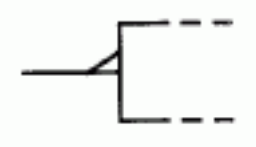
S01471



Name:	Polarity indicator, output, right to the left
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-06
Alternative names:	Logic polarity, output, right to left
Keywords:	binary logic elements, combinative elements
Applied in:	S01618, S01736
Application notes:	A00272, A00351
Shape class:	Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown at an output in the case of signal flow from right to left. The internal 1-state corresponds to the L-level on the connecting line.

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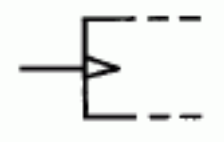
S01472



Name:	Dynamic input
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-07
Keywords:	binary logic elements, combinative elements
Applied in:	S01701, S01473, S01474, S01478, S01477, S01663, S01661, S01665, S01669, S01670, S01675, S01668, S01674, S01683, S01676, S01684, S01677, S01690, S01692, S01698, S01691, S01688, S01694, S01720, S01727, S01719, S01721, S01722, S01734, S01746, S01745
Application notes:	A00272, A00351
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state corresponds to the transition from the external 0-state to the external 1-state. At all other times, the internal logic state is 0. On diagrams using the symbol for logic polarity the (transitory) internal 1-state corresponds to the transition from the L-level to the H-level on the connecting line. At all other times, the internal logic state is 0.

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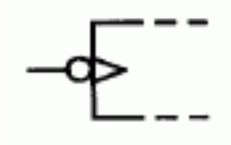
S01473



Name:	Dynamic input with logic negation
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-08
Keywords:	binary logic elements, combinative elements
Applied in:	S01703, S01697, S01696
Applies:	S01466; S01472
Application notes:	A00272, A00351
Shape class:	Circles, Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state corresponds to the transition from the external 1-state to the external 0-state. At all other times the internal logic state is 0.

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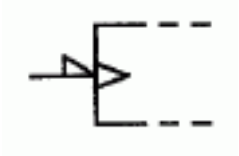
S01474



Name:	Dynamic input with polarity indicator
Status level:	Standard
Released on:	2004-08-27
Earlier published in:	IEC 60617-12 (ed.3.0) 12-07-09
Keywords:	binary logic elements, combinative elements
Applied in:	S01699, S01700, S01702, S01704, S01691, S01689, S01693, S01695, S01694, S01718, S01722
Applies:	S01468; S01472
Application notes:	A00272, A00351
Shape class:	Equilateral triangles, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state corresponds to the transition from the H-level to the L-level on the connecting line. At all other times, the internal logic state is 0.

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S01475



Name:	Internal connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-01
Keywords:	binary logic elements, combinative elements, internal connections
Alternative forms:	S01476; S01485
Applied in:	S01702, S01592, S01591, S01670, S01683, S01715, S01713, S01721, S01730, S01729, S01792, S01806
Application notes:	A00273, A00351
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	This symbol may be used for a signal flow from right to left only if the direction of signal flow is obvious. Otherwise, symbol S01485 shall be used.
Remarks:	The internal 1-state [0-state] of the input of the element on the right corresponds to the internal 1-state [0-state] of the output of the element on the left.

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S01476



Name:	Internal connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-01A
Keywords:	binary logic elements, combinative elements, internal connections
Form:	Simplified form
Alternative forms:	S01475; S01485
Applied in:	S01704, S01478, S01477, S01583, S01581, S01584, S01619, S01615, S01618, S01620, S01624, S01631, S01789, S01809
Application notes:	A00273
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	Symbol S01476 may be used if no confusion is likely about the number of logic connections. See also A00271 6.1.2. This symbol may be used for a signal flow from right to left only if the direction of signal flow is obvious. Otherwise, symbol S01485 shall be used.

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Remarks: The internal 1-state [0-state] of the input of the element on the right corresponds to the internal 1-state [0-state] of the output of the element on the left.

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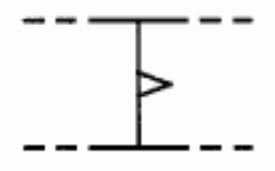
S01477



Name:	Internal connection with dynamic character
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-03
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01718, S01737, S01806
Applies:	S01472; S01476
Application notes:	A00273, A00351
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state of the input of the element on the right corresponds to the transition from the internal 0-state to the internal 1-state of the output of the element on the left. At all other times, the internal logic state of the input of the element on the right is 0.

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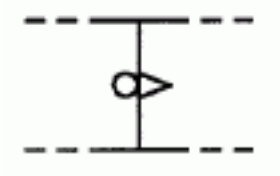
S01478



Name:	Internal connection with negation and dynamic character
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-04
Keywords:	binary logic elements, combinative elements, internal connections
Applies:	S01466; S01472; S01476
Application notes:	A00273, A00351
Shape class:	Circles, Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state of the input of the element on the right corresponds to the transition from the internal 1-state to the internal 0-state of the output of the element on the left. At all other times, the internal logic state of the input of the element on the right is 0.

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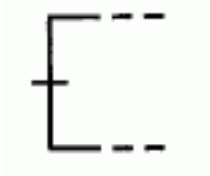
S01479



Name:	Internal input (left hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-05
Alternative names:	Virtual input (left hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01483, S01617, S01632, S01670, S01689, S01696, S01715
Application notes:	A00273, A00351
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	The symbols associated with negation, logic polarity and dynamic input shall not be applied to internal inputs and outputs, except as shown in symbol S01483.

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Remarks:

The symbol is shown on the left-hand side.

This input always stands at its internal 1-state unless it is affected by a dependency relationship that has an overriding or modifying effect. (see symbols S01670 and S01689) .

This symbol may be shown at the external boundary of an element to emphasize the fact that there is no external input line that has been forgotten. A virtual input at the common boundary of two abutted elements should be indicated by dependency notation without these symbols.

Internal inputs and outputs have internal logic states only.

This symbol should not be confused with symbol S01475, which is used for a connection between abutted elements.

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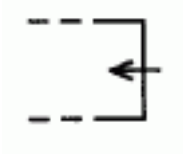
S01480



Name:	Internal input (right-hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-05A
Alternative names:	Virtual input (right-hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01696
Application notes:	A00273, A00351
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown on the right-hand side. This input always stands at its internal 1-state unless it is affected by a dependency relationship that has an overriding or modifying effect. (see symbols S01670 and S01689) . This symbol may be shown at the external boundary of an element to emphasize the fact that there is no external input line that has been forgotten. A virtual input at the common boundary of two abutted elements should be indicated by dependency notation without these symbols. Internal inputs and outputs have internal logic states only.

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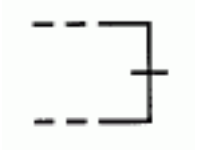
S01481



Name:	Internal output (right-hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-06
Alternative names:	Virtual output (right-hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01483
Application notes:	A00273, A00351
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	The symbols associated with negation, logic polarity and dynamic input shall not be applied to internal inputs and outputs, except as shown in symbol S01483.
Remarks:	The symbol is shown on the right-hand side. The effect of this output on an input or output to which it is connected shall be indicated by dependency notation. Internal inputs and outputs have internal logic states only. This symbol should not be confused with symbol S01475, which is used for a connection between abutted elements.

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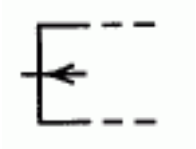
S01482



Name:	Internal output (left-hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-06A
Alternative names:	Virtual output (left-hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Application notes:	A00273, A00351
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown on the left-hand side. This output always stands at its internal 1-state unless it is affected by a dependency relationship that has an overriding or modifying effect. (See symbols S01670 and S01689) . This symbol may be shown at the external boundary of an element to emphasize the fact that there is no external input line that has been forgotten. A virtual input at the common boundary of two abutted elements should be indicated by dependency notation without these symbols. Internal inputs and outputs have internal logic states only.

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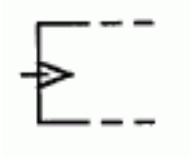
S01483



Name:	Internal input with dynamic character (left-hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-07
Alternative names:	Virtual input with dynamic character (left-hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01700, S01683
Applies:	S01479; S01481
Application notes:	A00273
Shape class:	Equilateral triangles, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown on the left-hand side. The (transitory) internal 1-state corresponds to the transition from the internal 0-state to the internal 1-state that would occur if this input were not dynamic. The source of the transitioning signal shall be shown by dependency notation. The identifying number of the transitioning signal shall be the left-most character in the label string at this input. This holds whether this input is shown on the left-hand side or on the right-hand side of the symbol outline.

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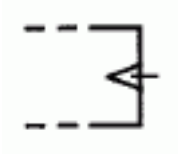
S01484



Name:	Internal input with dynamic character (right-hand side)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-07A
Alternative names:	Virtual input with dynamic character (right-hand side)
Keywords:	binary logic elements, combinative elements, internal connections
Application notes:	A00273
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is shown on the right-hand side. The (transitory) internal 1-state corresponds to the transition from the internal 0-state to the internal 1-state that would occur if this input were not dynamic. The source of the transitioning signal shall be shown by dependency notation. The identifying number of the transitioning signal shall be the left-most character in the label string at this input. This holds whether this input is shown on the left-hand side or on the right-hand side of the symbol outline.

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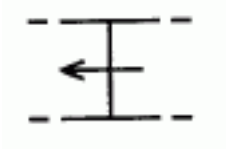
S01485



Name:	Internal connection for signal flow from right to left
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-08
Keywords:	binary logic elements, combinative elements, internal connections
Alternative forms:	S01475; S01476
Application notes:	A00273
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The internal 1-state [0-state] of the input of the element on the left corresponds to the internal 1-state [0-state] of the output of the element on the right. If no confusion is likely, symbols S01475 or S01476 may be used instead.

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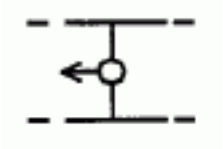
S01486



Name:	Internal connection with logic negation for signal flow from right to left
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-09
Keywords:	binary logic elements, combinative elements, internal connections
Applied in:	S01721
Applies:	S01809
Application notes:	A00273
Shape class:	Arrows, Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The internal 1-state [0-state] of the input of the element on the left corresponds to the internal 0-state [1-state] of the output of the element on the right. If no confusion is likely, symbol S01809 may be used instead. The vertical line may extend through the circle.

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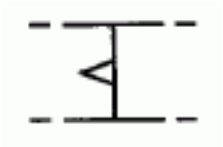
S01487



Name:	Internal connection with dynamic character for signal flow from right to left
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-10
Keywords:	binary logic elements, combinative elements, internal connections
Application notes:	A00273
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state of the input of the element on the left corresponds to the transition from the internal 0-state to the internal 1-state of the output of the element on the right. At all other times, the internal logic state of the input of the element on the left is 0.

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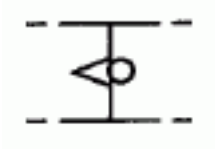
S01488



Name:	Internal connection with logic negation and dynamic character for signal flow from right to left
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-11
Keywords:	binary logic elements, combinative elements, internal connections
Application notes:	A00273
Shape class:	Circle segments, Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The (transitory) internal 1-state of the input of the element on the left corresponds to the transition from the internal 1-state to the internal 0-state of the output of the element on the right. At all other times, the internal logic state of the input of the element on the left is 0.

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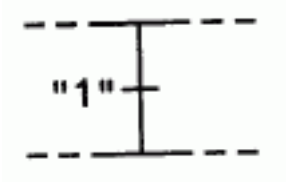
S01489



Name:	Fixed 1-state output, shown at an internal connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-12
Keywords:	binary logic elements, combinative elements, internal connections
Applies:	S01543
Application notes:	A00273
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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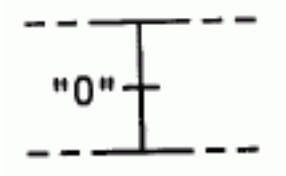
S01490



Name:	Fixed 0-state output, shown at an internal connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-13
Keywords:	binary logic elements, combinative elements, internal connections
Applies:	S01544
Application notes:	A00273
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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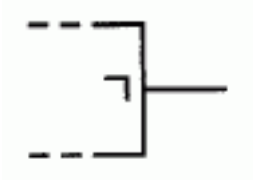
S01491



Name:	Postponed output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-01
Keywords:	binary logic elements, combinative elements
Applied in:	S01702, S01663, S01662, S01666
Application notes:	A00304, A00335
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

Remarks:

The change of the internal state of this output is postponed until the input signal which initiates the change returns to its initial external logic state or logic level. The internal logic state of any input(s) affecting or affected by the initiating input must not change while this initiating input stands at its internal 1-state or the resulting output state will not be specified by the symbol. If the input signal which initiates the change appears at an internal connection, the change of state is postponed until the output of the preceding element returns to its initial internal logic state.

If this symbol is shown without prefix, it should be assumed that the output is postponed with respect to each , , +, -, and T-input and to each Cm-input or Cm-output (see symbols S01558 and S01559); in all other cases, the identifying numbers (or if necessary the full labels) of all inputs and outputs with respect to which the output is postponed shall be shown as a prefix to this symbol. See symbol S01702.

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Care should be taken that this symbol is a right angle with lines of equal length, to avoid confusion with other symbols, for example the character 7.

For the application of this symbol and additional explanation, see A00304.

The symbol is defined as character 2/1 of IEC 61286 "POSTPONED-OUTPUT SYMBOL", equivalent to UCS 2510 (Table 67) of ISO/IEC 10646 "BOX DRAWINGS LIGHT DOWN AND LEFT".

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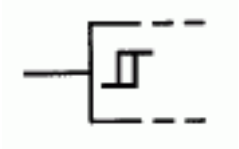
S01492



Name:	Bi-threshold input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-02
Alternative names:	Input with hysteresis
Keywords:	binary logic elements, combinative elements
Applied in:	S01700, S01597, S01602, S01608, S01607, S01683, S01676, S01737, S01806
Application notes:	A00336
Shape class:	Characters, Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The input takes on its internal 1-state when the external signal level reaches a threshold value V1. It maintains this state until the external signal level has returned through V1 and reaches another threshold value V0. If this symbol (without the negation symbol or polarity symbol) appears on a diagram that uses either the symbol for logic polarity or the positive-logic convention, V1 is more positive than V0. If it appears on a diagram that uses the negative-logic convention, V1 is more negative than V0. If the negation or polarity symbol is present at the input, the relationship between V1 and V0 is reversed. For an illustration to the text, see A00336.

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The symbols S01607 and S01608 show the use of the symbol as a general qualifying symbol for an element.

The absence of this symbol does not necessarily indicate the absence of hysteresis. Most practical devices exhibit this characteristic to some extent. This symbol should only be used when an identification of the characteristic is important to the application of the device.

The symbol is defined as character 2/3 of IEC 61286 "HYSTERESIS SYMBOL", equivalent to UCS 238E (Table 63) of ISO/IEC 10646 "HYSTERESIS SYMBOL".

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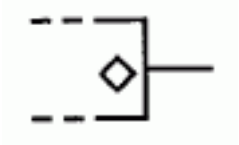
S01493



Name:	Open-circuit output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-03
Keywords:	binary logic elements, combinative elements
Applied in:	S01494, S01495
Application notes:	A00289
Shape class:	Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Exemples: open-collector, open-emitter, open-drain, open-source.

One of the two possible internal logic states of this type of output corresponds to an external high-impedance condition. In order to produce a proper logic level in this condition, an externally connected component or circuit, often a resistor, is required. This type of output is usually capable of forming part of a distributed connection.

This symbol should be drawn adjacent to the output line, except when using the bit-grouping symbol (symbol S01517) in the manner defined in A00289, where an alternative position is permitted.

Although this symbol is shown inside the outline, it refers to external states and levels only.

If it is necessary to indicate which logic level is the one with the low impedance, use can be made of symbol S01494 or S01495.

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The symbol is defined as character 2/4 of IEC 61286 "OPEN-CIRCUIT-OUTPUT SYMBOL", equivalent to UCS 25C7 (Table 69) of ISO/IEC 10646 "WHITE DIAMOND".

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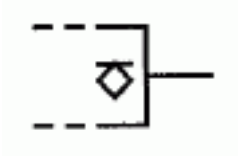
S01494



Name:	Open-circuit output (H-type)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-04
Keywords:	binary logic elements, combinative elements
Applied in:	S01496, S01578, S01583, S01586, S01587, S01591, S01634, S01654, S01806
Applies:	S01493
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Examples: PNP open-collector, NPN open-emitter, P-channel open-drain, N-channel open-source. When not in its external high-impedance condition, this type of output produces a relatively low-impedance H-level. See also symbol S01578. The meaning of this symbol is not altered by the presence of a negation or polarity indicator. The symbol is defined as character 2/5 of IEC 61286 "OPEN-CIRCUIT-OUTPUT H-TYPE SYMBOL", equivalent to UCS 238F (Table 63) of ISO/IEC 10646 "OPEN-CIRCUIT-OUTPUT H-TYPE SYMBOL".

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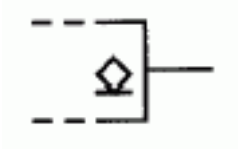
S01495



Name:	Open-circuit output (L-type)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-05
Keywords:	binary logic elements, combinative elements
Applied in:	S01738, S01497, S01578, S01582, S01594, S01596, S01618, S01622, S01648, S01649, S01650, S01653, S01717, S01739, S01747, S01794, S01801, S01806
Applies:	S01493
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Examples: NPN open-collector, PNP open-emitter, N-channel open-drain, P-channel open-source. When not in its external high-impedance condition, this type of output produces a relatively low-impedance L-level. The meaning of this symbol is not altered by the presence of a negation or polarity indicator. See also symbol S01578. The symbol is defined as character 2/6 of IEC 61286 "OPEN-CIRCUIT-OUTPUT L-TYPE SYMBOL", equivalent to UCS 2390 (Table 63) of ISO/IEC 10646 "OPEN-CIRCUIT-OUTPUT L-TYPE SYMBOL".

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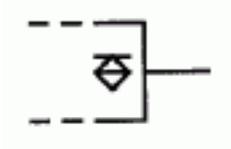
S01496



Name:	Passive-pull-down output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-06
Keywords:	binary logic elements, combinative elements
Applied in:	S01578
Applies:	S01494
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This type of output is similar to the H-type open-circuit output (symbol S01494) and can likewise be used as part of a distributed connection but without the need for an additional external component or circuit. See also symbol S01578. The meaning of this symbol is not altered by the presence of a negation or polarity indicator. The symbol is defined as character 2/7 of IEC 61286 "PASSIVE-OUTPUT-PULL-DOWN SYMBOL", equivalent to UCS 2391 (Table 63) of ISO/IEC 10646 "PASSIVE-OUTPUT-PULL-DOWN SYMBOL".

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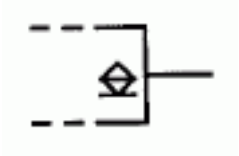
S01497



Name:	Passive-pull-up output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-07
Keywords:	binary logic elements, combinative elements
Applied in:	S01578, S01602, S01618, S01644, S01742, S01803
Applies:	S01495
Shape class:	Lines , Squares
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

Remarks:

This type of output is similar to the L-type open-circuit output (symbol S01495) and can likewise be used as part of a distributed connection but without the need for an additional external component or circuit.

See also symbol S01578.

The meaning of this symbol is not altered by the presence of a negation or polarity indicator.

The symbol is defined as character 2/8 of IEC 61286 "PASSIVE-OUTPUT-PULL-UP SYMBOL", equivalent to UCS 2392 (Table 63) of ISO/IEC 10646 "PASSIVE-OUTPUT-PULL-UP SYMBOL".

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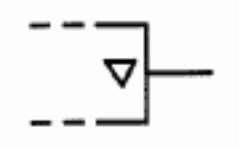
S01498



Name:	3-state output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-08
Keywords:	binary logic elements, combinative elements
Applied in:	S01744, S01598, S01597, S01603, S01599, S01619, S01620, S01621, S01652, S01670, S01712, S01715, S01713, S01711, S01714, S01735, S01734, S01743, S01736, S01742, S01745, S01793
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This output can take on a third external state, which is a high-impedance condition, having no logic significance. This symbol should be drawn adjacent to the output line, except when using the bit-grouping symbol (symbol S01517) in the manner defined in A00289, where an alternative position is permitted. The symbol is defined as character 4/6 of IEC 61286 "THREE-STATE OUTPUT SYMBOL", equivalent to UCS 25BD (Table 69) of ISO/IEC 10646 "WHITE DOWN-POINTING TRIANGLE".

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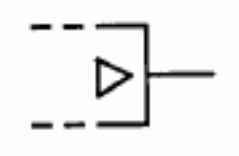
S01499



Name:	Output with special amplification (drive capability)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-08A
Keywords:	binary logic elements, combinative elements
Applies:	S01457
Application notes:	A00351
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol S01457 emphasizes the function of amplification. It shall point in the direction of signal flow. This symbol should be drawn adjacent to the output line, except when using the bit-grouping symbol (symbol S01517) in the manner defined in A00289, where an alternative position is permitted. If this symbol is used with symbols S01493, S01494, S01495, S01496, S01497 and S01498, those symbols are placed between the amplification symbol and the edge of the element. The absence of this symbol does not necessarily indicate the absence of special amplification. The symbols S01594 to S01599 show the use of symbol S01457 as a general qualifying symbol for an element.

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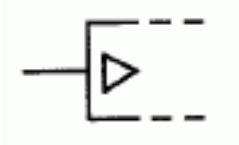
S01500



Name:	Input with special amplification (sensitivity)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-08B
Keywords:	binary logic elements, combinative elements
Applies:	S01457
Application notes:	A00351
Shape class:	Equilateral triangles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol S01457 emphasizes the function of amplification. It shall point in the direction of signal flow. If one or more of the symbols S01540, S01500 or S01492 are required at an input, they shall be shown, as needed, in the following order: symbol S01540 shall be placed closest to the input(s), followed by symbol S01500, and then by symbol S01492. The absence of this symbol does not necessarily indicate the absence of special amplification. The symbols S01594 to S01599 show the use of symbol S01457 as a general qualifying symbol for an element. Its use at an input, rather than as a general qualifying symbol, shows that the input is unusually sensitive rather than that the output has increased drive capability.

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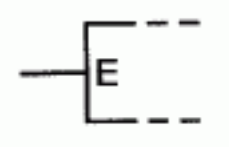
S01501



Name:	Extension input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-09
Keywords:	binary logic elements, combinative elements
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An input of a binary element to which the output of an extender element may be connected (see symbol S01502). The description that characterizes the relationship between the external logic states of binary variables and their corresponding physical quantities is normally not valid for extension inputs and extender outputs.

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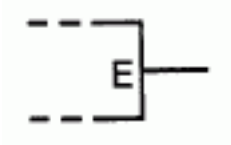
S01502



Name:	Extender output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-10
Keywords:	binary logic elements, combinative elements
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An output of a binary element that may be connected to the extension input of another binary element in order to extend the number of inputs of that element (see symbol S01501). The description that characterizes the relationship between the external logic states of binary variables and their corresponding physical quantities is normally not valid for extension inputs and extender outputs.

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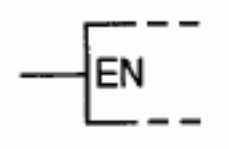
S01503



Name:	Enable input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-11
Keywords:	binary logic elements, combinative elements
Applied in:	S01562, S01598, S01597, S01619, S01620, S01621, S01630, S01648, S01649, S01650, S01652, S01717, S01714, S01728, S01727, S01716, S01730, S01729, S01775
Application notes:	A00274, A00337
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, all outputs stand at their normally defined internal logic states and have their normally defined effect on elements or distributed connections that may be connected to the outputs, provided no other inputs or outputs have an overriding and contradicting effect. If the input stands at its internal 0-state, all outputs of the type S01493, S01494 or S01495 are in their external high-impedance conditions, all passive-pull-down outputs stand at their high-impedance L-levels, all passive-pull-up outputs stand at their high-impedance H-levels, all 3-state outputs stand at their normally defined internal logic states and are in their external high-impedance conditions, and all other outputs stand at their internal 0-states. This input only affects outputs shown as external outputs. If it is an

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input of an element having an internal connection indicated by the symbols S01475, S01476, S01477 and S01809, even when the remark with symbol S01475 is applied, or if an internal connection is implied (for example, by a common control block, common output element or dependency notation), the input is also an EN-input of the element to which the internal connection is connected. If ambiguity can arise, for example because of the presence of embedded outlines, EN-dependency should be used.

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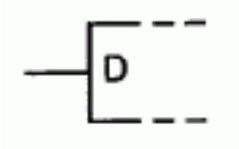
S01504



Name:	D-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-12
Keywords:	binary logic elements, combinative elements
Applied in:	S01660, S01669, S01670, S01668
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The internal logic state of the D-input is stored by the element. See symbol S01660. The internal logic state of this input is always subject to an affecting input or output.

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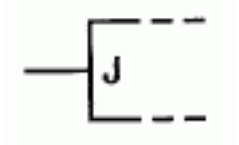
S01505



Name:	J-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-13
Keywords:	binary logic elements, combinative elements
Applied in:	S01663, S01662, S01661
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input takes on its internal 1-state, a 1 is stored by the element. When the input stands at its internal 0-state, it has no effect on the element. See also symbol S01506: Each occurrence of the combination J=K=1 causes a single change of the internal state of the output to its complement.

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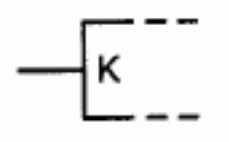
S01506



Name:	K-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-14
Keywords:	binary logic elements, combinative elements
Applied in:	S01663, S01662, S01661
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input takes on its internal 1-state, a 0 is stored by the element. When the input stands at its internal 0-state, it has no effect on the element. See also symbol S01505: Each occurrence of the combination J=K=1 causes a single change of the internal state of the output to its complement.

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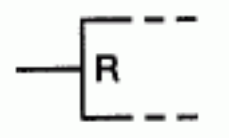
S01507



Name:	R-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-15
Keywords:	binary logic elements, combinative elements
Applied in:	S01663, S01659, S01662, S01666, S01661, S01664, S01665, S01676, S01677
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input takes on its internal 1-state, a 0 is stored by the element. When the input stands at its internal 0-state, it has no effect on the element. See also symbol S01508: The effect of the combination R=S=1 is not specified by the symbol; this effect may be indicated by means of SET-/RESET-dependency.

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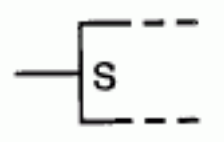
S01508



Name:	S-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-16
Keywords:	binary logic elements, combinative elements
Applied in:	S01663, S01659, S01666, S01664, S01665, S01668
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input takes on its internal 1-state, a 1 is stored by the element. When the input stands at its internal 0-state, it has no effect on the element. See also symbol S01507: The effect of the combination R=S=1 is not specified by the symbol; this effect may be indicated by means of SET-/RESET-dependency.

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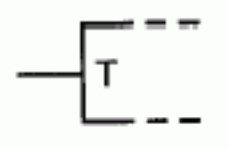
S01509



Name:	T-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-17
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each time this input takes on its internal 1-state, a single change of the internal state of the output to its complement takes place. When the input stands at its internal 0-state, it has no effect on the element.

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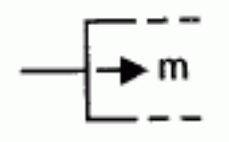
S01510



Name:	Shifting input, left to right or top to bottom
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-18
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Arrows, Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each time this input takes on its internal 1-state, the information contained in the element will be shifted once m positions from left to right or from top to bottom, depending on the orientation of the symbol for the element. When the input stands at its internal 0-state, it has no effect on the element. m shall be replaced by the relevant value. If m=1, the 1 may be omitted. All directions above are relative to an orientation of the symbol in which the arrow is pointing to the right. The symbol "" is defined as character 5/1 of IEC 61286 "SHIFTING-INPUT SYMBOL LEFT-TO RIGHT OR TOP-TO-BOTTOM", equivalent to UCS 2192 (Table 59) of ISO/IEC 10646 "RIGHTWARDS ARROW".

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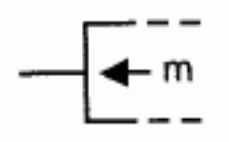
S01511



Name:	Shifting input, right to left or bottom to top
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-19
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each time this input takes on its internal 1-state, the information contained in the element will be shifted once m positions from right to left or from bottom to top, depending on the orientation of the symbol for the element. When the input stands at its internal 0-state, it has no effect on the element. m shall be replaced by the relevant value. If m=1, the 1 may be omitted. NOTE - All directions above are relative to an orientation of the symbol in which the arrow is pointing to the left. The symbol "" is defined as character 4/1 of IEC 61286 "SHIFTING-INPUT SYMBOL RIGHT-TO LEFT OR BOTTOM-TO-TOP", equivalent to UCS 2190 (Table 59) of ISO/IEC 10646 "LEFTWARDS ARROW".

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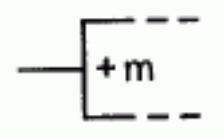
S01512



Name:	Counting-up input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-20
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each time this input takes on its internal 1-state, the content of the element is increased once by m units. When the input stands at its internal 0-state, it has no effect on the element. m shall be replaced by the relevant value. If m=1, the 1 may be omitted.

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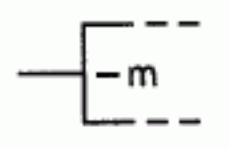
S01513



Name:	Counting-down input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-21
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each time this input takes on its internal 1-state, the content of the element is decreased once by m units. When the input stands at its internal 0-state, it has no effect on the element. m shall be replaced by the relevant value. If m=1, the 1 may be omitted.

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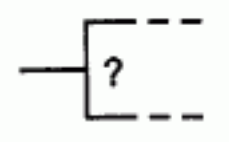
S01514



Name:	Query input of an associative memory
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-22
Alternative names:	Interrogate input of an associative memory
Keywords:	binary logic elements, combinative elements
Application notes:	A00274, A00338
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input takes on its internal 1-state, an interrogation of the content of the element takes place. If the input stands at its internal 0-state, it has no effect on the element.

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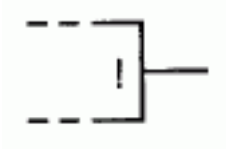
S01515



Name:	Compare output of an associative memory
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-23
Alternative names:	Match output of an associative memory
Keywords:	binary logic elements, combinative elements
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The internal 1-state at this output indicates a match.

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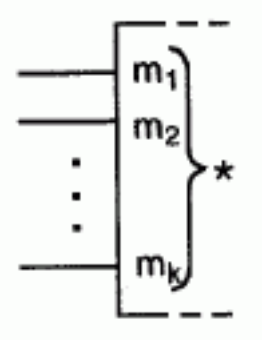
S01516



Name:	Bit grouping for multibit input, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-24
Keywords:	binary logic elements, combinative elements
Applied in:	S01740, S01645, S01631, S01635, S01634, S01630, S01633, S01648, S01651, S01649, S01650, S01654, S01652, S01646, S01653, S01712, S01717, S01715, S01713, S01711, S01714, S01716, S01722, S01741
Application notes:	A00339, A00351
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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Remarks:

Inputs grouped by this symbol produce a number that is the sum of the individual weights of the inputs standing at their internal 1-states. The individual inputs shall be shown in ascending or descending order by weight.

This number can be regarded

- as a number on which a mathematical function is performed, or

- as defining an identifying number in the sense of dependency notation, or

- as a value to become the content of the element.

m_1 ... m_k shall be replaced by the decimal equivalents of the actual weights. If all weights are powers of 2, m_1 ... m_k may be replaced by the exponents of the powers of 2. Labels between $m_1$and m_k may be omitted to the extent that no confusion is likely.

The asterisk shall be replaced by an appropriate indication of the operand on which the mathematical function is performed (for example P or Q), by an appropriate indication in the sense of dependency notation or by CT. In the latter case, the number produced by the inputs is the value that is loaded into the element.

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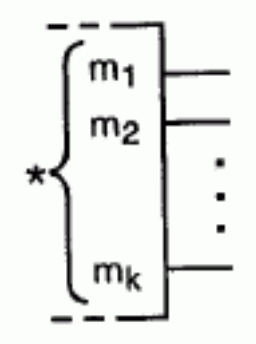
S01517



Name:	Bit grouping for multibit output, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-25
Keywords:	binary logic elements, combinative elements
Applied in:	S01645, S01648, S01649, S01646, S01697, S01735, S01743, S01742, S01747
Application notes:	A00339, A00351
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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Remarks:

Outputs grouped by this symbol represent a number that is the sum of the individual weights of the outputs standing at their internal 1-states. The individual outputs shall be shown in ascending or descending order by weight.

This number can be regarded

- as the result of the performance of a mathematical function, or

- as the value of the content of the element.

m_1 ... m_k shall be replaced by the decimal equivalents of the actual weights. If all weights are powers of 2, m_1 ... m_k may be replaced by the exponents of the powers of 2. Labels between m_1 and m_k may be omitted to the extent that no confusion is likely.

The asterisk shall be replaced by an appropriate indication of the result of the performance of the mathematical function or by CT. In the latter case, the number represented by the outputs standing at their internal 1-states is the actual value of the content of the element.

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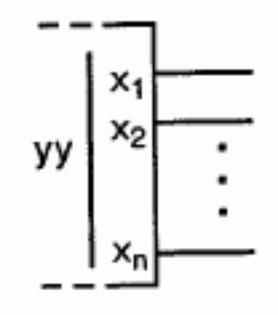
S01518



Name:	Label grouping, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-25A
Keywords:	arithmetic elements, binary logic elements, combinative elements
Applied in:	S01738, S01703, S01704, S01744, S01712, S01720, S01715, S01718, S01714, S01716, S01719, S01722, S01735, S01734, S01736, S01737, S01739, S01747, S01786, S01788, S01803
Application notes:	A00340
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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Remarks:

Symbol shown at the output side.

This symbol indicates the grouping of adjacent and associated connecting lines whose labels are partially alike.

The differing portions of these labels (x_1,..., x_n) are placed at the side of the vertical line against the connecting lines. The common portion (yy) is placed only once at the other side of the vertical line. If the differing portions are numbers, intermediate numbers within consecutive groups may be omitted to the extent that no confusion is likely. Although the differing portions may be numeric, the numbers they contain should not be considered as weights for the respective inputs and outputs. They might, for example, only identify the relative ordering of inputs or outputs.

This symbol may be applied in cases where the bit grouping symbol is not applicable because the inputs or outputs grouped together do not produce or represent a number.

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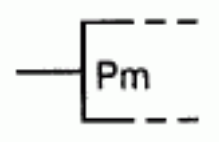
S01519



Name:	Operand input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-26
Keywords:	binary logic elements, combinative elements
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Pm-input shown. This input represents one bit of an operand on which one or more mathematical functions are performed. m shall be replaced by the decimal equivalent of the weight of the bit. If the weights of all Pm-inputs of the element are powers of 2, at each Pm-input m may be replaced by the exponent of the power of 2. If an operand consists of two or more bits represented by adjacent input lines, the bit grouping symbol S01516 may be used. Preferred letters for operands are P and Q. If these letters are not suitable or if more than two operands are involved, other characters may be used providing no confusion is likely.

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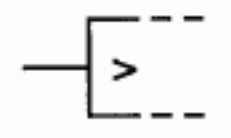
S01520



Name:	Greater-than input of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-27
Keywords:	binary logic elements, combinative elements
Applied in:	S01651
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol is intended for use when representing cascaded comparators. For an example of use, see symbol S01651. This symbol should not be drawn adjacent to the outline, to avoid confusion with the dynamic input indicator symbol S01472. Other symbols in accordance with ISO 31-11 may be used to qualify other inputs of magnitude comparators, as follows: , , . The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO".

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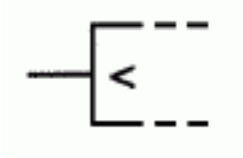
S01521



Name:	Less-than input of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-28
Keywords:	binary logic elements, combinative elements
Applied in:	S01651
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol is intended for use when representing cascaded comparators. For an example of use, see symbol S01651. Other symbols in accordance with ISO 31-11 may be used to qualify other inputs of magnitude comparators, as follows: , , . The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO". The symbol "" is defined as character 2/10 of IEC 61286 "LESS-THAN OR EQUAL TO", equivalent to UCS 2264 (Table 60) of ISO/IEC 10646 "LESS-THAN OR EQUAL TO". The symbol "" is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT

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EQUAL TO".

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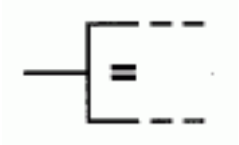
S01522



Name:	Equal input of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-29
Keywords:	binary logic elements, combinative elements
Applied in:	S01651
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol is intended for use when representing cascaded comparators. For an example of use, see symbol S01651. Other symbols in accordance with ISO 31-11 may be used to qualify other inputs of magnitude comparators, as follows: , , . The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO". The symbol "" is defined as character 2/10 of IEC 61286 "LESS-THAN OR EQUAL TO", equivalent to UCS 2264 (Table 60) of ISO/IEC 10646 "LESS-THAN OR EQUAL TO". The symbol "" is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT EQUAL TO".

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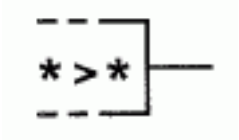
S01523



Name:	Greater-than output of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-30
Keywords:	binary logic elements, combinative elements
Applied in:	S01651, S01652, S01770
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the operands, for example P and Q, respectively. If this symbol appears in one element of a series of cascaded comparators, the output marked with this symbol is affected not only by the operands, but also by the inputs marked with the symbols S01520, S01521 or S01522. Other symbols in accordance with ISO 31-11 may be used to qualify other outputs of magnitude comparators, as follows: * *, * *, * *. The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO". The symbol "" is defined as character 2/10 of IEC 61286 "LESS-THAN OR EQUAL TO", equivalent to UCS 2264 (Table 60) of ISO/IEC 10646 "LESS-THAN OR EQUAL TO".

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The symbol "" is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT EQUAL TO".

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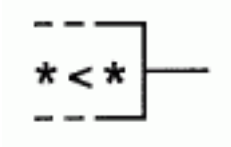
S01524



Name:	Less-than output of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-31
Keywords:	binary logic elements, combinative elements
Applied in:	S01651, S01652, S01771
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the operands, for example P and Q, respectively. If this symbol appears in one element of a series of cascaded comparators, the output marked with this symbol is affected not only by the operands, but also by the inputs marked with the symbols S01520, S01521 or S01522. Other symbols in accordance with ISO 31-11 may be used to qualify other outputs of magnitude comparators, as follows: * *, * *, * *. The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO". The symbol "" is defined as character 2/10 of IEC 61286 "LESS-THAN OR EQUAL TO", equivalent to UCS 2264 (Table 60) of ISO/IEC 10646 "LESS-THAN OR EQUAL TO".

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The symbol "" is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT EQUAL TO".

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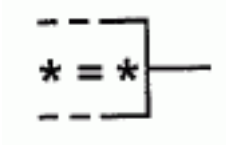
S01525



Name:	Equal output of a magnitude comparator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-32
Keywords:	binary logic elements, combinative elements
Applied in:	S01651, S01652, S01772
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

Remarks:

The asterisks shall either be replaced by designations of the operands, for example P and Q, respectively, or, providing no confusion is likely, be omitted.

If this symbol appears in one element of a series of cascaded comparators, the output marked with this symbol is affected not only by the operands, but also by the inputs marked with the symbols S01520, S01521 or S01522.

Other symbols in accordance with ISO 31-11 may be used to qualify other outputs of magnitude comparators, as follows: * *, * *, * *.

The symbol "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO".

The symbol "" is defined as character 2/10 of IEC 61286 "LESS-THAN OR EQUAL TO", equivalent to UCS 2264 (Table 60) of ISO/IEC 10646 "LESS-THAN OR EQUAL TO".

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The symbol "" is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT EQUAL TO".

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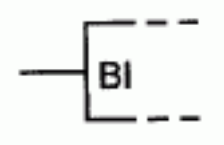
S01526



Name:	Borrow-in input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-33
Keywords:	binary logic elements, combinative elements
Applied in:	S01646
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates that a subtraction operation performed by a lower-ordered arithmetic element produces an arithmetic borrow. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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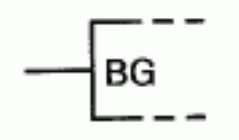
S01527



Name:	Borrow-generate input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-34
Keywords:	binary logic elements, combinative elements
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates to a borrow-acceleration element that the arithmetic element that produces the BG-signal is in the borrow-generate state (see description of symbol S01528). The borrow acceleration element uses its BG-, BP-, and BI-input signals to determine, with reduced propagation delays, the states of the arithmetic borrow signals for a group of arithmetic elements performing binary subtraction. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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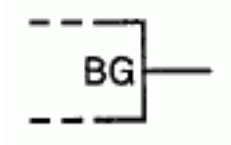
S01528



Name:	Borrow-generate output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-35
Keywords:	binary logic elements, combinative elements
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that an arithmetic element performing subtraction is in the borrow-generate state, that is, that the subtrahend applied to the element is larger than the minuend, causing a borrow from that element independent of the state of the BI-input to that element. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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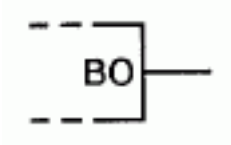
S01529



Name:	Borrow-out output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-36
Alternative names:	Ripple-borrow output of an arithmetic element
Keywords:	binary logic elements, combinative elements
Applied in:	S01646
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that a subtraction operation performed by an arithmetic element produces an arithmetic borrow (see description of symbol S01526). A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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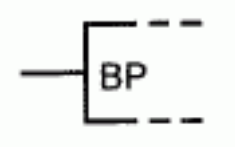
S01530



Name:	Borrow-propagate input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-37
Keywords:	binary logic elements, combinative elements
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates to a borrow-acceleration element that the arithmetic element that produces the BP-signal is in the borrow-propagate state. See description of symbol S01531. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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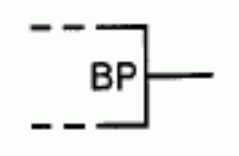
S01531



Name:	Borrow-propagate output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-38
Keywords:	binary logic elements, combinative elements
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that an arithmetic element performing subtraction is in the borrow-propagate state, that is, that the subtrahend and minuend applied to the element are equal in value, so that the BO-output will stand at its internal 1-state if and only if the BI-input is at its internal 1-state. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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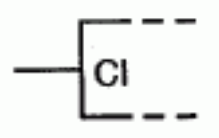
S01532



Name:	Carry-in input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-39
Keywords:	binary logic elements, combinative elements
Applied in:	S01643, S01647, S01654, S01653
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates that an addition performed by a lower-ordered arithmetic element produces an arithmetic carry. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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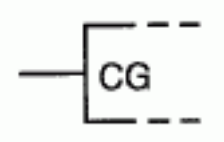
S01533



Name:	Carry-generate input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-40
Keywords:	binary logic elements, combinative elements
Applied in:	S01647
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates to a carry-acceleration element whether or not the arithmetic element that produces the CG-signal is in the carry-generate state (see description of symbol S01534). The carry-acceleration element uses its CG-, CP-, and CI-input signals to determine, with reduced propagation delays, the states of the arithmetic carry signals for a group of elements performing addition. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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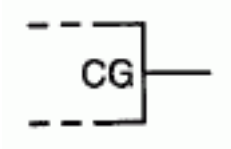
S01534



Name:	Carry-generate output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-41
Keywords:	binary logic elements, combinative elements
Applied in:	S01647, S01654, S01653
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that an arithmetic element performing addition is in the carry-generate state, that is, that the sum of its addends is sufficiently large to cause a carry from the element independent of the state of the CI-input to that element. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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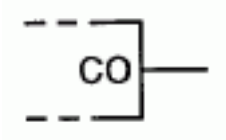
S01535



Name:	Carry-out output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-42
Alternative names:	Ripple-carry output of an arithmetic element
Keywords:	binary logic elements, combinative elements
Applied in:	S01643, S01642, S01647, S01654, S01653
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that an addition operation performed by an arithmetic element produces an arithmetic carry (see description of symbol S01532). A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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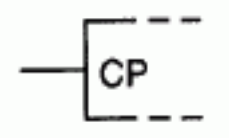
S01536



Name:	Carry-propagate input of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-43
Keywords:	binary logic elements, combinative elements
Applied in:	S01647
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, this indicates to a carry-acceleration element that the arithmetic element that produces the CP-signal is in the carry-propagate state (see description of symbol S01537). A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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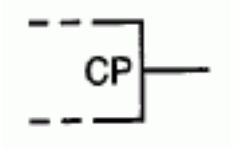
S01537



Name:	Carry-propagate output of an arithmetic element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-44
Keywords:	binary logic elements, combinative elements
Applied in:	S01647, S01653
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this output stands at its internal 1-state, this indicates that an arithmetic element performing addition is in the carry-propagate state, that is that the sum of its addends is one less than the value at which the element produces an output carry. As a result, the CO-output will stand at its internal 1-state if and only if its CI-input is at its internal 1-state. A decimal indication of the weight may be added as a suffix to this label; if the weight is a power of 2, this indication may be replaced by the exponent if no confusion is likely.

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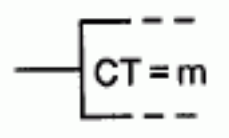
S01538



Name:	Content input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-45
Keywords:	binary logic elements, combinative elements
Applied in:	S01703
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	m shall be replaced by an appropriate indication of the content of the element (for example a counter) that results whenever this input takes on its internal 1-state. If this input stands at its internal 0-state, it has no effect on the element.

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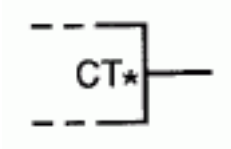
S01539



Name:	Content output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-46
Keywords:	binary logic elements, combinative elements
Applied in:	S01699, S01618
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisk shall be replaced by an appropriate indication of those values of the content of the element (for example a counter) for which the output stands at its internal 1-state.

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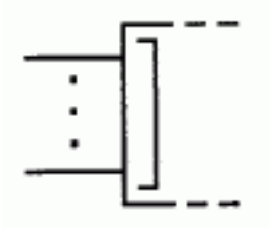
S01540



Name:	Line grouping at the input side
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-47
Keywords:	binary logic elements, combinative elements
Applied in:	S01584, S01600, S01605, S01625, S01724, S01787
Application notes:	A00351
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol indicates that two or more connections are needed to implement a single logic input. The logic levels on connections grouped by this symbol may differ from those on the other input and output terminals. See symbol S01600. The absence of this symbol does not necessarily indicate the absence of special amplification. The symbols S01594 to S01599 show the use of symbol S01457 as a general qualifying symbol for an element. Its use at an input, rather than as a general qualifying symbol, shows that the input is unusually sensitive rather than that the output has increased drive capability.

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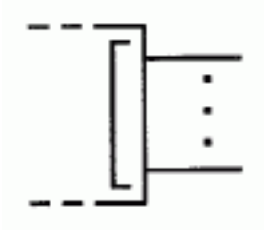
S01541



Name:	Line grouping at the output side
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-48
Keywords:	binary logic elements, combinative elements
Applied in:	S01585
Application notes:	A00351
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol indicates that two or more connections are needed to implement a single logic output. The logic levels on connections grouped by this symbol may differ from those on the other input and output terminals.

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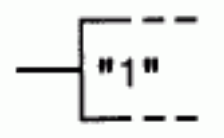
S01542



Name:	Fixed-mode input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-49
Keywords:	binary logic elements, combinative elements
Applied in:	S01695, S01694
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an element can perform several functions but only a restricted number of functions is of interest, this representation can be used to identify an input that must be in the internal 1-state for the element to perform the functions of interest indicated by the symbol. A fixed-mode input must not be affected by dependency notation nor have other functions.

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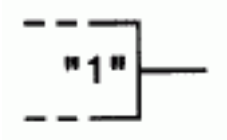

Name:	Fixed-1-state output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-50
Keywords:	binary logic elements, combinative elements
Applied in:	S01489, S01622
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This representation may be used to identify an output that always stands at its internal 1-state. This output shall neither be affected by dependency notation nor have other functions.

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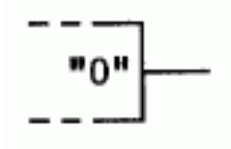

Name:	Fixed-0-state output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-51
Keywords:	binary logic elements, combinative elements
Applied in:	S01490
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This representation may be used to identify an output that always stands at its internal 0-state. This output shall neither be affected by dependency notation nor have other functions.

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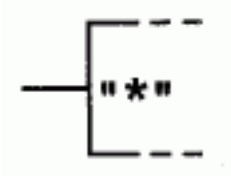
S01545



Name:	Required connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-09-52
Keywords:	binary logic elements, combinative elements
Applied in:	S01704, S01658
Application notes:	A00274
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown at an input. This symbol identifies an input or output that must be connected to one or more other inputs or outputs in the same element for the element to perform as otherwise indicated by the symbol. The asterisk shall be replaced by a label other than 0 or 1. Each input and output that is to be connected (outside the element) to this one shall have an identical required-connection label. A required connection shall not be affected by dependency notation. However, the input or output may have other functions that are affected by dependency notation.

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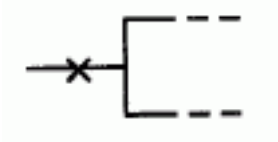

Name:	Non-logic connection
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-10-01
Keywords:	binary logic elements, connections
Applied in:	S01683, S01676, S01684, S01677, S01752, S01785, S01792, S01799, S01798
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol shown on the left-hand side.

This symbol may be used to indicate a connection which does not carry any logic information (for example reference voltage connection).

Additional information associated with non-logic connections may be shown without brackets inside the outline.

The symbol is defined as character 5/7 of IEC 61286 "MULTIPLICATION SIGN", equivalent to UCS 00D7 (Table 3) of ISO/IEC 10646 "MULTIPLICATION SIGN".

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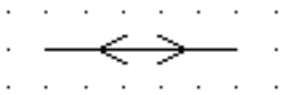

Name:	Bidirectional signal flow
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-10-02
Keywords:	binary logic elements, flow, signal flow
Applied in:	S01604, S01603, S01605
Applies:	S00101
Application notes:	A00275
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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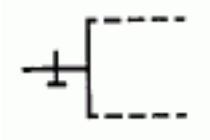

Name:	Input with internal pulldown
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-10-03
Keywords:	binary logic elements
Applied in:	S01705
Application notes:	A00275
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input is not connected externally, the external logic level is L. The absence of this symbol does not necessarily indicate the absence of internal pulldown.

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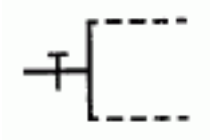

Name:	Input with internal pullup
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-10-04
Keywords:	binary logic elements
Shape class:	Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input is not connected externally, the external logic level is H. The absence of this symbol does not necessarily indicate the absence of internal pullup.

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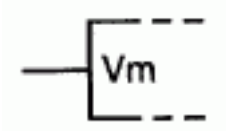

Name:	Vm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-15-01
Keywords:	binary logic elements, dependency notation, OR dependency
Applied in:	S01617, S01618, S01622, S01802
Application notes:	A00276, A00278, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Vm-input stands at its internal 1-state, all inputs and outputs affected by this Vm-input stand at their internal 1-states. If a Vm-input stands at its internal 0-state, all inputs and outputs affected by this Vm-input stand at their normally defined internal logic states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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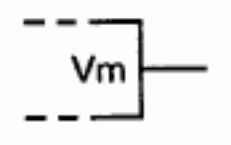

Name:	Vm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-15-02
Keywords:	binary logic elements, dependency notation, OR dependency
Applied in:	S01665
Application notes:	A00276, A00278, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Vm-output stands at its internal 1-state, all inputs and outputs affected by this Vm-output stand at their internal 1-states. If a Vm-output stands at its internal 0-state, all inputs and outputs affected by this Vm-output stand at their normally defined internal logic states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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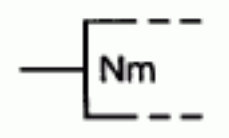

Name:	Nm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-16-01
Keywords:	binary logic elements, dependency notation, NEGATE dependency
Applied in:	S01593, S01634, S01654, S01653
Application notes:	A00276, A00279, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Nm-input stands at its internal 1-state, the internal logic state of each input and each output affected by this Nm-input is the complement of the normally defined internal logic state of that input. If a Nm-input stands at its internal 0-state, all inputs and outputs affected by this Nm-input stand at their normally defined internal logic states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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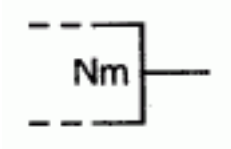

Name:	Nm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-16-02
Keywords:	binary logic elements, dependency notation, NEGATE dependency
Application notes:	A00276, A00279, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Nm-output stands at its internal 1-state, the internal logic state of each input and each output affected by this Nm-output is the complement of the normally defined internal logic state of that output. If a Nm-output stands at its internal 0-state, all inputs and outputs affected by this Nm-output stand at their normally defined internal logic states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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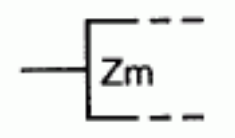

Name:	Zm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-17-01
Keywords:	binary logic elements, dependency notation, INTERCONNECTION dependency
Applied in:	S01591, S01617, S01670, S01721, S01729, S01766
Application notes:	A00276, A00280, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Zm-input stands at its internal 1-state, all inputs and outputs affected by this Zm-input stand at their internal 1-states unless modified by additional dependency notation. If a Zm-input stands at its internal 0-state, all inputs and outputs affected by this Zm-input stand at their internal 0-states unless modified by additional dependency notation. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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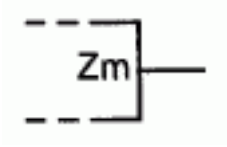

Name:	Zm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-17-02
Keywords:	binary logic elements, dependency notation, INTERCONNECTION dependency
Applied in:	S01683, S01689, S01696, S01767
Application notes:	A00276, A00280, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Zm-output stands at its internal 1-state, all inputs and outputs affected by this Zm-output stand at their internal 1-states unless modified by additional dependency notation. If a Zm-output stands at its internal 0-state, all inputs and outputs affected by this Zm-output stand at their internal 0-states unless modified by additional dependency notation. m shall be replaced by the relevant identifying number. The note with table I de A00276 applies.

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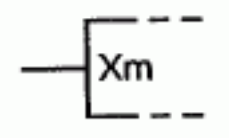
S01556



Name:	Xm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-17A-01
Keywords:	binary logic elements, dependency notation, TRANSMISSION dependency
Applied in:	S01604, S01605, S01606, S01776, S01805
Application notes:	A00276, A00281, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an Xm-input stands at its internal 1-state, a transmission path is established to which all ports affected by this input are connected. However, if a port is affected by two or more Xm-inputs and/or Xm-outputs whose identifying numbers are separated by commas, then the port is connected to the transmission paths established by these Xm-inputs only if all these affecting inputs stand at their internal 1-states. All ports connected to a transmission path stand at the same analogue signal level or internal logic state unless modified by additional notation, for example dependency notation. If an Xm-input stands at its internal 0-state, no transmission paths are established by this input or output. If an Xm-input is modified by additional notation to have no effect on the function of the element, there is no transmission path established by that input or output.

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m shall be replaced by the relevant identifying number.

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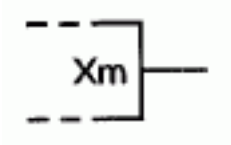
S01557



Name:	Xm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-17A-02
Keywords:	binary logic elements, dependency notation, TRANSMISSION dependency
Applied in:	S01635, S01777
Application notes:	A00276, A00281, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an Xm-output stands at its internal 1-state, a transmission path is established to which all ports affected by this output are connected. However, if a port is affected by two or more Xm-inputs and/or Xm-outputs whose identifying numbers are separated by commas, then the port is connected to the transmission paths established by these Xm-outputs only if all these affecting outputs stand at their internal 1-states. All ports connected to a transmission path stand at the same analogue signal level or internal logic state unless modified by additional notation, for example dependency notation. If an Xm-output stands at its internal 0-state, no transmission paths are established by this input or output. If an Xm-output is modified by additional notation to have no effect on the function of the element, there is no transmission path established by that input or output.

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m shall be replaced by the relevant identifying number.

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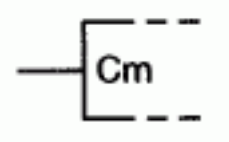
S01558



Name:	Cm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-18-01
Keywords:	binary logic elements, CONTROL dependency, dependency notation
Applied in:	S01701, S01702, S01654, S01660, S01663, S01662, S01666, S01661, S01669, S01668, S01676, S01677, S01690, S01692, S01698, S01689, S01693, S01688, S01695, S01694, S01717, S01718, S01713, S01727, S01716, S01721, S01722, S01792, S01806
Application notes:	A00276, A00282, A00286
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Cm-input stands at its internal 1-state, the inputs affected by this Cm-input have their normally defined effect on the function of the element. If a Cm-input stands at its internal 0-state, the inputs affected by this Cm-input have no effect on the function of the element. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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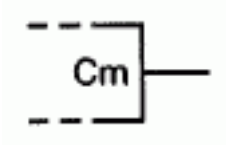
S01559



Name:	Cm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-18-02
Keywords:	binary logic elements, CONTROL dependency, dependency notation
Applied in:	S01676, S01677, S01737
Application notes:	A00276, A00282, A00286, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Cm-output stands at its internal 1-state, the inputs affected by this Cm-output have their normally defined effect on the function of the element. If a Cm-output stands at its internal 0-state, the inputs affected by this Cm-output have no effect on the function of the element. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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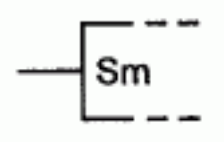
S01560



Name:	Sm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-19-01
Keywords:	binary logic elements, dependency notation, SET dependency
Applied in:	S01806
Application notes:	A00276, A00283, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an Sm-input stands at its internal 1-state, the outputs affected by this Sm-input will take on the internal logic state they normally would take on for the combination S=1, R=0, regardless of the state of any R-input. If an Sm-input stands at its internal 0-state, it has no effect. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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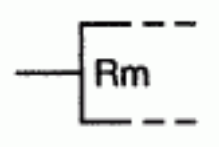
S01561



Name:	Rm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-19-02
Keywords:	binary logic elements, dependency notation, RESET dependency
Applied in:	S01701, S01670, S01690, S01692, S01698, S01691, S01696, S01695, S01694, S01803
Application notes:	A00276, A00283, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an Rm-input stands at its internal 1-state, the outputs affected by this Rm-input will take on the internal logic state they normally would take on for the combination S=0, R=1, regardless of the state of any S-input. If an Rm-input stands at its internal 0-state, it has no effect. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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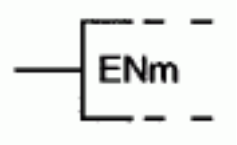
S01562



Name:	ENm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-20-01
Keywords:	binary logic elements, dependency notation, ENABLE dependency
Alternative forms:	S01503; S01562
Applied in:	S01702, S01596, S01603, S01599, S01606, S01615, S01617, S01670, S01721, S01746, S01793, S01805
Applies:	S01503; S01563
Application notes:	A00276, A00284, A00286, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The effect of this input on its affected outputs is the same as that of an EN-input (see symbol S01503). The effect of this input on its affected inputs is the same as that of an Mm-input (see symbol S01563). m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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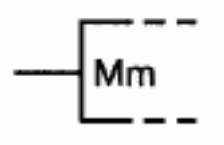
S01563



Name:	Mm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-21-01
Keywords:	binary logic elements, dependency notation, MODE dependency
Applied in:	S01702, S01705, S01562, S01634, S01690, S01698, S01689, S01695, S01713
Application notes:	A00276, A00285, A00286, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If an Mm-input stands at its internal 1-state, any input affected by this Mm-input has its normally defined effect on the function of the element, and any output affected by this Mm-input stands at its normally defined internal logic state or analogue signal value. That is, the inputs and outputs are enabled. If an Mm-input stands at its internal 0-state, its effect on inputs and outputs is as follows: - any input affected by this Mm-input has no effect on the function of the element; - if an affected input has several sets of labels separated by solidi, any set containing the identifying number of the Mm-input has no effect and shall be ignored. This represents disabling some of the functions of a multifunction input; - at each output affected by this Mm-input, any set of labels containing the identifying number of that Mm-input has no effect and shall be

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ignored;
- if an output has several sets of labels separated by solidi (see A00289), any set containing the identifying number of this Mm-input shall be ignored. This represents disabling or selecting some of the functions of a multifunction output or modifying some of the characteristics or dependent relationships of the output.

m shall be replaced by the relevant identifying number.

The note with table I of A00276 applies.

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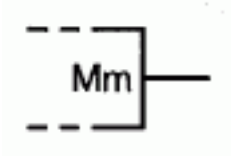
S01564



Name:	Mm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-21-02
Keywords:	binary logic elements, dependency notation, MODE dependency
Application notes:	A00276, A00285, A00286, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

Remarks:

If an Mm-output stands at its internal 1-state, any input affected by this Mm-output has its normally defined effect on the function of the element, and any output affected by this Mm-output stands at its normally defined internal logic state or analogue signal value. That is, the inputs and outputs are enabled.

If an Mm-output stands at its internal 0-state, its effect on inputs and outputs is as follows:

- any input affected by this Mm-output has no effect on the function of the element;
- if an affected input has several sets of labels separated by solidi, any set containing the identifying number of the Mm-output has no effect and shall be ignored. This represents disabling some of the functions of a multifunction input;
- at each output affected by this Mm-output, any set of labels containing the identifying number of that Mm-output has no effect and shall be ignored;
- if an output has several sets of labels separated by solidi (see A00289), any set containing the identifying number of this Mm-output

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shall be ignored. This represents disabling or selecting some of the functions of a multifunction output or modifying some of the characteristics or dependent relationships of the output.

m shall be replaced by the relevant identifying number.

The note with table I of A00276 applies.

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S01565



Name:	Am-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-23-01
Keywords:	ADDRESS dependency, binary logic elements, dependency notation
Applied in:	S01712, S01717, S01715, S01718, S01713, S01711, S01714, S01716, S01722, S01730
Application notes:	A00276, A00286, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If this input stands at its internal 1-state, the inputs affected by this input (that is the inputs of the section of the array selected by this input) have their normally defined effect on the elements of the selected section and the internal logic states of the outputs affected by this input (that is the outputs of the selected section) have their normal effect on the OR functions (or the indicated functions) determining the internal logic states of the outputs of the array. If the input stands at its internal 0-state, the inputs affected by this input (that is the inputs of the section selected by this input) have no effect on the elements of this section and the outputs affected by this input (that is the outputs of the section selected by this input) have no effect on the outputs of the array. m shall be replaced by the relevant identifying number.

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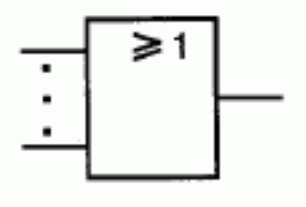
S01566



Name:	OR element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-01
Keywords:	binary logic elements, combinative elements
Applied in:	S01580, S01583, S01581, S01586, S01584, S01587, S01617, S01618, S01632, S01644, S01670
Applies:	S01463
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if one or more of the inputs stand at their 1-states. "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO". "1" may be replaced by "1" if no ambiguity is likely.

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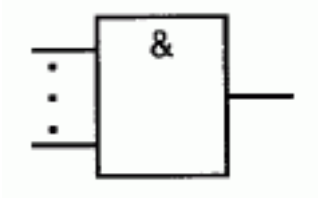
S01567



Name:	AND element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-02
Keywords:	binary logic elements, combinative elements
Applied in:	S01700, S01704, S01579, S01583, S01581, S01582, S01584, S01585, S01595, S01602, S01619, S01615, S01618, S01620, S01624, S01634, S01644, S01633, S01648, S01649, S01652, S01666, S01670, S01683, S01676, S01692, S01693, S01688, S01718, S01711, S01721, S01722, S01789
Applies:	S01463
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if all inputs stand at their 1-states.

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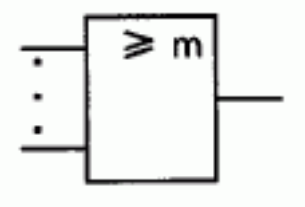
S01568



Name:	Logic threshold element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-03
Keywords:	binary logic elements, combinative elements
Applies:	S01463
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the number of inputs which stand at their 1-states is equal to or greater than the number in the qualifying symbol, represented here by m. m shall always be smaller than the number of inputs. An element with m=1 is generally known as an OR element (see symbol S01566). "" is defined as character 3/10 of IEC 61286 "GREATER-THAN OR EQUAL TO", equivalent to UCS 2265 (Table 60) of ISO/IEC 10646 "GREATER-THAN OR EQUAL TO".

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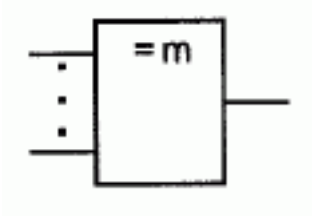
S01569



Name:	m and only m element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-04
Keywords:	binary logic elements, combinative elements
Applies:	S01463
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the number of inputs which stand at their 1-states is equal to the number in the qualifying symbol, represented here by m. A 2-input element with m=1 is generally known as an exclusive-OR element (see symbol S01574). m shall always be smaller than the number of inputs.

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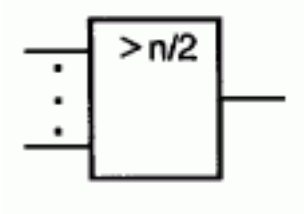
S01570



Name:	MAJORITY element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-05
Keywords:	binary logic elements, combinative elements
Applies:	S01463
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the majority of the inputs stand at their 1-states.

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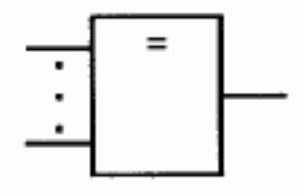
S01571



Name:	LOGIC IDENTITY element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-06
Keywords:	binary logic elements, combinative elements
Applied in:	S01592, S01631
Applies:	S01463
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if all inputs stand at the same logic state.

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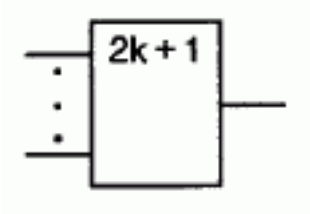
S01572



Name:	ODD element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-07
Alternative names:	ODD-parity element, general symbol; Addition modulo 2 element, general symbol
Keywords:	binary logic elements, combinative elements
Applied in:	S01591, S01589
Applies:	S01463
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the number of inputs which stand at their 1-states is odd (1, 3, 5, etc.).

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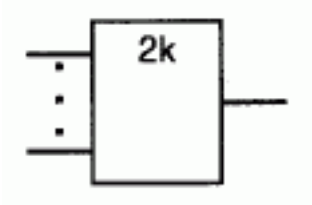
S01573



Name:	EVEN element, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-08
Alternative names:	EVEN-parity element, general symbol
Keywords:	binary logic elements, combinative elements
Applied in:	S01590, S01592
Applies:	S01463
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the number of inputs which stand at their 1-states is even (0, 2, 4, etc.).

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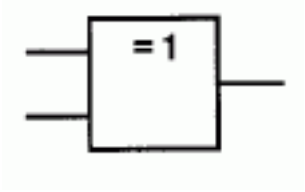
S01574



Name:	Exclusive-OR element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-09
Keywords:	binary logic elements, combinative elements
Applied in:	S01587, S01588, S01632
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if one and only one of the two inputs stands at its 1-state. In the case of more than two inputs, either symbol S01569 with m=1 or symbol S015722 should be used depending on the function involved.

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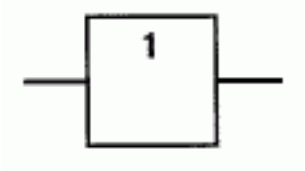
S01575



Name:	Buffer without specially amplified output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-10
Keywords:	binary logic elements, combinative elements
Applied in:	S01593, S01596, S01607
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its 1-state if and only if the input stands at its 1-state.

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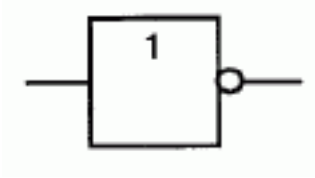
S01576



Name:	Negator
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-11
Alternative names:	Inverter (in the case of device representation using the logic-negation symbol)
Keywords:	binary logic elements, combinative elements
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its external 0-state if and only if the input stands at its external 1-state.

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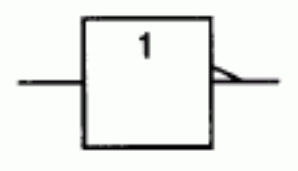
S01577



Name:	Inverter (in the case of device representation using the qualifying symbol for logic polarity)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-12
Keywords:	binary logic elements, combinative elements
Applied in:	S01601
Application notes:	A00291, A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The output stands at its L-level if and only if the input stands at its H-level.

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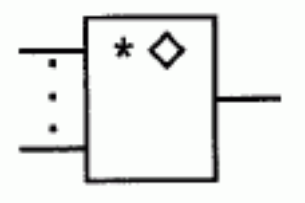
S01578



Name:	Distributed connection, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-27-13
Alternative names:	Dot function, general symbol; Wired function, general symbol
Keywords:	binary logic elements, combinative elements
Applies:	S01463; S01494; S01495; S01496; S01497
Application notes:	A00291
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	A distributed connection is a connection of specific outputs of a number of elements which are joined together to achieve either the AND- or the OR-function. The asterisk shall be replaced by the qualifying symbol for the function, that is, & or 1. As an alternative to the use of the general symbol, a distributed connection may be shown by one of the symbols for a junction of conductors (S00019 and S00020). At each point where lines are joined together the qualifying symbol for the function, that is, & or 1, shall be shown if confusion is otherwise likely.

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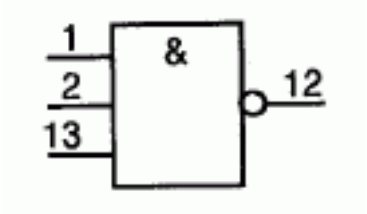
S01579



Name:	AND with negated output (NAND)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-01
Keywords:	binary logic elements, combinative elements
Applies:	S01467; S01567
Application notes:	A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	(e.g. part of SN 7410)

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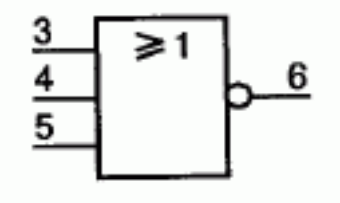
S01580



Name:	OR with negated output (NOR)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-02
Keywords:	binary logic elements, combinative elements
Applies:	S01467; S01566
Application notes:	A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 7427)

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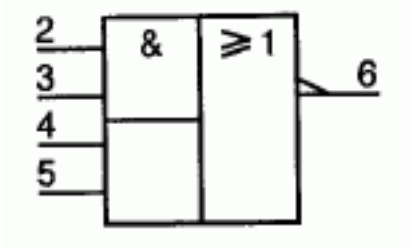
S01581



Name:	AND-OR-Invert
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-03
Keywords:	binary logic elements, combinative elements
Applies:	S01469; S01476; S01566; S01567
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74L51)

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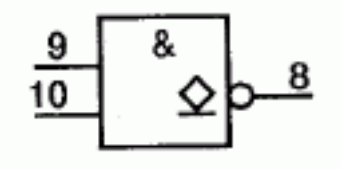
S01582



Name:	NAND with open-circuit output of the L-type
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-04
Keywords:	binary logic elements, combinative elements
Applies:	S01467; S01495; S01567
Application notes:	A00348
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 7403)

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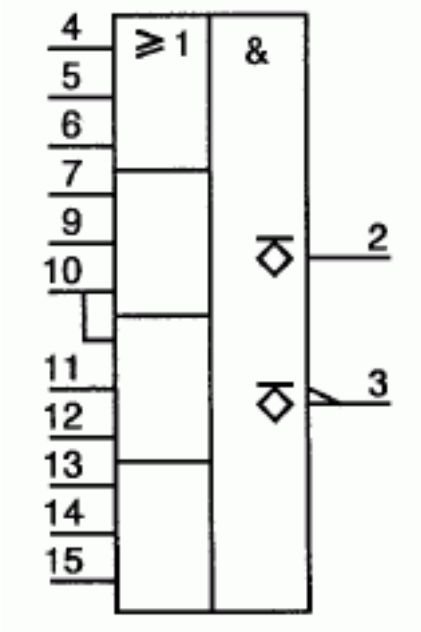
S01583



Name:	OR-AND with complementary open-circuit outputs of the H-type
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-05
Keywords:	binary logic elements, combinative elements
Applies:	S01469; S01476; S01494; S01566; S01567
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. MC 10121)

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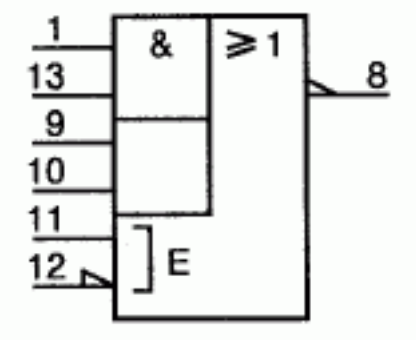

Name:	AND-OR-Invert, expandable
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-06
Keywords:	binary logic elements, combinative elements
Applies:	S01468; S01469; S01476; S01540; S01566; S01567
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	e.g. part of SN 7450)

The line grouping symbol (S01540) indicates that two wires are needed to implement the single extension connection.

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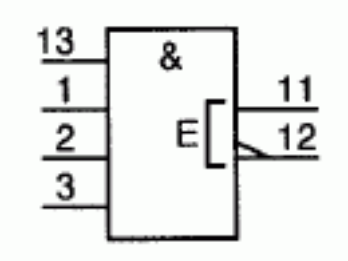

Name:	Expander
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-07
Keywords:	binary logic elements, combinative elements
Applies:	S01469; S01541; S01567
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 7460)

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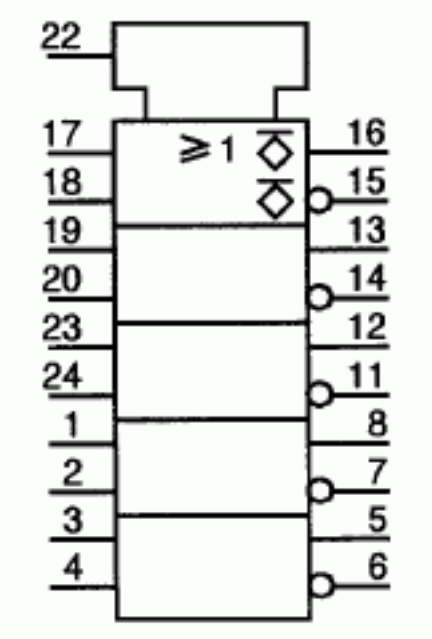
S01586



Name:	OR, with one common input and with complementary outputs, quintuple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-08
Keywords:	binary logic elements, combinative elements
Applies:	S01464; S01467; S01494; S01566
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. F 100102)

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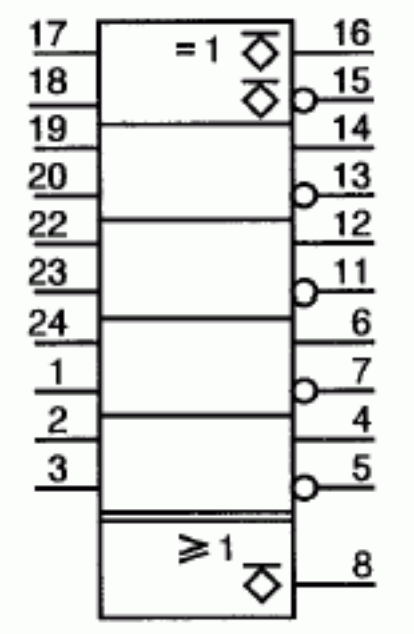
S01587



Name:	Exclusive-OR, with complementary outputs and one common output, quintuple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-09
Keywords:	binary logic elements, combinative elements
Applies:	S01465; S01494; S01566; S01574
Application notes:	A00271
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. F 100107)

One output of each of the five elements is internally connected to an input of the common output element. The internal logic state of this input corresponds with that of the output to which it is connected and does not depend on the choice of that output because both outputs of each element have identical internal logic states (see application note A271).

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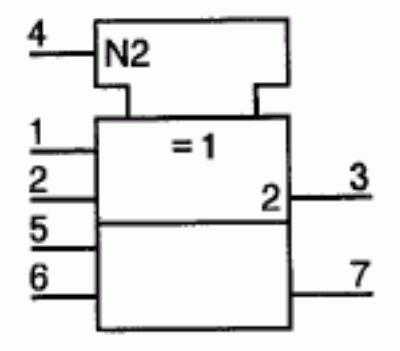

Name:	Exclusive-OR/NOR, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-10
Keywords:	binary logic elements, combinative elements
Alternative forms:	S01589
Applies:	S01464; S01574
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74S135) Symbol S01589 depicts the same device in another way.

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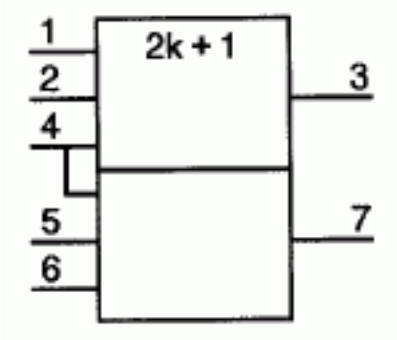

Name:	ODD element, with one common input, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-11
Keywords:	binary logic elements, combinative elements
Alternative forms:	S01588
Applies:	S01572
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74S135)

Symbol S01588 depicts the same device in another way.

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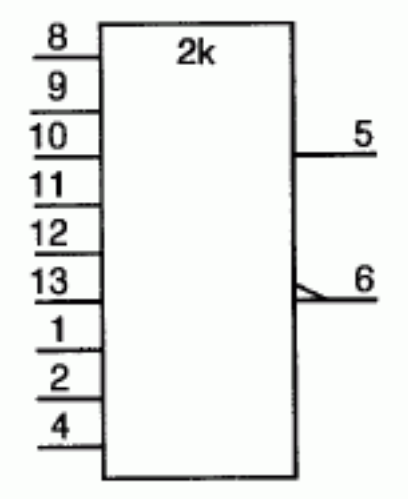
S01590



Name:	Parity generator/checker with complementary outputs
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-12
Keywords:	binary logic elements, combinative elements
Applies:	S01469; S01573
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74280)

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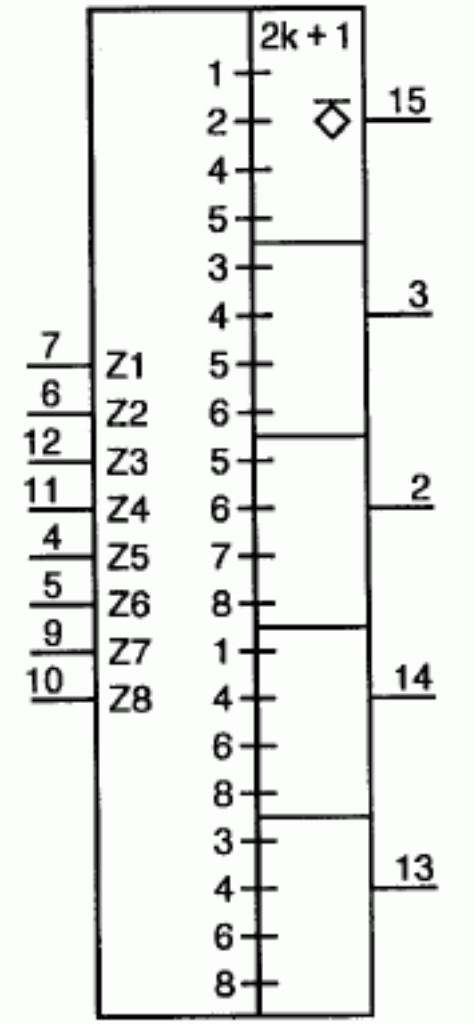

Name:	Error detection/correction element
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-13
Keywords:	binary logic elements, combinative elements
Applies:	S01475; S01494; S01554; S01572
Shape class:	Characters, Lines , Rectangles

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Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. MC 10163)

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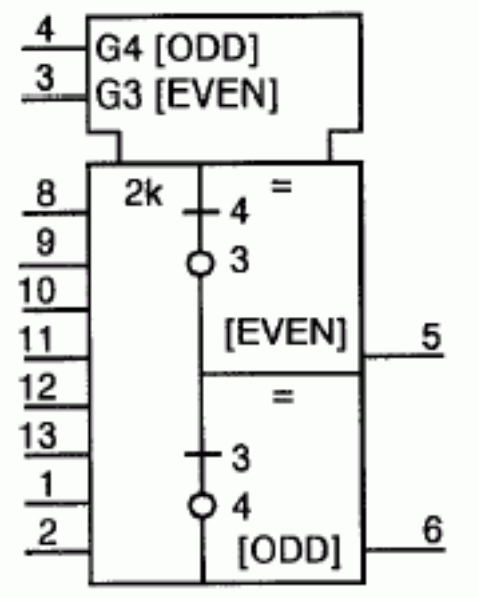
S01592



Name:	Parity generator/checker, odd/even
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-14
Keywords:	binary logic elements, combinative elements
Applies:	S01464; S01475; S01571; S01573; S01809
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74180)

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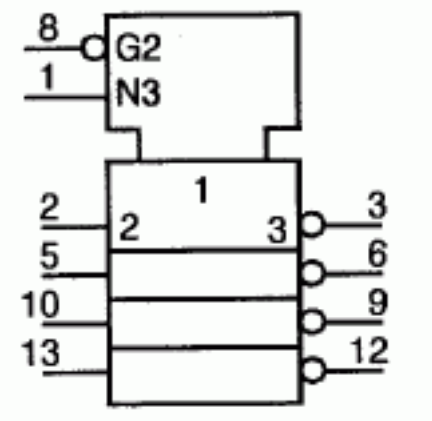
S01593



Name:	True/complement, zero/one element, quadruple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-28-15
Keywords:	binary logic elements, combinative elements
Applies:	S01464; S01466; S01467; S01552; S01575; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74H87)

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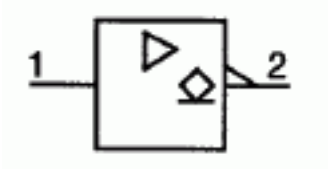

Name:	Buffer/driver with inverted open-circuit output of the L-type
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-01
Keywords:	amplifiers, binary logic elements, buffers, drivers
Applies:	S01457; S01469; S01495
Application notes:	A00293
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 7406)

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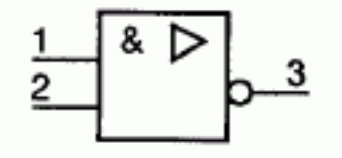
S01595



Name:	NAND buffer
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-02
Keywords:	amplifiers, binary logic elements, buffers, drivers
Applies:	S01457; S01467; S01567
Application notes:	A00293
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 7437)

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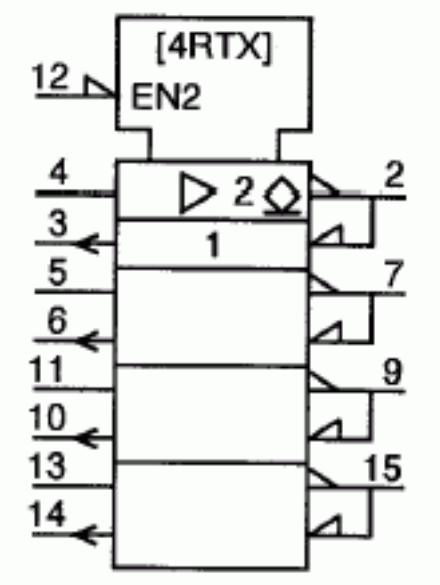
S01596



Name:	Bus transceiver, quadruple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-03
Keywords:	binary logic elements, drivers, receivers, tranceivers
Applies:	S00099; S01457; S01468; S01469; S01470; S01495; S01562; S01575
Application notes:	A00271, A00293
Shape class:	Arrows, Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. Am 26S10)

The general qualifying symbols and those associated with the inputs and outputs of the two outlines forming the first element of the array have been omitted from the remaining elements of the array in accordance with application note A271.

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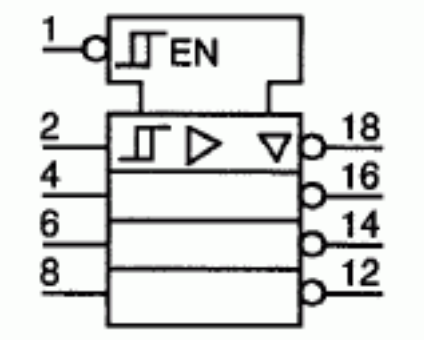
S01597



Name:	Bus driver with bi-threshold inputs and 3-state outputs, quad
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-04
Keywords:	binary logic elements, drivers
Applies:	S01457; S01466; S01467; S01492; S01498; S01503
Application notes:	A00293
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74S240)

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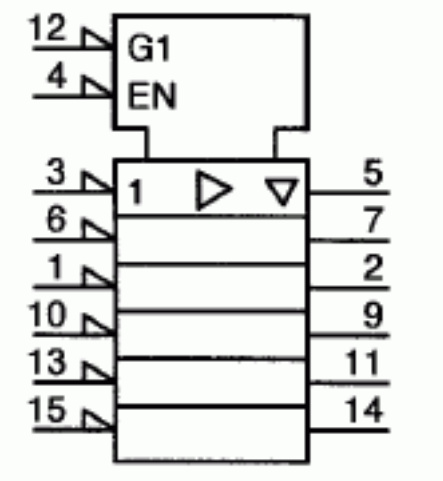
S01598



Name:	Buffer, inverting, with 3-state outputs, hex
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-05
Keywords:	binary logic elements, buffers, inverters
Applies:	S01457; S01464; S01468; S01498; S01503; S01810
Shape class:	Characters, Equilateral triangles, Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. CD 4502B)

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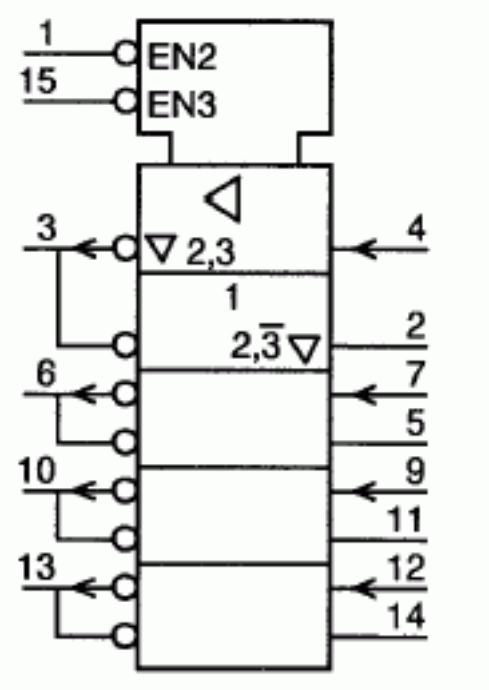
S01599



Name:	Bus driver, bidirectional, quadruple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-06
Keywords:	binary logic elements, drivers
Applies:	S00099; S01457; S01466; S01467; S01498; S01562
Shape class:	Arrows, Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. 8226)

Terminal 1 could be labelled as an EN-input (symbol S01503) without dependency notation, that is, the identifying number 2 may be omitted at three places inside the outline.

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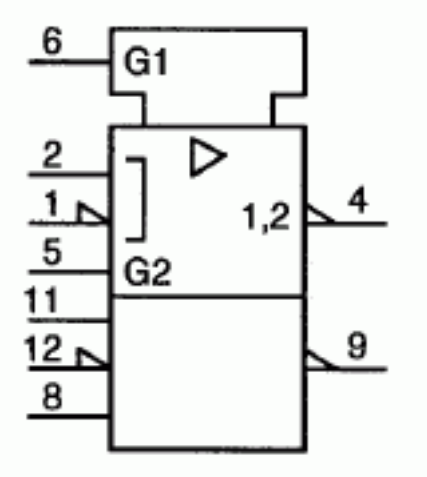
S01600



Name:	Line receiver, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-07
Keywords:	binary logic elements, receivers
Applies:	S01457; S01468; S01469; S01540; S01810
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 75107)

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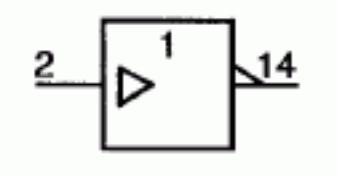
S01601



Name:	Line receiver
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-07A
Keywords:	binary logic elements, receivers
Applies:	S01457; S01577
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 75127)

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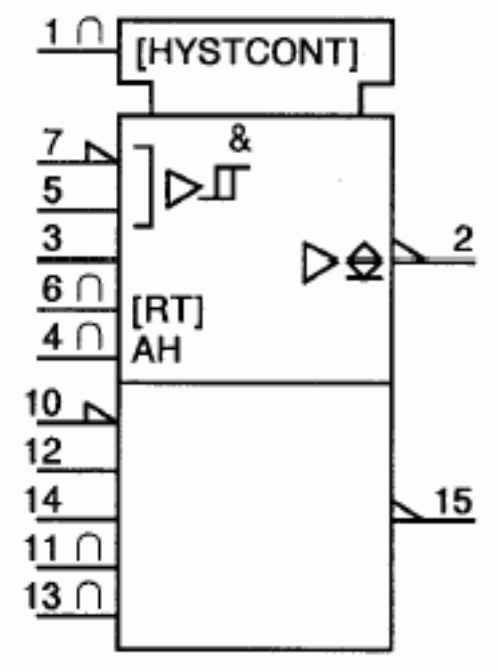
S01602



Name:	Line receiver, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-07B
Keywords:	binary logic elements, receivers
Applies:	S01457; S01464; S01468; S01469; S01492; S01497; S01567; S01748; S01764
Shape class:	Characters, Equilateral triangles, Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 55152)

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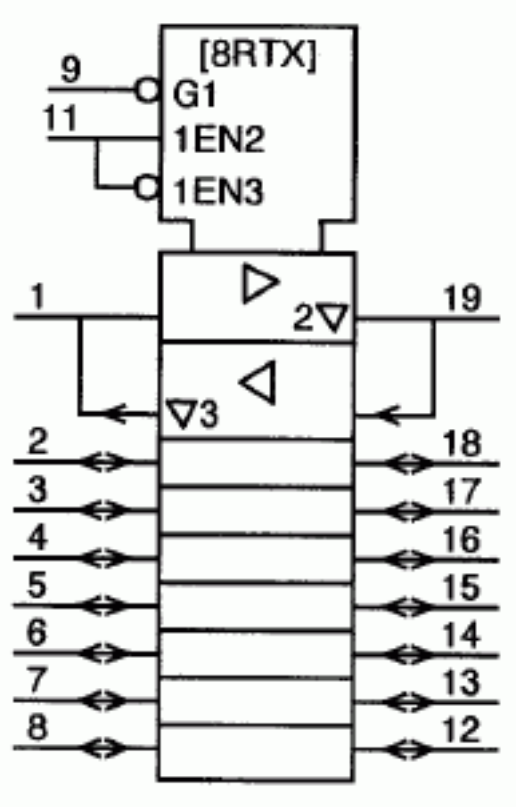
S01603



Name:	Bus driver, bidirectional, 8-bit parallel
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-08
Keywords:	binary logic elements, drivers
Applies:	S00099; S00101; S01457; S01466; S01498; S01547; S01562; S01810
Shape class:	Arrows, Characters, Equilateral triangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. 8286)

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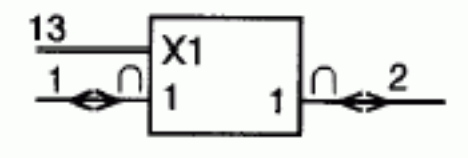
S01604



Name:	Bidirectional switch
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-09
Keywords:	binary logic elements, static switches, switches
Applies:	S01547; S01556; S01748; S01749
Shape class:	Arrows, Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of CD 4016B)

The arrowheads (S01547) and/or the symbols S01748 and S01749 are optional.

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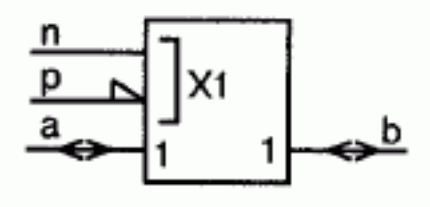
S01605



Name:	CMOS transmission gate
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-10
Keywords:	binary logic elements, static switches, switches
Applies:	S01468; S01540; S01547; S01556
Application notes:	A00341
Shape class:	Arrows, Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The arrowheads (S01547) are optional. The symbol represents an internal transmission gate used in many integrated circuits such as CD 4013B and is equivalent to the circuit shown A341.

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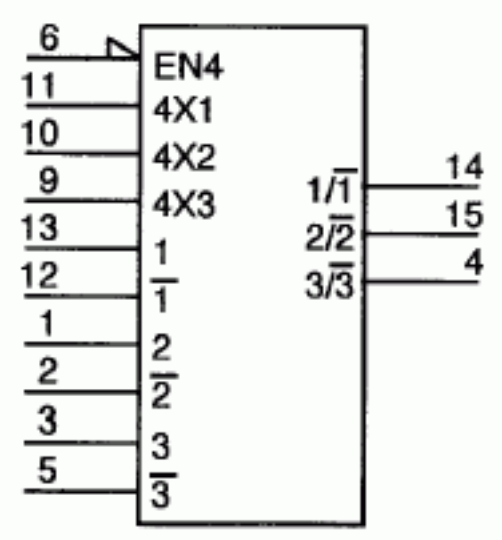
S01606



Name:	Bidirectional change-over switch with common enable, triple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-29-11
Keywords:	binary logic elements, switches
Alternative forms:	S01805
Applies:	S01468; S01556; S01562
Shape class:	Characters, Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. 74HC4053)

Symbol S01805 depicts the same device in another way.

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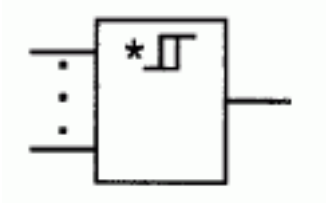
S01607



Name:	Element with hysteresis, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-30-01
Keywords:	binary logic elements, combinative elements, hysteresis
Applies:	S01463; S01492; S01575
Shape class:	Characters, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	When used within an element as a general qualifying symbol, the hysteresis symbol designates an element whose overall input/output characteristics include hysteresis as described by symbol S01492. The asterisk must be replaced by a general qualifying symbol designating the logic function of the element unless that qualifying symbol is the numeral 1 (of symbol S01575) in which case it shall be omitted.

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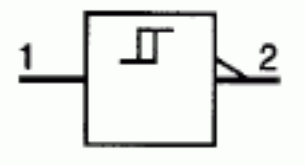
S01608



Name:	Bi-threshold detector with inverted output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-31-01
Alternative names:	Schmitt-trigger inverter; Inverter with hysteresis
Keywords:	binary logic elements, detectors, inverters
Applies:	S01469; S01492
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74LS14)

In accordance with the description of symbol S01492, symbol S01608 is equivalent to symbol S01577 with a bi-threshold input (S01492).

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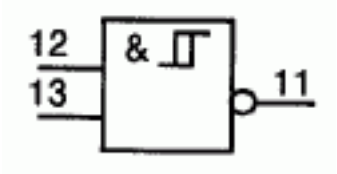
S01609



Name:	NAND Schmitt-trigger
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-31-02
Alternative names:	NAND with hysteresis
Keywords:	binary logic elements, triggers
Alternative forms:	S01467; S01492; S01567
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. part of SN 74132)

The output takes on its internal 1-state only when the external level applied to each input reaches its V1 threshold (see description of symbol S01492). The output will maintain the internal 1-state until the external level applied to one of its inputs reaches its V2 threshold.

This symbol is not equivalent to an AND gate with the hysteresis function applied to each input instance.

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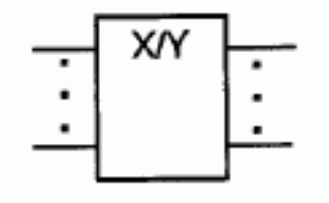
S01610



Name:	Coder, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-32-01
Alternative names:	Code converter, general symbol
Keywords:	binary logic elements, code converters, coders
Applied in:	S01611, S01614, S01612, S01619, S01615, S01617, S01618, S01613, S01620, S01616, S01622, S01621, S01632, S01727
Applies:	S01463
Application notes:	A00296
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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Remarks: The relationship between inputs and outputs shall be shown by

- indications in the general qualifying symbol together with labels at the inputs and outputs,

- and/or by a referenced table.

X and Y may be replaced by appropriate indications of the code used to represent the information at the inputs and at the outputs respectively.

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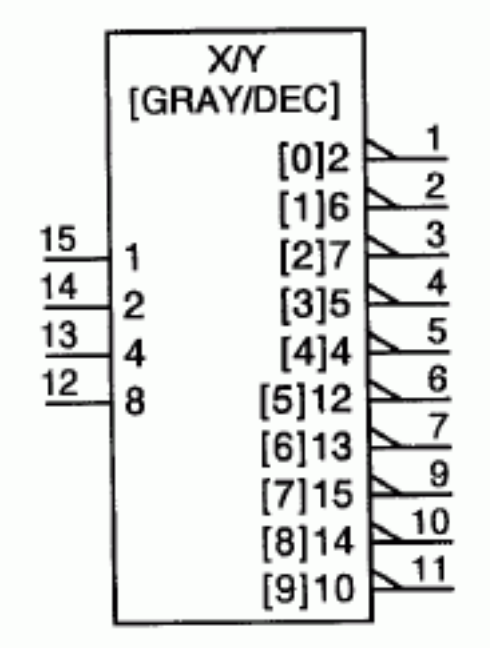
S01611



Name:	Code converter, Gray-to-decimal
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-01
Keywords:	binary logic elements, code converters
Applies:	S01469; S01610
Application notes:	A00296
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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Remarks: (e.g. SN 7444)

Because it is not possible to label the inputs with characters referring to the Gray code, the general symbol for a coder is shown here in accordance with the first alternative in each of the second and the third paragraphs of 32.1.1. of A296.

Supplementary information has been added to indicate a particular application of this device to implement a particular Gray code.

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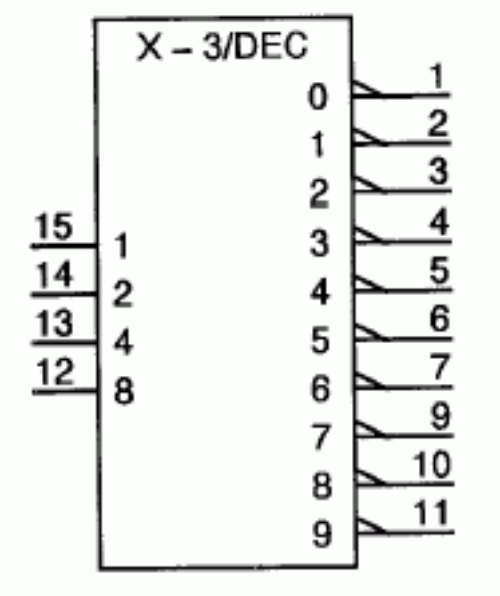
S01612



Name:	Code converter, excess-3-to-decimal
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-01A
Keywords:	binary logic elements, code converters
Form:	form 1
Alternative forms:	S01613
Applies:	S01469; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 7443)

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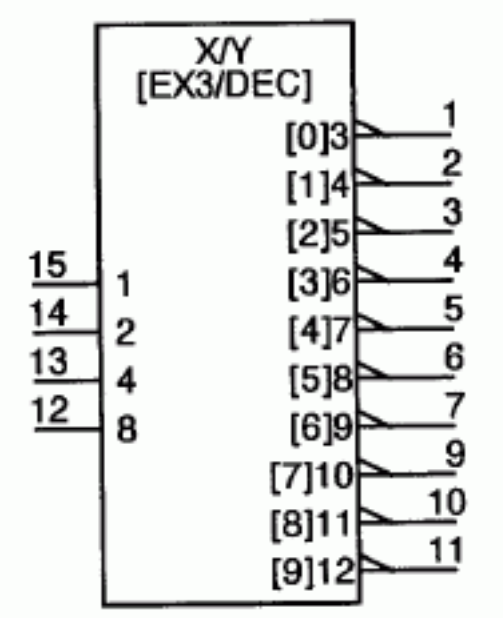
S01613



Name:	Code converter, excess-3-to-decimal
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-01B
Keywords:	binary logic elements, code converters
Form:	form 2
Alternative forms:	S01612
Applies:	S01469; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 7443)

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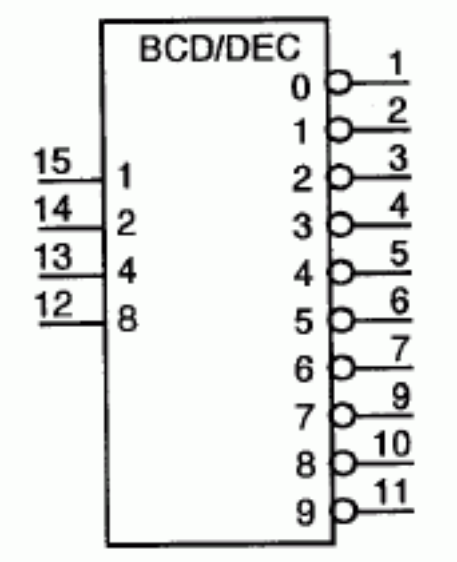
S01614



Name:	Code converter, BCD-to-decimal
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-02
Keywords:	binary logic elements, code converters
Applies:	S01467; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 7442)

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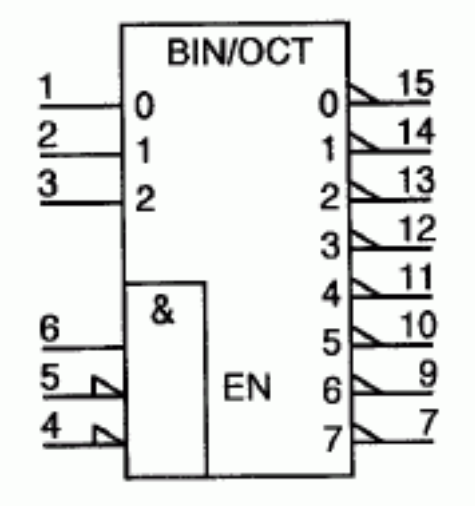
S01615



Name:	Code converter, three-to-eight-line
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-03
Keywords:	binary logic elements, code converters
Alternative forms:	S01633
Applies:	S01468; S01469; S01476; S01562; S01567; S01610
Shape class:	Characters, Rectangles, Right-angled triangle
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74LS138)

Symbol S01633 depicts the same device in another way.

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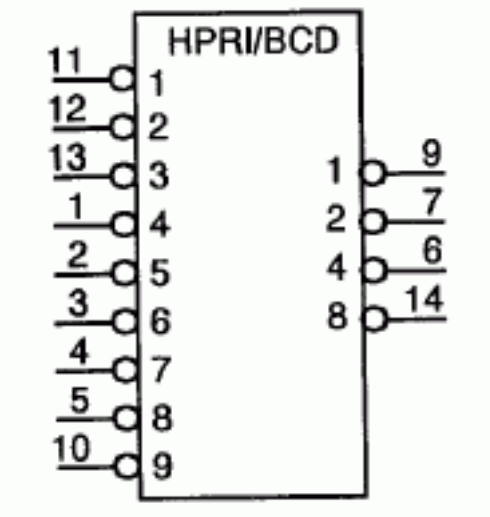
S01616



Name:	Highest-priority encoder, encoding 9 data lines to 4-line BCD
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-04
Keywords:	binary logic elements, coders
Applies:	S01466; S01467; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74147)

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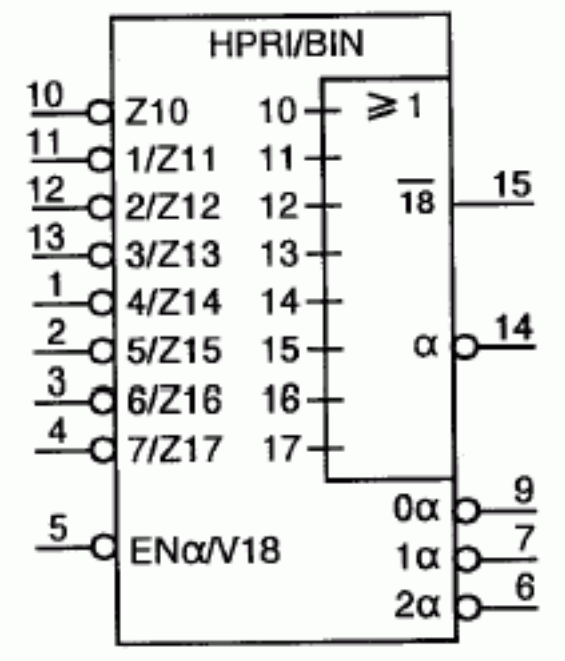
S01617



Name:	Highest-priority encoder, encoding 8 data lines to 3-line binary (octal)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-05
Keywords:	binary logic elements, coders
Applies:	S01479; S01550; S01554; S01562; S01566; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74148)

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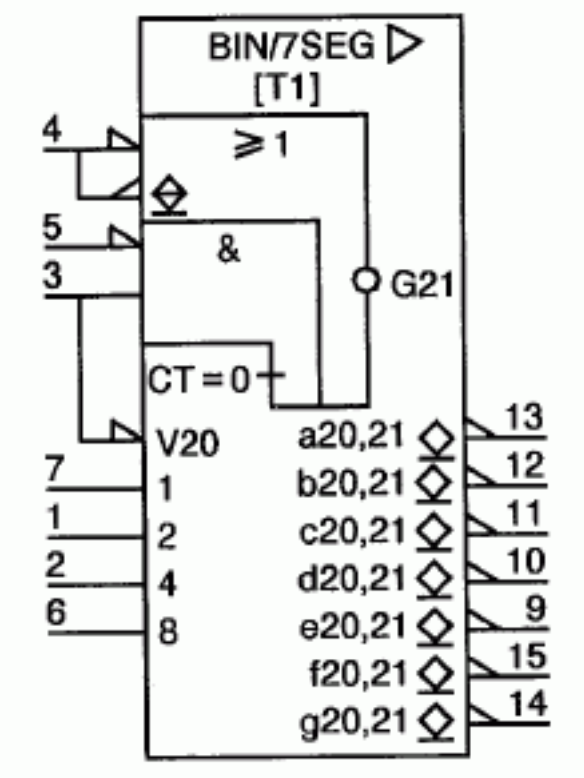
S01618



Name:	Decoder/driver, binary-to-seven-segment
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-06
Keywords:	binary logic elements, decoders, drivers
Applies:	S01457; S01468; S01469; S01471; S01476; S01495; S01497; S01539; S01550; S01566; S01567; S01610; S01809; S01810
Application notes:	A00297
Shape class:	Characters, Rectangles, Right-angled triangle
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. SN 74LS47)

This example shows the use of the polarity indicator at external connections together with the use of the negation indicator at internal connections.

The font table T1 is shown in A0297.

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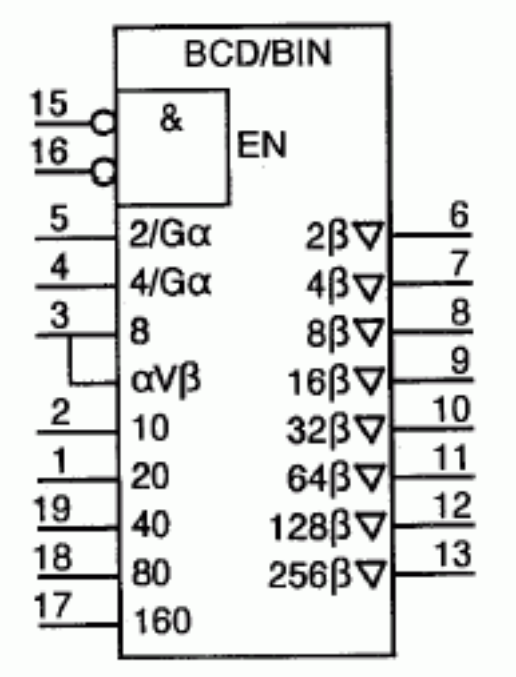
S01619



Name:	Code converter, BCD-to-binary
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-07
Keywords:	binary logic elements, code converters
Alternative forms:	S01620
Applies:	S01466; S01476; S01498; S01503; S01567; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74S484)

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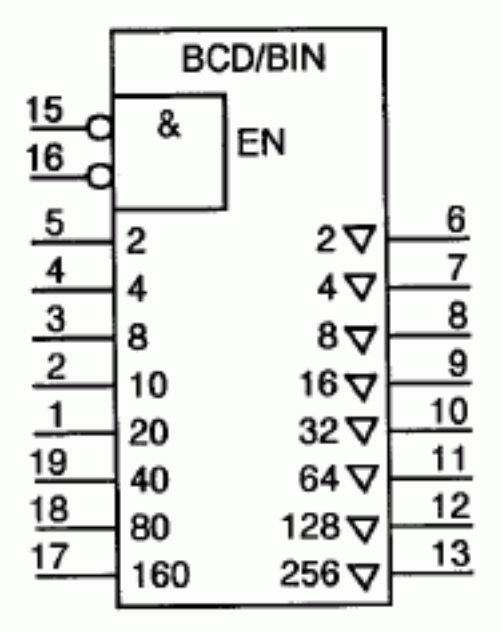
S01620



Name:	Code converter, BCD-to-binary
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-08
Keywords:	binary logic elements, coders
Form:	simplified form
Alternative forms:	S01562; S01567; S01619
Applies:	S01466; S01476; S01498; S01503; S01567; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams

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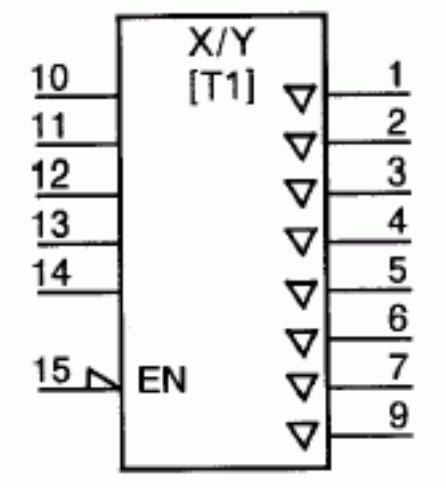
S01621



Name:	Coder for arbitrary code
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-09
Keywords:	binary logic elements, coders
Applies:	S01468; S01498; S01503; S01610
Application notes:	A00343
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. TBP 18S030, formerly SN 74S288)

The combinative relationships between inputs and outputs are implemented in a PROM (or a ROM).

"T1" refers to a table showing the logic function of the device, for an example see A00343.

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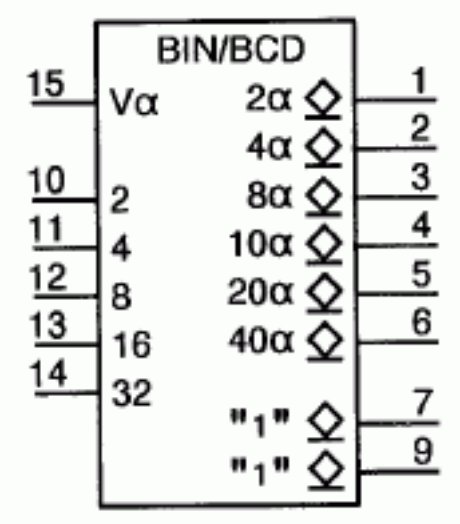
S01622



Name:	Code converter, binary-to-BCD
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-33-10
Keywords:	binary logic elements, code converters
Applies:	S01495; S01543; S01550; S01610
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, S Converting a manual operation into a signal
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74185)

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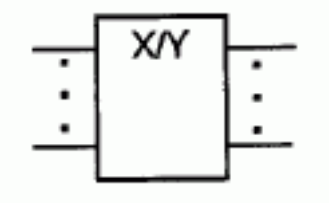
S01623



Name:	Signal-level converter, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-34-01
Keywords:	binary logic elements, converters
Applied in:	S01624, S01625
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The level references may be shown inside the symbol and shall replace X and Y if confusion with the coder is likely. The general qualifying symbol X/Y may be replaced by X//Y if it is necessary to indicate electrical isolation.

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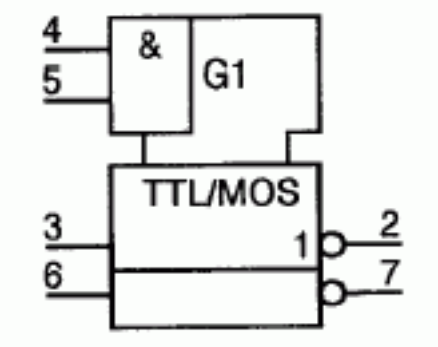
S01624



Name:	Level converter, TTL-to-MOS, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-35-01
Keywords:	binary logic elements, converters
Applies:	S01464; S01467; S01476; S01567; S01623; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	Exemple: part of SN75356.

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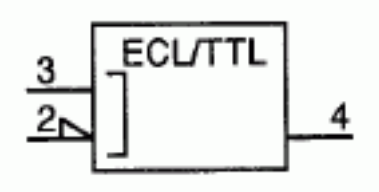
S01625



Name:	Level converter, ECL-to-TTL
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-35-02
Keywords:	binary logic elements, converters
Applies:	S01468; S01540; S01623
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	Example: part of MC 10125.

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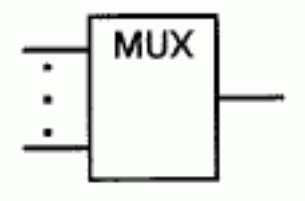
S01626



Name:	Multiplexer, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-36-01
Keywords:	binary logic elements, multiplexers
Applied in:	S01629, S01628, S01631, S01632, S01630
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	If one input of a multiplexer is selected, the internal logic state of the output takes on the internal state of the selected input. If no input is selected, the output stands at its internal 0-state. The inputs and logic relationships that control the selecting action should also be shown, for example by showing those inputs and the associated dependency notation either within the element or within a common control block.

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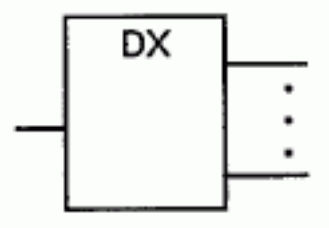
S01627



Name:	Demultiplexer, general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-36-02
Keywords:	binary logic elements, demultiplexers
Applied in:	S01629, S01628, S01634, S01633
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	If an output of a demultiplexer is selected, the internal logic state of that output takes on the internal logic state of the input. Otherwise, the output takes on its internal 0-state. If confusion is likely, DX may be replaced by DMUX. The inputs and logic relationships that control the selecting action should also be shown, for example by showing those inputs and the associated dependency notation either within the element or within a common control block.

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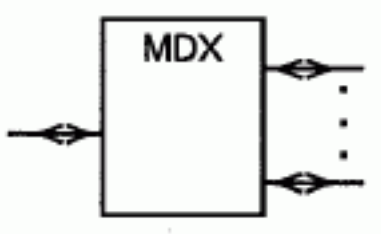
S01628



Name:	Bidirectional multiplexer/demultiplexer (selector), general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-36-03
Keywords:	binary logic elements, demultiplexers, multiplexers
Applied in:	S01635
Applies:	S00101; S01463; S01626; S01627
Shape class:	Arrows, Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	This element establishes a bidirectional connection between one input-output port and another that is selected from a group of input-output ports. The inputs and logic relationships that control the selecting action should also be shown, for example by showing those inputs and the associated dependency notation either within the element or within a common control block. The arrowheads are optional. If confusion is likely, MDX may be replaced by MUXDX.

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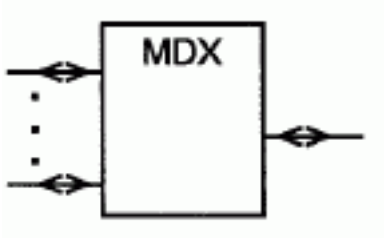
S01629



Name:	Bidirectional multiplexer/demultiplexer (selector), general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-36-04
Keywords:	binary logic elements
Applies:	S00101; S01463; S01626; S01627
Shape class:	Arrows, Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	This element establishes a bidirectional connection between one input-output port and another that is selected from a group of input-output ports. The inputs and logic relationships that control the selecting action should also be shown, for example by showing those inputs and the associated dependency notation either within the element or within a common control block. If confusion is likely, DX may be replaced by DMUX. The arrowheads are optional. If confusion is likely, MDX may be replaced by MUXDX.

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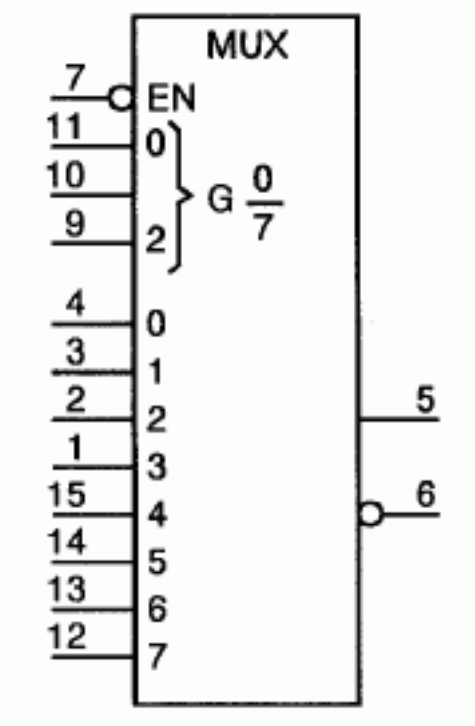
S01630



Name:	Multiplexer (one-of-eight)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-01
Keywords:	binary logic elements, multiplexers
Applies:	S01466; S01467; S01503; S01516; S01626; S01810
Shape class:	Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74151.

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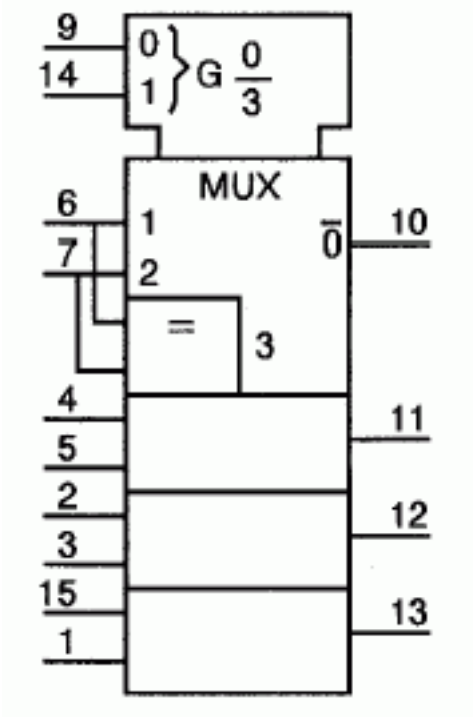
S01631



Name:	Multiplexer, quadruple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-02
Keywords:	binary logic elements, multiplexers
Alternative forms:	S01632
Applies:	S01464; S01476; S01516; S01571; S01626; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g. MC 14519)

The "0 with negation bar" is optional (see description of symbol S01626).

Symbol S01632 depicts the same device in another way.

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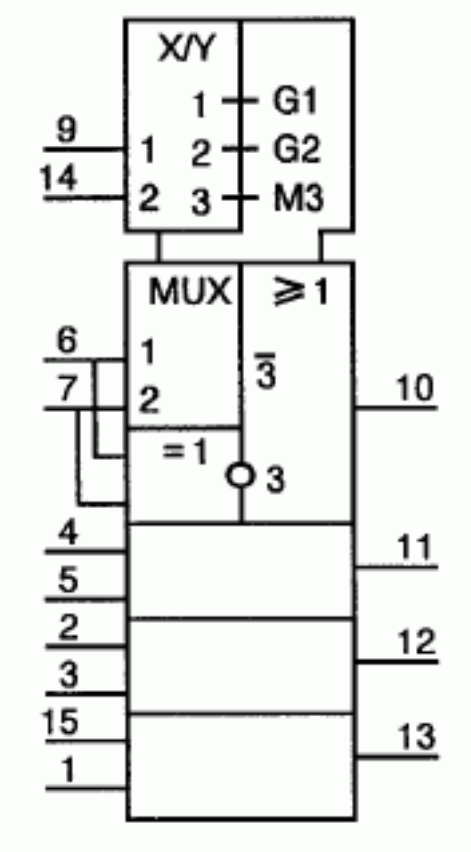
S01632



Name:	Exclusive NOR, quadruple
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-03
Keywords:	binary logic elements, combinative elements
Alternative forms:	S01631
Applies:	S01464; S01479; S01566; S01574; S01610; S01626; S01809; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind

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Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. MC 14519)
	Symbol S01631 depicts the same device in another way.

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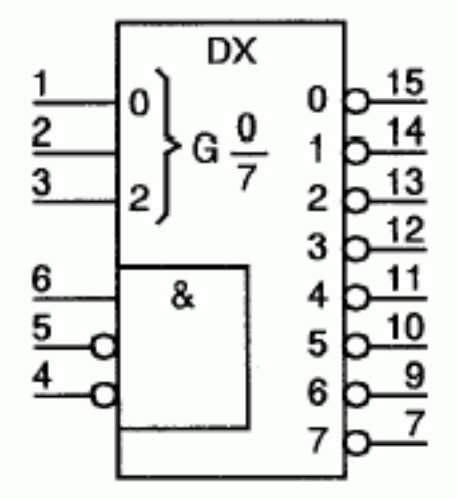
S01633



Name:	Demultiplexer (one-to-eight)
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-04
Keywords:	binary logic elements, demultiplexers
Alternative forms:	S01615
Applies:	S01466; S01467; S01516; S01567; S01627; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74LS138)

Symbol S01615 depicts the same device in another way.

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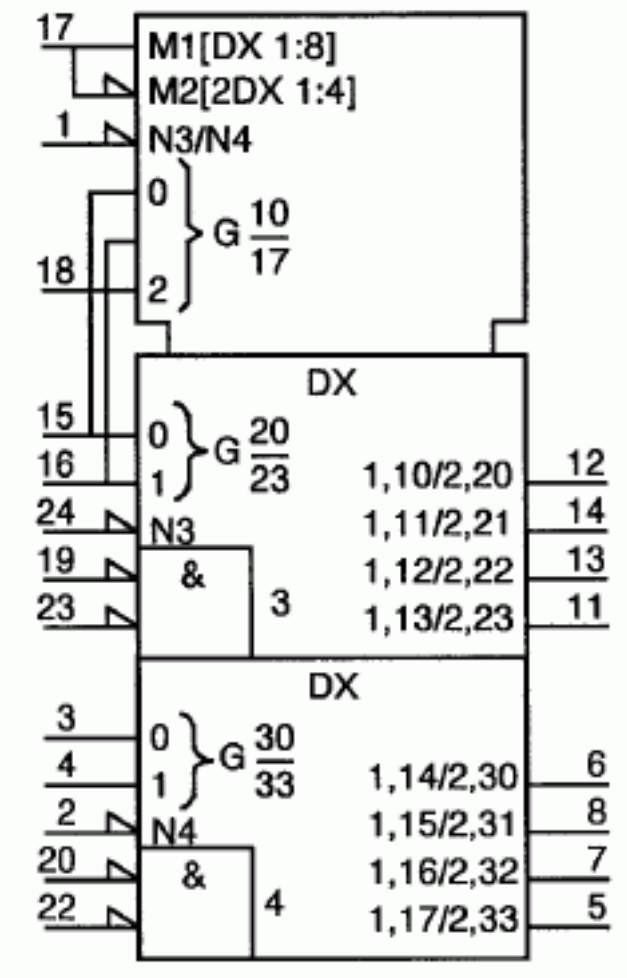
S01634



Name:	Demultiplexer/decoder, universal, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-05
Keywords:	binary logic elements, coders, multiplexers
Applies:	S01464; S01468; S01494; S01516; S01552; S01563; S01567; S01627; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind

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Application class: Circuit diagrams

Remarks: E.g. F 100170.

In order to perform the function DX1:8 correctly, it is necessary to make an external connection between terminals 19 and 20, and also between terminals 22 and 23.

The symbol for open-circuit output (symbol S01494) is not shown in this example because all ECL outputs of this ECL family are of the same open-circuit type.

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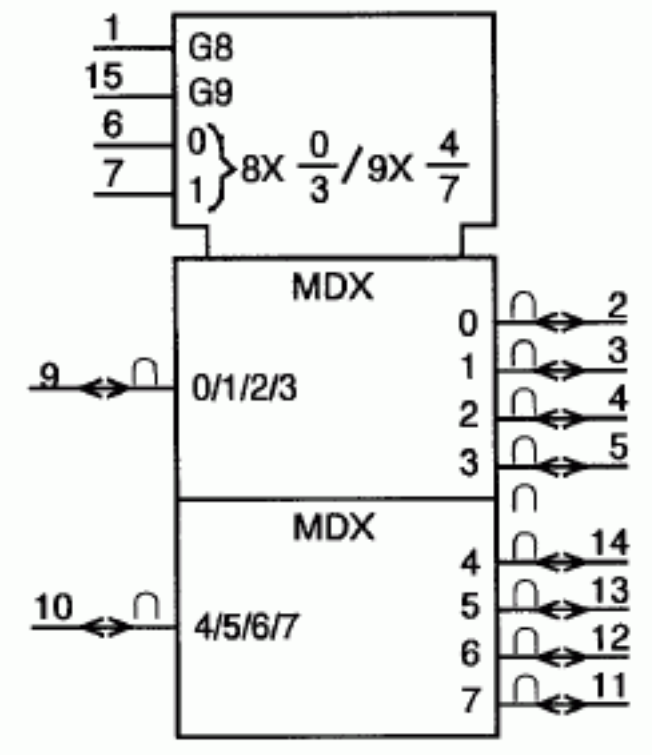
S01635



Name:	Analogue data selector (multiplexer/demultiplexer), 4-channel, dual
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-37-06
Keywords:	analogue elements, binary logic elements, multiplexers
Applies:	S00101; S00216; S01464; S01516; S01557; S01628; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams

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Remarks: E.g. MC 14529B.

When using the general qualifying symbol MDX, the identifying numbers of the X-dependencies, (for example, 0/1/2/3) may be omitted at the multiplexed port if no confusion is likely.

The arrowheads and the identifiers of analogue signals are optional.

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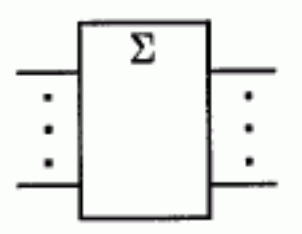
S01636



Name:	Adder, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-01
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01643, S01642
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	"" is defined as character 5/3 of IEC 61286 "CAPITAL LETTER SYMBOL SIGMA", equivalent to UCS 03A3 (Table 10) of ISO/IEC 10646 "GREEK CAPITAL LETTER SIGMA".

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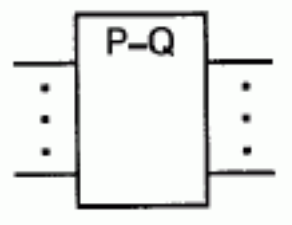
S01637



Name:	Subtractor, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-02
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01646
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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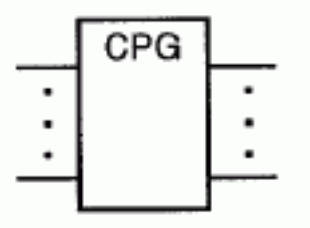
S01638



Name:	Look-ahead carry generator (carry, propagate and generate), general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-03
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01647
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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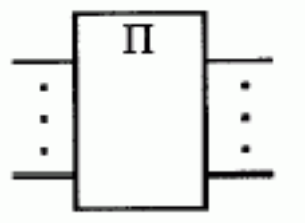
S01639



Name:	Multiplier, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-04
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01648, S01649
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	"" is defined as character 5/0 of IEC 61286 "CAPITAL LETTER SYMBOL SIGMA", equivalent to UCS 03A0 (Table 10) of ISO/IEC 10646 "GREEK CAPITAL LETTER SIGMA".

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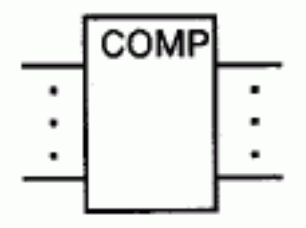
S01640



Name:	Magnitude comparator, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-05
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01651, S01650, S01652
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	A cascadable comparator is assumed to implement a portion of a comparison that proceeds from lower to higher order unless otherwise indicated, for example by "[H - L]" placed below the qualifying symbol "COMP".

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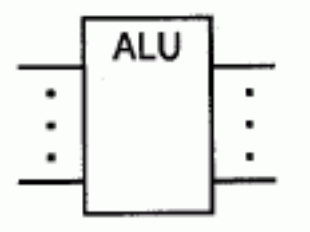
S01641



Name:	Arithmetic logic unit, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-06
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01654, S01653
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Supplementary information shall be added to the general qualifying symbol to specify the function of the element (see for example, symbol S01453).

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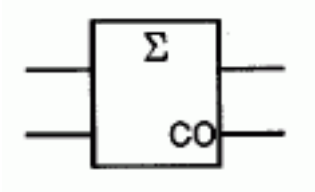
S01642



Name:	Half adder
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-07
Keywords:	arithmetic elements, binary logic elements
Applies:	S01535; S01636
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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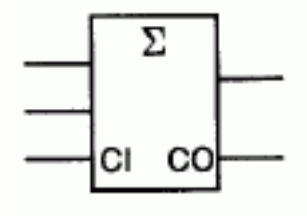
S01643



Name:	Single-bit full adder
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-38-08
Keywords:	arithmetic elements, binary logic elements
Applied in:	S01645, S01644
Applies:	S01532; S01535; S01636
Application notes:	A00301
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	A simple single-bit full adder may alternatively be depicted by the combination of the symbol for the ODD element (modulo 2 adder) and shown as in A0301.

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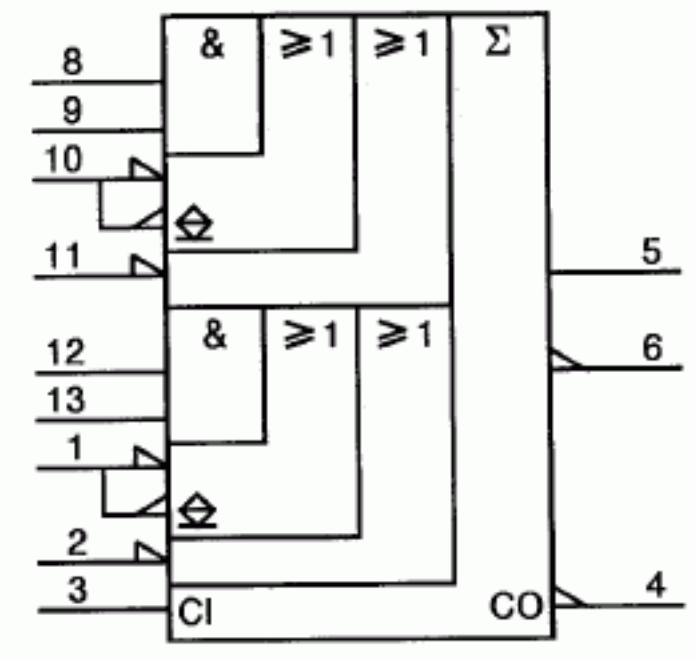
S01644



Name:	Single-bit full adder with complementary sum outputs and inverted carry output
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-01
Keywords:	arithmetic elements, binary logic elements
Applies:	S01468; S01469; S01497; S01566; S01567; S01643
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. SN 7480.

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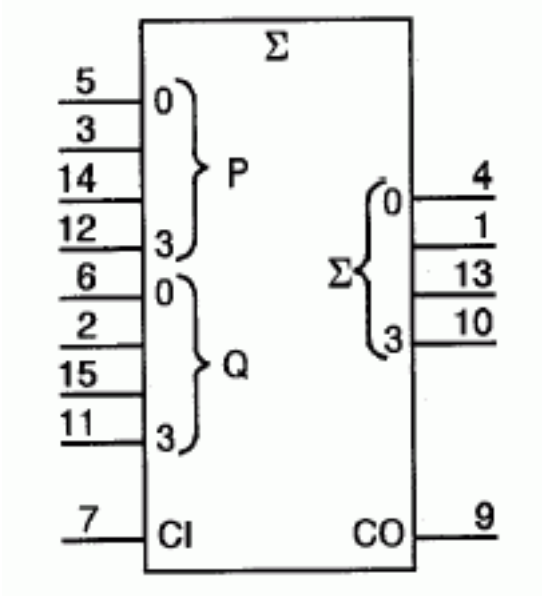
S01645



Name:	Full adder, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-02
Keywords:	arithmetic elements, binary logic elements
Alternative forms:	S01646
Applies:	S01516; S01517; S01643
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. SN 74283. Symbol S01646 depicts the same device in another way.

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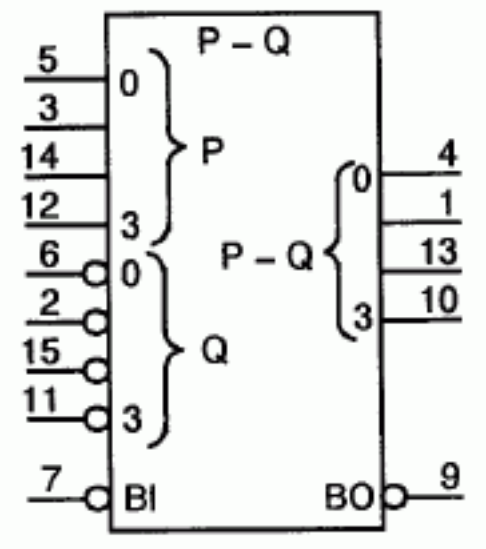
S01646



Name:	Full subtractor, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-03
Keywords:	arithmetic elements, binary logic elements
Alternative forms:	S01645
Applies:	S01466; S01467; S01516; S01517; S01526; S01529; S01637
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. SN 74283. Symbol S01645 depicts the same device in another way.

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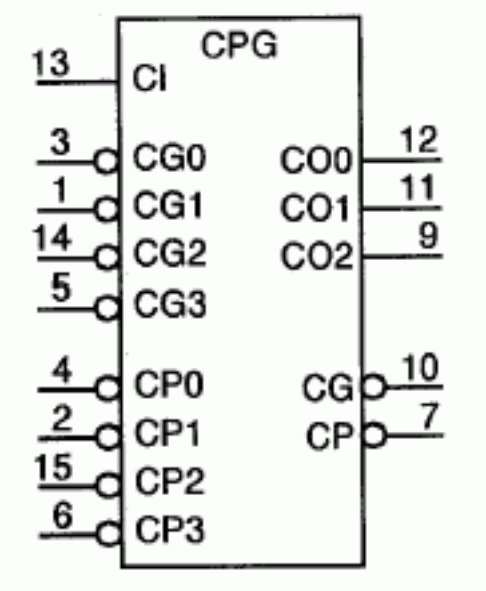

Name:	Look-ahead carry generator, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-04
Keywords:	arithmetic elements, binary logic elements
Applies:	S01466; S01467; S01532; S01533; S01534; S01535; S01536; S01537; S01638
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74182)

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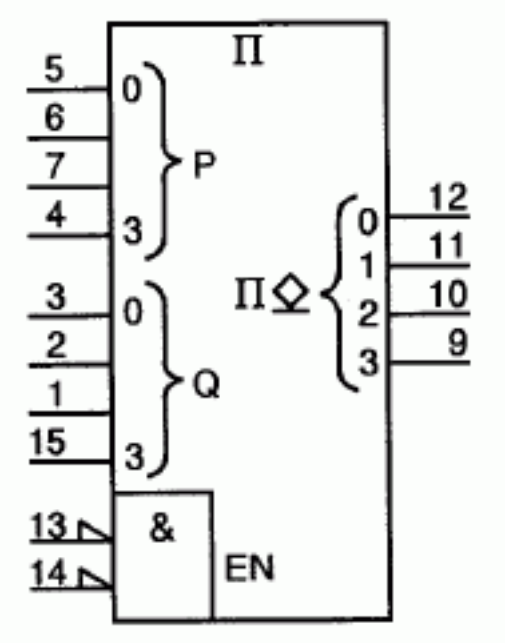

Name:	Multiplier, 4-bit parallel, generating the four least significant bits of the product
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-05
Keywords:	arithmetic elements, binary logic elements
Applies:	S01468; S01495; S01503; S01516; S01517; S01567; S01639
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. SN 74285)

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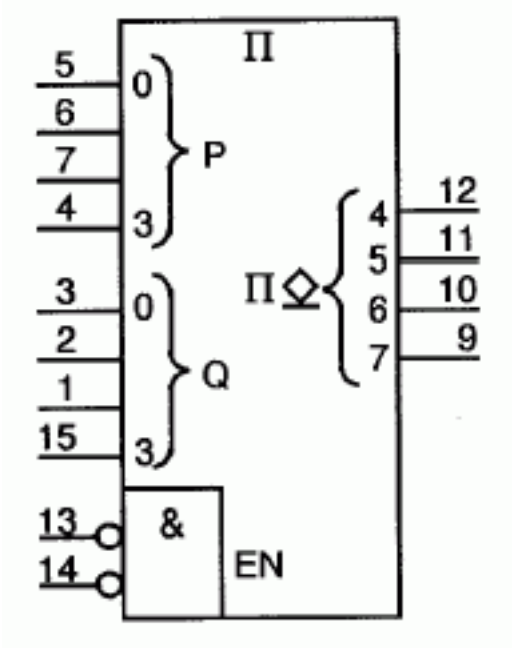
S01649



Name:	Multiplier, 4-bit parallel, generating the four most significant bits of the product
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-06
Keywords:	arithmetic elements, binary logic elements
Applies:	S01466; S01495; S01503; S01516; S01517; S01567; S01639
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. SN 74284.

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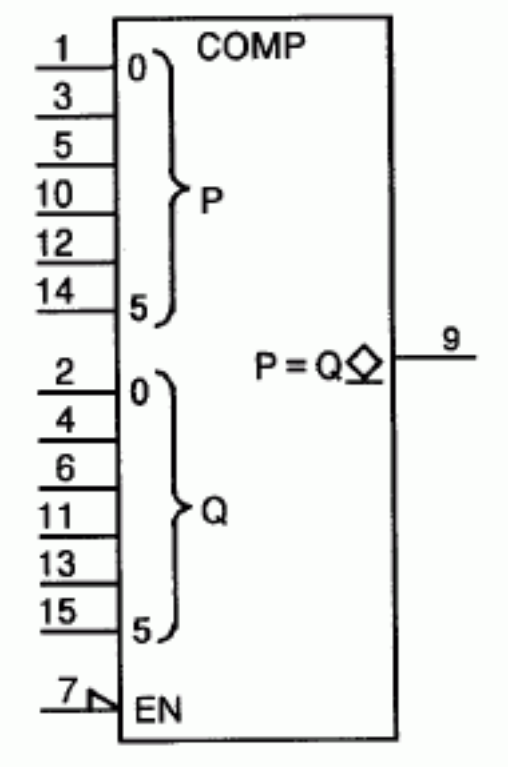
S01650



Name:	Magnitude comparator with open-circuit output of the L-type, 6-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-07
Keywords:	arithmetic elements, binary logic elements
Applies:	S01468; S01495; S01503; S01516; S01640
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. DM 7160)

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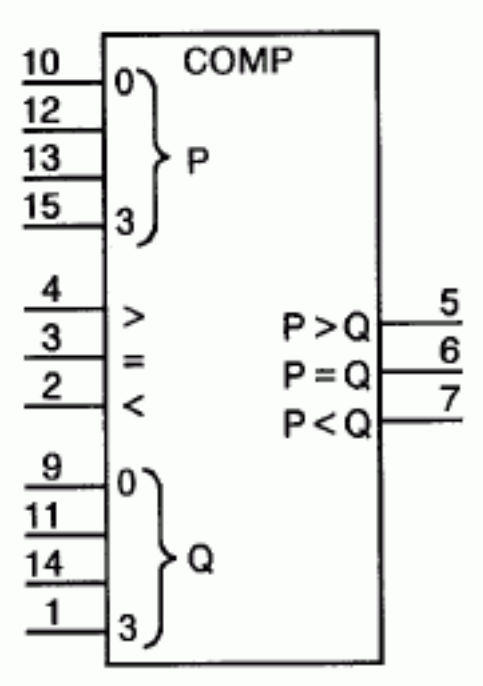
S01651



Name:	Magnitude comparator with cascading inputs, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-08
Keywords:	binary logic elements, comparators
Applies:	S01516; S01520; S01521; S01522; S01523; S01524; S01525; S01640
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 7485

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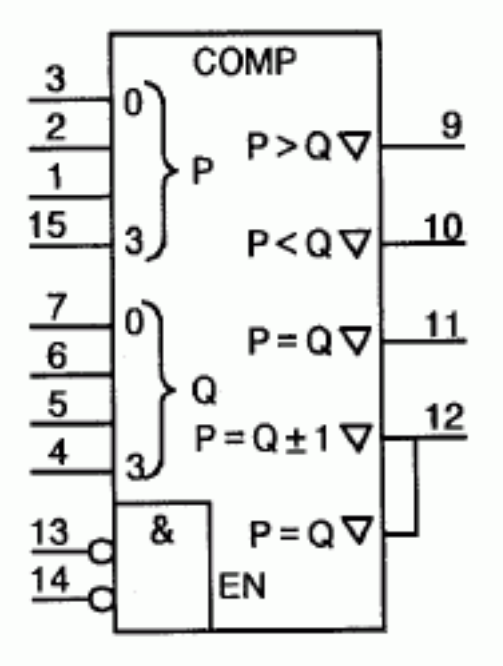
S01652



Name:	Magnitude comparator with 3-state outputs, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-09
Keywords:	binary logic elements, comparators
Applies:	S01466; S01498; S01503; S01516; S01523; S01524; S01525; S01567; S01640
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	(e.g. DM 76L24)

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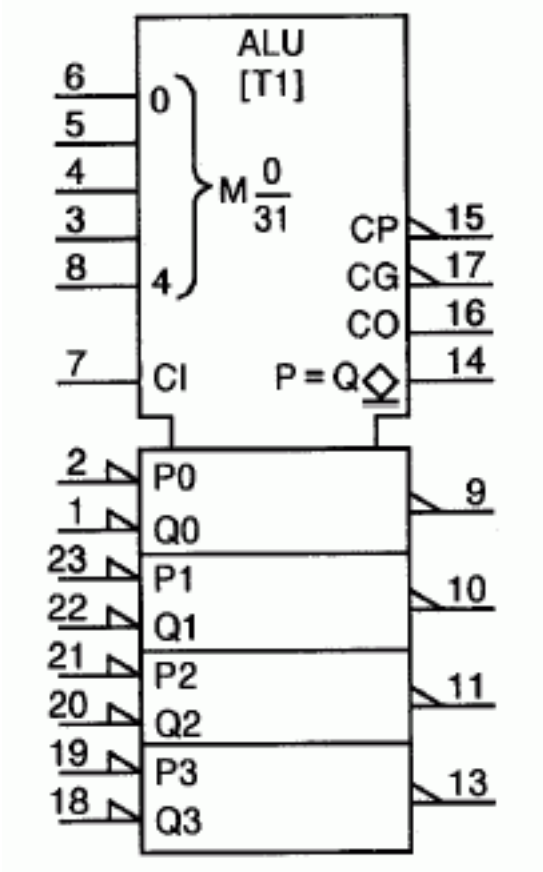
S01653



Name:	Arithmetic logic unit, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-10
Keywords:	arithmetic elements, binary logic elements
Applies:	S01464; S01468; S01495; S01516; S01532; S01534; S01535; S01537; S01552; S01641
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams

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Remarks: E.g. SN 74181

[T1] refers to supplementary documentation detailing the element's function in various modes.

The Ms at the outputs have been omitted in accordance with 21.2 of application note A00285.

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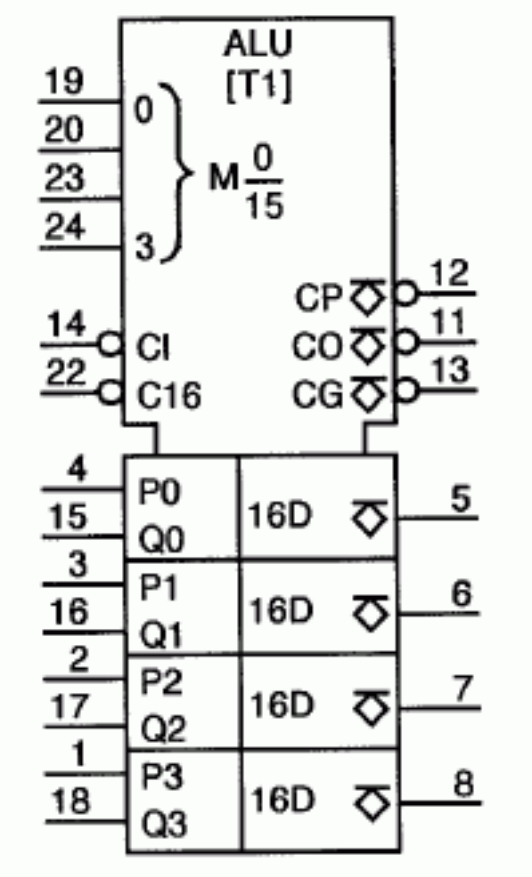
S01654



Name:	Arithmetic logic unit with output latches, 4-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-39-11
Keywords:	arithmetic elements, binary logic elements
Applies:	S01464; S01466; S01467; S01494; S01516; S01532; S01534; S01535; S01552; S01558; S01641
Application notes:	A00285
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information

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Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. F 100181
	[T1] refers to supplementary documentation detailing the element's function in various modes.
	The Ms at the outputs have been omitted in accordance with 21.2 of application note A00285.

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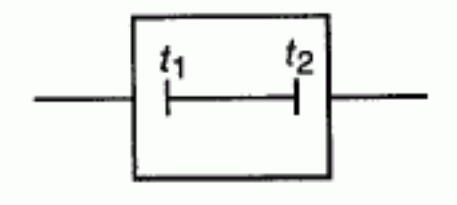
S01655



Name:	Delay element with specified delay times
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-40-01
Keywords:	binary logic elements, delay elements, delayed operation
Applied in:	S01657, S01656, S01658
Applies:	S00059; S00124
Application notes:	A00303
Shape class:	Characters, Lines
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	A transition from the internal 0-state to the internal 1-state at the output occurs after a delay of t1 with reference to the same transition at the input. The transition from the internal 1-state to the internal 0-state at the output occurs after a delay of t2 with reference to the same transition at the input. t1 and t2 may be replaced by the actual delays, expressed in seconds, word units or digit units, and may be placed inside or outside the outline. If the two delays are equal, it is sufficient to insert one value only.

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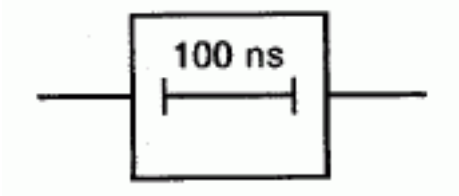
S01656



Name:	Delay element (100 ns)
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-40-02
Keywords:	binary logic elements, delay element, delayed operation
Applies:	S01655
Application notes:	A00303
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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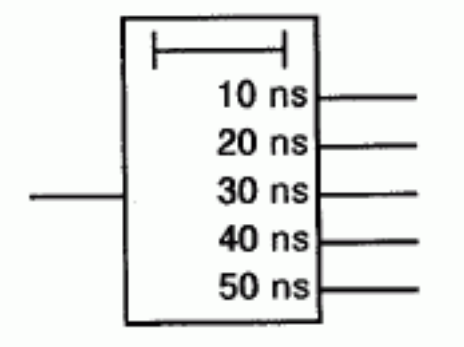
S01657



Name:	Tapped delay element (in steps of 10 ns)
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-40-03
Keywords:	binary logic elements, delay elements, delayed operation
Applies:	S01655
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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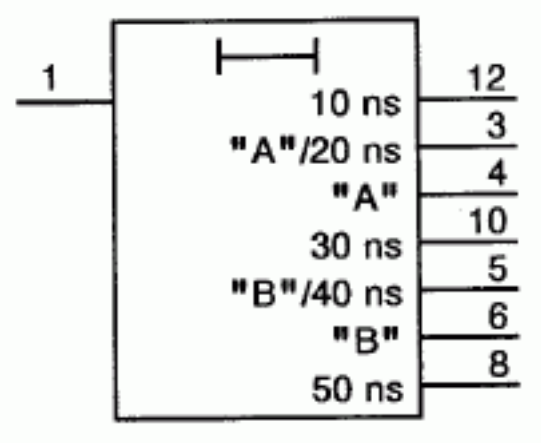
S01658



Name:	Delay line, 5 taps
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-40-04
Keywords:	binary logic elements, delay elements, delayed operation
Applies:	S01545; S01655
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. composite representation of BEL FUSE S423-0050-02, and Fil-Mag 77Z14A050. This symbol is a composite representation of two devices that have identical functions but different terminal assignments. On the printed circuit board, the different "pinning" is accommodated by a common footprint with some pads connected together. To illustrate this, symbol S01545 is used. The terminal designations shown are those of the common footprint.

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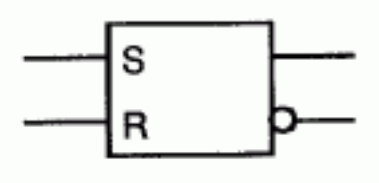
S01659



Name:	RS-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-01
Alternative names:	RS-latch
Keywords:	binary logic elements, bistable elements
Applied in:	S01671, S01673, S01672
Applies:	S01463; S01467; S01507; S01508
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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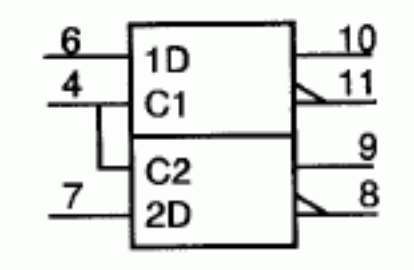
S01660



Name:	D-latch, dual
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-02
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01469; S01504; S01558
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 7475.

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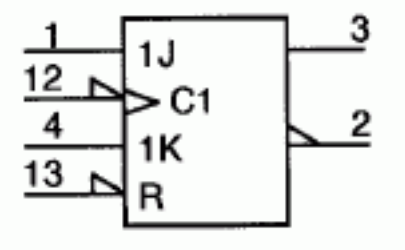
S01661



Name:	Edge-triggered JK-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-03
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01469; S01472; S01505; S01506; S01507; S01558
Application notes:	A00304
Shape class:	Characters, Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 74LS107.

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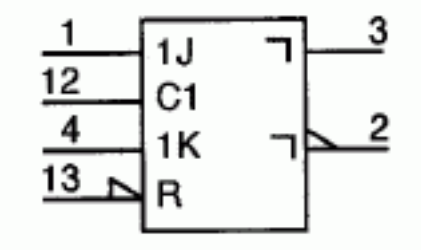
S01662



Name:	Pulse-triggered JK-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-04
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01469; S01491; S01505; S01506; S01507; S01558
Application notes:	A00304
Shape class:	Characters, Lines , Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 74107.

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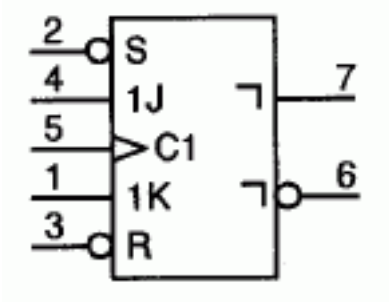
S01663



Name:	Data-lock-out JK-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-05
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01472; S01491; S01505; S01506; S01507; S01508; S01558
Application notes:	A00304
Shape class:	Characters, Equilateral triangles, Rectangles, Right-angled triangle
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 74111.

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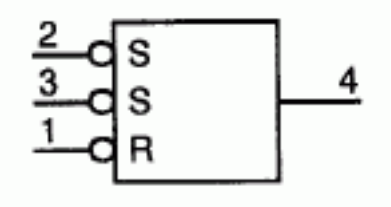

Name:	RS-latch with negated inputs
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-06
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01466; S01507; S01508
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 74279.

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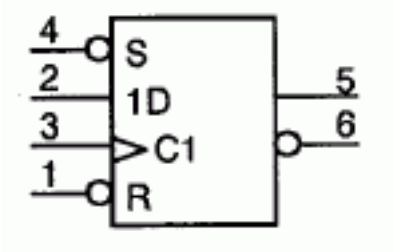
S01665



Name:	Edge-triggered D-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-07
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01466; S01467; S01472; S01507; S01508; S01551
Application notes:	A00304, A00305
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 7474. If the effect of the combination S=R=1 is specified, this effect may be shown using the S- and R-dependency.

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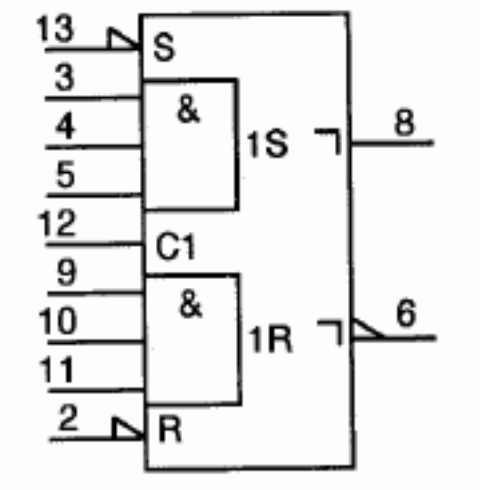
S01666



Name:	Pulse-triggered RS-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-08
Keywords:	binary logic elements, bistable elements
Applies:	S01466; S01468; S01491; S01507; S01508; S01558; S01567
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74L71.

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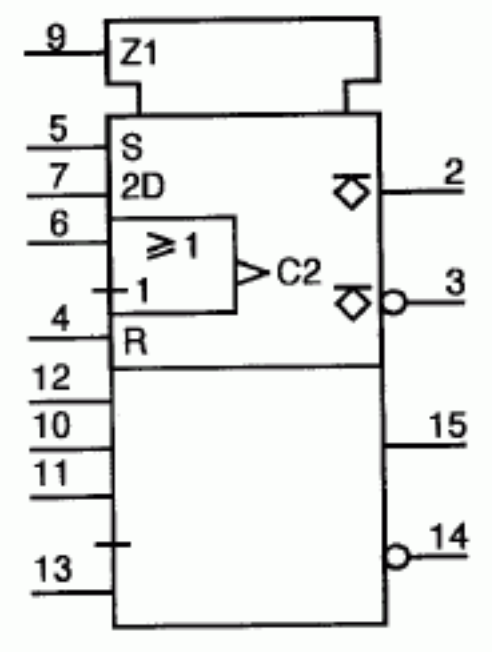
S01667



Name:	Edge-triggered D-bistable, dual
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-09
Keywords:	binary logic elements, bistable elements
Alternative forms:	S01463; S01464; S01467; S01472; S01479; S01494; S01504; S01507; S01508; S01554; S01558; S01566
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. MC 10131.

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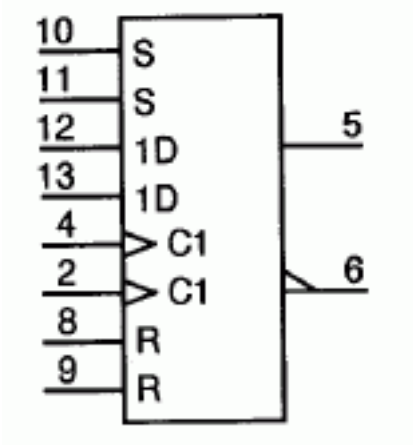
S01668



Name:	Edge-triggered D-bistable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-10
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01469; S01472; S01504; S01508; S01558
Application notes:	A00304
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. MC 1222.

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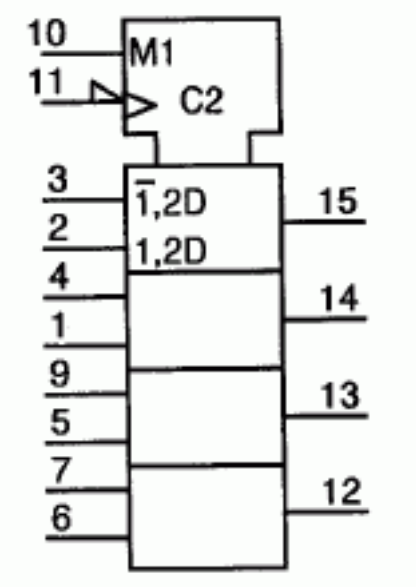
S01669



Name:	Multiplexer with storage, quadruple 2-input
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-11
Keywords:	binary logic elements, bistable elements, multiplexers
Applies:	S01463; S01464; S01466; S01472; S01504; S01558
Application notes:	A00304
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74298. The "M1" at pin 10 may be replaced by "G1".

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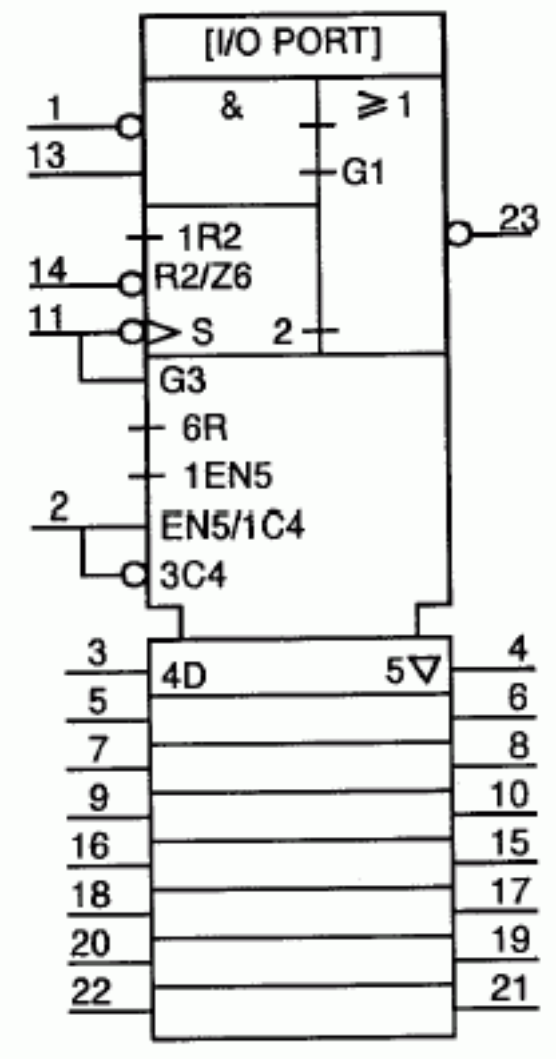
S01670



Name:	Input/output port, 8-bit
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-42-12
Keywords:	binary logic elements, bistable elements
Applies:	S01463; S01464; S01466; S01472; S01475; S01479; S01498; S01504; S01554; S01561; S01562; S01566; S01567
Application notes:	A00304

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Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. 8212.

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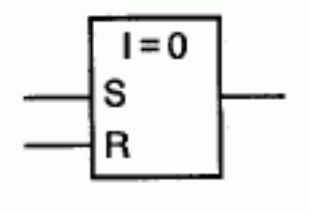
S01671



Name:	RS-bistable with initial 0-state
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-43-01
Keywords:	binary logic elements, bistable elements
Applies:	S01659
Application notes:	A00304, A00306
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	At the moment the supply is switched on, the output will stand at its internal 0-state.

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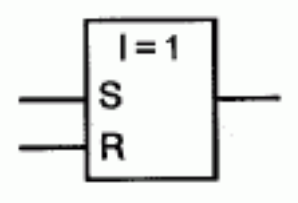
S01672



Name:	RS-bistable with initial 1-state
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-43-02
Keywords:	binary logic elements, bistable elements
Applies:	S01659
Application notes:	A00304, A00306
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	At the moment the supply is switched on, the output will stand at its internal 1-state.

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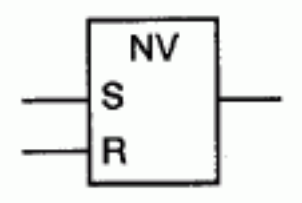
S01673



Name:	RS-bistable, non-volatile
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-43-03
Keywords:	binary logic elements, bistable elements
Applies:	S01659
Application notes:	A00304, A00306
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	At the moment the supply is switched on, the internal logic state of the output will be the same as it was when the supply was switched off.

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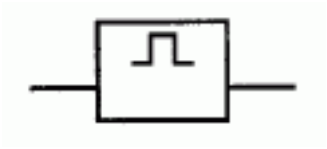
S01674



Name:	Monostable, retriggerable (during the output pulse), general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-44-01
Alternative names:	Single shot, general symbol
Keywords:	binary logic elements, monostables
Applied in:	S01676, S01721, S01806
Applies:	S00132; S01463; S01472
Shape class:	Lines , Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The output changes to or remains at its 1-state each time the input changes to its 1-state. The output returns to its 0-state after a period of time that is characteristic of the particular device, beginning at the last change of the input to its 1-state. The use of the dynamic input symbol (symbol S01472) at the input is optional (for example of use see symbol S01676).

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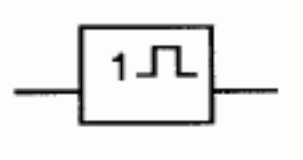
S01675



Name:	Monostable, non-retriggerable (during the output pulse), general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-44-02
Keywords:	binary logic elements, monostables
Applied in:	S01677
Applies:	S00132; S01463; S01472
Shape class:	Characters, Depicting shapes, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	The output changes to its 1-state only when the input changes to its 1-state. The output returns to its 0-state after a period of time that is characteristic of the particular device, regardless of any changes of the input variable during this period. The use of the dynamic input symbol (symbol S01472) at the input is optional (for example of use see symbol S01677).

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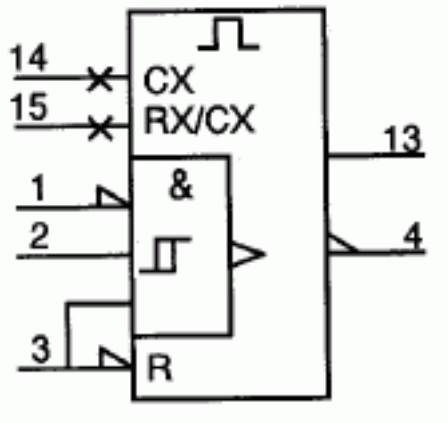
S01676



Name:	Monostable, retriggerable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-45-01
Keywords:	binary logic elements, monostables
Applies:	S01468; S01469; S01472; S01492; S01507; S01546; S01558; S01559; S01567; S01674
Application notes:	A00308
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. part of SN 74LS123. See the application note A00308 for the function table.

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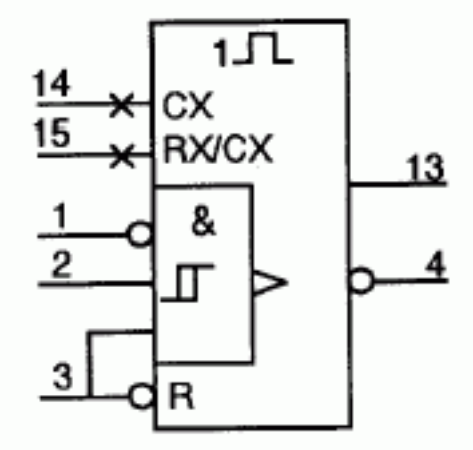
S01677



Name:	Monostable, non-retriggerable
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-45-02
Keywords:	binary logic elements, monostables
Applies:	S01466; S01467; S01472; S01507; S01546; S01558; S01559; S01675
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. part of SN 74221.

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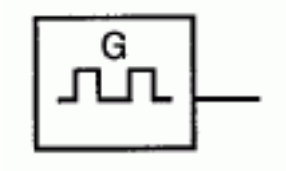
S01678



Name:	Astable element, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-46-01
Alternative names:	Signal generator producing an alternating sequence of zeros and ones.
Keywords:	binary logic elements, signal generators
Applied in:	S01679, S01683, S01734, S01742
Applies:	S01225; S01463
Shape class:	Characters, Lines , Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	In this symbol, the letter G is the qualifying symbol for a generator. If the waveform is evident, this symbol may be shown without the associated symbol.

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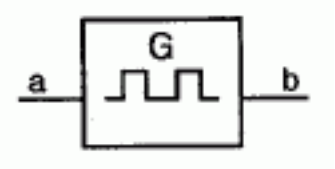
S01679



Name:	Controlled astable element, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-46-02
Keywords:	astable elements, binary logic elements
Applied in:	S01682, S01681
Applies:	S01678
Application notes:	A00309
Shape class:	Characters, Depicting shapes, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Overview diagrams
Remarks:	In this symbol, the letter G is the qualifying symbol for a generator. If the waveform is evident, this symbol may be shown without the associated symbol.

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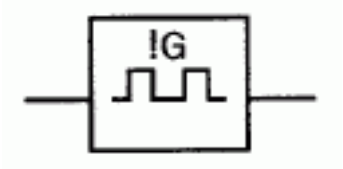
S01680



Name:	Astable element, synchronously starting, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-46-03
Keywords:	astable elements, binary logic elements
Applied in:	S01684
Shape class:	Characters, Depicting shapes, Squares
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Overview diagrams
Remarks:	The output starts with a complete pulse at the instant at which the input takes on its internal 1-state. In this symbol, the letter G is the qualifying symbol for a generator. If the waveform is evident, this symbol may be shown without the associated symbol.

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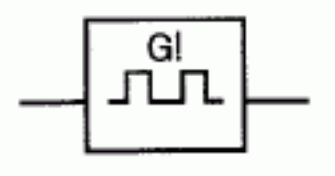
S01681



Name:	Astable element stopping after completing the last pulse, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-46-04
Keywords:	astable elements, binary logic elements
Applies:	S01679
Application notes:	A00345
Shape class:	Characters, Depicting shapes, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	When the input returns to its internal 0-state, the output remains at its internal 0-state or completes its final pulse. In this symbol, the letter G is the qualifying symbol for a generator. If the waveform is evident, this symbol may be shown without the associated symbol.

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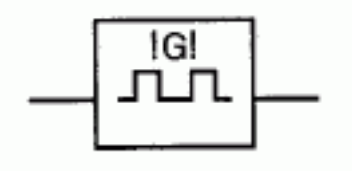
S01682



Name:	Astable element, synchronously starting, stopping after completing the last pulse, general symbol
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-46-05
Keywords:	astable elements, binary logic elements
Applies:	S01679
Application notes:	A00346
Shape class:	Characters, Depicting shapes, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	In this symbol, the letter G is the qualifying symbol for a generator. If the waveform is evident, this symbol may be shown without the associated symbol.

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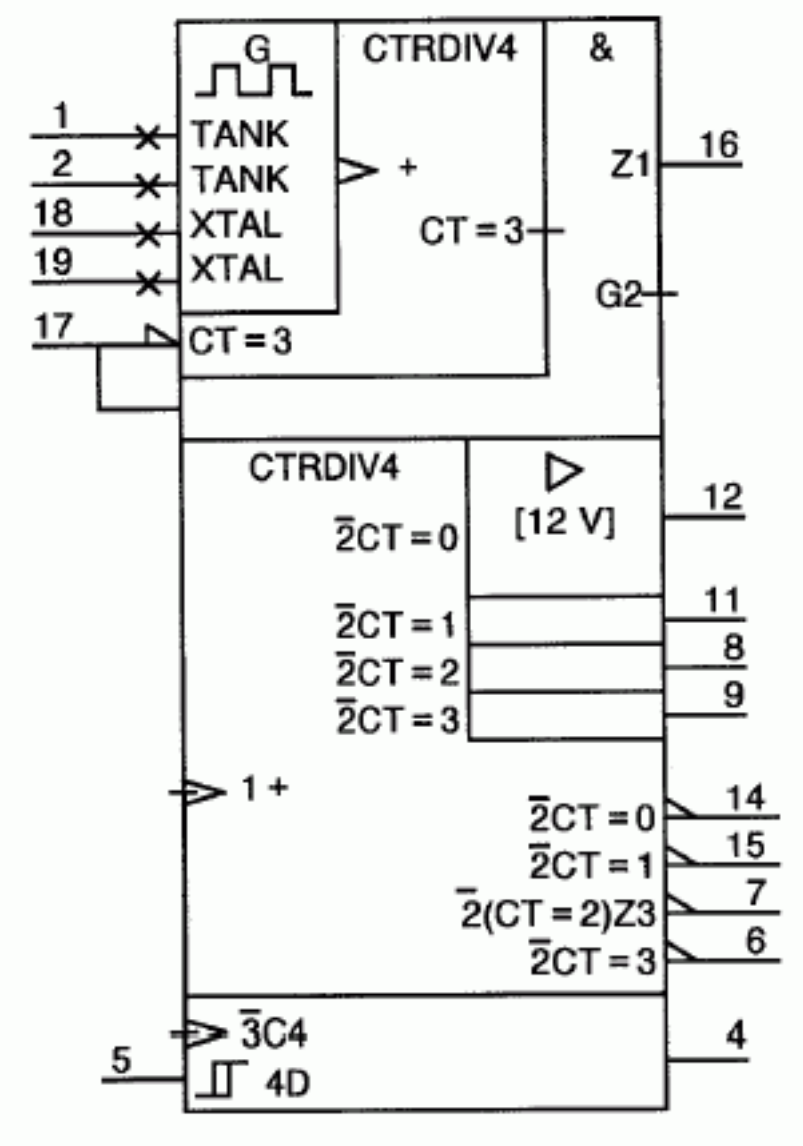
S01683



Name:	Clock generator/driver, four-phase
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-47-01
Keywords:	astable elements, binary logic elements, clock generators
Applies:	S01240; S01468; S01469; S01472; S01475; S01483; S01492; S01546; S01555; S01567; S01678; S01687; S01811

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Shape class:	Characters, Depicting shapes, Equilateral triangles, Rectangles, Right-angled triangle
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TIM 9904, formerly SN 74LS362.
	For the use of CTRDIV4, see symbol S01687.
	Symbol S01737 depicts the same device using the rules for complex-function elements.

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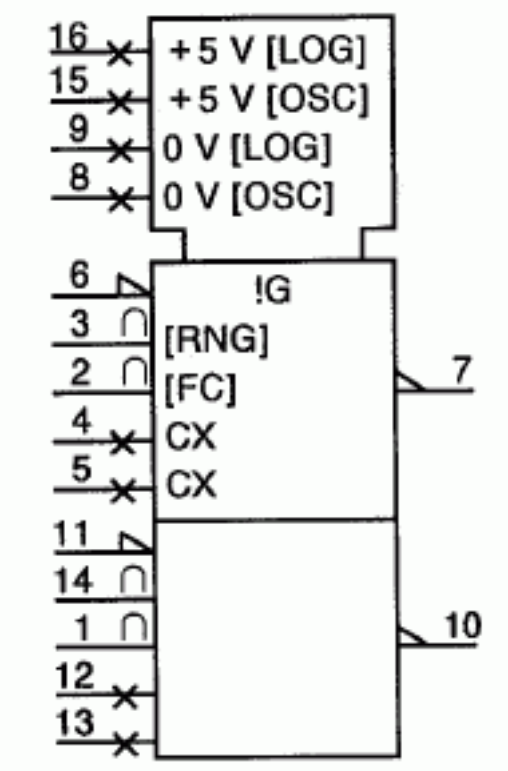
S01684



Name:	Voltage-controlled oscillator, dual
Status level:	Standard
Released on:	2004-09-02
Earlier published in:	IEC 60617-12 (ed.3.0) 12-47-02
Keywords:	astable elements, binary logic elements, oscillators
Applies:	S00216; S01464; S01468; S01472; S01546; S01680
Shape class:	Characters, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. SN 74S124.

This symbol illustrates a method of showing supply terminals common to an array of elements.

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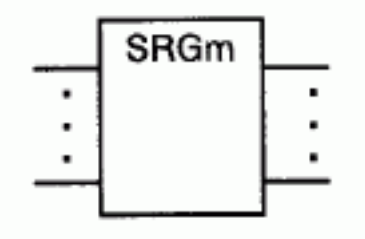
S01685



Name:	Shift register, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-48-01
Keywords:	binary logic elements, registers
Applied in:	S01690, S01692, S01691, S01689, S01688, S01695, S01694
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The m shall be replaced by the number of stages.

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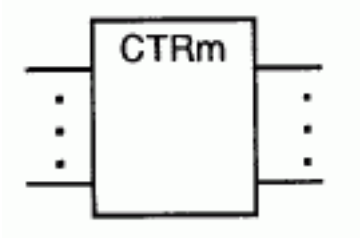
S01686



Name:	Counter with cycle length 2 to the power m, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-48-02
Alternative names:	Counter modulo 2 to the power m, general symbol
Keywords:	binary logic elements, counters
Applied in:	S01702, S01703, S01704, S01697, S01696, S01720, S01719
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	m shall be replaced by the actual value. In order to distinguish ripple counters, the prefix R may be added to the general qualifying symbol; for example: RCTRm.

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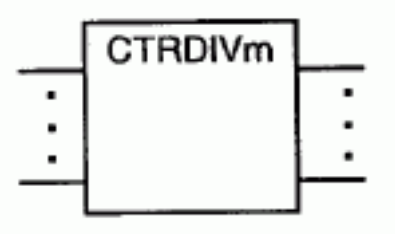
S01687



Name:	Counter with cycle length m, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-48-03
Alternative names:	Counter modulo m, general symbol
Keywords:	binary logic elements, counters
Applied in:	S01699, S01700, S01701, S01705, S01683, S01698
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	m shall be replaced by the actual value. In order to distinguish ripple counters, the prefix R may be added to the general qualifying symbol; for example: RCTRm. In an array of elements having different cycle lengths, that applying to each should be indicated by DIVm in each element. In such a case, the letters CTR need only be shown in the common control block (for example of application, see symbol S01699).

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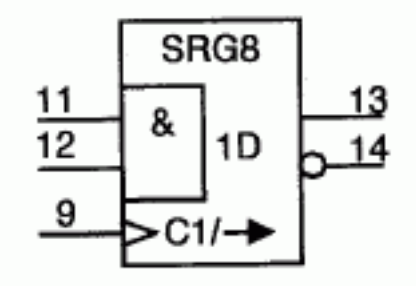
S01688



Name:	Shift register, 8-bit, with serial input and complementary serial outputs
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-01
Keywords:	binary logic elements, registers
Applies:	S01467; S01472; S01558; S01567; S01685
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 7491.

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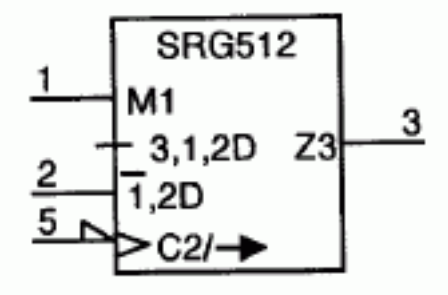
S01689



Name:	Shift register, 512-bit, static
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-02
Keywords:	binary logic elements, registers
Applies:	S01474; S01479; S01555; S01558; S01563; S01685
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. MM 4057.

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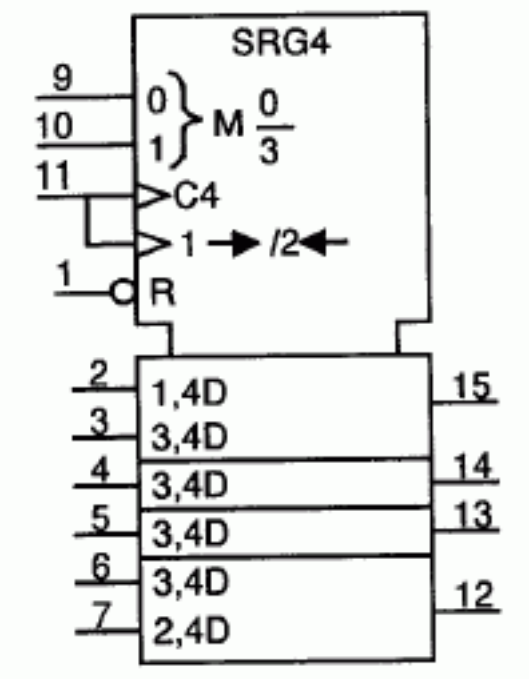
S01690



Name:	Shift register, 4-bit, bidirectional
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-03
Keywords:	binary logic elements, registers
Applies:	S01464; S01466; S01472; S01558; S01561; S01563; S01685
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74LS194.

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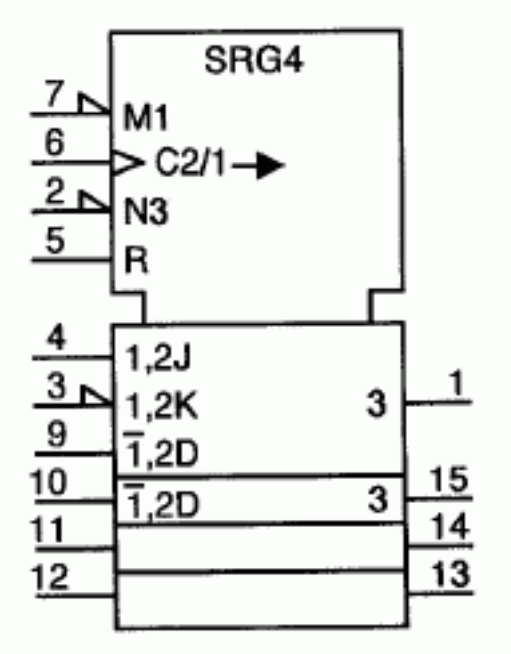
S01691



Name:	Shift register, 4-bit, parallel in/parallel out
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-04
Keywords:	binary logic elements, registers
Applies:	S01464; S01472; S01474; S01561; S01685
Application notes:	A00312
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. CD 4035A.

The use of the bar can be avoided as shown in A00312.

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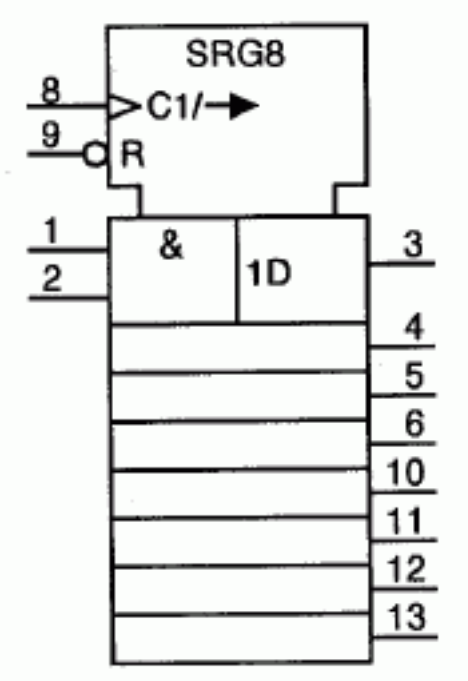
S01692



Name:	Shift register, 8-bit, with parallel outputs
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-05
Keywords:	binary logic elements, registers
Applies:	S01464; S01472; S01558; S01561; S01567; S01685
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74164.

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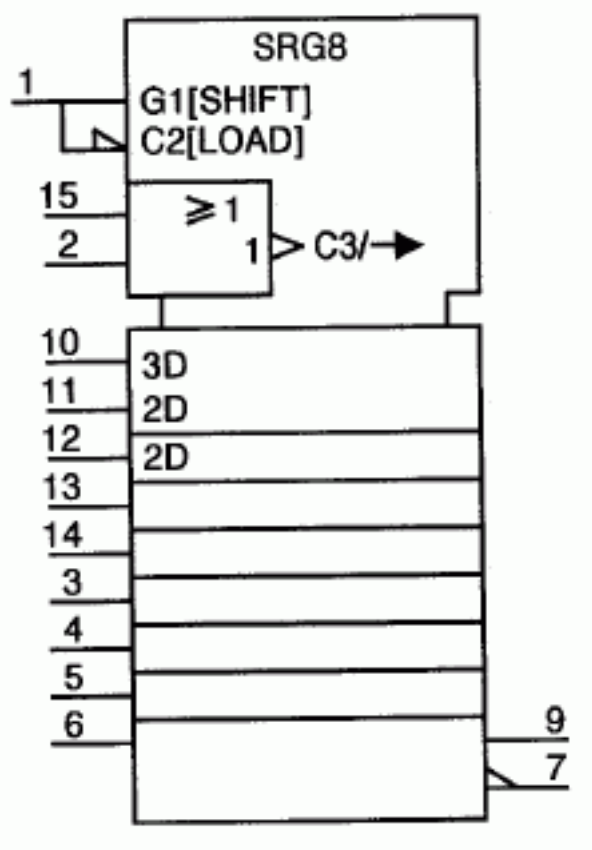
S01693



Name:	Shift register with parallel load, 8-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-06
Keywords:	binary logic elements, registers
Applies:	S01464; S01474; S01558; S01567; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. SN 74165.

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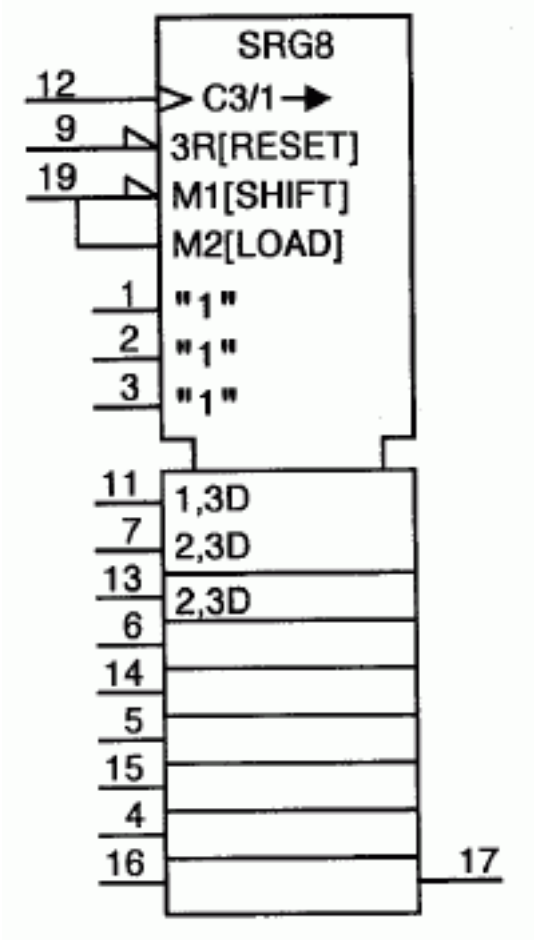
S01694



Name:	Register, universal shift/storage, 8-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-07
Keywords:	binary logic elements, registers
Form:	Form 1
Alternative forms:	S01695
Applies:	S01464; S01472; S01474; S01542; S01558; S01561; S01685

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Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74LS323, for which only the reset, shift and parallel-load modes are shown. This symbol illustrates how an incompletely utilized device may be represented by a symbol suited to the application. For this purpose use is made of the fixed-mode input, symbol S01542. Symbol S01695 depicts the same device performing another function.

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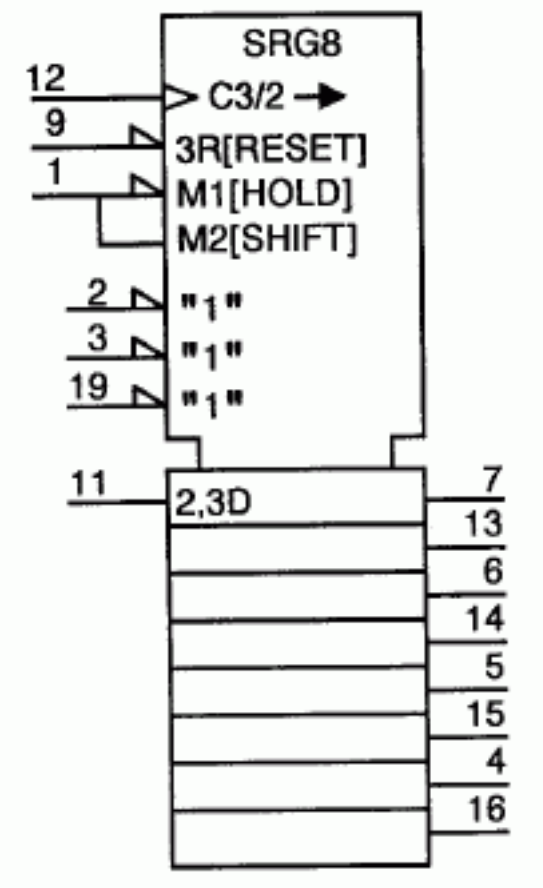
S01695



Name:	Register, universal shift/storage, 8-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-08
Keywords:	binary logic elements, registers
Form:	Form 2
Alternative forms:	S01694
Applies:	S01474; S01542; S01558; S01561; S01563; S01685
Shape class:	Characters, Rectangles

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Function class: K Processing signals or information

Application class: Circuit diagrams, Function diagrams

Remarks: E.g. SN 74LS323 for which only the reset, hold and shift modes are shown.

This symbol illustrates how an incompletely utilized device may be represented by a symbol suited to the application. For this purpose use is made of the fixed-mode input, symbol S01542.

Symbol S01694 depicts the same device performing another function.

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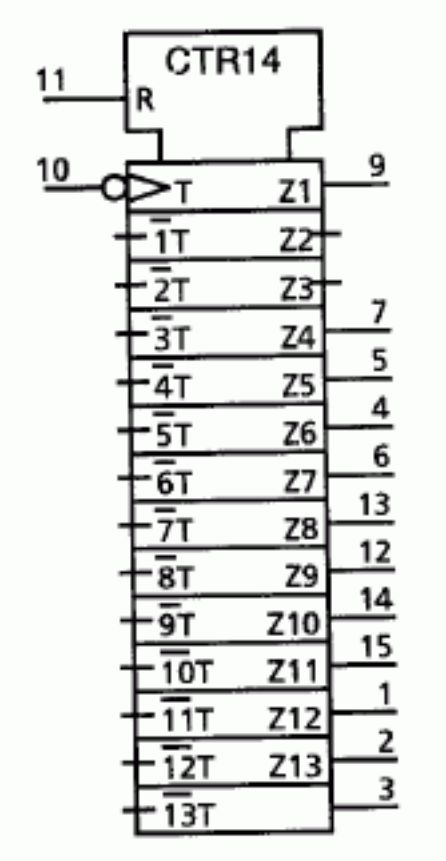
S01696



Name:	Binary ripple counter, 14-stage
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-09
Keywords:	binary logic elements, counters
Form:	Form 1
Applies:	S01464; S01473; S01479; S01480; S01555; S01561; S01686
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information

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Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. CD 4020.
	If it is not necessary to indicate the ripple effect, symbol S01697 may be used. As a simplified way of indicating the ripple effect, symbol S01697 may be used with the addition of the prefix R to the general qualifying symbol.

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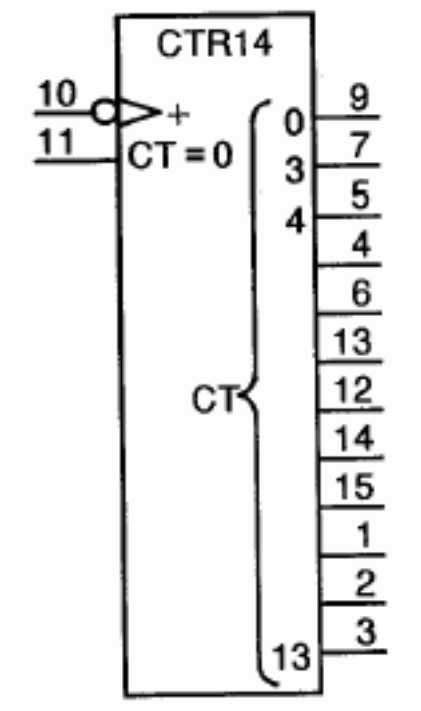
S01697



Name:	Binary counter, 14-stage
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-10
Keywords:	binary logic elements, counters
Form:	Form 2
Applies:	S01473; S01517; S01686
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. CD 4020.

If it is necessary to indicate the ripple effect, the prefix R shall be added to the general qualifying symbol, for example RCTR14, or symbol S01696 shall be used.

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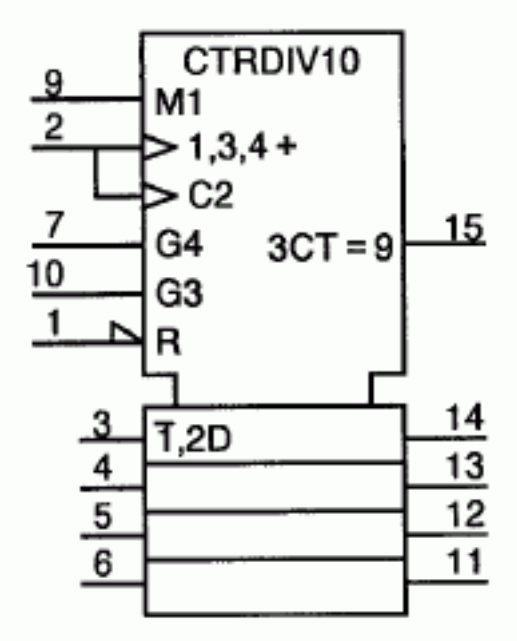
S01698



Name:	Counter, synchronous, decade, with parallel load
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-11
Keywords:	binary logic elements, counters
Applies:	S01464; S01468; S01472; S01558; S01561; S01563; S01687; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74LS160.

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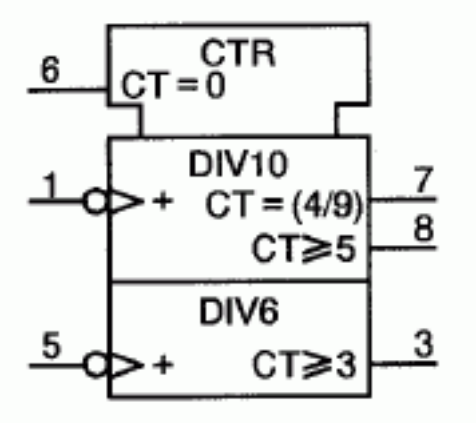
S01699



Name:	Counters, one dividing by 5 and 10 and the other by 6
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-12
Keywords:	binary logic elements, counters
Applies:	S01464; S01474; S01539; S01687; S01770; S01772
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74LS57.

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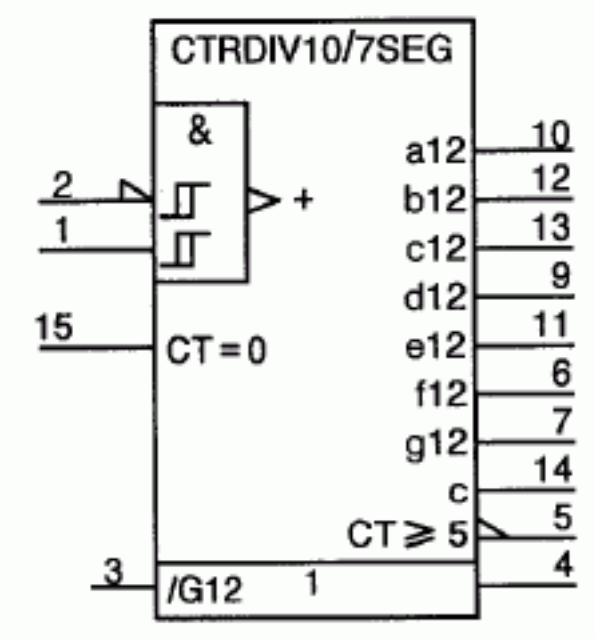
S01700



Name:	Decade counter/divider with decoded 7-segment-display outputs
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-13
Keywords:	binary logic elements, counters, dividers
Applies:	S01474; S01483; S01492; S01567; S01687; S01770; S01810
Application notes:	A00347
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. CD 4026. For the segment identification, see A00347.

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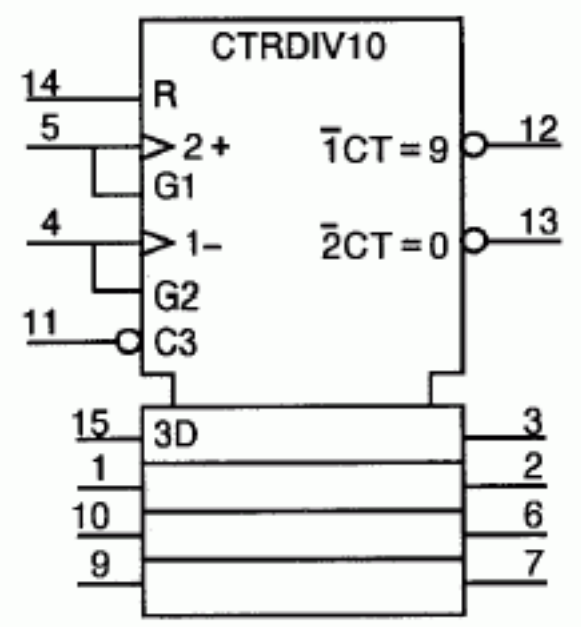
S01701



Name:	Counter, decade, synchronous up/down
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-14
Keywords:	binary logic elements, counters
Applies:	S01464; S01472; S01558; S01561; S01687; S01772; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74192.

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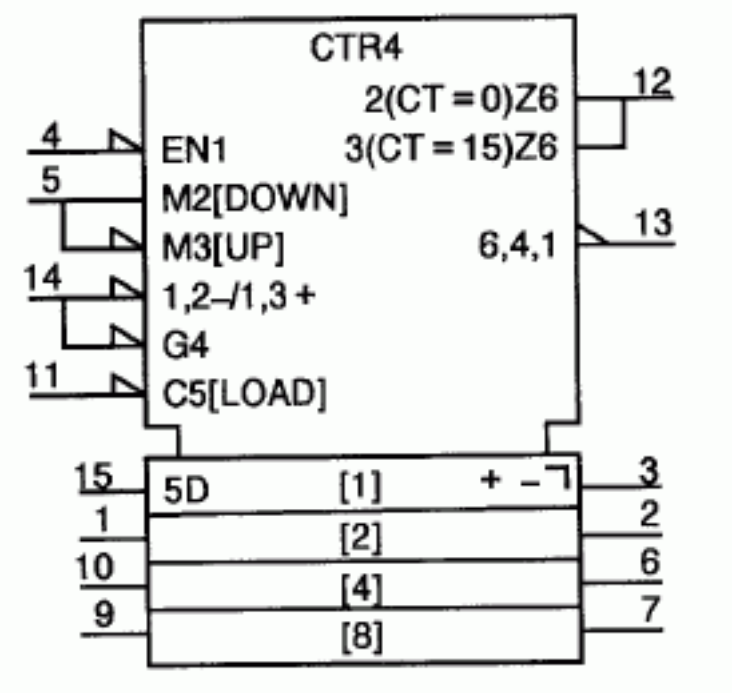
S01702



Name:	Binary counter, 4-bit, synchronous up/down
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-15
Keywords:	binary logic elements, counters
Applies:	S01474; S01475; S01491; S01558; S01562; S01563; S01686; S01810
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	Shown with supplementary clarifying information in the array. E.g. SN 74191.

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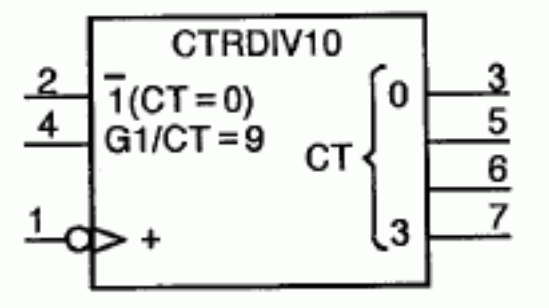
S01703



Name:	Counter, decade
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-16
Keywords:	binary logic elements, counters
Applies:	S01473; S01518; S01538; S01686; S01810
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of SN 74490.

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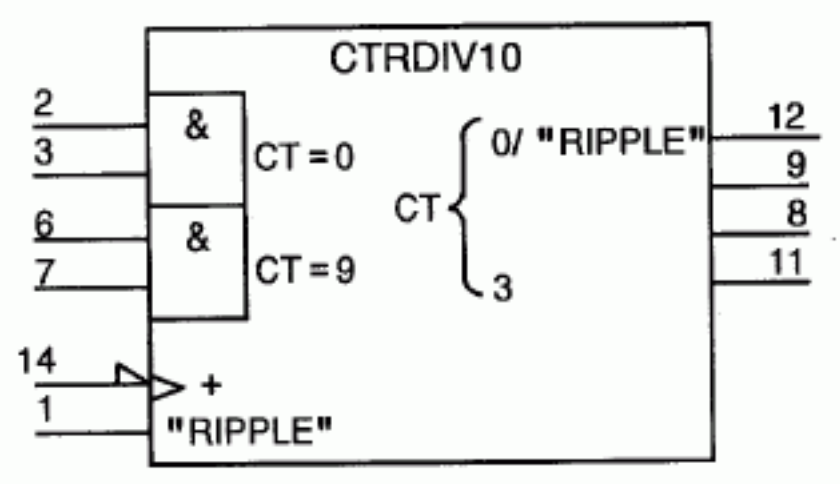
S01704



Name:	Counter, decade
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-17
Keywords:	binary logic elements, counters
Applies:	S01474; S01476; S01518; S01545; S01567; S01686
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 7490.

This symbol illustrates how a device may be represented by a symbol suited to the application. Symbol S01545 is used here to indicate that the symbol is a valid representation only if an external connection is made between terminals 1 and 12.

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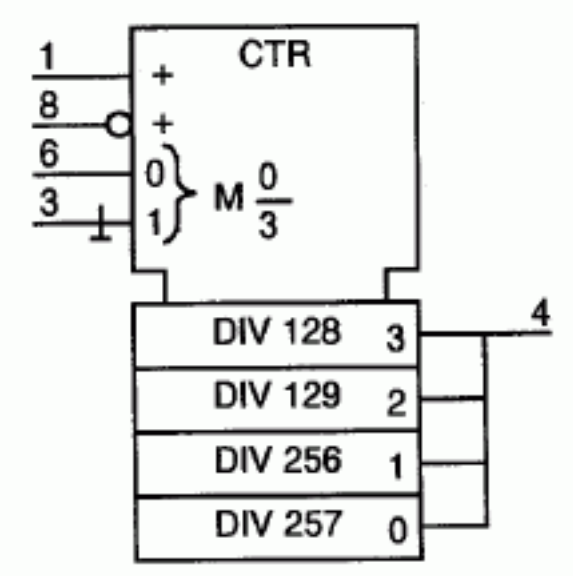
S01705



Name:	Prescaler with four scaling factors
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-49-18
Keywords:	binary logic elements, registers
Applies:	S01466; S01548; S01563; S01687
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. MB507.

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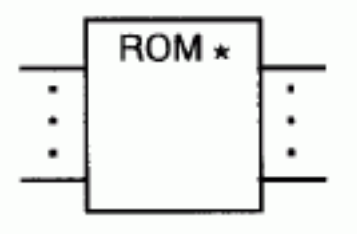
S01706



Name:	Read-only memory, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-50-01
Keywords:	binary logic elements, memories
Applied in:	S01712, S01711
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced by an appropriate indication of the number of addresses and bits. In such indications 1k stands for 1024 (= 1 Ki) and 1M for 1 048 576 (=1 Mi). That is k (Ki) and M (Mi) may be used as multiplication factors.

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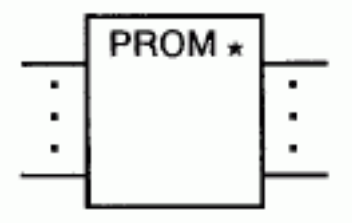
S01707



Name:	Programmable read-only memory, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-50-02
Keywords:	binary logic elements, memories
Applied in:	S01715, S01713
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced by an appropriate indication of the number of addresses and bits. In such indications 1k stands for 1024 (= 1 Ki) and 1M for 1 048 576 (=1 Mi). That is k (Ki) and M (Mi) may be used as multiplication factors.

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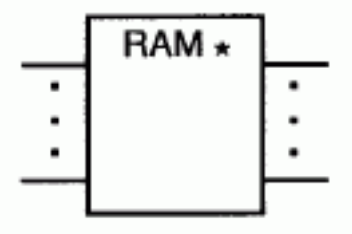
S01708



Name:	Random-access memory, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-50-03
Alternative names:	Read/write memory, general symbol
Keywords:	binary logic elements, memories
Applied in:	S01717, S01718, S01716, S01722
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced by an appropriate indication of the number of addresses and bits. In such indications 1k stands for 1024 (= 1 Ki) and 1M for 1 048 576 (=1 Mi). That is k (Ki) and M (Mi) may be used as multiplication factors.

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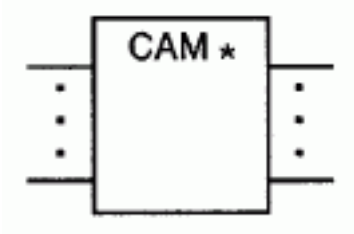
S01709



Name:	Content-addressable memory, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-50-04
Alternative names:	Associative memory, general symbol
Keywords:	binary logic elements, memories
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced by an appropriate indication of the number of addresses and bits. In such indications 1k stands for 1024 (= 1 Ki) and 1M for 1 048 576 (=1 Mi). That is k (Ki) and M (Mi) may be used as multiplication factors.

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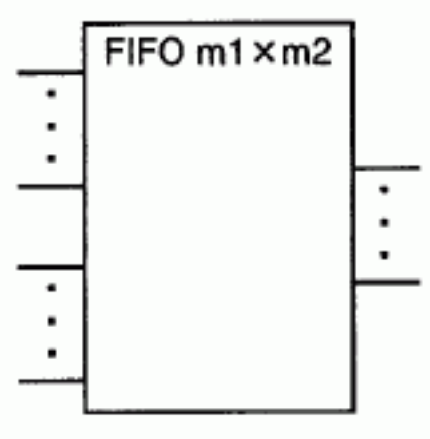
S01710



Name:	First-in first-out memory, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-50-05
Keywords:	binary logic elements, memories
Applied in:	S01720, S01719, S01721
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	C Storing, K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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Remarks:

The general qualifying symbol signifies that, as in all memory elements, each associated element represents a single general case of the sections of a multi-dimensional array, although ADDRESS dependency is usually not used in symbols for first-in first-out memories.

The internal logic states of the m2 data outputs correspond to the values of the bits of the word first entered of those words presently stored. As each word is clocked out, subsequently stored words become available at the outputs in the order in which they were entered. If no words are presently stored, the internal logic states of the data outputs are not specified by the general qualifying symbol.

m1 shall be replaced by the maximum number of words that can be stored. m2 shall be replaced by the number of data outputs.

This symbol will normally require a counter to be shown as an embedded symbol, although this may not necessarily represent the actual implementation. The content of the counter represents the number of words presently stored, that is, the number of words that have been clocked in less the number of words that have been clocked out. The indication of the cycle length of the counter is omitted from the CTR qualifying symbol because, by definition, the counter cannot be incremented beyond m1 to start a new cycle.

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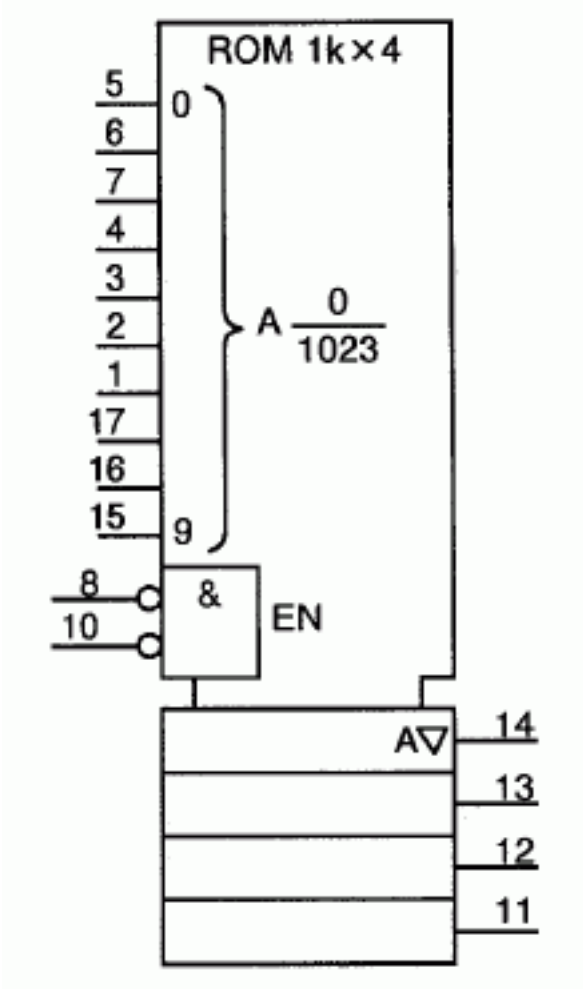
S01711



Name:	Read-only memory (ROM) 1024x4-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-01
Keywords:	binary logic elements, memories
Alternative forms:	S01712
Applies:	S01464; S01466; S01498; S01516; S01565; S01567; S01706
Shape class:	Characters

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Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. INTEL 3625.

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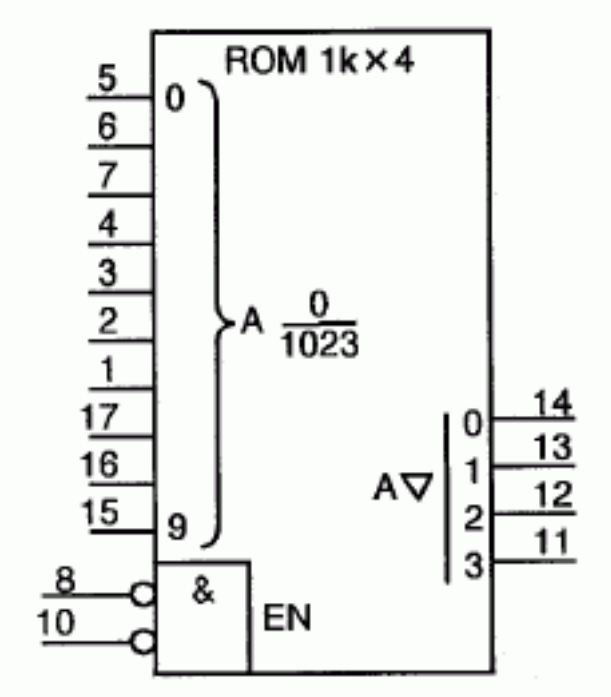
S01712



Name:	Read-only memory (ROM) 1024x4-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-02
Keywords:	binary logic elements, memories
Form:	Simplified form
Alternative forms:	S01711
Applies:	S01466; S01468; S01498; S01516; S01518; S01565; S01706
Shape class:	Characters
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. INTEL 3625.

Because no confusion is likely concerning the correspondence between data inputs and data outputs and because each section has only one output, it is not necessary to show the array.

Simplification of the output labeling is achieved by the use of label grouping; see symbol S01518. The relative order of the individual outputs is identified by the numbers adjacent to the connecting lines grouped by the label grouping. In this simplified form, the square brackets around these numbers have been omitted.

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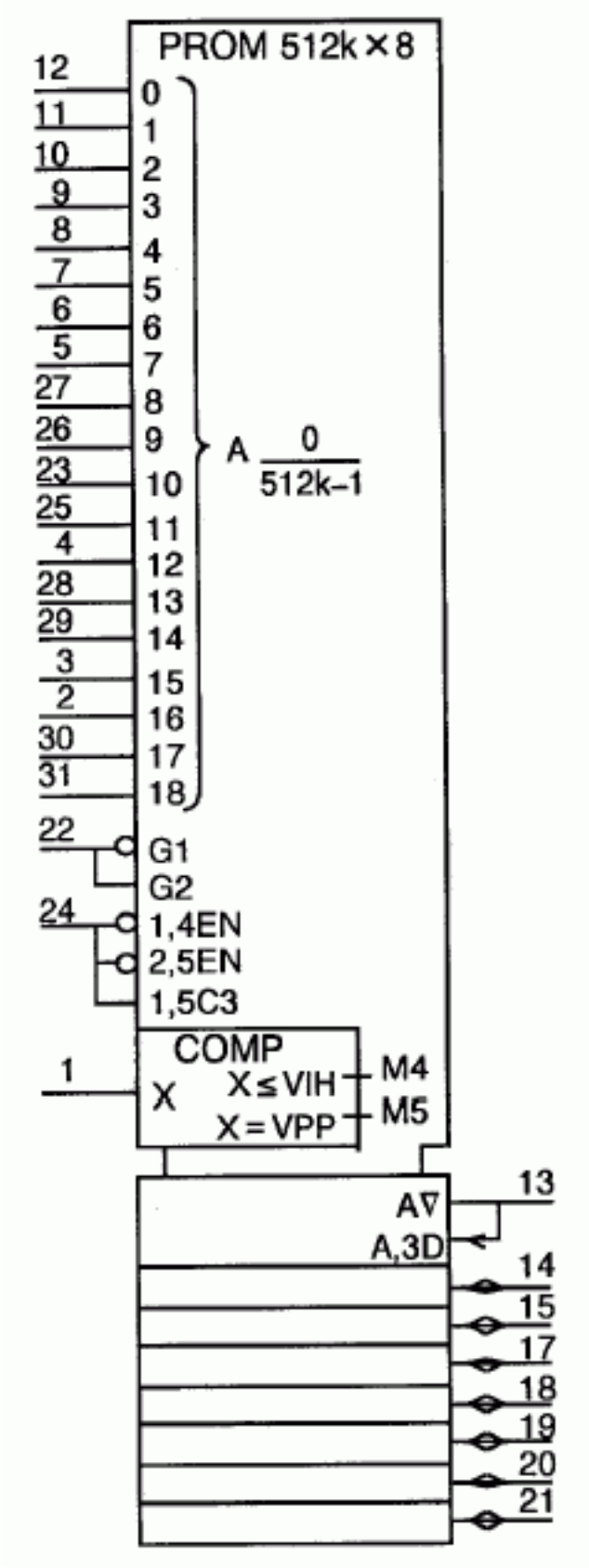
S01713



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Name:	Programmable read-only memory (PROM), 512kx8-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-03
Keywords:	binary logic elements, memories
Alternative forms:	S01714
Applies:	S00099; S00101; S01464; S01468; S01475; S01498; S01516; S01558; S01563; S01565; S01707; S01800; S01801
Shape class:	Characters
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	Shown with READ and WRITE function. E.g. M27C4001.

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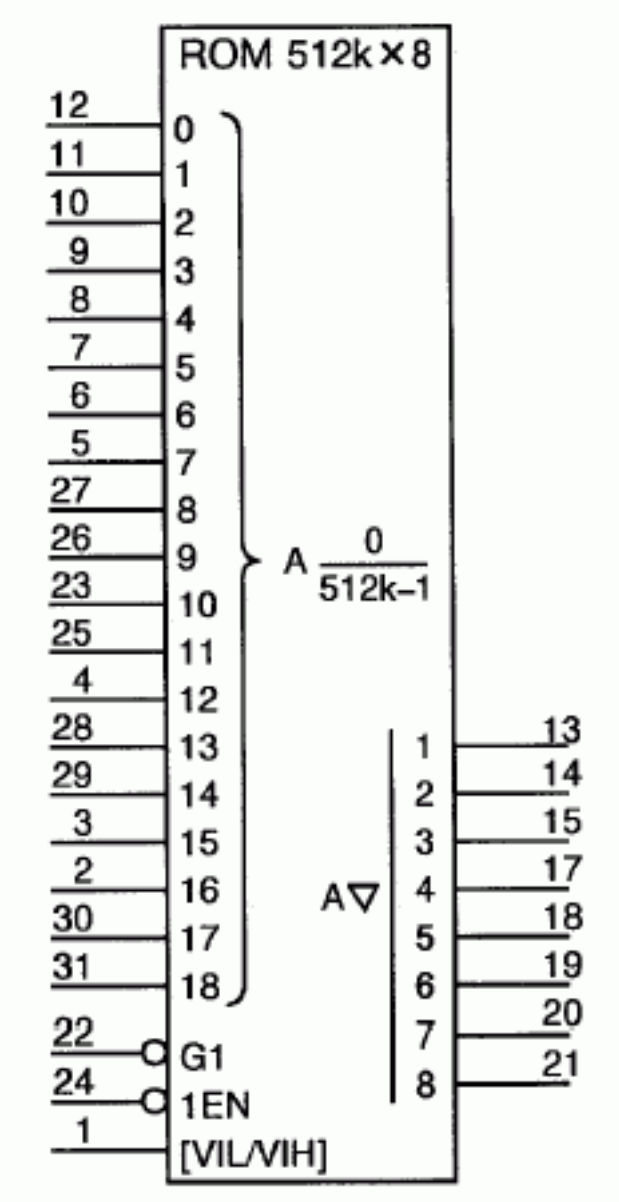
S01714



Name:	Programmable read-only memory (PROM), 512kx8-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-04
Keywords:	binary logic elements, memories

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Form:	Simplified form
Alternative forms:	S01713
Applies:	S01466; S01498; S01503; S01516; S01518; S01565; S01810
Shape class:	Characters
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	The simplified form only shows the READ function. E.g. M27C4001. Because no confusion is likely concerning the correspondence between data inputs and data outputs and because each section has only one output, it is not necessary to show the array. Simplification of the output labeling is achieved by the use of label grouping; see symbol S01518. The relative order of the individual outputs is identified by the numbers adjacent to the connecting lines grouped by the label grouping. In this simplified form, the square brackets around these numbers have been omitted.

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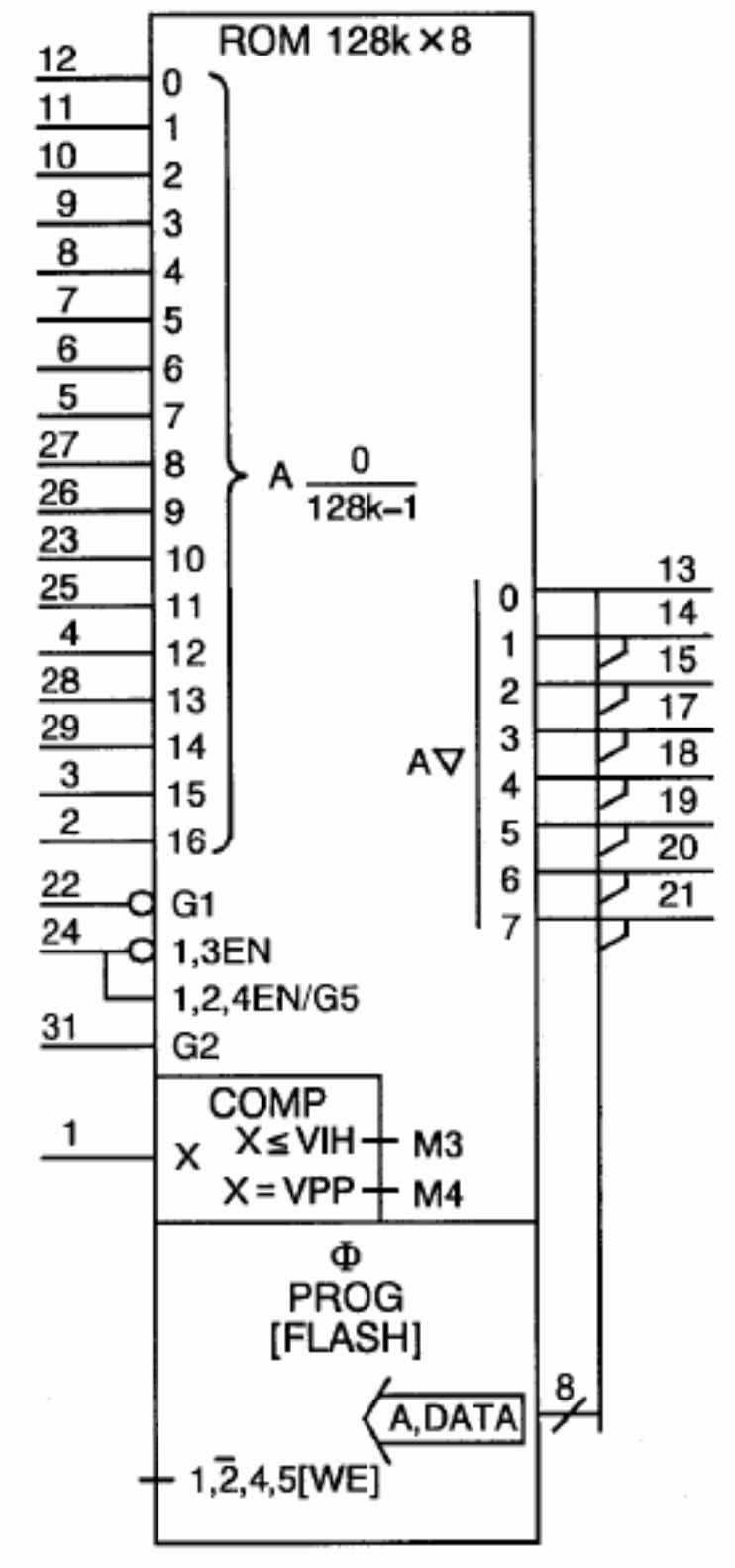
S01715



Name: Programmable read-only memory, electrically alterable, 128kx8-bit

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Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-04A
Alternative names:	Flash memory, 128kx8-bit
Keywords:	binary logic elements, memories
Applies:	S01466; S01468; S01475; S01479; S01498; S01516; S01518; S01565; S01707; S01731; S01732; S01800; S01810
Shape class:	Characters
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. AM28F010.

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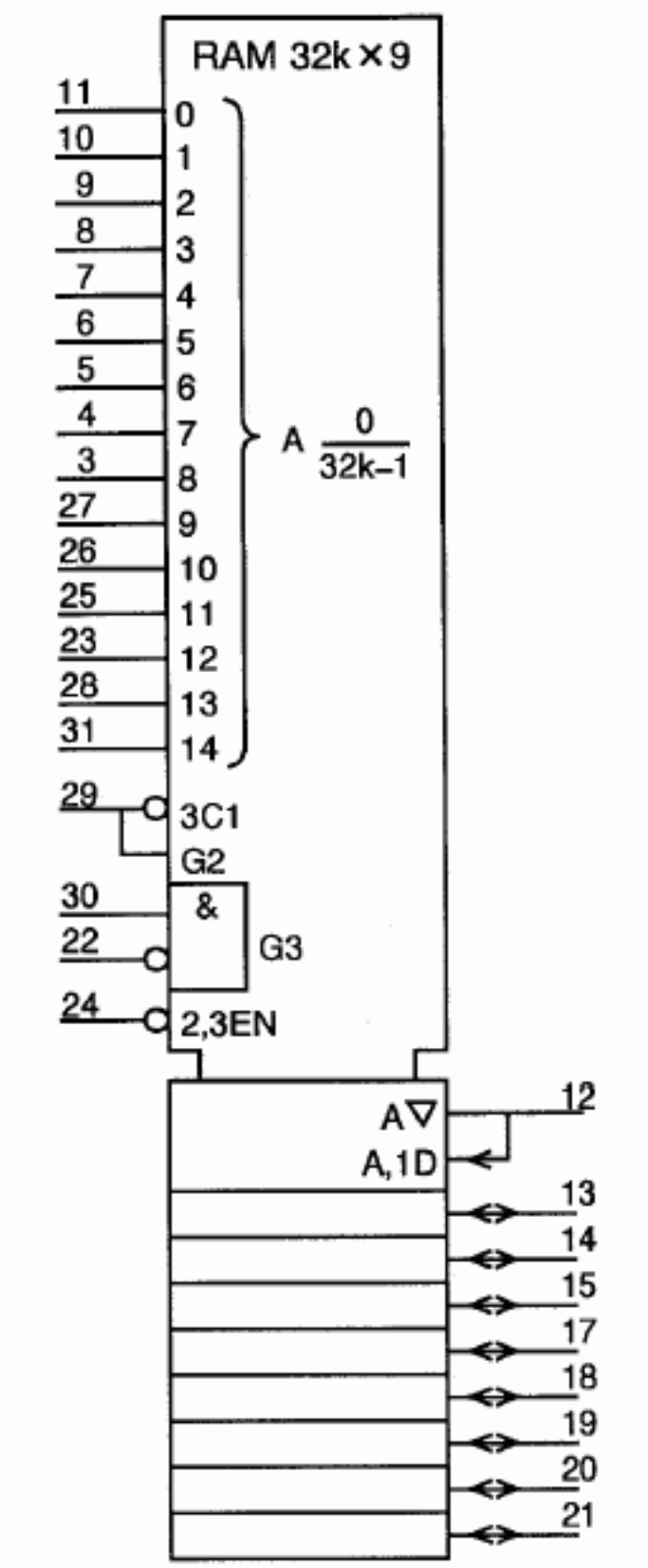
S01716



Name:

Random-access memory (RAM), 32kx9-bit

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Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-05
Keywords:	binary logic elements, memories
Applies:	S00099; S00101; S01466; S01503; S01516; S01518; S01558; S01565; S01708; S01810
Shape class:	Characters, Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TC55329.

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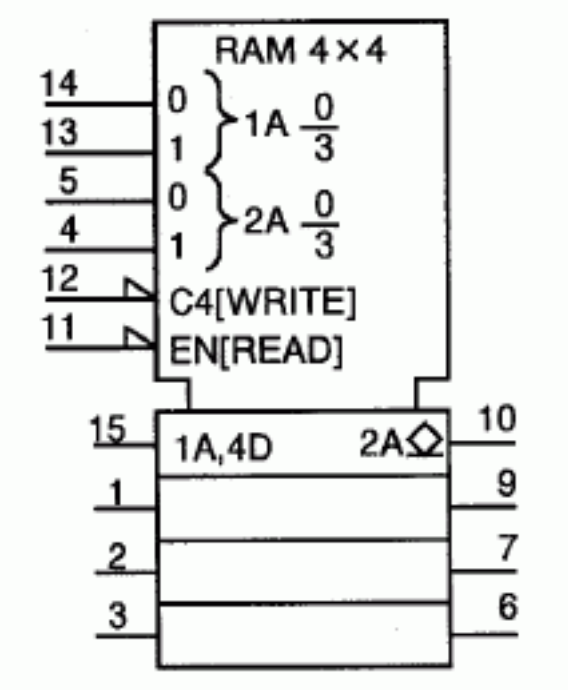
S01717



Name:	Random-access memory, 4x4-bit, with separate write and read addresses
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-06
Keywords:	binary logic elements, memories
Applies:	S01464; S01468; S01495; S01503; S01516; S01558; S01565; S01708
Shape class:	Characters, Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74170.

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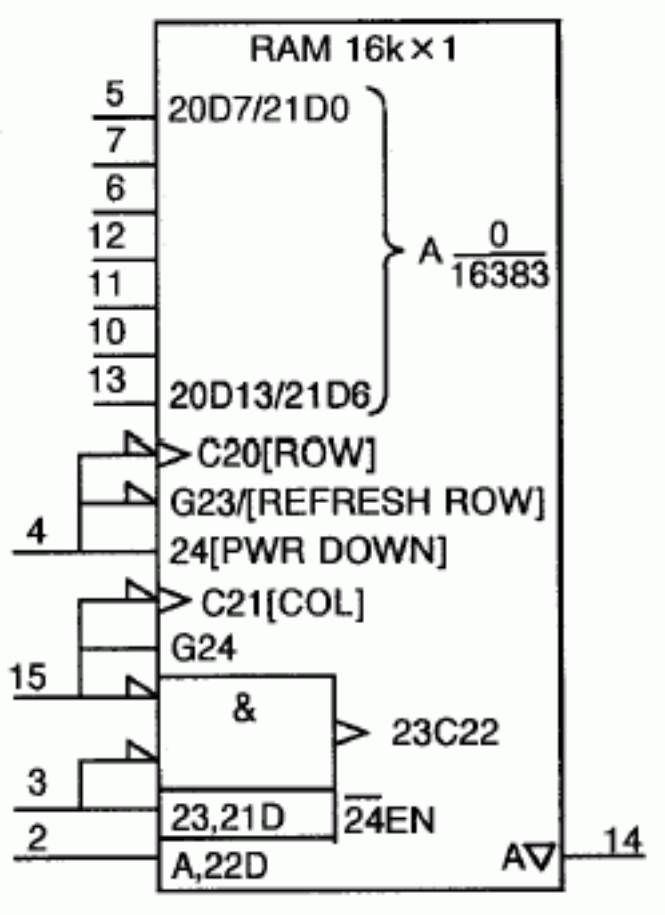
S01718



Name:	Random-access memory, dynamic, 16384x1-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-07
Keywords:	binary logic elements, memories
Applies:	S01468; S01474; S01477; S01518; S01558; S01565; S01567; S01708; S01810
Shape class:	Rectangles
Function class:	C Storing

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Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TMS 4116.

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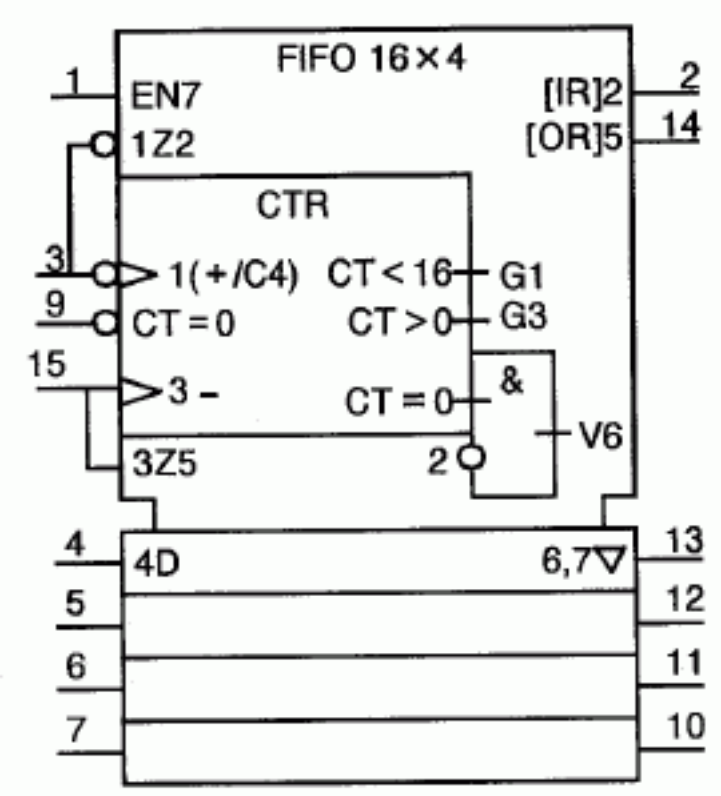
S01719



Name:	First-in first-out memory, counter-controlled, 16x4-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-08
Keywords:	binary logic elements, memories
Applies:	S01462; S01464; S01468; S01469; S01472; S01518; S01686; S01710; S01772; S01811
Shape class:	Characters, Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74LS224.

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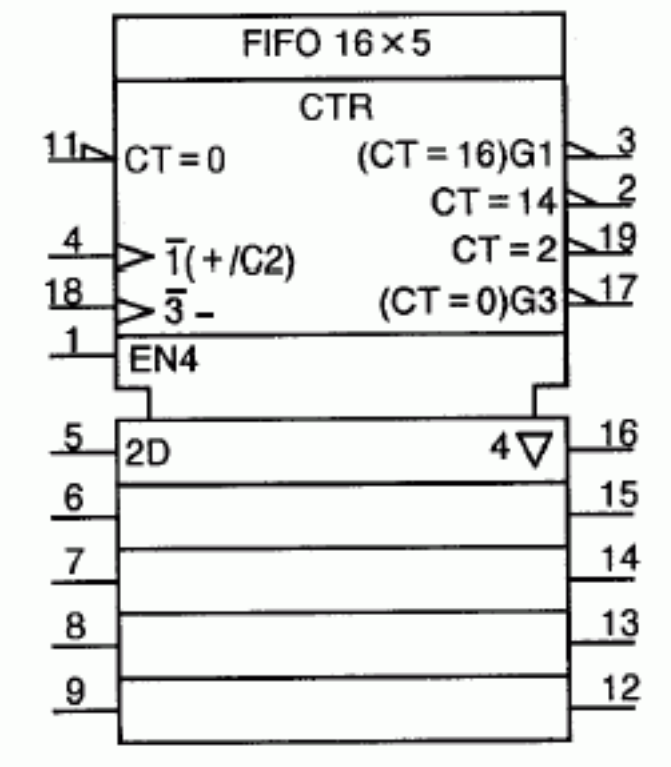
S01720



Name:	First-in first-out memory, counter-controlled, 16x5-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-09
Keywords:	binary logic elements, memories
Applies:	S01462; S01464; S01468; S01469; S01472; S01518; S01686; S01710; S01811
Shape class:	Characters, Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74ALS229.

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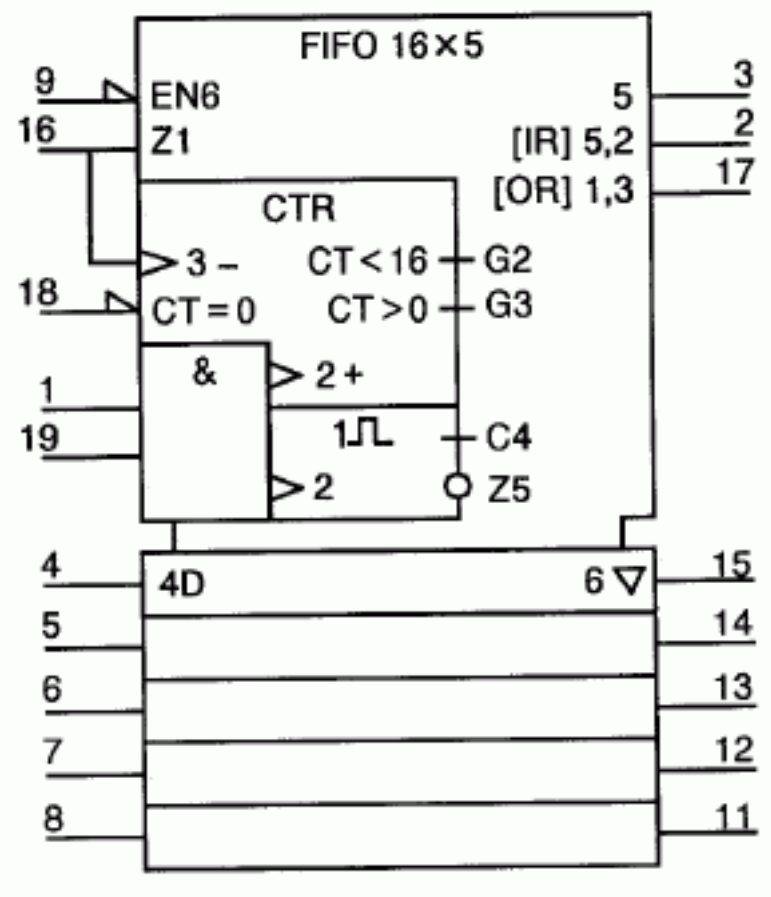
S01721



Name:	First-in first-out memory, fall-through, 16x5-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-10
Keywords:	binary logic elements, memories
Form:	Form 1
Alternative forms:	S01744
Applies:	S01464; S01468; S01472; S01475; S01486; S01554; S01558; S01562; S01567; S01674; S01710; S01770; S01771; S01772

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Shape class:	Characters, Rectangles
Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. SN 74S225.
	Symbol S01744 depicts the same device using the techniques for complex-function elements.

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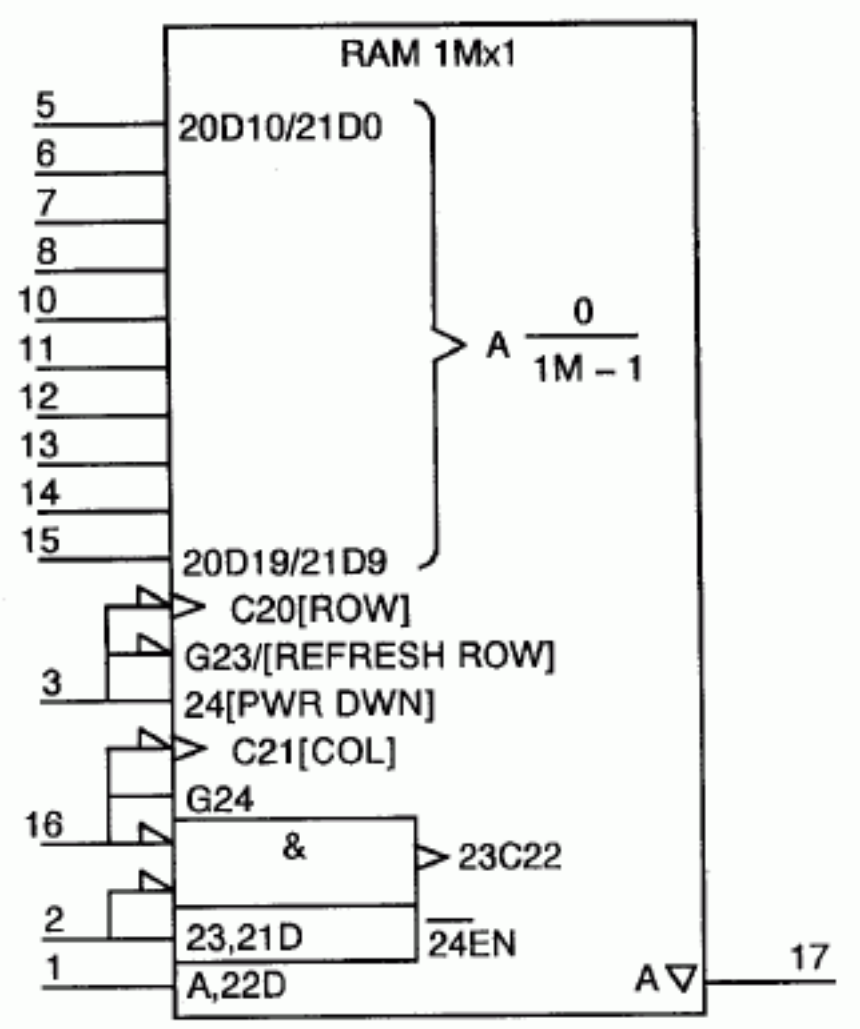
S01722



Name:	Random-access memory, dynamic, 1048576x1-bit
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-51-11
Keywords:	binary logic elements, memories
Applies:	S01472; S01474; S01516; S01518; S01558; S01565; S01567; S01708; S01810
Shape class:	Characters, Rectangles

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Function class:	C Storing
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TMS 4C1024.

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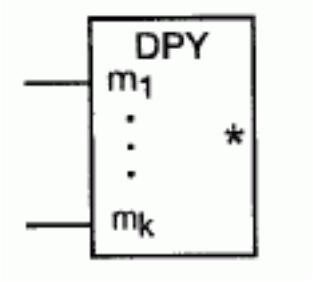
S01723



Name:	Display element, general symbol
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-52-01
Keywords:	binary logic elements, display elements
Applied in:	S01726, S01728, S01725, S01724, S01727, S01730, S01729, S01746, S01745
Applies:	S01463
Application notes:	A00315
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks:

The asterisk shall be replaced either by

- an appropriate indication of the display; and/or by
- a reference to a table.

The elements that make up the display shall always be shown in their correct physical positions relative to each other. Rotation of symbols to preserve the relative orientation of the display with respect to the reader is sometimes advisable.

m_1 ... m_k shall each be replaced either by

- an appropriate indication of the visual signals controlled by those inputs; or by
- appropriate designations referring to entries in a table.

If reference is made to a table in which the terminal designations are used to identify the inputs, these designations may be omitted.

It should be recognized that the visual (optical) signals produced by display elements, for example LED or LCD, bar or dot matrices, are external outputs of those elements.

For the representation of of complex-function display elements, see symbols S01745 and S01746.

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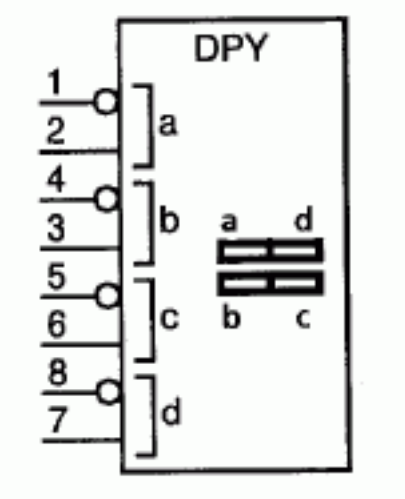
S01724



Name:	LED light bars
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-01
Keywords:	binary logic elements, display elements
Applies:	S01540; S01723
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HLMP 2600.

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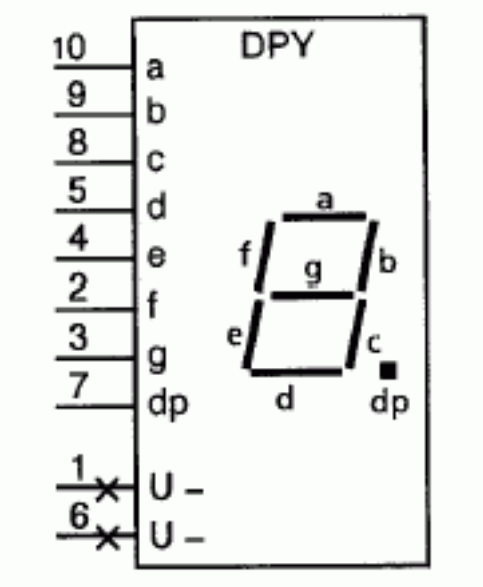
S01725



Name:	Seven-segment display
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-02
Keywords:	binary logic elements, display elements
Applies:	S01723; S01753
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HDSP 3603.

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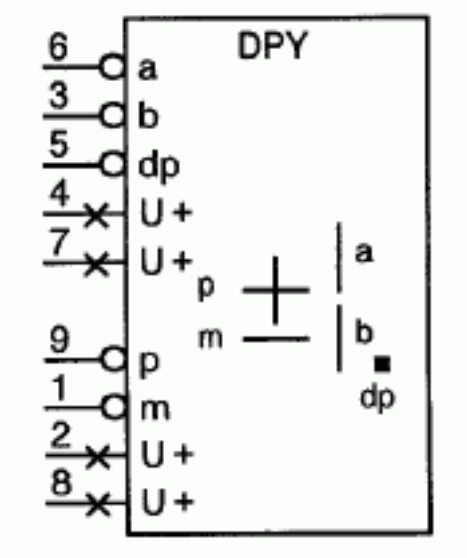
S01726



Name:	Overflow display
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-03
Keywords:	binary logic elements, display elements
Applies:	S01466; S01723; S01753
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HDSP 5607.

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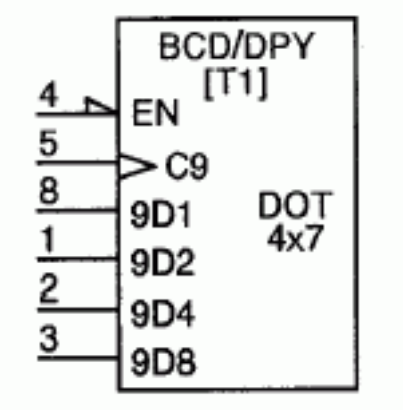
S01727



Name:	Hexadecimal display
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-04
Keywords:	binary logic elements, display elements
Applies:	S01468; S01472; S01503; S01558; S01610; S01723
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. 5082-7340. [T1] refers to a font table describing the decoding from BCD to a dotmatrix 4x7. The visual signals are visible only if the EN-input stands at its internal 1-state. The latching of the data is not controlled by the EN-input.

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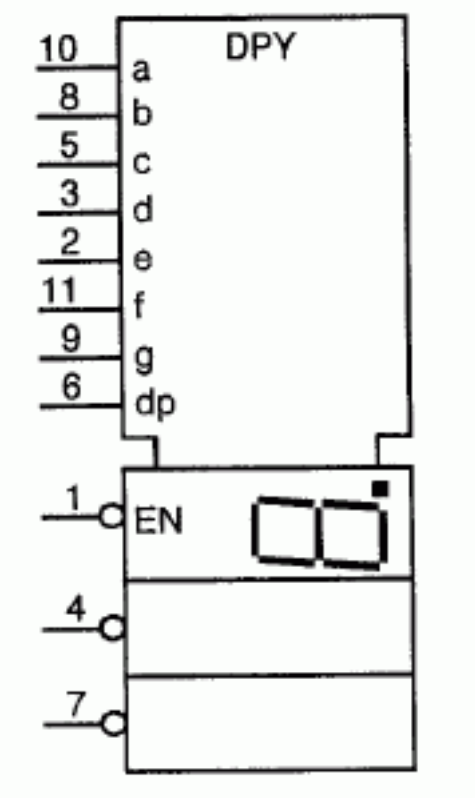
S01728



Name:	Numeric display, three 7-segment characters with decimal point
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-05
Keywords:	binary logic elements, display elements
Applies:	S01464; S01466; S01503; S01723
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. 5082-7433.

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S01729



Name:	Alphanumeric display, four 16-segment characters
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-06
Keywords:	binary logic elements, display elements
Applies:	S01468; S01475; S01503; S01554; S01723
Application notes:	A00316
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HDSP 6504.

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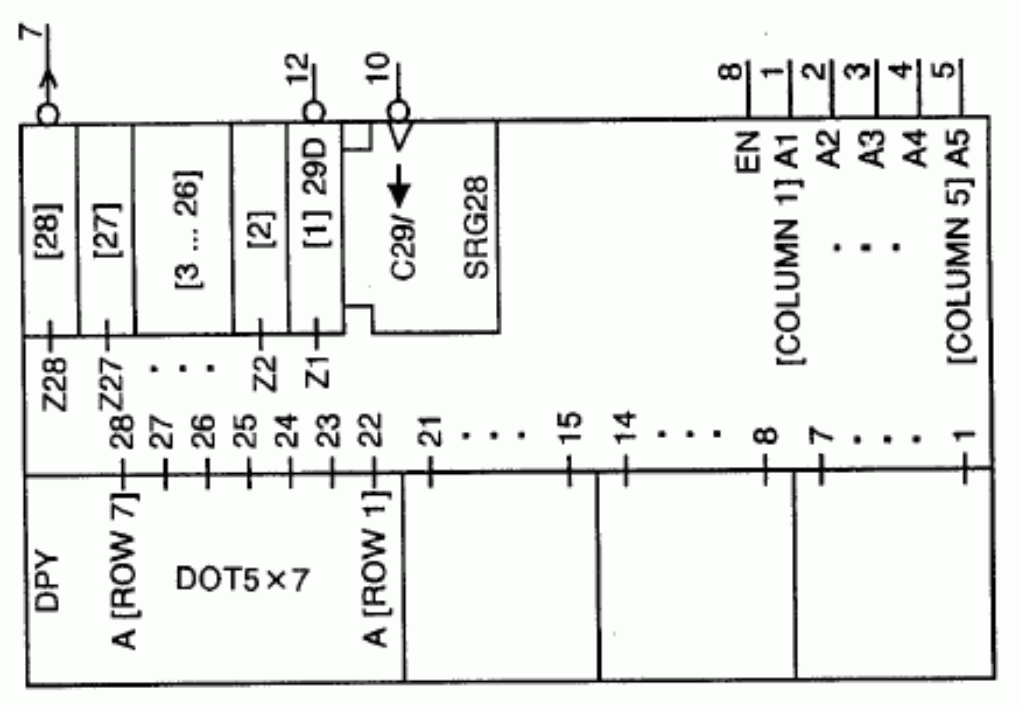
S01730



Name:	Alphanumeric display, four 5x7-dot characters
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-53-07
Keywords:	binary logic elements, display elements
Applies:	S01464; S01466; S01467; S01475; S01503; S01565; S01723
Shape class:	Characters
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HDSP 2000.

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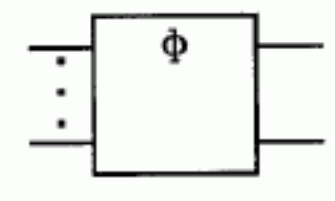
S01731



Name:	Complex-function element ("gray box"), general symbol
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-54-01
Keywords:	arithmetic elements, binary logic elements, combinative elements
Applied in:	S01740, S01738, S01744, S01715, S01735, S01734, S01741, S01743, S01736, S01737, S01739, S01742, S01747, S01746, S01745, S01803
Applies:	S01463; S01808
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The letter shall be supported by an indication, preferably short, of the function. In addition, a reference to supporting documentation (for example a type number or reference designation) shall be included within or adjacent to the symbol outline.

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S01732



Name:	Bus indicator, unidirectional
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-55-01
Keywords:	bus indicators
Applied in:	S01740, S01744, S01715, S01734, S01741, S01743, S01736, S01747, S01745
Application notes:	A00318
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol shown for signal flow from left to right

If associated with terminals, a bit-grouping symbol (symbol S01516 or symbol S01517) or a label-grouping symbol (see symbol S01518), as appropriate, shall be shown between the bus indicator and the symbol outline. Then the connecting lines grouped together need no arrowheads to indicate the direction of signal flow.

If a bus name or a common portion of the labels for the associated terminals is shown, that name or common portion should be placed inside the bus indicator.

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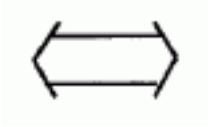
S01733



Name:	Bus indicator, bidirectional
Status level:	Standard
Released on:	2004-09-03
Earlier published in:	IEC 60617-12 (ed.3.0) 12-55-02
Keywords:	bus indicators
Applied in:	S01735, S01734, S01736, S01742, S01747
Application notes:	A00318
Shape class:	Arrows
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Function diagrams
Remarks:	If associated with terminals, a bit-grouping symbol (symbol S01516 or symbol S01517) or a label-grouping symbol (see symbol S01518), as appropriate, shall be shown between the bus indicator and the symbol outline. Then the connecting lines grouped together need no arrowheads to indicate the direction of signal flow. If a bus name or a common portion of the labels for the associated terminals is shown, that name or common portion should be placed inside the bus indicator.

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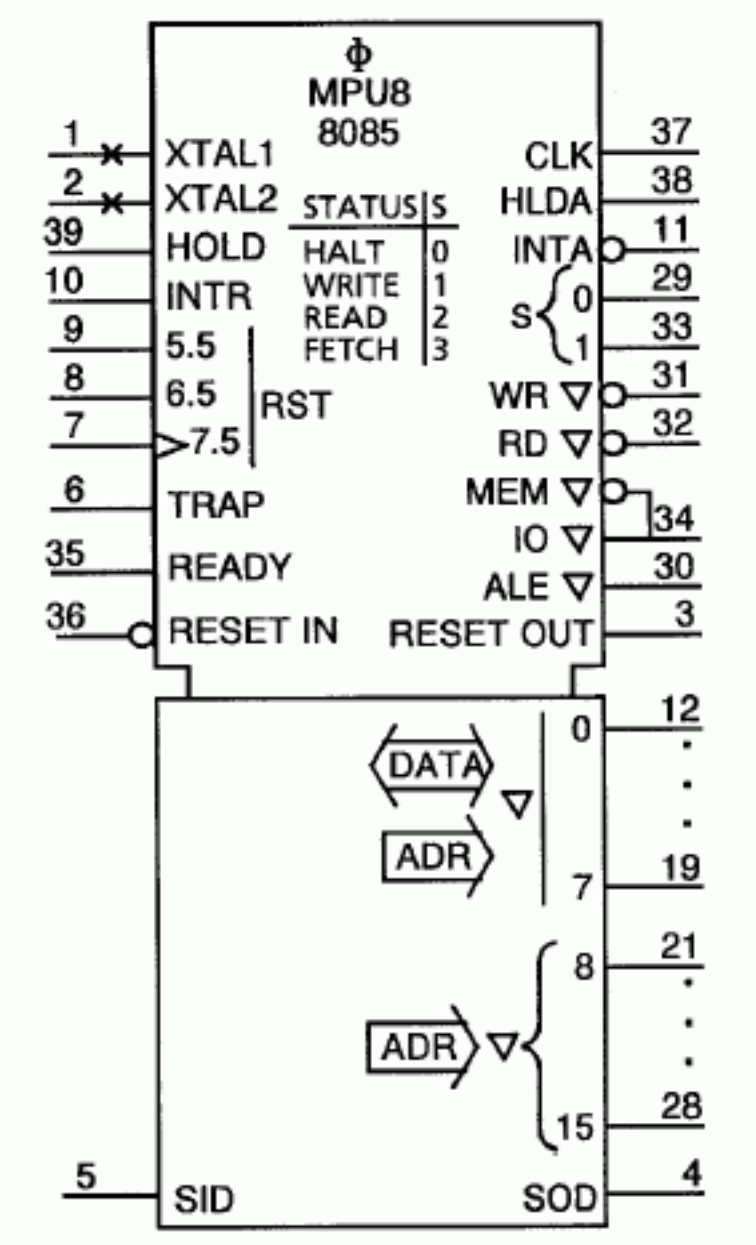
S01734



Name:	Microprocessor, 8-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-01
Keywords:	binary logic elements, microprocessors

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Applies:	S01463; S01464; S01466; S01467; S01472; S01498; S01518; S01678; S01731; S01732; S01733
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. INTEL 8085.

In accordance with 54.2 of A00317:

- ADR replaces A,

- ADR and DATA replace AD, and

- MEM replaces M.

The table is shown for the assistance of the reader but may be omitted.

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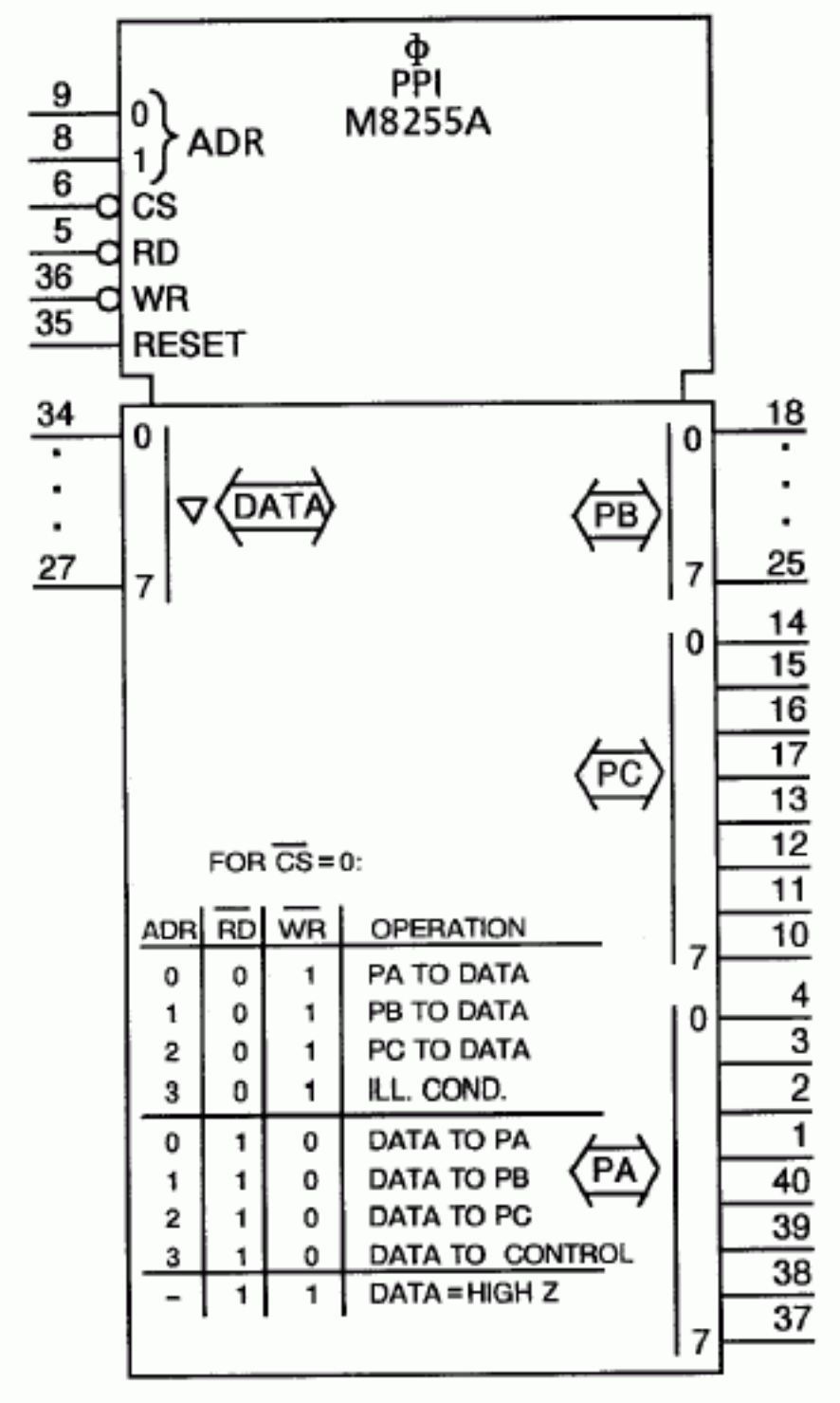
S01735



Name: Programmable peripheral interface

Status level: Standard

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Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-02
Keywords:	binary logic elements, interfaces, microprocessors
Applies:	S01466; S01498; S01517; S01518; S01731; S01733
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. INTEL M8255A. The table is shown for the assistance of the reader but may be omitted. In accordance with 54.2 of A00317: - ADR replaces A, and - DATA replaces D.

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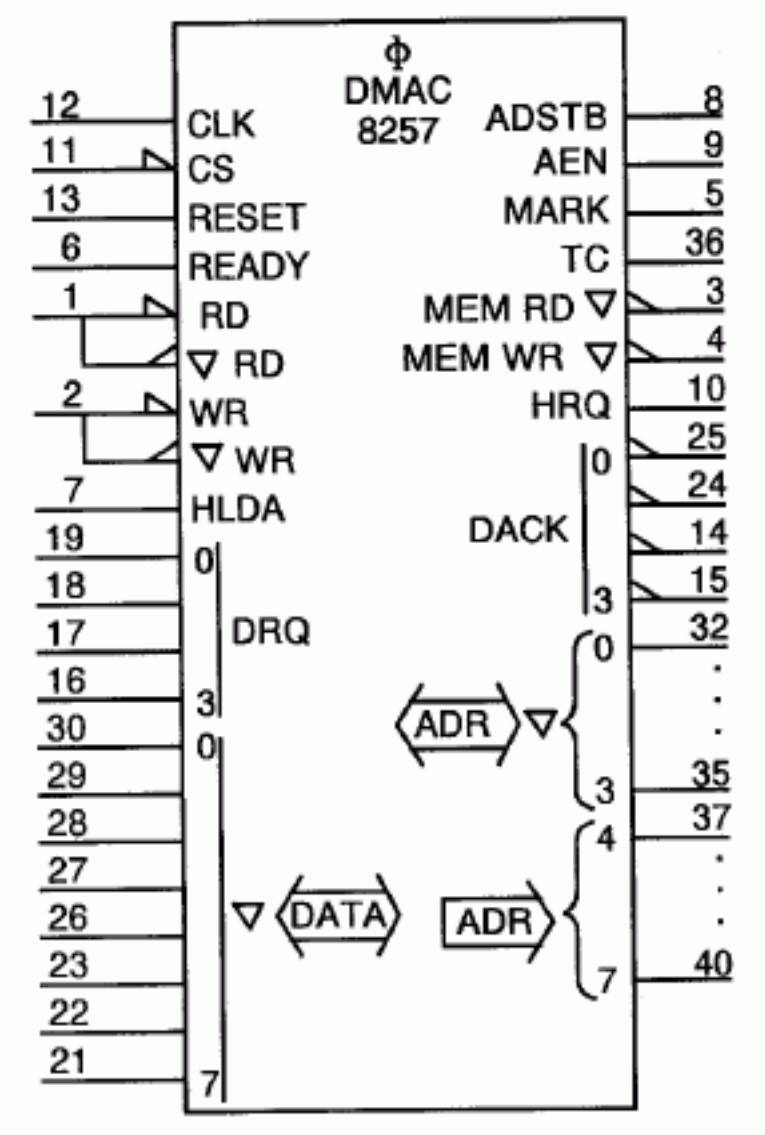
S01736



Name:	Programmable DMA controller
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-03
Keywords:	binary logic elements, complex functions, microprocessors
Applies:	S01468; S01469; S01471; S01498; S01518; S01731; S01732; S01733

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Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. INTEL 8257.
	In accordance with 54.2 of A00317:
	- ADR replaces A, and
	- DATA replaces D.

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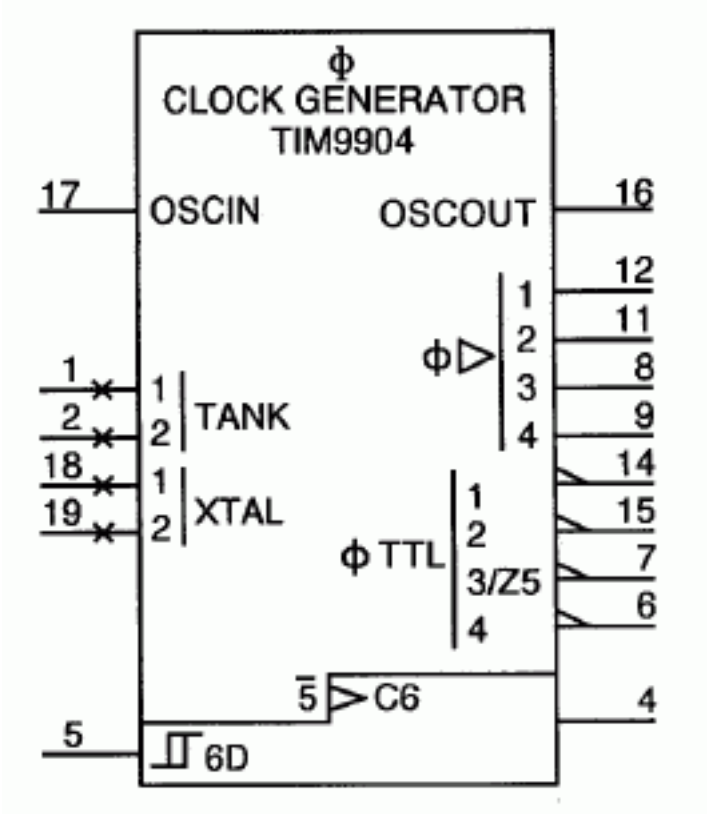
S01737



Name:	Clock generator/driver, four-phase
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-04
Keywords:	binary logic elements, clock generators, signal generators
Applies:	S01457; S01469; S01477; S01492; S01518; S01559; S01731; S01752
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. Texas Instruments TIM9904, formerly SN 74LS362.

The symbol S01683 depicts the same device.

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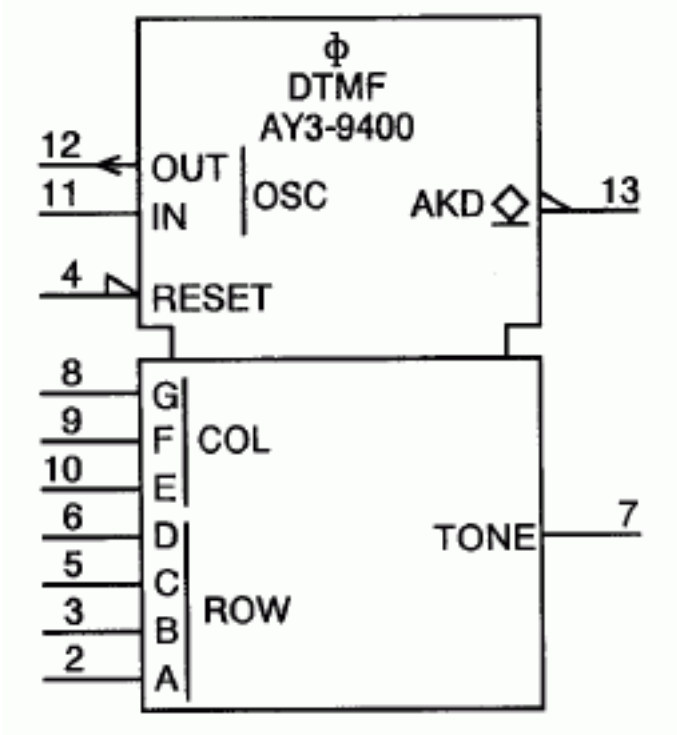
S01738



Name:	Dual-tone multi-frequency generator (generates 12 tone-pairs)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-05
Keywords:	binary logic elements, clock generators, signal generators
Alternative forms:	S01739
Applies:	S00099; S01464; S01468; S01495; S01518; S01731
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. General Instruments AY3-9400.

See also symbol S01739.

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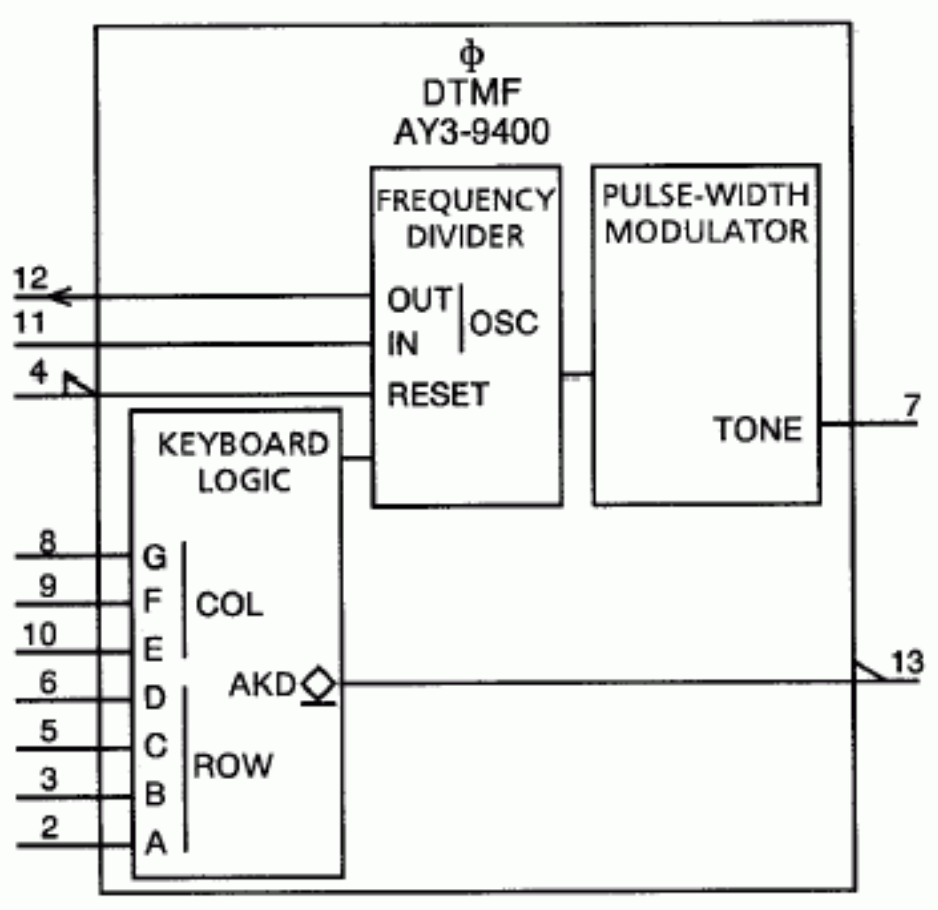
S01739



Name:	Dual-tone multi-frequency generator (generates 12 tone-pairs)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-06
Keywords:	binary logic elements, clock generators, signal generators
Alternative forms:	S01738
Applies:	S00099; S01468; S01495; S01518; S01731
Application notes:	A00317
Shape class:	Characters, Rectangles

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Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. General Instruments AY3-9400.
	See also symbol S01738.

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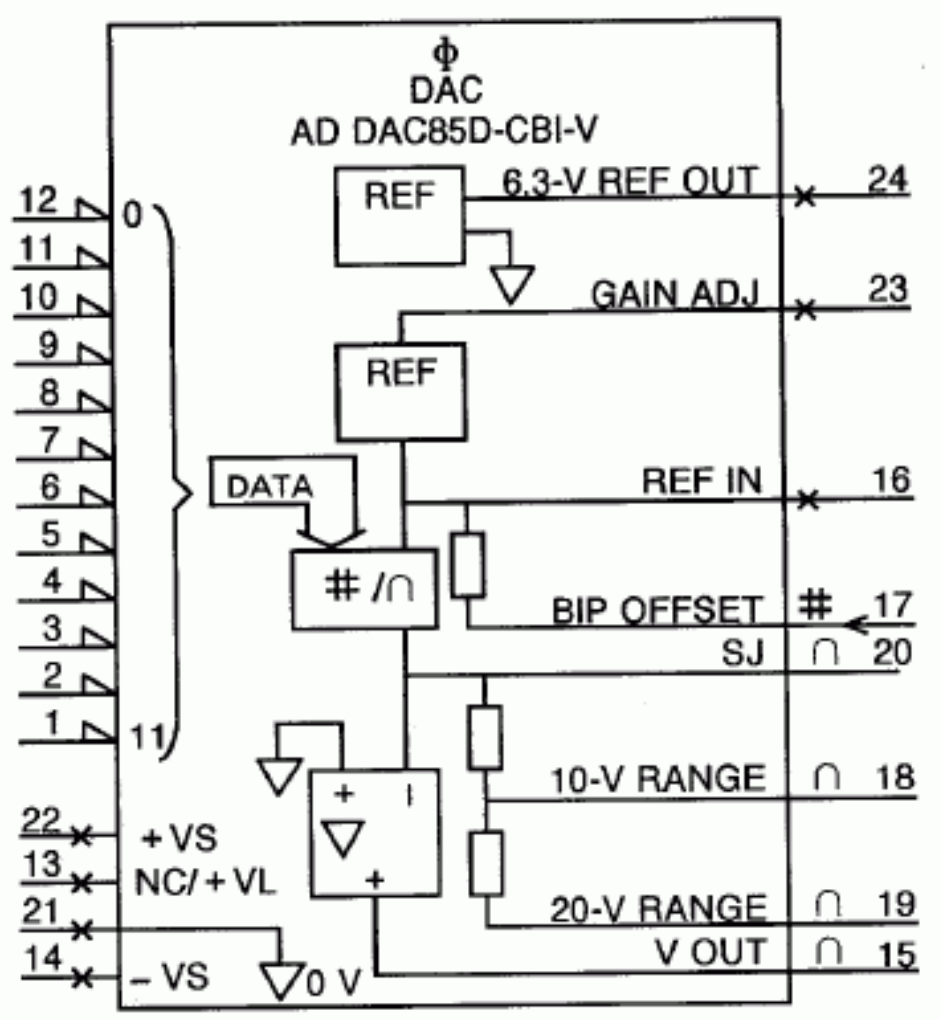
S01740



Name:	Digital-to-analogue converter, 12-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-07
Keywords:	analogue elements, binary logic elements, converters, signal converters
Alternative forms:	S01741
Applies:	S00555; S01231; S01468; S01516; S01731; S01732; S01749; S01750; S01752; S01753; S01782

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Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Analog Devices AD DAC85D-CBI-V.

See also symbol S0741.

Because the logic inputs produce a number, use has been made of the bit-grouping symbol. Consequently the labelling of these inputs differs from that of the manufacturer.

If no confusion is likely, at the inputs and outputs may be omitted.

Arrowheads may be used on terminals 18, 19, and 20, depending on the application.

See also S01791, S01792 and S01793 for other methods of representing digital-to-analogue converters and analogue-to-digital converters.

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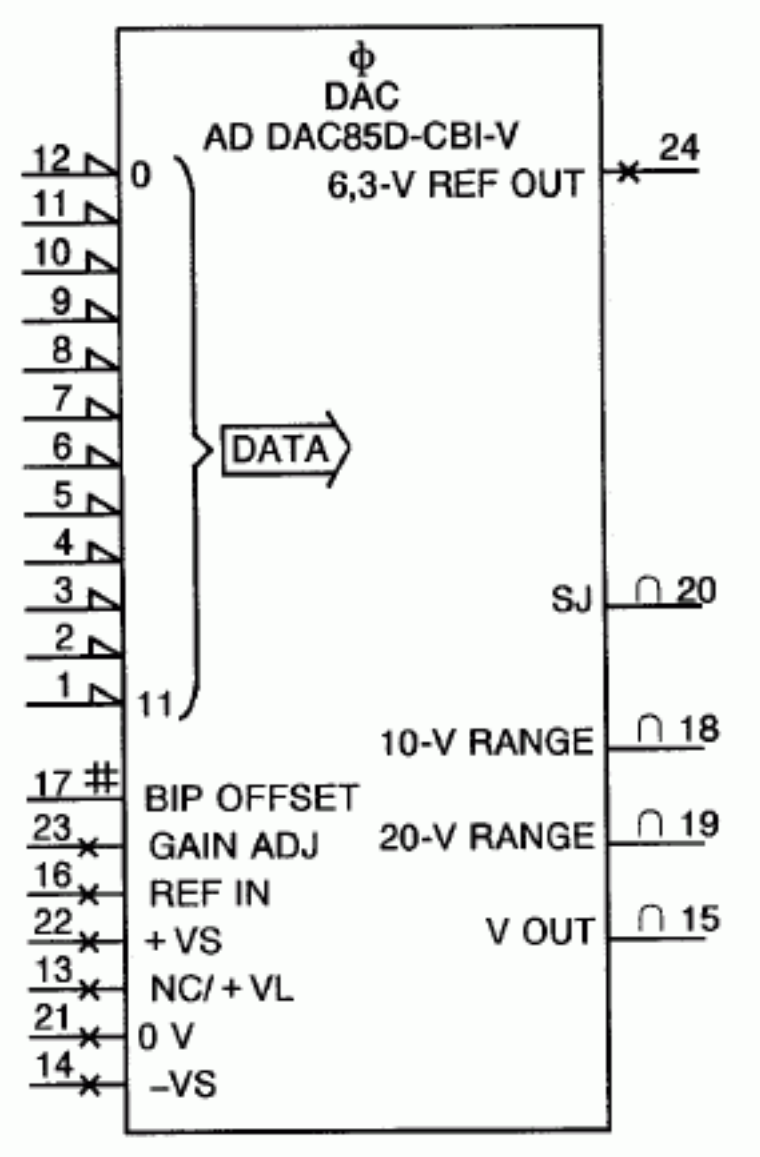
S01741



Name:	Digital-to-analogue converter, 12-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-08
Keywords:	analogue elements, binary logic elements, converters, signal converters
Form:	Simplified form

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Alternative forms:	S01740
Applies:	S01468; S01516; S01731; S01732; S01749; S01752; S01753; S01757
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Analog Devices AD DAC85D-CBI-V.

See also symbol S01740.

Because the logic inputs produce a number, use has been made of the bit-grouping symbol. Consequently the labelling of these inputs differs from that of the manufacturer.

If no confusion is likely, at the inputs and outputs may be omitted.

Arrowheads may be used on terminals 18, 19, and 20, depending on the application.

See also S01791, S01792 and S01793 for other methods of representing digital-to-analogue converters and analogue-to-digital converters.

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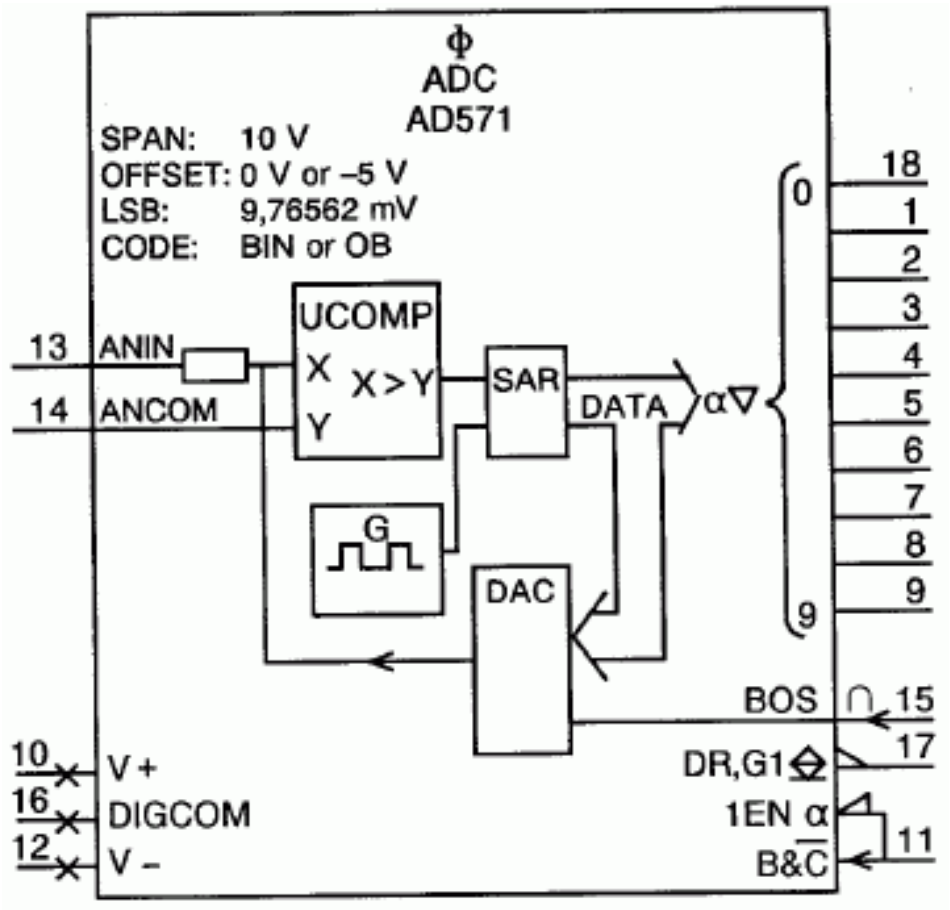
S01742



Name:	Analog-to-digital converter, 10-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-09
Keywords:	analogue elements, binary logic elements, converters, signal converters
Alternative forms:	S01743
Applies:	S01469; S01497; S01498; S01517; S01678; S01731; S01733; S01752; S01753; S01801
Application notes:	A00317
Shape class:	Characters, Rectangles

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Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Analog Devices AD571.
	See also symbol S01743.
	In symbol S01742, the layout of the internal diagram has been chosen such that the feedback function of the internal digital-to-analogue converter is emphasized.
	Because the logic outputs represent a number, use has been made of the bit grouping symbol. Consequently, the labelling of these outputs differs from that of the manufacturer.
	If no confusion is likely, at the inputs and outputs may be omitted.
	See also S01791, S01792 and S01793 for other methods of representing digital-to-analogue converters and analogue-to-digital converters.

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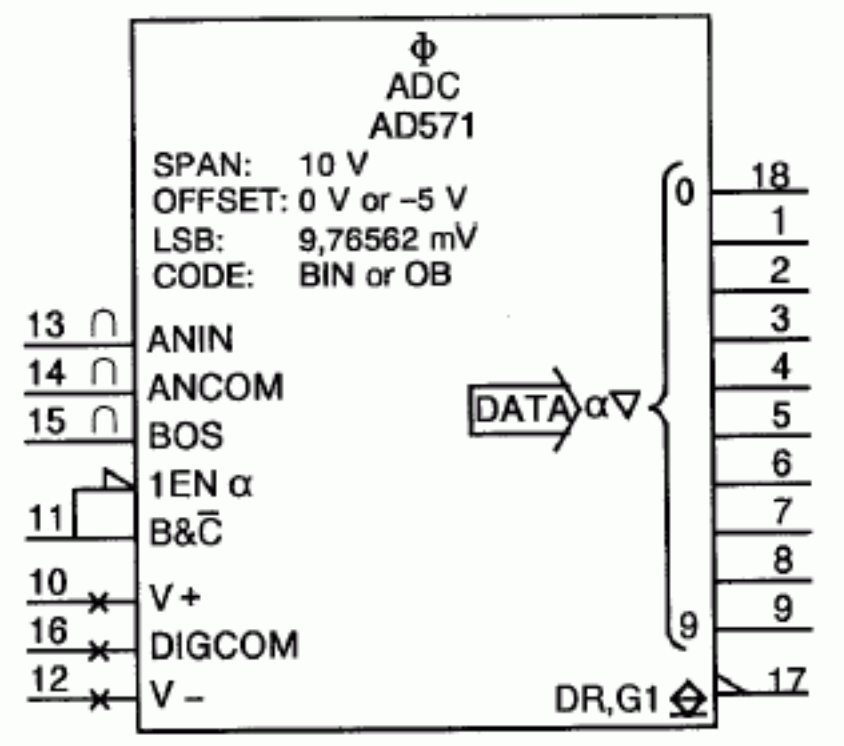
S01743



Name:	Analog-to-digital converter, 10-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-10
Keywords:	analogue elements, binary logic elements, converters, signal converters
Form:	Simplified form
Alternative forms:	S01742
Applies:	S01468; S01498; S01517; S01731; S01732; S01749; S01750; S01752; S01753
Application notes:	A00317
Shape class:	Characters, Rectangles

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Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Analog Devices AD571.
	See also symbol S01743.
	In symbol S01743, the layout of the internal diagram has been chosen such that the feedback function of the internal digital-to-analogue converter is emphasized.
	Because the logic outputs represent a number, use has been made of the bit grouping symbol. Consequently, the labelling of these outputs differs from that of the manufacturer.
	If no confusion is likely, at the inputs and outputs may be omitted.
	See also S01791, S01792 and S01793 for other methods of representing digital-to-analogue converters and analogue-to-digital converters.

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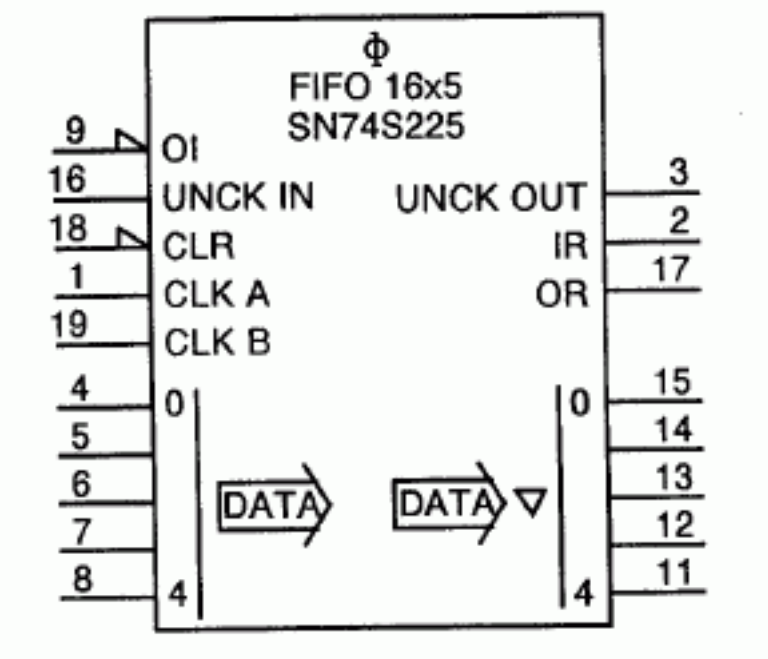
S01744



Name:	First-in first-out memory, fall-through, 16x5-bit
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-11
Keywords:	binary logic elements, memories
Form:	Form 2
Alternative forms:	S01721
Applies:	S01468; S01498; S01518; S01731; S01732
Application notes:	A00317
Shape class:	Characters, Rectangles
Function class:	C Storing

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Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Texas Instruments SN 74S225.
	Symbol S01721 depicts the same device.

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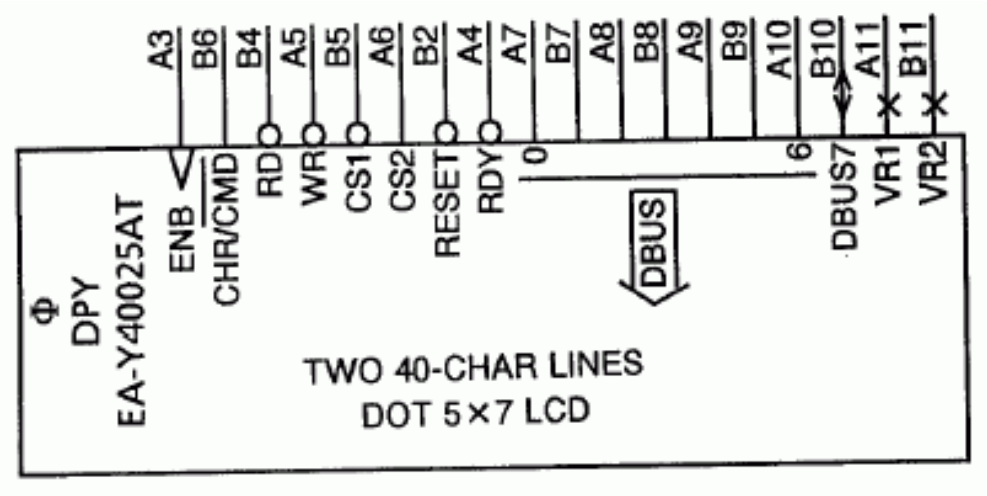
S01745



Name:	Display element, dot matrix, alphanumeric, with two 40-character lines
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-12
Keywords:	binary logic elements, display elements
Applies:	S01466; S01472; S01498; S01723; S01731; S01732
Shape class:	Characters, Rectangles
Function class:	P Presenting information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. EPSON EA-Y40025AT.

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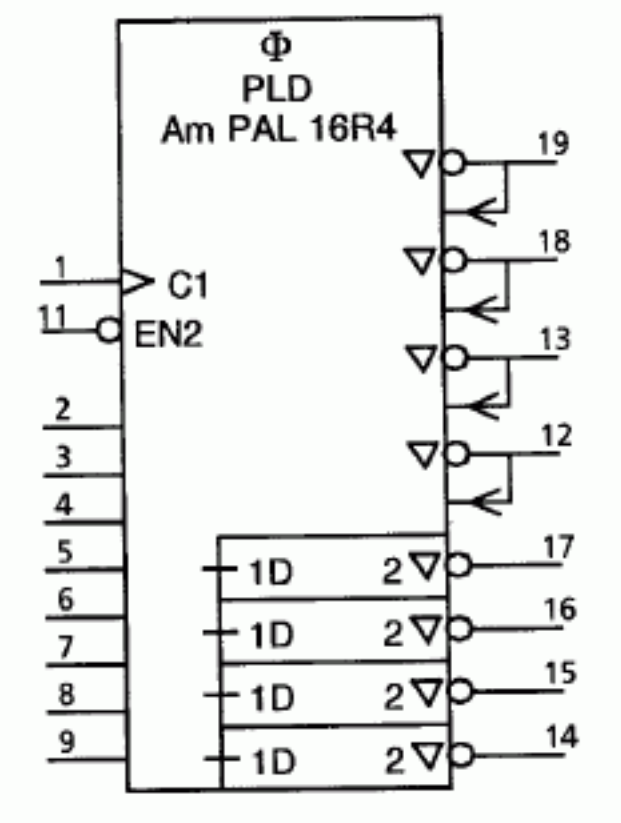
S01746



Name:	Programmable logic device (PLD)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-13
Keywords:	binary logic elements
Applies:	S00099; S01466; S01467; S01472; S01562; S01723; S01731
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. Advanced Micro Devices Am PAL 16R4.

There are 16 array inputs. Eight of them are directly accessable unidirectional inputs, four of them are connected to bidirectional input/ outputs, and four are internal feedbacks from the latches. The latter four are not shown in this symbol.

Since no labels other than pin numbers appear on the circuit data sheet of the manufacturer, no terminal names are shown besides the ones required by the use of dependency notation.

The symbol shows the unprogrammed device. If the symbol is to be used to show the device after programming, the labels and/or the functional indication may be changed to correspond to the supporting documentation for the programmed device.

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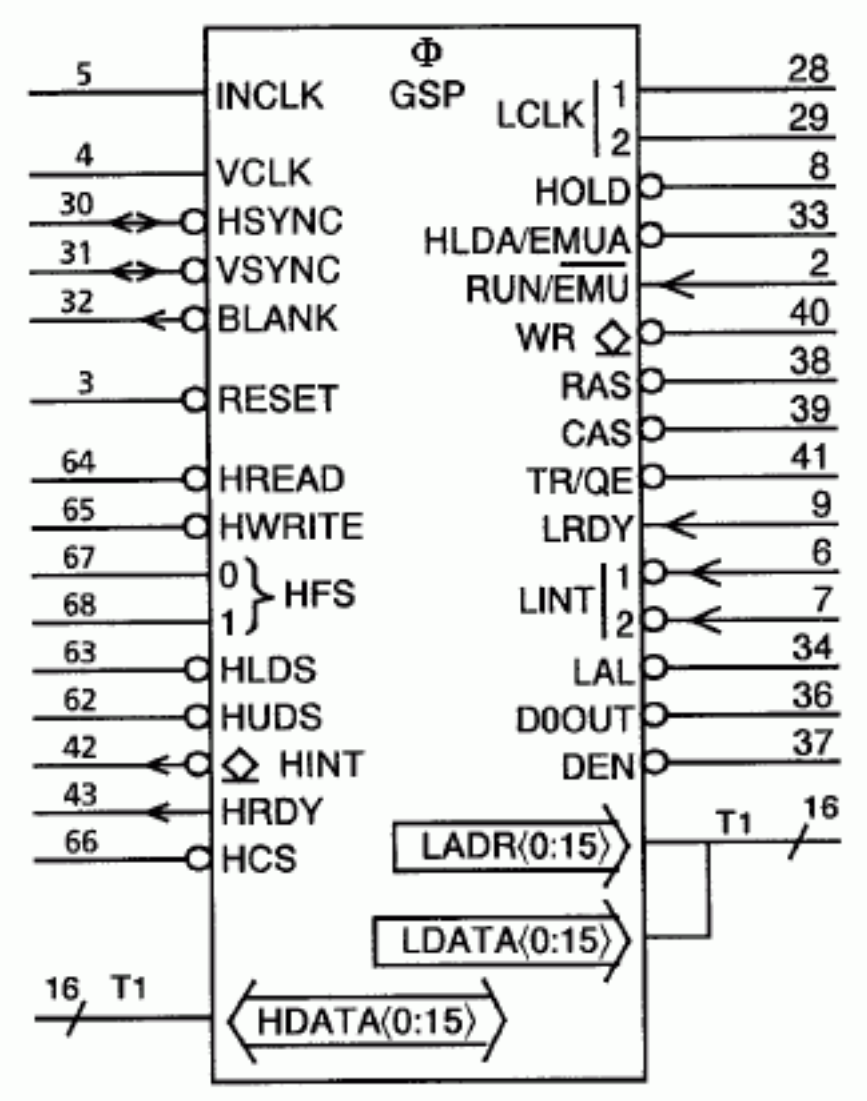
S01747



Name:	Graphics system processor
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-12 (ed.3.0) 12-56-14
Keywords:	binary logic elements, graphics processors, microprocessors
Applies:	S01495; S01517; S01518; S01731; S01732; S01733
Shape class:	Arrows, Characters, Rectangles

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Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. Texas Instruments TMS34010.
	The table T1 is considered to be part of the symbol and shall be shown on the circuit diagram or in a supporting document.
	Use has been made of the technique described in IEC 61082-2, subclause 5.3, to simplify the two 16-bit-wide busses.
	Reference is made to the table shown below. ..

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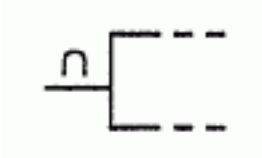
S01748



Name:	Analogue input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-04-01
Keywords:	analogue, analogue elements, connections
Applied in:	S01604, S01602, S01793, S01792
Applies:	S00216
Application notes:	A00321
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is defined as character 4/9 of IEC 61286 "ANALOGUE SYMBOL", equivalent to UCS 2229 (Table 61) of ISO/IEC 10646 "INTERSECTION".

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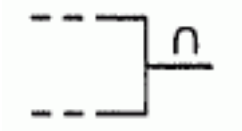
S01749



Name:	Analogue output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-04-02
Keywords:	analogue, analogue elements, connections
Applied in:	S01740, S01604, S01741, S01743, S01803
Applies:	S00216
Application notes:	A00321
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The symbol is defined as character 4/9 of IEC 61286 "ANALOGUE SYMBOL", equivalent to UCS 2229 (Table 61) of ISO/IEC 10646 "INTERSECTION".

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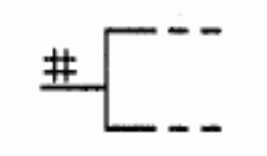
S01750



Name:	Digital input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-04-03
Keywords:	binary, connections, digital
Applied in:	S01740, S01743, S01790
Applies:	S00217
Application notes:	A00321
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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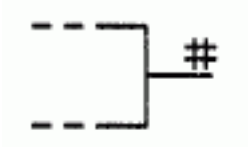
S01751



Name:	Digital output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-04-04
Keywords:	binary, connections, digital
Applies:	S00217
Application notes:	A00321
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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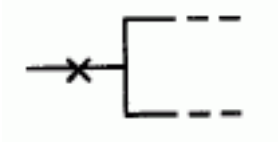
S01752



Name:	Subsidiary connection
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-04-05
Keywords:	connections
Applied in:	S01740, S01741, S01743, S01737, S01742, S01753, S01754, S01763, S01762
Applies:	S01546
Application notes:	A00321
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An input supplying power to the device or a connection the knowledge of whose level is not important to understand the function of the element and the circuit (e.g., a connection to an external supplementary resistor or capacitor).

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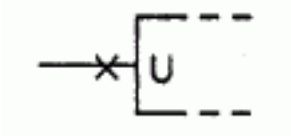
S01753



Name:	Supply-voltage terminal
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-01
Keywords:	connections, terminals
Alternative forms:	S01754
Applied in:	S01740, S01726, S01725, S01741, S01743, S01742, S01779, S01780, S01790, S01793, S01794, S01795, S01792, S01803, S01806
Applies:	S01752
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol shown on the left-hand side. U may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., +5 V) or by - a suitable mnemonic (e.g., VCC, GND). Supply terminals are not always shown in a diagram.

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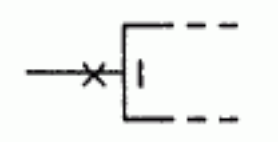
S01754



Name:	Supply-current terminal
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-02
Keywords:	connections, terminals
Alternative forms:	S01753
Applies:	S01752
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Symbol shown on the left-hand side. I may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., 10 mA) or by - a suitable mnemonic (e.g., VCC, GND). Supply terminals are not always shown in a diagram.

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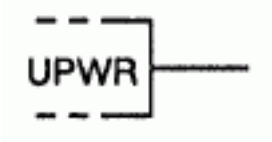
S01755



Name:	Supply-voltage output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-03
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An output that is a source of power. U [I] may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., resulting in +5 V PWR, 1 A PWR), or by - a suitable mnemonic (e.g., resulting in VCCPWR, GNDPWR). If it is not necessary to emphasize the fact that it is a power output, use symbol S01760.

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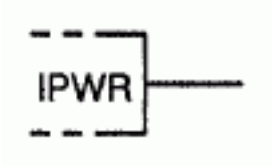
S01756



Name:	Supply-current output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-04
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An output that is a source of power. I [U] may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., resulting in +5 V PWR, 1 A PWR), or by - a suitable mnemonic (e.g., resulting in VCCPWR, GNDPWR). If it is not necessary to emphasize the fact that it is a power output, use symbol S01760.

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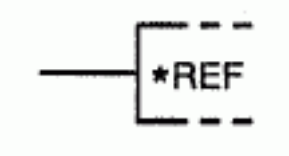
S01757



Name:	Reference input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-05
Applied in:	S01741
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An input to be connected to a reference source. The asterisk shall be replaced by the symbol for the reference quantity (e.g., U, I, f,). The quantity symbol may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., resulting in + 5 V REF, 10 mA REF), or by - a suitable mnemonic (e.g., resulting in VCCREF, GNDREF). If it is not necessary to emphasize the fact that it is a reference input use symbol S01759.

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S01758



Name:	Reference output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-06
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	An output that is a reference source. The asterisk shall be replaced by the symbol for the reference quantity (e.g., U, I, f,). The quantity symbol may be followed by the polarity sign or may be replaced by - the nominal signed value (e.g., resulting in + 5 V REF, 10 mA REF), or by - a suitable mnemonic (e.g., resulting in VCCREF, GNDREF). If it is not necessary to emphasize the fact that it is a reference output use symbol S01760.

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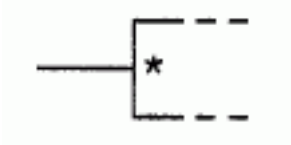
S01759



Name:	Quantity-sensing input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-07
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Input for which the indicated quantity represents the information. The asterisk shall be replaced by the symbol for the quantity representing the information (e.g., U, I, f,). The quantity symbol may be followed by the polarity sign or may be replaced by one of the following indications of the range or fixed value: - a nominal signed value or values (e.g., +5 V, 0 mA...20 mA,440 Hz) or - a suitable mnemonic (e.g., VCC, GND, A#). If the polarity sign is not shown, U should be omitted unless confusion is likely. If this symbol is combined with other symbols (e.g., S01761) it should follow those other symbols, enclosed, if necessary, in square brackets.

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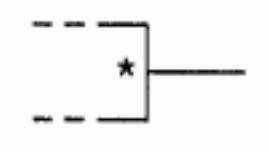
S01760



Name:	Quantity output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-08
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Output for which the indicated quantity represents the information. The asterisk shall be replaced by the symbol for the quantity representing the information (e.g., U, I, f,). The quantity symbol may be followed by the polarity sign or may be replaced by one of the following indications of the range or fixed value: - a nominal signed value or values (e.g., +5 V, 0 mA...20 mA,440 Hz) or - a suitable mnemonic (e.g., VCC, GND, A#). If the polarity sign is not shown, U should be omitted unless confusion is likely. If this symbol is combined with other symbols (e.g., S01761) it should follow those other symbols, enclosed, if necessary, in square brackets.

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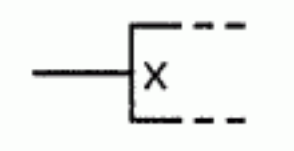
S01761



Name:	Analogue operand input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-09
Applied in:	S01779, S01780
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	X-input shown. This input represents an operand on which one or more analogue functions are performed. For analogue operands, the letters X and Y should be used. If more than two operands are involved, other characters may be used or suffixes may be added, providing no confusion is likely.

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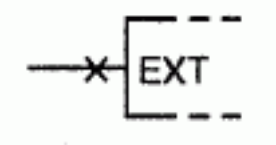
S01762



Name:	Terminal to be externally connected to a subsidiary circuit or circuit element
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-10
Applies:	S01752
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown on the left-hand side. EXT should be replaced by another designation, e.g., RX resistance CX capacitance RCX resistance and capacitance XTAL crystal This symbol may be shown without the symbol for subsidiary connection (symbol S01752) if no confusion is likely.

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If an indication of the polarity is necessary, a + or a - may be added as a suffix to the symbol.

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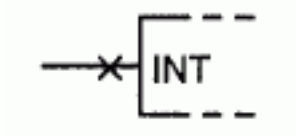
S01763



Name:	Terminal of a subsidiary internal circuit or circuit component
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-11
Applies:	S01752
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown on the left-hand side.

INT should be replaced by another designation, e.g.,

RINT resistance

CINT capacitance

RCINT resistance and capacitance

XTALINT crystal
This symbol may be shown without the symbol for subsidiary connection (symbol S01752) if no confusion is likely.

If an indication of the polarity is necessary, a + or a - may be added as a suffix to the symbol.

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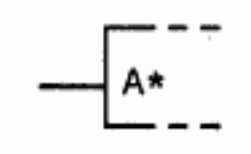
S01764



Name:	Adjustment terminal
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-12
Applied in:	S01602, S01779, S01784, S01780, S01783, S01787, S01786, S01785, S01788, S01794, S01799
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown on the left-hand side. The A* shall be replaced by ADJ, or only the asterisk shall be replaced by an indication of the property or quantity to be adjusted. The following indications should be used for the properties or quantities listed: B - bias CL - current limit f - frequency H - hysteresis m - amplification OFS - offset

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P - power

SR - slew rate

SYM - symmetry

T - temperature

U or V - voltage

WF - waveform

Z - impedance

or - phase

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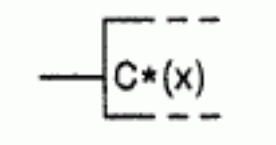
S01765



Name:	Compensation terminal
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-13
Applied in:	S01784, S01787, S01786, S01790, S01794, S01803
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Shown on the left-hand side. The C* shall be replaced by CPN, or only the asterisk shall be replaced by an indication of the property or quantity to be adjusted. The x shall be replaced by an indication of the property or quantity that causes the adjustment or compensation to be necessary. The following indications should be used in replacing the asterisk and/ or the X: B - bias; CL - current limit; f - frequency; H - hysteresis; m - amplification;

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OFS - offset;

P - power;

SR - slew rate;

SYM - symmetry;

T - temperature;

U or V - voltage;

WF - waveform;

Z - impedance;

or - phase.

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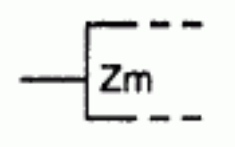
S01766



Name:	Zm-input (analogue)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-14
Keywords:	dependency notation, INTERCONNECTION dependency
Applies:	S01554
Application notes:	A00276, A00289, A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Affecting analogue Zm-inputs or Zm-outputs impose their signal levels on the analogue inputs and outputs affected by them. These symbols imply the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289. For affecting digital Zm-inputs and Zm-outputs, see S01554.

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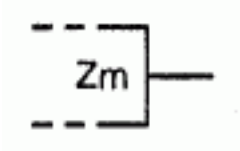
S01767



Name:	Zm-output (analogue)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-15
Keywords:	dependency notation, INTERCONNECTION dependency
Applies:	S01555
Application notes:	A00276, A00289, A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Affecting analogue Zm-inputs or Zm-outputs impose their signal levels on the analogue inputs and outputs affected by them. These symbols imply the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and S00289. For affecting digital Zm-inputs and Zm-outputs, see S01555.

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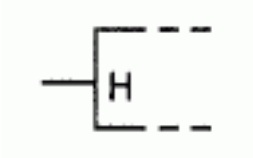
S01768



Name:	Hold input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-16
Applied in:	S01787, S01789
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	When this input takes on its internal 1-state, the analogue outputs hold their values. When this input is in its internal 0-state, it has no effect on the element.

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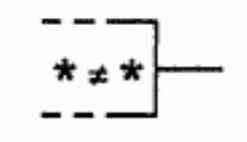
S01769



Name:	Not-equal output of a comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-17
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the quantities or operands whose values are compared. The symbol is defined as character 3/6 of IEC 61286 "NOT EQUAL TO", equivalent to UCS 2260 (Table 60) of ISO/IEC 10646 "NOT EQUAL TO".

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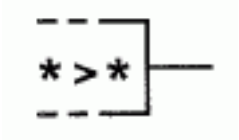
S01770



Name:	Greater-than output of a comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-18
Applied in:	S01699, S01700, S01721, S01802, S01801
Applies:	S01523
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the quantities or operands whose values are compared.

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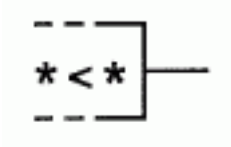
S01771



Name:	Less-than output of a comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-19
Applied in:	S01721
Applies:	S01524
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the quantities or operands whose values are compared.

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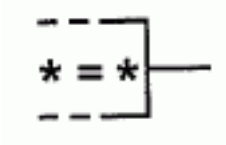
S01772



Name:	Equal output of a comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-20
Applied in:	S01699, S01701, S01719, S01721
Applies:	S01525
Application notes:	A00322
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks shall be replaced by designations of the quantities or operands whose values are compared.

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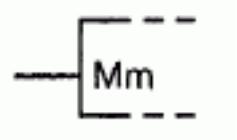
S01773



Name:	Mm-input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-21
Applied in:	S01775, S01790
Application notes:	A00276, A00289
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	This symbol imply the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289. If an Mm-input [Mm-output) stands at its internal 1-state, any input affected by this Mm-input [Mm-output] has its normally defined effect on the function of the element, and any output affected by this Mm-input [Mm-output] stands at its normally defined internal logic state or analogue signal level. That is, the inputs and outputs are enabled. If an Mm-input [Mm-output] stands at its internal 0-state, its effect on inputs and outputs is as follows: - Any input affected by this Mm-input [Mm-output] has no effect on the function of the element. - If an affected input has several sets of labels separated by solidi, any

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set containing the identifying number of the Mm-input [Mm-output] has no effect and is to be ignored. This represents disabling some of the functions of a multi-function input.

- At each output affected by this Mm-input [Mm-output], any set of labels containing the identifying number of that Mm-input [Mm-output] has no effect and is to be ignored.

- If an output has several sets of labels separated by solidi (see IEC 617-12, Section 25), any set containing the identifying number of this Mm-input [Mm-output] is to be ignored. This represents disabling or selecting some of the functions of a multi-function output, or modifying some of the characteristics or dependent relationships of the output.

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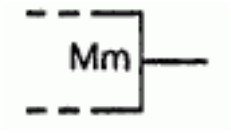
S01774



Name:	Mm-output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-22
Application notes:	A00276, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	This symbol imply the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289. If an Mm-input [Mm-output) stands at its internal 1-state, any input affected by this Mm-input [Mm-output] has its normally defined effect on the function of the element, and any output affected by this Mm-input [Mm-output] stands at its normally defined internal logic state or analogue signal level. That is, the inputs and outputs are enabled. If an Mm-input [Mm-output] stands at its internal 0-state, its effect on inputs and outputs is as follows: - Any input affected by this Mm-input [Mm-output] has no effect on the function of the element. - If an affected input has several sets of labels separated by solidi, any set containing the identifying number of the Mm-input [Mm-output] has no effect and is to be ignored. This represents disabling some of the functions of a multi-function input.

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- At each output affected by this Mm-input [Mm-output], any set of labels containing the identifying number of that Mm-input [Mm-output] has no effect and is to be ignored.

- If an output has several sets of labels separated by solidi (see IEC 617-12, Section 25), any set containing the identifying number of this Mm-input [Mm-output] is to be ignored. This represents disabling or selecting some of the functions of a multi-function output, or modifying some of the characteristics or dependent relationships of the output.

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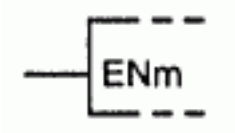
S01775



Name:	ENm-input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-23
Applies:	S01503; S01773
Application notes:	A00276, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The effect of this input on its affected inputs is the same as that of an Mm-input (see symbol S01773). The effect of this input on its affected digital outputs is the same as that of an EN-input (see symbol S01503). For any affected analogue output, if the ENm-input stands at its internal 1-state, the output has its normally defined function and analogue signal level. Otherwise, neither the function nor the level is specified by the symbol. If the ENm-input affects all outputs as defined in the note to symbol S01503, and no inputs, the identifying numbers (m) may be omitted. This symbol implies the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289.

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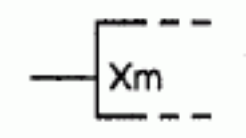
S01776



Name:	Xm-input
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-24
Keywords:	dependency notation
Applied in:	S01804
Applies:	S01556
Application notes:	A00276, A00281, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	See also symbol S01556 and application note A281. This symbol implies the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289.

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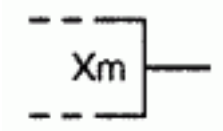
S01777



Name:	Xm-output
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-05-25
Keywords:	dependency notation
Applies:	S01557
Application notes:	A00276, A00281, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	See also symbol S01557 and application note A281. This symbol implies the application of dependency notation including the replacement of "m" by the relevant identifying number. For an explanation of the techniques involved, see A00276 and A00289.

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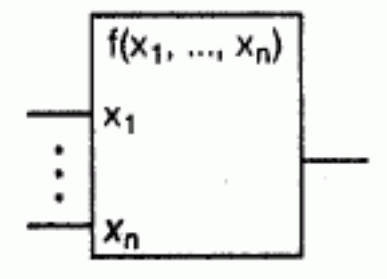
S01778



Name:	Function-computing element, general symbol
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-06-01
Keywords:	analogue elements
Applied in:	S01779, S01780, S01792
Applies:	S01463
Application notes:	A00323
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	f (x1, ..., xn) shall be replaced by an appropriate indication (a symbol or a graph) of, or reference to, the function (see e.g., IEC 27-1). x1, ..., xn shall be replaced by appropriate indications of the arguments of the function. To avoid ambiguity with the symbols for level converter and the code converter, the solidus shall not be used to indicate division.

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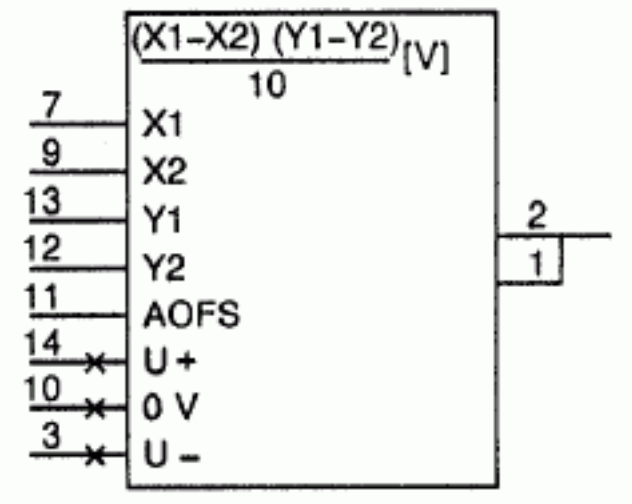
S01779



Name:	Multiplier
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-07-01
Keywords:	mathematical elements
Alternative forms:	S01780
Applies:	S01753; S01761; S01764; S01778
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. AD532D.

Symbol S01780 depicts the same device performing another function.

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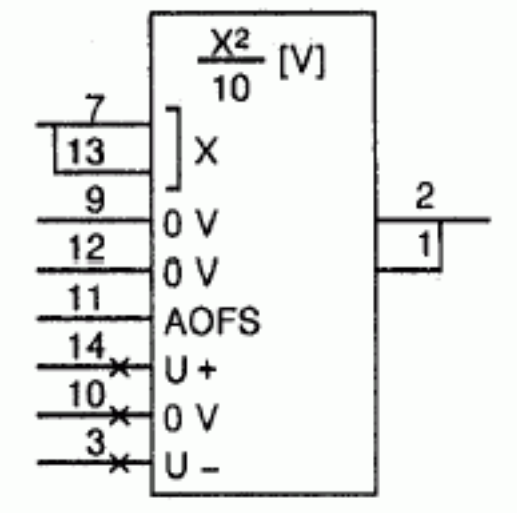
S01780



Name:	Squarer
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-07-02
Keywords:	mathematical elements
Alternative forms:	S01779
Applies:	S01753; S01761; S01764; S01778
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams
Remarks:	E.g. AD532D. Symbol S01779 depicts the same device performing another function.

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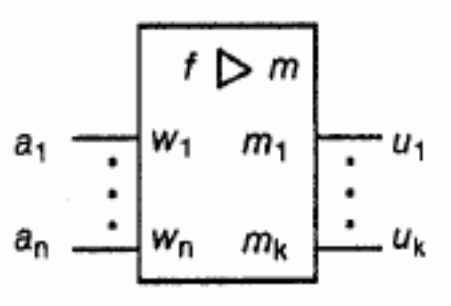
S01781



Name:	Amplifier, general symbol
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-08-01
Keywords:	amplifiers
Form:	form 3
Alternative forms:	S01239; S01240
Applied in:	S01782, S01784, S01783, S01787, S01786, S01790, S01789, S01785, S01788
Applies:	S01457; S01463
Application notes:	A00325
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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Remarks: $u_i = m \cdot m_i \cdot f\,(w_1 \cdot a_1, w_2 \cdot a_2, ..., w_n \cdot a_n)$ where i = 1, 2, ..., k

If an element performs a specific function in addition to amplification, "*f* " may be replaced by an appropriate qualifying symbol. Otherwise "*f* " shall be omitted. The following qualifying symbols should be used for the functions listed:

- summing;
- integration;
d/dt - differentiating with respect to time;
exp - exponentiation;
log - logarithmic (base 10);
SH - sample-and-hold.

$m \cdot m_i$ equals the amplification for output i.

m represents the common factor of the amplification.

If the common factor is fixed and is to be shown, the "*m* " shall be replaced by a number or expression giving the absolute value of the common factor or the range within which it is fixed.

If the common factor is variable and that fact is to be shown, "*m* " shall be shown and the way to determine the value of m shall be shown either inside the symbol or in supporting documentation. Otherwise the "*m* " shall be omitted.

The following indications should be used for indicating a fixed common factor:

- if the common factor is large;
1 - if the common factor is 1;
a number - if the common factor is to be shown explicitly;
*1 ... *2 - if the common factor is fixed within the range *1 ... *2.

*1 and *2 shall be replaced by the smallest and by the largest factors in the range, respectively.

$m_1 ... m_k$ represe

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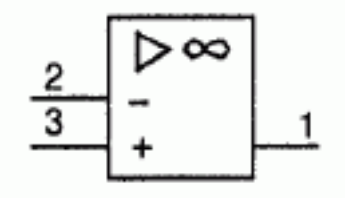
S01782



Name:	Operational amplifier
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-01
Keywords:	amplifiers
Applied in:	S01740
Applies:	S01781
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of LM324.

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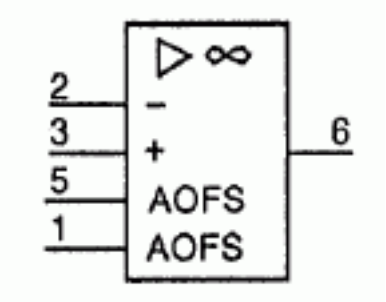
S01783



Name:	Operational amplifier
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-02
Keywords:	amplifiers
Applies:	S01764; S01781
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LM741.

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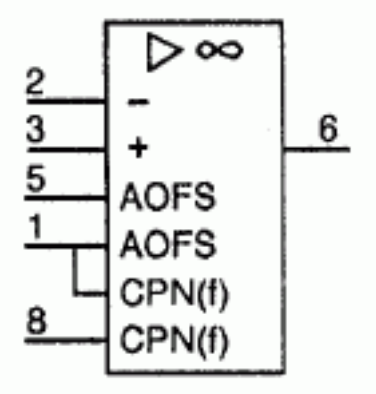
S01784



Name:	Operational amplifier
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-03
Keywords:	amplifiers
Applies:	S01764; S01765; S01781
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LM301A.

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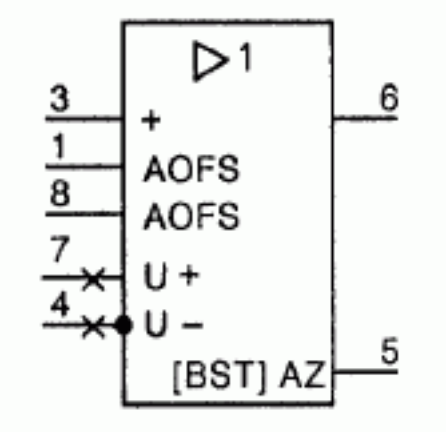
S01785



Name:	Voltage follower
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-04
Keywords:	amplifiers
Applies:	S00016; S01546; S01764; S01781
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g., LM310, metal-can package. This use of symbol S00016 (the dot) represents the connection of the case (envelope) to a terminal.

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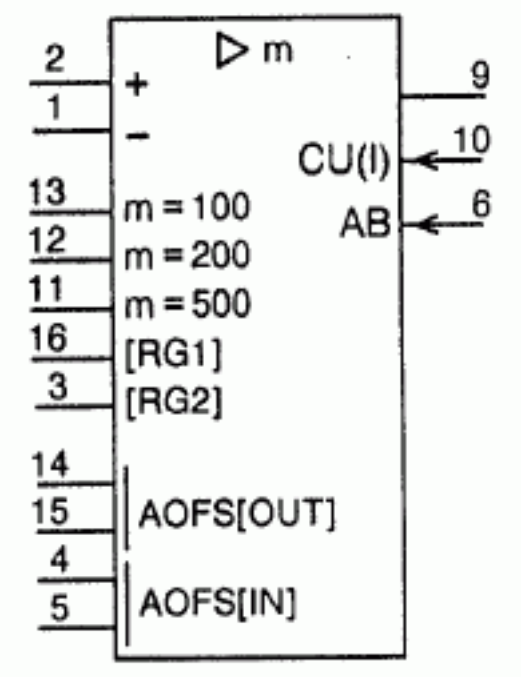
S01786



Name:	Amplifier with selectable amplification
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-05
Keywords:	amplifiers
Applies:	S01518; S01764; S01765; S01781
Shape class:	Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. AD624.

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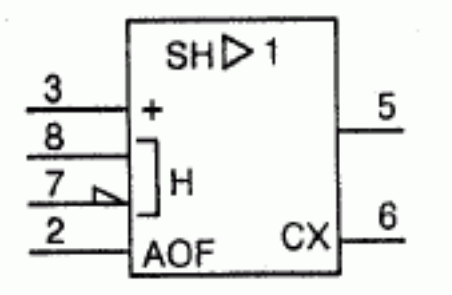
S01787



Name:	Sample-and-hold amplifier with an amplification factor of one
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-06
Keywords:	amplifiers
Applies:	S01468; S01540; S01764; S01765; S01768; S01781
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LF398.

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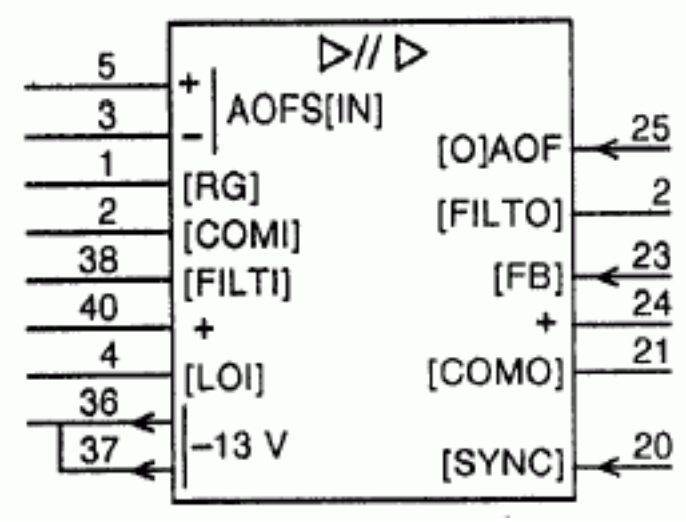
S01788



Name:	Amplifier, isolating
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-07
Keywords:	amplifiers
Applies:	S01407; S01518; S01764; S01781
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. AD293.

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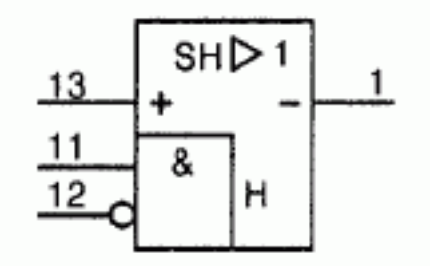
S01789



Name:	Sample-and-hold amplifier with an amplification factor of one
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-08
Keywords:	amplifiers
Applies:	S01466; S01476; S01567; S01768; S01781
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. 4860

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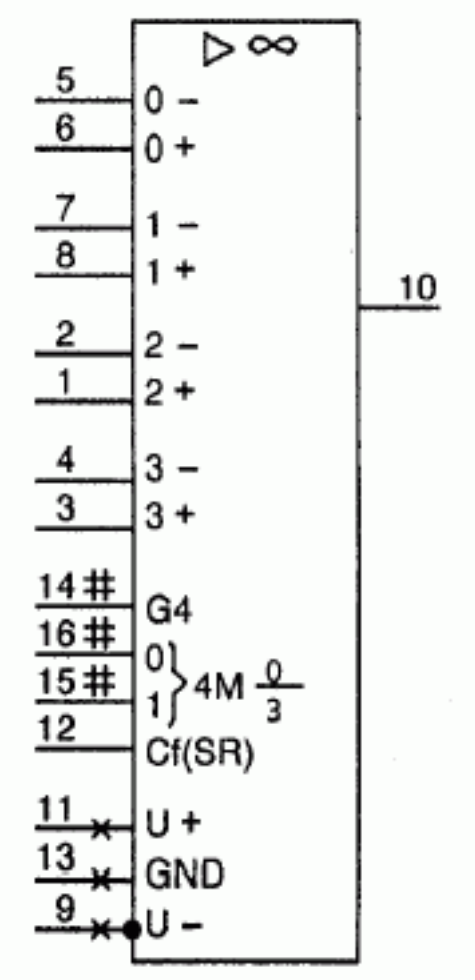
S01790



Name:	Operational amplifier with multiplexed inputs (one of four)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-09-09
Keywords:	amplifiers
Applies:	S00016; S01750; S01753; S01765; S01773; S01781; S01810
Shape class:	Characters, Equilateral triangles, Rectangles
Function class:	K Processing signals or information

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Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. HA-2400.
	This use of symbol S00016 (the dot) represents the connection of the case (envelope) to a terminal.

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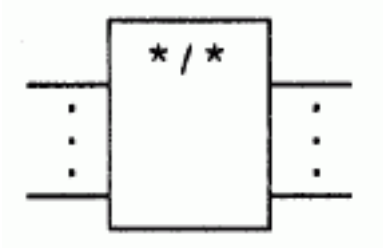
S01791



Name:	Converter, general symbol
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-10-01
Keywords:	converters
Applied in:	S01793, S01794, S01795, S01792
Applies:	S00214; S01407; S01463
Application notes:	A00296, A00327
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams, Overview diagrams

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Remarks:

The general qualifying symbol * / * may be replaced by * //* if it is necessary to indicate electrical isolation.

The asterisks shall be replaced by appropriate indications of the quantities or qualities con-cerned.

The left asterisk refers to the input; the right asterisk refers to the output.

The following indications should be used for the items listed:

- digital, code unspecified;
- analogue, function unspecified;
U or V - voltage;
f - frequency;
or - phase;
I - current;
T - temperature.

The general qualifying symbols #/ and /# may be replaced by DAC and ADC rsp.

In the general qualifying symbols #/ and /#, # may be replaced by an appropriate indication of the code used at the digital inputs [outputs] to determine [represent] the internal value, In this case, the digital inputs [outputs] shall be labelled with characters that refer to this code. See Clause 32.1 of A296 for further information on this method.

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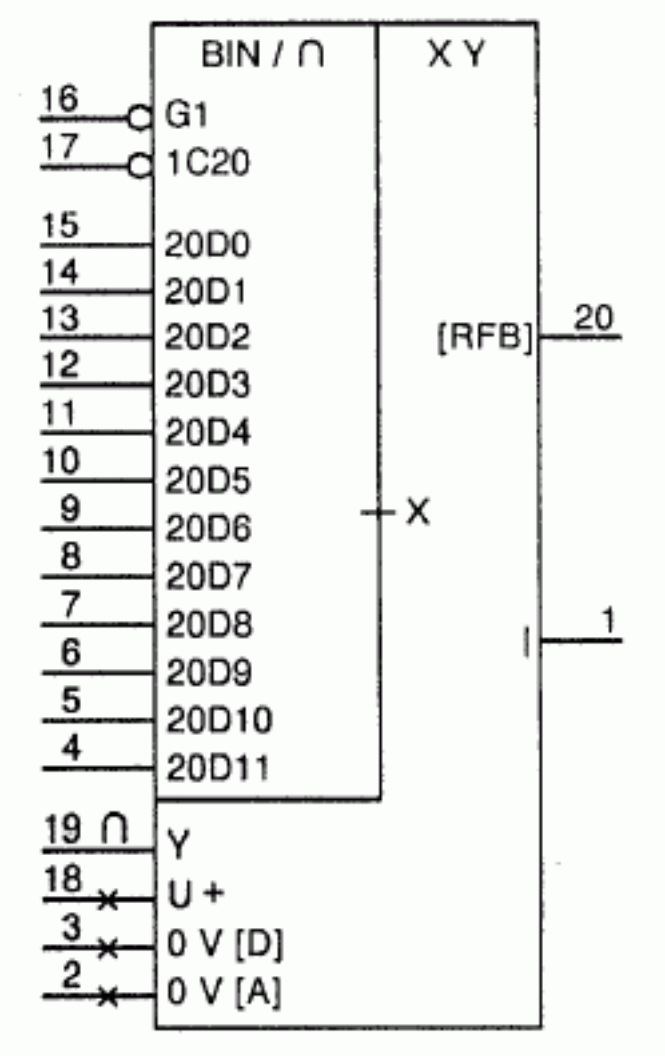
S01792



Name:	Converter, digital to analogue (DAC), multiplying
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-11-01
Keywords:	analogue elements, arithmetic elements, converters
Applies:	S01466; S01475; S01546; S01558; S01748; S01753; S01778; S01791; S01810
Shape class:	Characters, Rectangles

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Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. AD7545.

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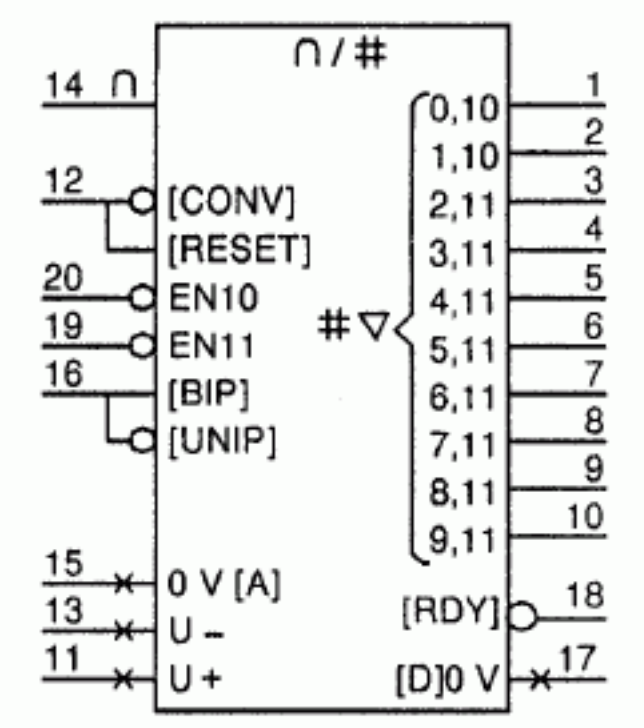
S01793



Name:	Converter, analogue to digital (ADC)
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-11-02
Keywords:	converters
Applies:	S01466; S01467; S01498; S01562; S01748; S01753; S01791
Shape class:	Characters, Lines , Rectangles
Function class:	K Processing signals or information, T Converting but maintaining kind
Application class:	Circuit diagrams, Function diagrams

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Remarks: E.g. AD573.

The general qualifying symbols #/ and /# may be replaced by DAC and ADC rsp.

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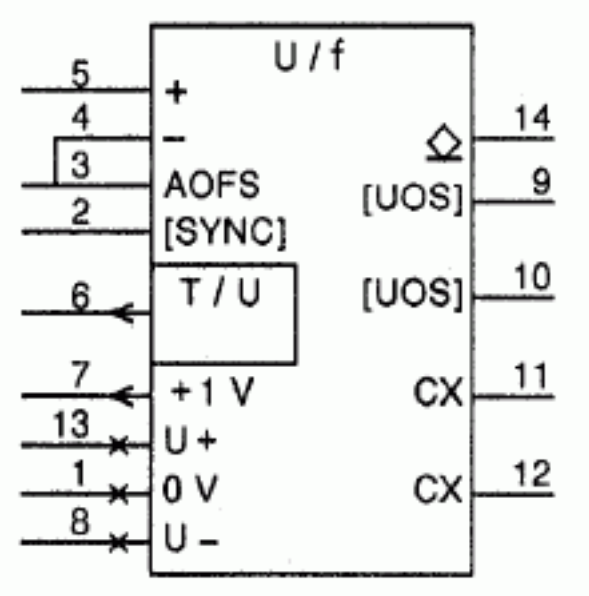
S01794



Name:	Converter, voltage to frequency
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-11-03
Keywords:	converters
Applies:	S01495; S01753; S01764; S01765; S01791
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. AD537.

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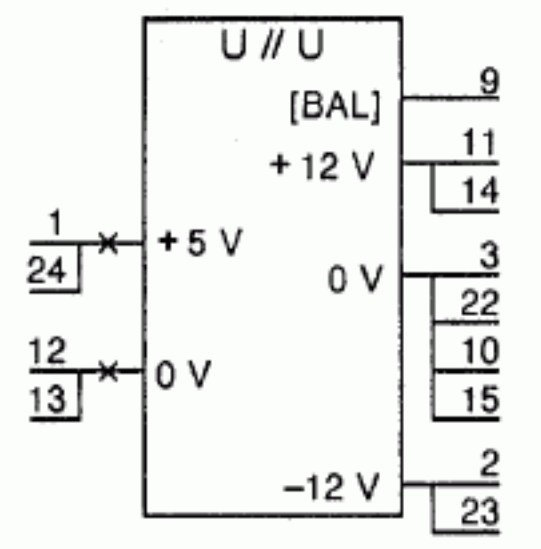
S01795



Name:	Converter, d.c.-to-d.c., isolating
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-11-04
Keywords:	converters
Applies:	S01753; S01791
Application notes:	A00328
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. PM671P. Internal branches are shown, e.g., between terminals 2 and 23. If it is not important to emphasize this fact, label-grouping symbols may be used, see A00328.

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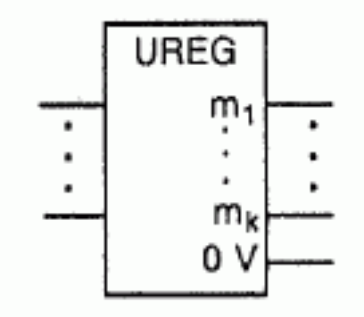
S01796



Name:	Voltage regulator, general symbol
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-12-01
Keywords:	regulators, stabilizers
Applied in:	S01797, S01799, S01798
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	m1 ... mk represent the regulated (stabilized) voltages with respect to the common (0 V) terminal. m1 ... mk shall be replaced by: - U1 ... Uk, each followed by the polarity sign, or by - the actual values or ranges of the regulated voltages.

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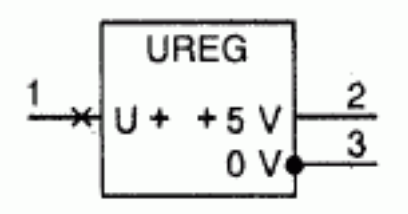
S01797



Name:	Voltage regulator, positive, fixed
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-13-01
Keywords:	voltage regulators, voltage stabilizers
Applies:	S00016; S01796
Shape class:	Characters, Rectangles
Function class:	G Initiating a flow
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LM309H. This use of symbol S00016 (the dot) represents the connection of the case (envelope) to a terminal.

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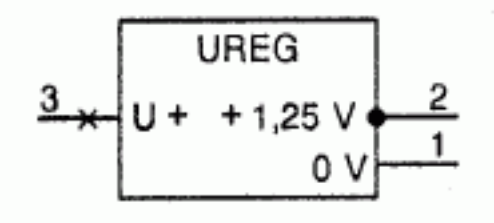
S01798



Name:	Voltage regulator, positive, adjustable
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-13-02
Keywords:	voltage regulators
Applies:	S00016; S01546; S01796
Application notes:	A00330
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LM317T. This use of symbol S00016 (the dot) represents the connection of the case (envelope) to a terminal. Although the voltage between terminals 2 and 1 is fixed, an external network can be used to obtain a different regulated voltage between terminal 2 and another point in the network, see A00330.

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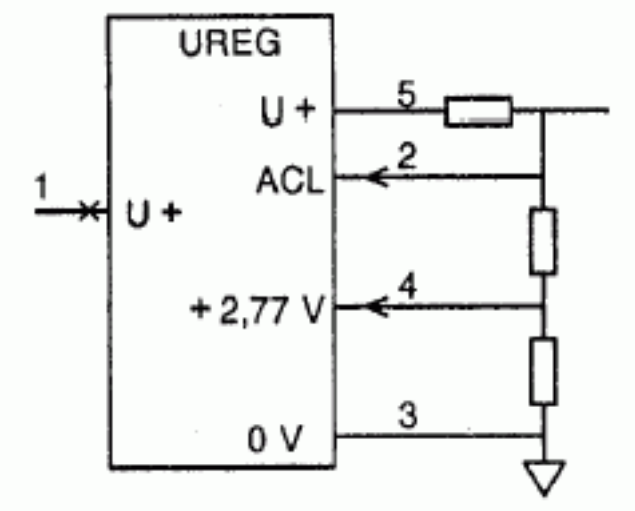
S01799



Name:	Voltage regulator, positive, adjustable, with current limiting
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-13-03
Keywords:	voltage regulators
Applies:	S00204; S00555; S01546; S01764; S01796
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. L200CV.

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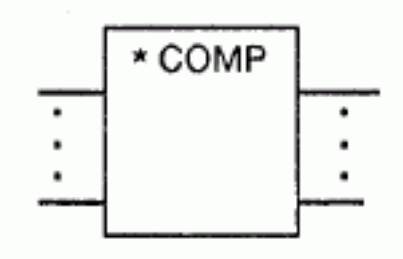
S01800



Name:	Comparator, general symbol
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-14-01
Keywords:	comparators
Applied in:	S01715, S01713, S01802, S01801, S01806
Applies:	S01463
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	The asterisk shall be replaced by the appropriate letter symbol for the quantity or operands whose values are to be compared. If no confusion is likely, this letter symbol may be omitted.

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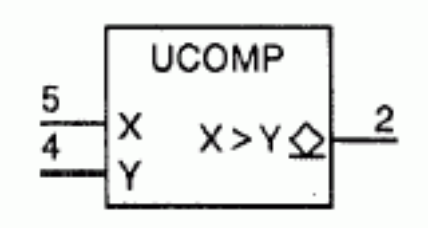
S01801



Name:	Voltage comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-15-01
Keywords:	comparators
Applied in:	S01713, S01742
Applies:	S01495; S01770; S01800
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. part of LM339.

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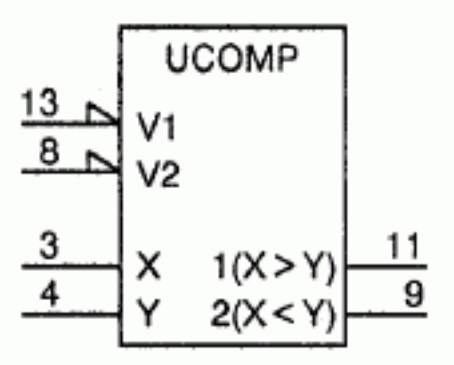
S01802



Name:	Voltage comparator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-15-02
Keywords:	comparators
Applies:	S01468; S01550; S01770; S01800
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. LM361.

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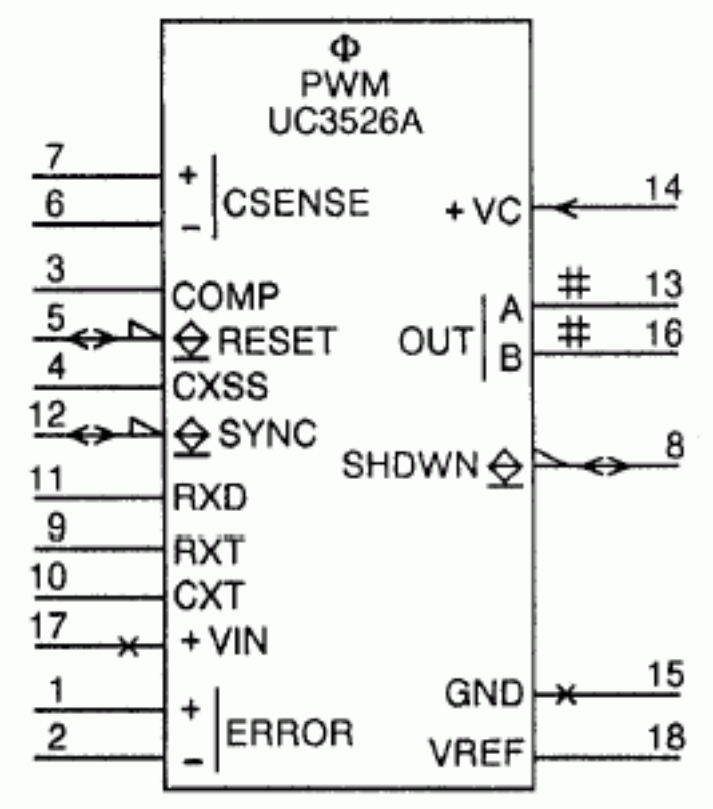

Name:	Pulse-width modulator
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-16-01
Keywords:	modulators
Applies:	S00100; S01468; S01497; S01518; S01561; S01731; S01749; S01753; S01765
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams

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Remarks: (e.g., Unitrode UC3526 A)

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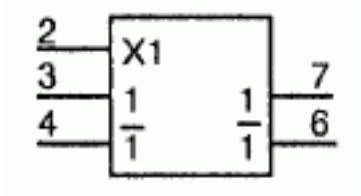
S01804



Name:	Analogue switch
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-17-01
Keywords:	switches
Applies:	S01776
Application notes:	A00281
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TL604.

In electronic switches, the connections between inputs and outputs shall be shown by TRANSMISSION (Xm) dependancy as described in A00281.

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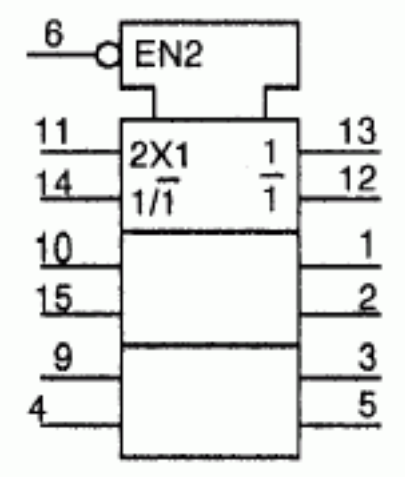
S01805



Name:	Analogue multiplexer/demultiplexer, triple
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-17-02
Keywords:	multiplexers
Alternative forms:	S01606
Applies:	S01466; S01556; S01562
Application notes:	A00281
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. 74HC4053. Symbol S01606 depicts the same device in another way.

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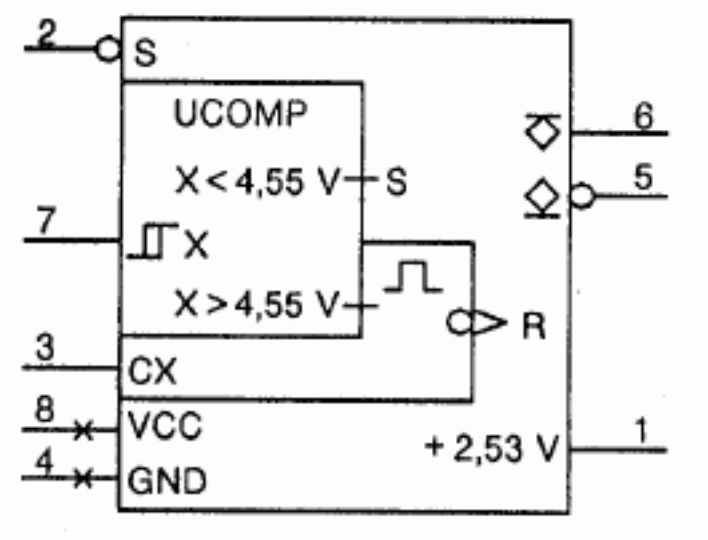
S01806



Name:	Voltage supervisor
Status level:	Standard
Released on:	2004-09-13
Earlier published in:	IEC 60617-13 (ed.2.0) 13-18-01
Keywords:	supervisors
Applies:	S01466; S01475; S01477; S01492; S01494; S01495; S01558; S01560; S01674; S01753; S01800
Shape class:	Characters, Rectangles
Function class:	K Processing signals or information
Application class:	Circuit diagrams, Function diagrams
Remarks:	E.g. TL7705 A.

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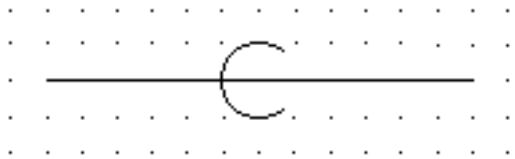
S01807



Name:	Concentric conductor
Status level:	Standard
Released on:	2004-03-27
Earlier published in:	Not applicable
Keywords:	conductors
Applies:	S00001
Shape class:	Circle segments
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams, Function diagrams, Installation diagrams, Overview diagrams
Symbol restrictions:	Not to be used for an screen or a coaxial pair.

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S01808



Name:	Complex function
Status level:	Standard
Released on:	2003-07-20
Earlier published in:	Not applicable
Keywords:	complex functions
Applied in:	S01454, S01731
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The letter shall be supported by an indication, preferably short, of the function. "" is defined as character 5/6 of IEC 61286 "CAPITAL LETTER SYMBOL PHI", equivalent to UCS 03A6 (Table 10) of ISO/IEC 10646 "GREEK CAPITAL LETTER PHI".

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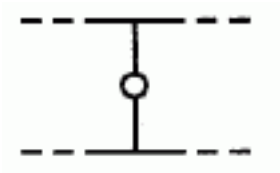
S01809



Name:	Internal connection with negation
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-08-02
Keywords:	combinative elements, internal connections
Alternative forms:	S01486
Applied in:	S01486, S01592, S01618, S01632
Applies:	S01466; S01476
Application notes:	A00273
Shape class:	Circles
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Symbol restrictions:	This symbol may be used for a signal flow from right to left only if the direction of the signal flow is obvious. Otherwise, symbol S01486 shall be used.
Remarks:	The internal 1-state [0-state] of the input of the element on the right corresponds to the internal 0-state [1-state] of the output of the element on the left. The vertical line may extend through the circle.

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S01810



Name:	Gm-input
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-14-01
Keywords:	AND dependency, binary logic elements, dependency notation
Applied in:	S01700, S01701, S01702, S01703, S01598, S01593, S01603, S01600, S01618, S01624, S01631, S01632, S01635, S01634, S01630, S01633, S01698, S01693, S01715, S01718, S01714, S01716, S01722, S01790, S01792
Application notes:	A00276, A00277, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	If a Gm-input stands at its internal 1-state, all inputs and outputs affected by this Gm-input stand at their normally defined internal logic states. If a Gm-input stands at its internal 0-state, all inputs and outputs affected by this Gm-input stand at their internal 0-states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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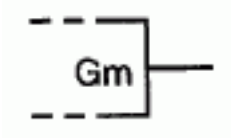
S01811



Name:	Gm-output
Status level:	Standard
Released on:	2004-09-01
Earlier published in:	IEC 60617-12 (ed.3.0) 12-14-02
Keywords:	AND dependency, binary logic elements, dependency notation
Applied in:	S01683, S01720, S01719
Application notes:	A00276, A00277, A00288, A00289
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	Each output affected by a Gm-output stands in an AND relationship with this Gm-output. If a Gm-output stands at its internal 1-state, all inputs and outputs affected by this Gm-output stand at their normally defined internal logic states. If a Gm-output stands at its internal 0-state, all inputs and outputs affected by this Gm-output stand at their internal 0-states. m shall be replaced by the relevant identifying number. The note with table I of A00276 applies.

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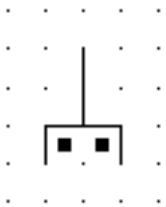
S01812



Name:	Multiple socket outlet (telecommunications)
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	installations in buildings, socket outlets
Applies:	S00465
Shape class:	Lines
Function class:	X Connecting
Application class:	Installation diagrams
Symbol restrictions:	The shown symbol is used for double outlets only.
Remarks:	For more than two outlets, indicate the number of outlets in the same way as in S00458.

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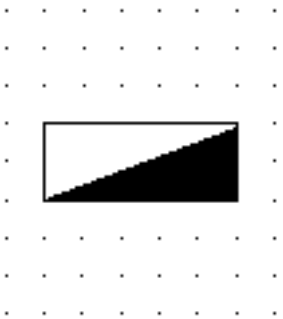
S01813



Name:	Distribution casing
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Electrical cabinet
Keywords:	installation material, installations in buildings
Shape class:	Rectangles, Right-angled triangle
Function class:	- Functional elements or attributes
Application class:	Installation diagrams

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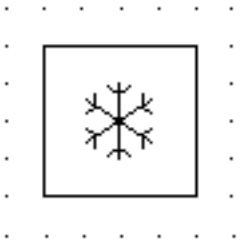
S01814



Name:	Cooling unit, general symbol
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Refrigerator; Freezer
Keywords:	appliances, installations in buildings
Applied in:	S01826
Shape class:	Depicting shapes, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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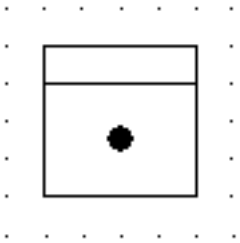
S01815



Name:	Oven
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Dots (points), Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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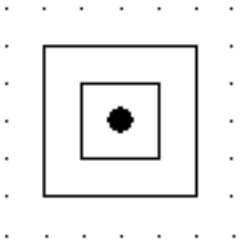
S01816



Name:	Warm-keeping plate
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Dots (points), Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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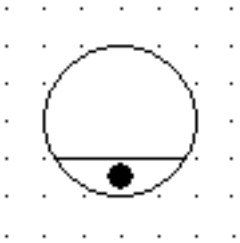
S01817



Name:	Chip pan
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Circles, Dots (points), Lines
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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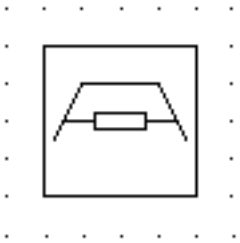
S01818



Name:	Infrared heater
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Applies:	S01825
Shape class:	Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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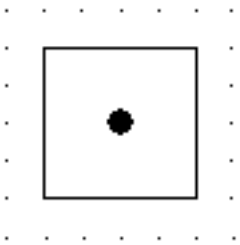
S01819



Name:	Feed heater
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Feed breather
Keywords:	appliances, installations in buildings
Shape class:	Dots (points), Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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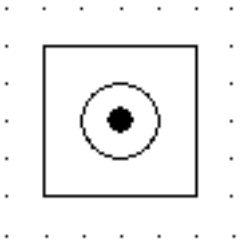
S01820



Name:	Washing machine
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Circles, Dots (points), Squares
Function class:	V Processing of material or products
Application class:	Installation diagrams

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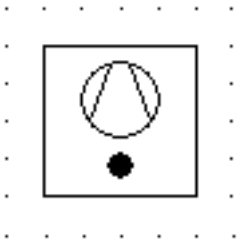
S01821



Name:	Tumble-drier
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	installations in buildings
Applies:	S01421
Shape class:	Circles, Dots (points), Squares
Function class:	V Processing of material or products
Application class:	Installation diagrams

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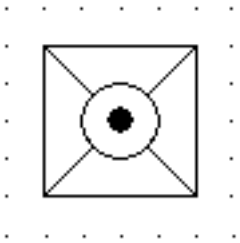
S01822



Name:	Dishwasher
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Circles, Dots (points), Lines , Squares
Function class:	V Processing of material or products
Application class:	Installation diagrams

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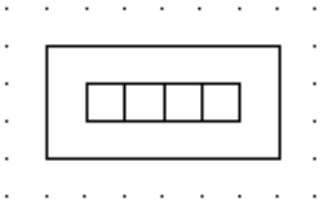
S01823



Name:	Space-heater
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Applied in:	S01824, S01826, S01827
Applies:	S00566
Shape class:	Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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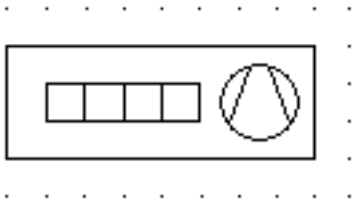
S01824



Name:	Space-heater with fan
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Applies:	S01421; S01823
Shape class:	Circles, Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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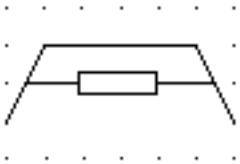
S01825



Name:	Infrared radiator
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Applied in:	S01818
Applies:	S00566
Shape class:	Lines , Rectangles
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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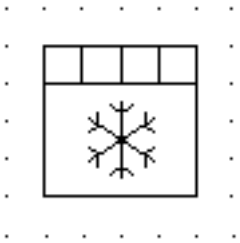
S01826



Name:	Climate control unit
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Air conditioner
Keywords:	appliances, installations in buildings
Applies:	S01814; S01823
Shape class:	Depicting shapes, Rectangles, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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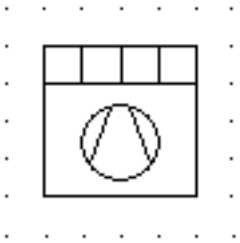
S01827



Name:	Hand dryer
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Hair dryer
Keywords:	appliances, installations in buildings
Applies:	S01421; S01823
Shape class:	Circles, Lines , Squares
Function class:	G Initiating a flow
Application class:	Installation diagrams

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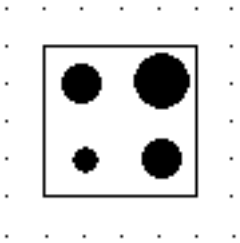
S01828



Name:	Electric kitchen stove, general symbol
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Shape class:	Circles, Dots (points), Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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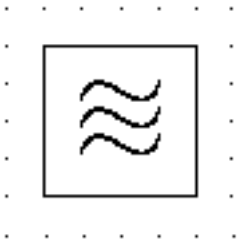
S01829



Name:	Microwave oven
Status level:	Rejected
Earlier published in:	Not applicable
Keywords:	appliances, installations in buildings
Applies:	S00075
Shape class:	Depicting shapes, Squares
Function class:	E Providing radiant or thermal energy
Application class:	Installation diagrams

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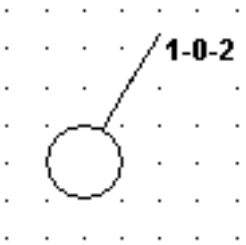
S01830



Name:	Two-way single pole switch
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Three position switch
Keywords:	installations in buildings, switches
Form:	Form 2
Applies:	S00466
Shape class:	Characters, Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Installation diagrams

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S01831

Name:	Dummy symbol for testing of terminology
Status level:	For test purposes only
Released on:	2004-09-08
Obsolete from:	2004-09-08
Earlier published in:	IEC 60617-2 (ed.2.0) Earlier publication
Alternative names:	Alternative English name
Keywords:	testing points
Form:	Form1
Alternative forms:	S00001
Applies:	S00001
Application notes:	A00001
Replacing:	S00001
Shape class:	Trapezoids
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams
Symbol restrictions:	English restrictions
Remarks:	English remark

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S01832



Name:	Actuating (when the absolute value of the quotient of two kinds of characteristic quantity deviates from 1)
Status level:	Obsolete - for reference only
Obsolete from:	2005-06-09
Earlier published in:	Not applicable
Keywords:	dependence on a quantity, quantity dependency
Applies:	S00112
Shape class:	Characters
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers
Remarks:	The asterisks within the symbol shall be replaced with the letter symbol for the quantity measured.

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S01833



Name:	Testing terminal for voltage circuit (voltage transformer secondary circuit)
Status level:	Proposed
Obsolete from:	2005-06-09
Earlier published in:	Not applicable
Keywords:	terminals
Form:	Form 1
Alternative forms:	S01834; S01835
Applies:	S00016
Shape class:	Dots (points)
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams

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S01834



Name:	Testing terminal for voltage circuit (voltage transformer secondary circuit)
Status level:	Proposed
Obsolete from:	2005-06-09
Earlier published in:	Not applicable
Keywords:	terminals
Form:	Form 2
Alternative forms:	S01833; S01835
Applies:	S00016
Shape class:	Dots (points)
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams

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S01835

Name:	Testing terminal for voltage circuit (voltage transformer secondary circuit)
Status level:	Proposed
Obsolete from:	2005-06-09
Earlier published in:	Not applicable
Keywords:	terminals
Form:	Form 3
Alternative forms:	S01833; S01834
Shape class:	Dots (points), Lines
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams

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S01836



Name:	Hot-line terminal (for HV-bus)
Status level:	Proposed
Obsolete from:	2005-06-09
Earlier published in:	Not applicable
Keywords:	terminals
Applies:	S00016
Shape class:	Arrows, Dots (points)
Function class:	- Functional elements or attributes
Application class:	Circuit diagrams, Connection diagrams

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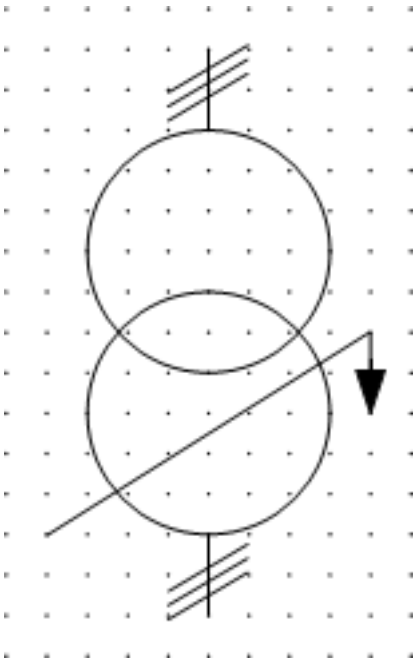
S01837



Name:	Phase-shifting transformer, three-phase
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	phase-shifting, transformers
Form:	Form 1
Alternative forms:	S01838
Applies:	S00002; S00841; S01846
Application notes:	A00128
Shape class:	Arrows, Circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams

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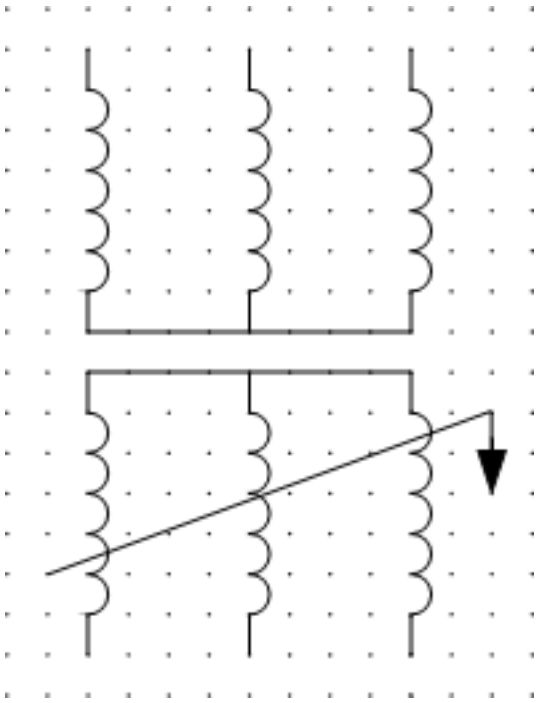
S01838



Name:	Phase-shifting transformer, three-phase
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	phase-shifting, transformers
Form:	Form 2
Alternative forms:	S01837
Applies:	S00842; S01846
Application notes:	A00128
Shape class:	Arrows, Half-circles, Lines
Function class:	T Converting but maintaining kind

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Application class:	Circuit diagrams, Connection diagrams

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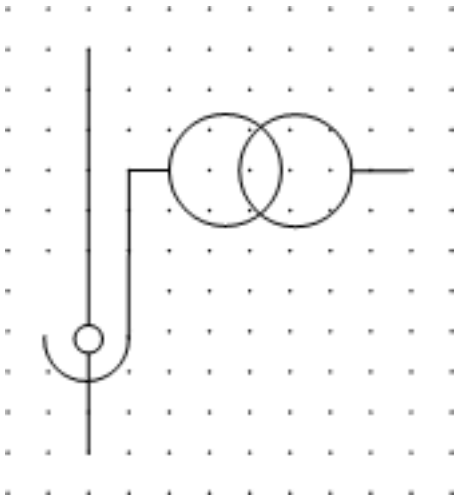
S01839



Name:	Bushing type voltage transformer
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	measuring transformers, transformers, voltage transformers
Form:	Form 1
Alternative forms:	S01840
Applies:	S00017; S00878
Shape class:	Circles, Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams

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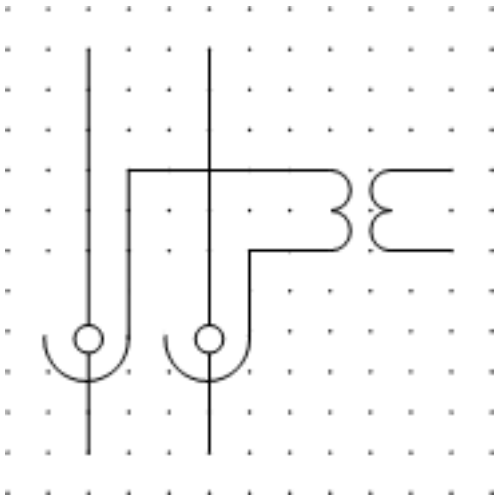
S01840



Name:	Bushing type voltage transformer
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	measuring transformers, transformers, voltage transformers
Form:	Form 2
Alternative forms:	S01839
Applies:	S00017; S00878
Application notes:	A00128
Shape class:	Half-circles
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams

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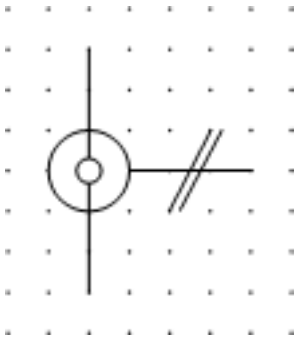
S01841



Name:	Bushing type current transformer
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	current transformers, transformers
Form:	Form 1
Alternative forms:	S01842
Applies:	S00017; S00850
Application notes:	A00128
Shape class:	Circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams

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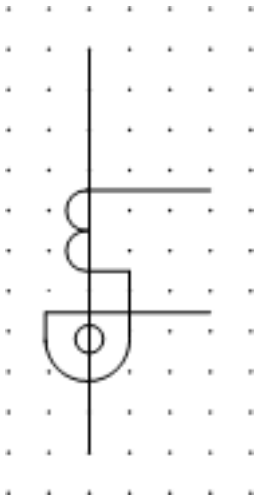
S01842



Name:	Bushing type current transformer
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	current transformers, measuring transformers
Form:	Form 2
Alternative forms:	S01841
Applies:	S00017; S00851
Application notes:	A00128
Shape class:	Half-circles, Lines
Function class:	B Converting variable to signal
Application class:	Circuit diagrams, Connection diagrams

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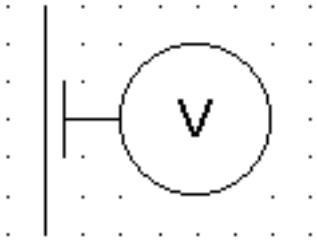
S01843



Name:	Simplicity voltage detector
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	indicating instruments, instruments, measuring instruments, voltmeters
Applies:	S00910; S00913
Shape class:	Characters, Circles, Lines
Function class:	P Presenting information
Application class:	Circuit diagrams, Connection diagrams

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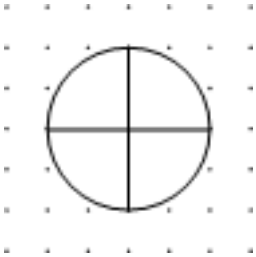
S01844



Name:	Instrument diverter switch for voltage circuit
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	switches
Applies:	S00061
Application notes:	A00349
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams

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S01845



Name:	Instrument diverter switch for current circuit
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	switches
Applies:	S00061
Application notes:	A00350
Shape class:	Circles, Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Connection diagrams

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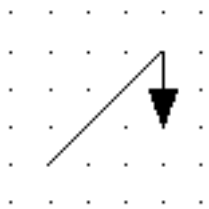
S01846



Name:	Phase-shifting
Status level:	Standard
Released on:	2005-11-15
Earlier published in:	Not applicable
Keywords:	phase-shifting
Applied in:	S01837, S01838
Shape class:	Arrows, Lines
Function class:	- Functional elements or attributes
Application class:	Conceptual elements or qualifiers

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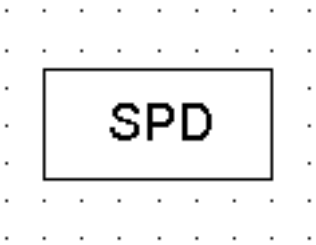
S01847



Name:	Surge protective device (SPD), general symbol
Status level:	Rejected
Earlier published in:	Not applicable
Alternative names:	Transient voltage surge suppressor (TVSS)
Keywords:	arresters, avalanche breakdown diodes, gas discharge tubes, metal oxide varistors, spark gaps, surge protective devices, thyristor surge suppressors
Shape class:	Characters, Rectangles
Function class:	F Protecting
Application class:	Circuit diagrams, Function diagrams, Installation diagrams, Overview diagrams
Remarks:	The symbol may be used for one-port as well as two-port surge protective devices, and for single phase as well as multi-phase devices. The size of the symbol is to be adapted to the required number of connections.

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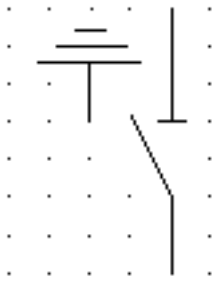
S01848



Name:	Combined disconnector and earthing switch
Status level:	Proposed
Earlier published in:	Not applicable
Keywords:	disconnectors, earth connection, switches
Applies:	S00200; S00288
Shape class:	Lines
Function class:	Q Controlled switching or varying
Application class:	Circuit diagrams, Function diagrams, Overview diagrams
Remarks:	Individual actuator equipment may be added.

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Application note A00001

A drawing method in which the symbol for conductors in a cable (S00009), screened conductor (S00007), or twisted connection (S00008) is shown either above, below, or beside the intermingled group of conductor symbols may be used if several conductors are contained within the same screen or cable or are twisted together, but the symbols for these conductors are intermingled with symbols for other connections.
The symbol shall be connected by a leader line pointing to the individual lines representing the conductors within the same screen, cable or twisted group.

For an example, see S00010.

Applies to: S00007, S00008, S00009, S00010, S01831

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Application note A00002

Terminal markings may be added.

Applies to: S00018

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Application note A00003

"n" shall be replaced by the total number of circuits. The figure shall be placed adjacent to the junction symbol. See IEC 61082-2.
A pair of mirror-imaged symbols indicates the extent of the circuit(s).

Illustration of concept: 10 parallel and identical resistors, see "A00003Illustration.gif" below.

Applies to: S00023, S00026, S01351

A00003Illustration.gif

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Application note A00004

The symbol applies to multi-phase or DC power circuits. The interchanged conductors may be indicated.

Applies to: S00024, S00025

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Application note A00005

The stroke shall be drawn parallel to the symbol for the non-interrupted conductor.

Applies to: S00029

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Application note A00006

In single line representation the symbol denotes the female part of a multi-contact connector.

Applies to: S00031, S01352, S01354

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Application note A00007

In single line representation the symbol denotes the male part of a multi-contact connector.

Applies to: S00032, S01353, S01354

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Application note A00008

The symbol "Connector, fixed portion of an assembly" should be used only when it is desired to distinguish between the fixed and movable parts in a connector assembly.

Applies to: S00036, S00037, S00038

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Application note A00009

The longest pole on the plug symbol "Telephone type plug and jack" represents the tip of the plug, and the shortest the sleeve.

Applies to: S00039, S00040

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Application note A00010

If the coaxial plug or socket is connected to a coaxial pair, the tangential stroke shall be extended on the appropriate side.

Applies to: S00042

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Application note A00011

If the coaxial structure is not maintained, the tangential line shall be drawn only on the coaxial side.

Applies to: S00011, S00012

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Application note A00012

The high pressure side is the longer side of the trapezium thus retaining gland in bulk-head.

Applies to: S00056, S00513

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Application note A00013

Suitable symbols or legends shall be inserted in or added to the symbol outline to indicate the type of object.

Applies to: S00059, S00060, S00061, S01225

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Application note A00014

An outline of another shape may be used if layout demands it.

Applies to: S00062, S00063

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Application note A00015

If the enclosure has special protective features attention may be drawn to these by a note.

Applies to: S00062, S00063

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Application note A00016

The envelope symbol may be omitted if no confusion is likely. The envelope must be shown if there is a connection to it.

Applies to: S00062, S00063

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Application note A00017

If necessary the envelope symbol may be split.

Applies to: S00062, S00063

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Application note A00018

The symbol is used to indicate a boundary of a group of objects associated physically, mechanically or functionally.

Applies to: S00064

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Application note A00019

Any combination of short and long strokes may be used.

Applies to: S00064

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Application note A00020

The symbol may be drawn in any convenient shape.

Applies to: S00065

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Application note A00021

The asterisk shall be replaced by the symbol(s) for an equipment or device protected against unintentional direct contact.

Applies to: S00066

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Application note A00022

The voltage may be indicated at the right of the symbol and the type of system at the left.

EXAMPLE: 2/M <symbol S00067> 220/110 V

Applies to: S00067, S01349

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Application note A00023

The numerical value of the frequency or the frequency range may be added at the right-hand side of the symbol.

Applies to: S00069, S00070, S00071, S00072, S00107

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Application note A00024

The voltage value may also be indicated to the right of the symbol.

Applies to: S00071, S00072, S00107

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Application note A00025

The number of phases and the presence of a neutral may be indicated at the left-hand side of the symbol.

Applies to: S00071, S00107

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Application note A00026

If it is necessary to indicate a system in accordance with the designations established in IEC 60364-3 the corresponding designation shall be added to the symbol.

Applies to: S00072, S00107

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Application note A00027

Symbols S00073, S00074 and S00075 may be used when it is necessary on a given drawing to distinguish between different frequency ranges

Applies to: S00073, S00074, S00075

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Application note A00028

Adjustability is a kind of non-inherent variability which enables to perform an adjustment, i.e. to set the variable quantity on a suitable value.

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Application note A00029

Variability is non-inherent when the variable quantity is controlled by an external device, for example, when the resistance is controlled by a regulator.

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Application note A00030

Variability is inherent when the variable quantity depends on qualities of the device itself, for example, when the resistance changes as a function of voltage or of temperature.

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Application note A00031

The symbols for adjustabillity, variability and automatic control should be drawn across the main symbol at about 45° to the centre line of the latter symbol.

Applies to: S00083, S00084, S00085, S00086, S00088, S00089, S00090, S00091, S00092

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Application note A00032

Information on the controlling quantity, for example voltage or temperature, may be shown adjacent to the symbol.

Applies to: S00083, S00084, S00085, S00086

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Application note A00033

Information on the conditions under which adjustibility is permitted may be shown adjacent to the symbol.

Applies to: S00085, S00086

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Application note A00034

A figure indicating the number of steps may be added.

Applies to: S00087, S00088

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Application note A00035

The controlled quantity may be indicated adjacent to the symbol.

Applies to: S00091, S00092, S00095, S00097, S00098

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Application note A00036

An arrow may be used to indicate the direction in which the movable part of a device shall move to give a required effect (see A00036Example.pdf below).
It may also indicate the direction of a force or the direction of motion of the physical part symbolized. In such cases a note to indicate the view point may be required.

Applies to: S00093, S00094, S00095, S00096, S00097, S00098



A00036Example.pdf

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Application note A00037

The effect caused by movement may be explained by symbols or by a text.

Applies to: S00093, S00094, S00096

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Application note A00038

The dot may be omitted if the sense is unambiguously given by the arrowhead in combination with the symbol to which it is applied. For example see symbol S 01128.

Applies to: S00102

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Application note A00039

The dot may be omitted if the sense is unambiguously given by the arrowhead in combination with the symbol to which it is applied. For example see symbol S01127.

Applies to: S00103

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Application note A00040

The type of material may be indicated either by using its chemical symbol,or by one of the qualifying symbols given below.
These symbols have been drawn in rectangles, but the rectangle may be omitted when they are used in conjunction with another symbol.
If necessary, use may be made of the symbols for materials given in ISO 128

Applies to: S00113, S00114, S00115, S00116, S00117, S00118, S00119, S01216, S01217

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Application note A00041

Arrows pointing towards a symbol denote that the device symbolized will respond to incident radiation of the indicated type.
Arrows pointing away from a symbol denote the emission of the indicated type of radiation by the device symbolized.

Arrows located within a symbol denote an internal radiation source.

Applies to: S00127, S00128, S00129, S00130, S00131, S00901

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Application note A00042

If source and target are shown, the arrows shall point from source to target.
If there is a target but no specific source shown, the arrows shall point downwards and to the right.

If there is no specific target shown, the arrows shall point upwards and to the right.

Applies to: S00127, S00128, S00129, S00901

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Application note A00043

If it is necessary to show the specific type of ionizing radiation, the symbol may be augmented by the addition of symbols or letters such as the following:

ALPHA = alpha particle
BETA = beta particle
GAMMA = gamma rays
DELTA = deuteron
RHO = proton
ETA = neutron
PI = pion
KAPPA = K meson
MY = muon
X = X-ray

Applies to: S00129

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Application note A00044

Each symbol represents an idealized shape of the waveform.

Applies to: S00132, S00133, S00134, S00135, S00136, S00137

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Application note A00045

The length of the link symbol may be adjusted to the layout of the diagram.

Applies to: S00144, S00145, S00146, S00147

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Application note A00046

The arrow is assumed to be placed in front of the link symbol.

Applies to: S00146

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Application note A00047

Action is delayed when the direction of movement is from the arc towards its centre.

Applies to: S00148, S00149

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Application note A00048

The triangle is pointed in the return direction.

Applies to: S00150

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Application note A00049

If desired, a more detailed drawing of the cam may be shown. This applies also to a profile plate.

Applies to: S00182, S00183, S00185

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Application note A00050

Information showing the form of stored energy may be added in the square.

Applies to: S00186

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Application note A00051

Supplementary information may be given to define the status or the purpose of the earth if this is not readily apparent.

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Application note A00052

This symbol may be used in place of symbol S00200 to indicate an earth connection having a specified protective function, for example for protection against electrical shock in case of a fault.

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Application note A00053

The hatching may be completely or partly omitted if there is no ambiguity. If the hatching is omitted, the line representing the frame or chassis shall be thicker as shown below:

Applies to: S00203

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Application note A00054

Additional indications may be added to the symbols S00205 to S00207 according to IEC 60375.

Applies to: S00205, S00206, S00207

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Application note A00055

If the direction of change is not obvious, it may be indicated by an arrowhead on the outline of the symbol.

Applies to: S00213

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Application note A00056

A symbol or legend indicating the input or output quantity, waveform etc. may be inserted in each half of the general symbol to show the nature of the conversion.
Example see symbol S00894.

Applies to: S00213

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Application note A00057

This symbol shall be used only when it is necessary to distinguish between analogue and other forms of signals and connections.

Applies to: S00216, S00217

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Application note A00058

See also introductory text of IEC 60617, part 13, section 4

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Application note A00059

See also introductory text of Part 13, Section 4 and ISO/IEC 646.

Applies to: S00217

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Application note A00060

A small circle, open or filled in, representing the hinge point, may be added to most of the symbols. For example, see symbol S00228.
In some symbols the circle indicating the hinge point shall be shown. For example, see symbol S00231.

Applies to: S00227, S00229, S00230, S00232, S00233, S00234, S00235, S00236, S00237, S00238, S00239, S00240, S00241, S00242, S00243, S00244, S00245, S00246, S00247, S00248, S00249, S00250, S00251, S00253, S00254, S00255, S00256, S00257, S00258, S00259, S00260, S00261, S00262, S00263, S00264, S00265, S00271, S00272, S00274, S00284, S00285, S00286, S00287, S00288, S00290, S00291, S00292, S00294, S00295

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Application note A00061

For other methods of representing switches, especially complex, electronic switches, see IEC 617-12, section 17A and 29, and IEC 617-13, section 17.

Applies to: S00218, S00219, S00220, S00221, S00222, S00223, S00224, S00225, S00226, S00227, S00228, S00229, S00230, S00231, S00232, S00233, S00234, S00235, S00236, S00237, S00238, S00239, S00240, S00241, S00242, S00243, S00244, S00245, S00246, S00247, S00248, S00249, S00250, S00251, S00252, S00253, S00254, S00255, S00256, S00257, S00258, S00259, S00260, S00261, S00262, S00263, S00264, S00265, S00267, S00268, S00269, S00270, S00271, S00272, S00273, S00274, S00275, S00276, S00277, S00278, S00279

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Application note A00062

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 desireable to show the means of operation, one of the symbols 02-13-16 through 02-13-19 may be used instead.

Applies to: S00223

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Application note A00063

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

Applies to: S00223

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Application note A00064

This symbol may be used to indicate
automatic return. For example, see 07-06-01.

Applies to: S00224, S00249, S00251, S00252

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Application note A00065

This symbol shall not be used together with
qualifying symbols S00218, S00219, S00220 and S00221. In many cases, symbol S00150 may be used.

Applies to: S00224, S00249, S00251, S00252

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Application note A00066

This symbol may be used to indicate non-automatic return function. When this convention is invoked, its use should be appropriately referenced.

Applies to: S00225, S00250, S00252

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Application note A00067

This symbol should not be used together with
qualifying symbols S00218, S00219, S00220 and S00221. In many cases, symbol S00151 may be used.

Applies to: S00225, S00250, S00252

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Application note A00068

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.

Applies to: S00226

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Application note A00069

If contacts are shown linked, the symbol shall apply to all the linked contacts unless otherwise indicated (see symbol 07-08-07).

Applies to: S00226

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Application note A00070

See symbols S00148 and S00149. Closing and opening of the contact is delayed with respect to the activation or deactivation operation. The movement is delayed in the direction towards the centre of the arc ("parachute effect"). The symbol for delayed action may be drawn on that side of the contact symbol which is most suitable for the application and for the placing of item designations.

Applies to: S00243, S00244, S00245, S00246, S00247, S00248

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Application note A00071

A rectangular outline may be used instead of a square.

Applies to: S00385, S00386, S00387, S00388, S00391, S00392, S00393, S00394, S00395, S00396, S00397, S00398, S00399, S00400, S00401, S00402, S00403, S00404, S01419, S01420

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Application note A00072

On small scale maps it may be desirable to replace the hatched areas in the symbols by completely filled-in areas.

Applies to: S00386, S00388, S00390, S00392, S00394, S00396, S00398, S00400, S00402, S00404, S00406, S01420

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Application note A00073

Examples of lines are given in S00001 and S00058.

Applies to: S00407, S00408, S00409, S00410, S00411, S00412, S00413, S00414, S00415, S00416, S00417, S00418

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Application note A00074

Additional information may be shown above the line representing the duct route, for example the number of ways.

Applies to: S00410

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Application note A00075

Qualifying symbols or designations may be used to indicate the apparatus contained in the enclosure.

Applies to: S00419, S00420

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Application note A00076

Inputs and outputs may be oriented as required.

Applies to: S00421

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Application note A00077

The symbol should be shown on the "creepout" side of the access chamber.

Applies to: S00424

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Application note A00079

The type of anode material may be indicated by adding its chemical letter symbol.

Applies to: S00426

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Application note A00082

Devices with "push" or "pull" operation most often have automatic return. It is therefore not necessary to show the automatic return symbol S00150.

On the other hand, a detent symbol S00151 shall be shown in those cases where non-return exists.

Applies to: S00253, S00254, S00255, S00257, S00258, S00267, S00268, S00269, S00273, S00292, S00294, S00295

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Application note A00083

Devices operated by turning do not usually have automatic return. It is therefore not necessary for the detent symbol S00151 to be shown.
On the other hand, the automatic return symbol S00150 should be shown in those cases where an automatic return exists.

Applies to: S00253, S00256, S00267, S00268, S00269, S00273, S00292, S00294, S00295

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Application note A00084

Where in a set of contacts one or some of them are constructed to have positive opening operation this positivity may concern:
- either the opening of break contact(s) (for example S00262: Position switch and S00258: Emergency stop switch) or the closing of a make contact (for example S00257: Alarm) and

- either all the contacts or only particular contacts (see for example S00296) but

- not both the opening and the closing of the same contact.

Applies to: S00259, S00260, S00261, S00262

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Application note A00085

The letter THETA may be replaced by the operating temperature conditions.

Applies to: S00263

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Application note A00086

There are many ways in which complex switching functions can be achieved mechanically, for example by rotary wafer switches, slide switches, drum controllers, cam-operated contact assemblies, etc. There are also many ways in which the switching functions may be symbolized on circuit diagrams (see IEC 61082-2).
Studies have shown that there is no unique system of symbolization which is superior in every application. The system employed should be chosen with due regard to the purpose of the diagram and the degree of complexity of the switching device that it is desired to symbolize.

Therefore this section presents only one of the possible methods for symbolizing complex switches. To facilitate understanding, each example includes a constructional drawing of the device symbolized. The method shown here uses a general symbol for a complex switch which must be supplemented by a table of connections. Two examples are shown.

Applies to: S00280

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Application note A00087

Qualifying symbols may be shown inside the general symbol to indicate particular types of starters. See symbols S00300, S00302 and S00303.

Applies to: S00297

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Application note A00088

The number of steps may be indicated

Applies to: S00298

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Application note A00089

Operating devices with several windings may be indicated by inclusion inside the outline of the appropriate number of inclined strokes, see symbol S00308.

Applies to: S00305, S00306

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Application note A00090

Polarity dots may be used to indicate the relationship between the direction of the current through the winding of a polarized relay and the movement of the contact arm according to the following connection. When the winding terminal identified by the polarity dot is positive with respect to the other winding terminal, the contact arm moves or tends to move towards the position marked with the dot.

Applies to: S00319

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Application note A00091

The asterisk shall be replaced by one or more letters or qualifying symbols indicating the parameters of the device, in the following order:
- characteristic quantity and its mode of variation;
- direction of energy flow;
- setting range;
- re-setting ratio;
- delayed action;
- value of time delay

Applies to: S00327

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Application note A00092

Letter symbols for characteristic quantities shall be in accordance with established standards, for example, IEC 60027 and ISO 31.

Applies to: S00327

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Application note A00093

A figure giving the number of similar measuring elements may be included in the symbol as shown in example S00342.

Applies to: S00327

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Application note A00094

The symbol may be used as a functional symbol representing the whole of the device, or as a symbol representing only the actuating element of the device.

Applies to: S00327

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Application note A00095

The method of operating may be indicated.

Applies to: S00355

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Application note A00096

The small circle representing the hinge point (see application note A00060) shall not be added to this symbol.

Applies to: S00376

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Application note A00097

Appropriate qualifying symbols may be added to denote the function of the static switch. See symbols S00229 to S00247.

Applies to: S00376

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Application note A00098

A qualifying symbol to denote the type of actuating element may be added.

Applies to: S00379

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Application note A00099

1. The asterisk (*) shall either be replaced by the symbol for the coupling medium or be omitted.
2. X and Y shall either be replaced by the appropriate indications for the quantities concerned or be omitted.

3. The double solidus may be replaced by a double diagonal.

Applies to: S00383

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Application note A00100

Branch feeders may be drawn from any convenient point on the circle.

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Application note A00101

The dot is used to distinguish an output at a relatively higher level.

Applies to: S00430, S00435

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Application note A00102

Branch or spur feeders may leave the sloping sides of the symbol at any convenient angle.

Applies to: S00430, S00435

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Application note A00103

The stroke inside the circle may be replaced by a designation.

Applies to: S00437, S01336

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Application note A00104

The stroke representing the subscriber's feeder may be omitted if no ambiguity will arise.

Applies to: S00437, S01336

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Application note A00105

Symbol S01244 may also be used.

Applies to: S00442

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Application note A00106

The symbols shown in S00446 ... S00449 may be replaced by letter symbols given in IEC 60445.

Applies to: S00446, S00447, S00448, S00449

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Application note A00107

If the arrow is pointing towards the top border (edge) of the drawing sheet, the wiring goes upwards.

Applies to: S00450

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Application note A00108

If the arrow is pointing towards the bottom border (edge) of the drawing sheet, the wiring goes downwards.

Applies to: S00451

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Application note A00109

Designations in accordance with relevant IEC or ISO standards, may be used to distinguish different types of connection (line) and outlet symbols:
BC = broadcasting
T = telecommunication in general
TD = data transmission
TFX = telefax
TLX = telex
TP = telephone
TV = television

Note that these letters are qualifiers to the symbols only.

For the purpose of identification of a connection or outlet, the relevant letter codes in IEC 61346-2 should be applied.

Applies to: S00001, S00465

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Application note A00110

Protection can be by means of a break-glass cover

Applies to: S00477

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Application note A00111

The symbol may be qualified as shown in S00965

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Application note A00112

The symbol shall only be used when the auxiliary apparatus is not incorporated in the luminaire.

Applies to: S00490

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Application note A00113

The asterisk shall be replaced by the proper equipment desgnation, or be omitted.

Applies to: S00515, S00519, S00520, S00526, S00527

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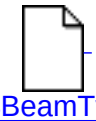
Application note A00114

Surface lights are light fixtures inset flush in the surface of runways, stopways, taxiways and aprons. Elevated navigation aids are lights and indicators not flush mounted.

The beam types are defined as shown in the file A00114BeamTypes.pdf attached below.

Applies to: S00533, S00534, S00535, S00536, S00537, S00538, S00539, S00540, S00541, S00542, S00543, S00544, S00545, S00546, S00547, S00548, S00549, S00550, S00551, S00552, S00553, S00554



A00114BeamTypes.pdf

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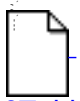
Application note A00116

Colours are indicated by adaption of the symbol according to Table 1 (omni-directional) and Table 2 (bi-directional), see the files A00116Table1.pdf and A00116Table2.pdf attached below.
If use is made of colours or combinations of colours not listed in Table 1 or 2, the colour name or the colour code according to IEC 60757 shall be indicated adjacent to the symbol.

Applies to: S00533, S00534, S00535, S00536, S00537, S00538, S00539, S00540, S00541, S00542, S00543, S00544, S00545, S00546, S00547, S00550, S00551


A00116Table1.pdf


A00116Table2.pdf

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Application note A00118

Colours may be indicated in accordance with A00116. See also Tables 1 and 2 (A00115).

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Application note A00119

If confusion can arise, an arrow showing the beam direction may be added.

Applies to: S00533, S00534

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Application note A00120

The number of separate windings should be indicated:
- either by the number of strokes drawn,
- or by adding a figure to the symbol

Applies to: S00796, S00797, S00798, S00799

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Application note A00121

Symbol S00806 may be used to symbolize a multiphase polygon connection of windings by adding a figure to denote the number of phases.

Applies to: S00806

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Application note A00122

Symbol S00796 may also be used to represent windings which can be externally connected in various ways .

Applies to: S00796, S00799, S00800

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Application note A00123

Symbol 00808 may also be used to symbolize a multiphase star connection of windings by adding a figure to denote the number of phases.

Applies to: S00808

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Application note A00124

Brushes are shown only if necessary. For an example of application, see symbol S00825.

Applies to: S00818

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Application note A00125

The asterisk, *, shall be replaced by one of the following letter designations:
C Rotary converter
G Generator
GP Permanent magnet generator
GS Synchronous generator
M Motor
MG Machine capable of use as a generator or motor
MGS Synchronous generator - motor
MP Permanent magnet motor
MS Synchronous motor
RC Rotary Condenser

Applies to: S00819

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Application note A00126

The symbols S00067 and S00107 may be added, as shown in many of the examples.

Applies to: S00819, S00823, S00824, S00825, S00826, S00827, S00828, S00829, S00830, S00831, S00832, S00833, S00834, S00835, S00836, S00837, S00838, S00839, S00840

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Application note A00127

If it is desired to show that there is a magnetic core, a single line may be added parallel to the symbol. The line may be annotated to indicate non-magnetic materials; it may be interrupted to indicate a gap in the core.

Applies to: S00583, S00842, S00845, S00849, S00851, S00853, S00855, S00857, S00859, S00861, S00863, S00865, S00867, S00869, S00871, S00873, S00875, S00877, S00879, S00881, S00883, S00885, S00887, S00889, S00891, S01344

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Application note A00128

Two forms of symbols are given for the same type of transformer:
- Form 1 uses a circle to represent each winding. Its use is preferably restricted to single-line representation. Symbols for transformer cores are not used with this form.
- Form 2 uses symbol S00583 to represent each winding. The number of half-circles may be varied to differentiate between winding.

Applies to: S00841, S00842, S00844, S00845, S00846, S00847, S00848, S00849, S00850, S00851, S00852, S00853, S00854, S00855, S00856, S00857, S00858, S00859, S00860, S00861, S00862, S00863, S00864, S00865, S00866, S00867, S00868, S00869, S00870, S00871, S00872, S00873, S00874, S00875, S00876, S00877, S00878, S00879, S00880, S00881, S00882, S00883, S00884, S00885, S00886, S00887, S00888, S00889, S00890, S00891, S01343, S01344, S01837, S01838, S01840, S01841, S01842

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Application note A00129

In the case of symbols for current and pulse transformers, straight lines, representing primary windings may be used for form 1 and form 2.

Applies to: S00841, S00842, S00843, S00844, S00845, S00850, S00851, S00880, S00881, S00882, S00883, S00884, S00885, S00886, S00887, S00888, S00889, S00890, S00891, S01343, S01344

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Application note A00130

The instantaneous voltage polarities may be indicated in form 2 of the symbol. IEC 60375 gives a method of indicating the instantaneous voltage polarities of coupled electric circuits. For an example, see S00843.

Applies to: S00842, S00843, S00845, S00847, S00849, S00851, S00853, S00855, S00857, S00859, S00861, S00863, S00865, S00867, S00869, S00873, S00877, S00879, S00881, S00883, S00885, S00887, S00889, S00891, S01344

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Application note A00131

For a rotary generator, use symbol S00819.

Applies to: S00899

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Application note A00132

The asterisk shall either be replaced by letter(s) or a graph denoting the transition behavior, or be omitted. To indicate an open-loop controller the symbol shall be used with only one input

Applies to: S00909

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Application note A00133

The general symbol for a machine S00819 should be used to represent an asynchronous machine, if no external connections to the rotor exist, for example in a squirrel cage motor. An inner circle, representing the rotor, should be shown in those cases where external connections to the rotor exist, see for example symbol S00838.

Applies to: S00836, S00837, S00838, S00839, S00840

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Application note A00134

For measuring transformers and pulse transformers use the appropriate symbols S00841 - S00851 and S01343 - S01344.

Applies to: S00878, S00879, S00880, S00881, S00882, S00883, S00884, S00885, S00886, S00887, S00888, S00889, S00890, S00891

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Application note A00135

The method of connecting transformer windings may also be indicated by codes. See IEC 60076: Power transformers.

Applies to: S00802, S00803, S00804, S00805, S00806, S00807, S00808, S00809, S00810, S00811, S00812, S00813, S00814

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Application note A00136

The type of coupling, power division proportions, reflection coefficients, etc., may be indicated. The angles between the ports may be drawn as convenient.

Applies to: S01185, S01186, S01187, S01188, S01189, S01190, S01191, S01192, S01193, S01194, S01195, S01196

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Application note A00137

The convention is that the power entering at one port is conveyed only to the two directly connected ports and thence away from the device.

Applies to: S01189, S01190, S01191, S01192, S01193, S01194

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Application note A00138

The symbol, consisting of a downwards pointing vertical arrow between two horizontal lines, represents the transition from one energy level to a lower one. It should be drawn in the lower left-hand corner of the square.
Pumping by light may be shown by placing symbol S00127 above the appropriate material symbol, see S00113 ... S00119.

For an example of application, see symbol S01216 .

Applies to: S01212, S01213, S01214, S01215, S01216, S01217

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Application note A00139

The asterisk shall be replaced by details of the code.

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Application note A00140

The f and f/n may be replaced by indications of the input and output frequencies .

Applies to: S01234

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Application note A00141

The asterisk shall be replaced by details of the code.

Applies to: S01223, S01224

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Application note A00142

The f and nf may be replaced by indications of the input and output frequencies

Applies to: S01233

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Application note A00143

The f1 and f2 may be replaced by indications of the input and output frequencies.

Applies to: S01232

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Application note A00144

The asterisk within the symbol shall be replaced with one of the following:
- the letter symbol for the unit of the quantity measured, or a multiple or sub-multiple thereof (see examples S00913 and S00919);
- the letter symbol for the quantity measured (see examples S00917 and S00918);
- a chemical formula (see example S00925);
- a graphical symbol (see example S00920).

The symbol or formula used shall be related to the information displayed by the instrument regardless of the means used to obtain the information.

Applies to: S00910, S00911, S00912, S00920, S00921, S00922, S00923, S00924, S00925, S00926, S00927, S00928, S00929, S00930, S00931, S00932, S00933, S00934, S00935, S00936, S00937, S00938, S00939, S00940, S00941, S00942, S00943, S00945

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Application note A00145

The letter symbols for the units and for the quantities measured shall be selected from one of the parts of IEC 60027 Letter symbols to be used in electrical technology.
Provided IEC 60027, or the letter symbols for chemical elements, do not apply, other letter symbols may be used, if they are explained on the diagram or in referenced documents.

Applies to: S00910, S00911, S00912, S00913, S00914, S00915, S00916, S00917, S00918, S00919, S00923, S00924, S00926, S00928, S00929, S00932, S00933, S00934, S00935, S00936, S00937, S00938, S00939, S00940, S00941, S00943, S00944, S00945

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Application note A00146

If the letter symbol for the unit of the quantity measured is used, it may be necessary to show the letter symbol for the quantity as supplementary information. It should be placed below the letter symbol (see example S00914).
Supplementary information concerning the quantity measured, and any necessary qualifying symbols may be shown below the quantity letter symbol.

Applies to: S00910, S00911, S00912, S00923, S00942, S00943, S00944

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Application note A00147

If more than one quantity is indicated or recorded by an instrument, the appropriate symbol outlines shall be placed attached in line, horizontally or vertically (see examples S00929 and S00944).

Applies to: S00910, S00911, S00912, S00929, S00944

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Application note A00148

This symbol may also be used for a remote instrument, which repeats a reading transmitted from an integrating meter. For example, see S00941.
This symbol may be combined with that for a recording instrument to represent a combined instrument. For example, see S00944.

Symbols S00099...S00106 may be used to specify the direction of energy flow. For examples, see S00934 and S00937.

The number of rectangles at the top of the symbol indicates the number of different summations by a multirate meter. For example, see S00939.

Applies to: S00912, S00933, S00934, S00935, S00936, S00937, S00938, S00939, S00940, S00941, S00944, S00945

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Application note A00149

A frequency spectrum is represented on a diagram by means of symbols on a horizontal frequency axis. The symbols show the functions of the various frequencies and frequency bands used in the transmission system as well as their relative positions in the spectrum.

Applies to: S01291, S01292, S01293, S01294, S01296, S01297, S01298, S01299, S01300, S01301, S01302, S01303, S01304, S01305, S01306, S01307

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Application note A00150

This is a qualifying symbol particular to semiconductor devices. If necessary, a special function or property essential for circuit operation may be indicated by a qualifying symbol placed adjacent to, or forming part of the symbol of the device.

Applies to: S00636, S00637, S00638, S00639, S00640

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Application note A00151

Symbol S00128 may be used to indicate that coherent light is being used.
If no confusion can arise the symbol element denoting an optical wave guide (S00127 or S00128 in a small circle) may be omitted.

Applies to: S01318

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Application note A00152

Fibre index identifiers should be placed adjacent to the symbol element denoting an optical wave guide to avoid confusion with signal waveforms.

Applies to: S01319, S01320, S01321

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Application note A00153

The diameter of optical fibres shall be indicated from the inside of the fibre towards the outside, for example:
a = core,
b = cladding,
c = first coating,
d = jacketing.

Applies to: S01322, S01323, S01324

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Application note A00154

When a single line represents a group of optical fibres, their number may be indicated either by adding small strokes or one stroke and a figure.

Applies to: S01323, S01324

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Application note A00155

For transmission systems (FDM) the order
of the group to which the pilot refers,
for example: group, supergroup, mastergroup
or supermastergroup, may be indicated by
adding the respective number 1, 2, 3 or 4
of oblique strokes.

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Application note A00156

Example of a composite cable containing both copper conductors and optical fibres.

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Application note A00157

The symbol S01334 may also be used to represent a combiner if the direction of information flow corresponds with a combiner. See symbol S01335.

Applies to: S01334, S01335

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Application note A00158

The circle may be omitted if no confusion can arise.

Applies to: S01337

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Application note A00159

This symbol may also be used to represent a fused coupler if the direction of information flow corresponds with a fused coupler.

Applies to: S01337

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Application note A00160

In a star coupler of this type each port is bidirectional and may be used as input and output at the same time. Each port feeds every other port.

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Application note A00161

The division of a band into channels, groups, etc., may be shown by adding vertical lines.

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Application note A00162

There is no indication of how much of the bandwidth shown by the symbol is actually used.
The symbols for this rule to be applied may be used to represent a single channel, group, etc., or a number of channels, groups, etc., providing they are all erect.

Applies to: S01303, S01304, S01305, S01306

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Application note A00164

The gate and source connections shall be drawn in line.

Applies to: S00671, S00672

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Application note A00165

The connection line to the symbol S00702 may be shown horizontally. See symbol S00770.

Applies to: S00702, S00770

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Application note A00166

Symbol S00703 may be used if no confusion is likely.

Applies to: S00704

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Application note A00167

Symbol S00705 may be used if no confusion will arise.

Applies to: S00709, S00714

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Application note A00168

Symbol S00709 may be used if no confusion will arise.

Applies to: S00710, S00712

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Application note A00169

The step from the low-resistance to the high-resistance state is reached by making the electrode marked with the step-function symbol the anode

Applies to: S00792

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Application note A00170

The letters (I, G, O, C) are not part of solion tetrode symbol.
I = input
G = grid
O = output
C = common

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Application note A00171

A conductivity cell is an element for measuring the conductivity of liquids.

Applies to: S00795

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Application note A00172

If desired, the direction of rotation of the discharge may be shown by an arrow.

Applies to: S00774, S00775

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Application note A00173

The asterisk shall be replaced by the appropriate letters for the particular synchronous device being symbolized. The letters to be used according to the function are as follows:
First letter - Function
C - Control
T - Torque
R - Resolver

Succeeding letter - Function
D - Differential
R - Receiver
T - Transformer
X - Transmitter
B - Rotatable stator winding

In the symbol, the inner circle represents the rotor and the outer circle the stator or, in certain instances, a rotatable outer winding.

Applies to: S00962, S00963

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Application note A00174

If it is desired to indicate the colour, a notation according to the following code is placed adjacent to the symbol:
RD = red
YE = yellow
GN = green
BU = blue
WH = white

If it is desired to indicate the type of lamp, a notation according to the following code is placed adjacent to the symbol:

Ne = neon
Xe = xenon
Na = sodium vapour
Hg = mercury
I = iodine
IN = incandescent
EL = electroluminescent
ARC = arc
FL = fluorescent
IR = infra-red
UV = ultra-violet
LED = light emitting diode

Applies to: S00965, S00966

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Application note A00175

Respective contacts close once
at every unit (10 0), ten (10 1), hundred (10 2), thousand (10 3) events registered by the counter

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Application note A00176

Junction influences a semiconductor layer by means of an electric field, for example in a junction field effect transistor

Applies to: S00620, S00621

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Application note A00177

This symbol indicates the conductivity type of the channel for insulated gate field effect transistors (IGFET).

Applies to: S00622, S00623

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Application note A00178

The slanting line with arrow represents the emitter.

Applies to: S00625, S00626, S00627, S00628

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Application note A00179

The slanting line represents the collector.

Applies to: S00629, S00630

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Application note A00180

The short slanting line indicates the point of change along the vertical line from P to N, or from N to P. No ohmic connection shall be made to the short slanting line.

Applies to: S00631

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Application note A00181

The intrinsic region lies between the linked slanting lines.
Any ohmic connection to the region shall be made between the short slanting lines and not to them.

Applies to: S00632, S00633

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Application note A00182

The connection to the collector is made to the long slanting line.

Applies to: S00634, S00635

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Application note A00183

In the case of multiple gates, the primary gate and the source connection shall be drawn in line.

Applies to: S00679

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Application note A00184

This symbol is used to represent a reverse
blocking triode thyristor, if it is not necessary to specify the type of gate.

Applies to: S00057

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Application note A00185

When this symbol is used to represent a carrier which is modulated in frequency or phase, the letter symbols f or "phi" shall be added. For example, see symbol S01309.
The arrowhead on the vertical line representing the carrier (and the arrowhead on the frequency axis) may be omitted if no confusion is likely.

Applies to: S01291

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Application note A00187

For transmission systems (FDM) the order of the group to which the pilot refers, for example: group, supergroup, mastergroup or supermastergroup, may be indicated by adding the respective number 1, 2, 3 or 4 of oblique strokes.

Applies to: S01294

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Application note A00188

If it is desired to show whether a particular band of frequencies is erect or inverted, symbol S01303 or S01306 shall be used.
The order of a band of frequencies forming part of a transmission system may be indicated by adding oblique strokes according to the rule with symbol S01294.

Applies to: S01300, S01301, S01302

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Application note A00190

For frequency modulation, replace "phi" by f.

Applies to: S01309

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Application note A00191

For static power generators, see symbol S00899 and the examples of that.

Applies to: S00819

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Application note A00192

If a single line represents a group of conductors, the number of connections may be indicated either by adding as many oblique strokes or one stroke followed by the figure for the number of connections.

Applies to: S00002, S00003, S00058, S01414, S01415

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Application note A00193

Additional information may be indicated such as:
- kind of current
- system of distribution
- frequency
- voltage
- number of conductors
- cross-sectional area of each conductor
- the chemical symbol for the conductor material

The number of conductors is followed by the sectional area, separated by x.

If different sizes are used, their particulars should be separated by +.

For dimensional data:
- for low-frequency cables and wires, see IEC 60189 (series); and
- for multicore and symmetrical pair/quad cables for digital communications, see IEC 61156-1;
- for radio-frequency cables, see IEC 61196 (series)
- for optical fibres, see IEC 60793-1 (Series) , IEC 60793-2 (series) and ITU specifications for optical fibres.

Applies to: S00001, S00002, S00003, S00004, S00005, S00058

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Application note A00194

The length of the symbol for connection, or group of connections, may be adjusted to the layout of the diagram.

Applies to: S00001, S00002, S00003, S00004, S00005, S00058

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Application note A00195

The symbol may be used to represent switching systems wiyhout regard to the type of equipment used

Applies to: S00981, S00982, S00983, S00984, S00985, S00986, S00987, S00988, S00989, S00990, S00991

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Application note A00196

Connection stage:
An arrangement of inlets and outlets such that only one switching point is used to connect inlet to an outlet. A number of connections may exist at any time in one connection stage.

Applies to: S00981, S00982, S00983, S00984, S00985, S00992, S00993

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Application note A00197

Marking stage:
In a common-control system, that sequence of connectiong stages which is controlled by one marking process. A marking stage may consist of one or more connecting stages.

Applies to: S00986, S00987, S00988, S00992, S00993

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Application note A00198

Switching stage:
A sequence of connecting stages which jointly preform a specified switching function, for example preselection or route selection.

Applies to: S00989, S00990, S00991, S00992, S00993

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Application note A00199

Highway-group:
The maximum number of circuits which have access to one highway.

Applies to: S00992, S00993

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Application note A00200

Circuits on one side may be connected individually to circuits on the other side.

Applies to: S00981, S00982, S00983, S00984, S00985

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Application note A00201

The number of inlets and outlets in each group may be indicated by a figure on the relevant line.

Applies to: S00984

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Application note A00202

The qualifying symbol indicating a marking stage is a dot. It shall be added to the inlets of the first connecting stage and to the oulets of the last connecting stage of that marking stage.

Applies to: S00986, S00987, S00988

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Application note A00203

The qualifying symbol indicating a switching stage is an arc. It shall be added to the inlets of the first connecting stage and to the aoutlets f the last connecting stage of that switching stage.

Applies to: S00989, S00990, S00991

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Application note A00204

The symbol S00060 may be qualified to represent switching equipment by the inclusion of symbol S00981

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Application note A00205

A suitable designation, for example a letter symbol, may be added to indicate a particular type of equipment.

Applies to: S00994, S00995

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Application note A00206

The small circle representing the hinge point may be open or filled in.

Applies to: S00996, S00997

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Application note A00207

The groups of outlets or contacts may be shown in a line instead of in an arc

Applies to: S01001

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Application note A00208

The individual outlets or contacts may be shown in a line instead of in an arc.

Applies to: S01002

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Application note A00209

The dots in the circle may be omitted if no confusion is likely.

Applies to: S01020

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Application note A00210

In single line representation the symbol denotes the female part and the male part of a multi-contact connector.

Applies to: S00033

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Application note A00211

The lines could be exchange or extension lines.

Applies to: S01028

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Application note A00212

The symbol may be used to represent the complete local end equipment.

Applies to: S01029, S01030, S01031, S01032, S01033, S01034, S01035, S01037

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Application note A00213

If the tapes are cut and fed one by one to the transmitter, the dashed line between the block symbols is omitted.

Applies to: S01036

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Application note A00214

The ± sign indicates double current.
The "+0", "0+", "-0" or "0-" signs indicate single current.
The "0f" sign indicates alternating current.

The signs within the quotation marks are within the symbols shown with the first character above the second.

Applies to: S01038, S01039, S01040, S01041

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Application note A00215

The symbols applying this application note are qualifying symbols specifically to be applied to the symbols applying the application note A00216.

Applies to: S01042, S01043, S01044, S01045, S01046, S01047, S01048, S01049, S01051, S01052

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Application note A00216

The symbols applying this note may be qualified with the symbols applying the note A00215.
The symbols applying the note A00215 are spesifically constructed to be applicable for those symbols applying this note.

Applies to: S01053, S01054, S01055, S01056, S01057, S01058, S01059, S01060, S01061, S01062, S01063, S01064, S01065, S01066, S01067, S01068, S01069, S01070, S01071, S01072, S01073, S01074, S01075, S01076, S01077, S01078, S01079

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Application note A00217

The arrow points in the direction of energy transfer.

Applies to: S01049

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Application note A00218

n shall be replaced by the actual number of tracks but may be omitted if n = 1.

Applies to: S01065, S01066

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Application note A00219

The qualifying symbol representing the transducer head may be omitted if qualifying symbols linked to application note A00215 is applied.

Applies to: S01075

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Application note A00220

Symbol S00102 or S00103 is used to indicate a transmitting or receiving radio station.
For examples of use, see symbols S01126 to S01130

Applies to: S01125

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Application note A00221

The asterisk shall be replaced by the indication of the propagation mode suppression.

Applies to: S01149, S01174

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Application note A00222

The line is not interrupted at the junction regardless of the type of connector.

Applies to: S01151

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Application note A00223

Y may be replaced by the appropriate lumped circuit symbol.

Applies to: S01161

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Application note A00224

Z may be replaced by the appropriate lumped circuit symbol.

Applies to: S01162

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Application note A00225

Appropriate indications may be added to specify the type of transition .

Applies to: S01169

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Application note A00227

The letter PHI may be replaced by the letter B.

Applies to: S01176

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Application note A00228

The symbols S00498 ... S00532 may be used to show installation details of:
- enclosures of trays used to house electrical conductors or
- prefabricated assemblies including electrical conductors or
- special communication transmission paths.

Typical applications are for:

a) power distribution systems with:
- site installed wiring or
- factory installed wiring and outlets or
- factory-built busbar trunking systems, according to IEC 60439-2;

b) installation channels, ducts or wireways for:
- telephone circuits,
- TV and radio broadcasting distribution systems
- data transmission circuits,
- signalling systems,
- flexible coaxial and fiber optic cables;

c) coaxil radio-frequency transmission lines;

d) waveguide runs.

Applies to: S00498, S00499, S00500, S00501, S00502, S00503, S00504, S00505, S00506, S00507, S00508, S00509, S00510, S00511, S00512, S00513, S00514, S00515, S00516, S00517, S00518, S00519, S00520, S00521, S00522, S00523, S00524, S00525, S00526, S00527, S00528, S00529, S00530, S00531, S00532

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Application note A00230

The symbol is applied where deliberate use is made of the voltage dependent characteristic.

Applies to: S00582

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Application note A00231

The symbol is applied where deliberate use is made of the temperature dependent characteristic.

Applies to: S00581

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Application note A00232

Information on the direction of current, its relative amplitude and the logic conditions imposed by the state in the magnetic remanence may be added.

Applies to: S00596

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Application note A00233

Symbol S000001 is used to represent a line or other telecommunication circuit. The usage of circuits may be indicated by letters, symbols S01080 to S01083.

Applies to: S01080, S01081, S01082, S01083

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Application note A00234

A dashed line may be used to identify a radio link or any section of a radio circuit.
The antenna symbol S01102 may be placed at the radio terminal points.

Applies to: S01084

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Application note A00235

Horizontal (vertical) polarization shall be indicated by an arrow shown perpendicular (parallel) to the stem of the antenna symbol.

Applies to: S01094

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Application note A00236

Symbol S01102 may be used to represent any type of antenna or aerial array. The stem of the symbol may represent any type of balanced or unbalanced feeder, including a single conductor.
A drawing of the general shapes of the main lobes of the polar diagrams of the antenna may be given adjacent to the antenna symbol.

Supplementary references in figures or letter symbols may be taken from the current Radio Regulations published by the International Telecommunication Union (ITU), Geneva.

Alternatively a name or a reference may be written adjacent to the general antenna symbol.

Applies to: S01102

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Application note A00237

If there is no risk of confusion, the general antenna symbol (S01102) may be omitted.

Applies to: S01114

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Application note A00238

The triangle is pointed in the direction of transmission.

Applies to: S01239, S01240, S01457

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Application note A00239

The quantity to be adjusted may be indicated beside the arrowhead.

Applies to: S01241

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Application note A00240

The Greek letter "phi" may be replaced by B if no confusion arises.

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Application note A00241

The Greek letter "phi" may be replaced by B if no confusion arises.

Applies to: S01256

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Application note A00242

If it is desirable to indicate that the equalization refers to the time derivative of "phi", "phi" may be replaced by "phi dot".

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Application note A00243

If it is desirable to indicate that the equalization refers to the time derivative of "phi", "phi" may be replaced by "phi dot".

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Application note A00244

If it is desirable to indicate that the equalization refers to the time derivative of "phi", "phi" may be replaced by "phi dot".

Applies to: S01259

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Application note A00245

There are two ways of showing details of the operation carried out by a limiter.
The first is the use of the symbol S01267 supplemented by appropriate waveform symbols on the input and output lines.

The second is the use of a specific symbol consisting of a rectangle containing a figure derived from the input/output characteristic in the following manner:

a) The axes are deleted, but the origin is indicated by a short vertical stroke representing the y?axis.

b)The origin may be located in the rectangle in such a position that the characteristic makes the maximum use of the available space.

See symbols S01268 - S01271.

Applies to: S01267

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Application note A00246

Symbol S01278 is used as follows:
The left hand side represents the modulating or modulated signal input.

The right hand side represents the modulated or demodulated signal output.

The bottom side represents the input of the carrier-wave if required.

Qualifying symbols may be placed inside or outside the symbol.

Applies to: S01278

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Application note A00247

Dashed lines representing the various parts of the linkage system shall be located in the following way:
To the left: From the operating means for opening and closing.

To the right: To associated main and auxiliary contacts.

Top or below: From actuator having an overriding opening function.

Applies to: S00293

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Application note A00248

The graphical representation of any one tube need show only those elements and details which are, for the purpose of the drawing or diagram, relevant to a correct interpretation and/or necessary for showing circuit connections.

Applies to: S00744, S00745, S00746, S00747, S00748, S00749, S00750, S00751, S00752, S00753, S00754, S00755, S00756, S00757, S00758, S00759, S00760, S00761, S00762, S00763, S00764, S00765, S00766, S00767, S00769, S00770, S00771, S00772, S00773, S00774

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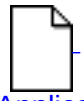
Application note A00250

For an example of application, see A00250Application.pdf below.

Applies to: S00212



A00250Application.pdf

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Application note A00251

It is sometimes convenient to indicate the purpose of each switch position by adding text to the position diagram. It is also possible to indicate limitations of movement of the operating device as shown in the drawing A00251Example.pdf below.

Applies to: S00272

A00251Example.pdf

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Application note A00252

18-position rotary wafer switch with six terminals, here designated A to F, constructed as shown in the drawing A00252Example.pdf below, switch shown in position 1.

Applies to: S00281

A00252Example.pdf

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Application note A00253

Six-position rotary drum switch with 5 terminals, constructed as shown in drawing A00253Example.pdf below:
The symbols (+ - o) in the table indicate the terminals that are connected together at any position (restposition or intermediate position) of the switch, i.e. terminals having the same indicating symbols, for example +, are interconnected.

Where additional symbols are required, the characters available on a typewriter should be used, for example x, =.

Applies to: S00282



A00253Example.pdf

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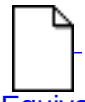
Application note A00254

For the equivalent circuit diagram, see A00254Equivalent.pdf below.

Applies to: S00472, S01456



A00254Equivalent.pdf

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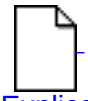
Application note A00255

See A00255Explication.pdf for explanations.

Applies to: S00595



A00255Explication.pdf

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Application note A00256

See A00256Example.pdf for an example.

Applies to: S00909



A00256Example.pdf

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Application note A00257

Application example: Trunking diagram for a switching system. See A00257Ex.pdf.

Applies to: S00992, S00993



A00257Ex.pdf

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Application note A00258

1. The numerical value of the frequency or the frequency range may be added at the right-hand side of the symbol.
Example "Alternating current, 50 Hz":

- Using symbol S01403: <Symbol S01403> 50 Hz
- Using symbol S01404: AC 50 Hz

Example "Alternating current, frequency range 100 kHz to 600 kHz":

- Using symbol S01403: <Symbol S01403> 100 kHz ... 600 kHz
- Using symbol S01404: AC 100 kHz ... 600 kHz

2. The voltage value may also be indicated to the right of the symbol. The number of phases and the presence of a neutral may be indicated at the left-hand side of the symbol.
Example "Alternating current: three-phase with neutral, 400 V (230 V between phase and neutral), 50 Hz". (See also IEC 61293):

- Using symbol S01403: 3/N <Symbol S01403> 400/230 V 50 Hz
- Using symbol S01404: 3/N AC 400/230 V 50 Hz

3. If it is necessary to indicate a system in accordance with the designations established in IEC 60364-3 the corresponding designation shall be added to the symbol.
Example "Alternating current, three-phase, 50 Hz; system having one point directly earth-connected and separate neutral and protective conductors throughout":

- Using symbol S01403: 3/N/PE <symbol S01403> 50 Hz / TN-S
- Using symbol S01404: 3/N/PE AC 50 Hz / TN-S

Applies to: S01403, S01404

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Application note A00259

The voltage may be indicated at the right of the symbol and the type of system at the left.
Example "Two conductors with mid-wire, 220/110 V":

- Using symbol S01401: 2/M <symbol S01401> 220/110 V
- Using symbol S01402: 2/M DC 220/110 V

Applies to: S01401, S01402

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Application note A00260

For different unspecified frequency ranges see symbols S00073, S00074 and S00075.

Applies to: S01403

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Application note A00261

"Variability" pertains to a quantity associated with a device represented by the symbol, the value of which is dependent on factors internal to the device.
"Adjustability" pertains to a quantity associated with a device represented by the symbol, the value of which may be set or controlled by external means.

Applies to: S00081, S00082, S00083, S00084, S00085, S00086, S00088, S00089, S00090, S00091, S00092

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Application note A00262

Dotted lines are used to indicate the context of the actually described symbol in order to facilitate the understanding and application of it.
At the application of the symbol such lines are to be replaced by other types of lines in accordance with applicable rules for the preparation of diagrams.

Applies to: S00024, S00026, S01391, S01392, S01393, S01396, S01397, S01398, S01399, S01400, S01414, S01415, S01458, S01459, S01460, S01461

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Application note A00263

The number of half-circles may be varied to suit the application.

Applies to: S00583

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Application note A00264

Symbol S00019 is used if it is not necessary to specify in which end of the horizontal connecting line the physical connection is made to the line coming from below.
Symbol S01414 is used if it is required to explicitely specify in which end of the horzontal connecting line the physical connection is made to the line coming from below.

Applies to: S01414

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Application note A00265

The asterisk shall be replaced by the relevant device symbol.

Applies to: S01440, S01441, S01442

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Application note A00266

Hidden mounting location can be depicted by the symbols S01440, S01441 and S01442.
For an example of application, see symbol S01447.

Applies to: S01432, S01433, S01434, S01435, S01436, S01437, S01438, S01439, S01443, S01444, S01445, S01447

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Application note A00267

An indication of any specific kind of substation may be added inside the symbol, for example: "AC/DC".

Applies to: S00389, S00390

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Application note A00268

For more specific types of complex switches, replace the general switch symbol S00227, with more specific ones, for example: S00253 to get a manual complex switch.

Applies to: S01454

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Application note A00269

1 Graphical symbols for binary logic elements
IEC 60617 DB contains graphical symbols that have been developed to represent logic functions. They are intended also to represent physical devices or combinations of physical devices capable of carrying out these functions. The symbols have been prepared with a view to electrical applications, but many can also be applied to non-electrical devices, for example pneumatic, hydraulic or mechanical.

2 General notes

2.1 For explanation of "logic states", "logic levels", etc., see 7.1.4.1.1 of IEC 61082-1.

2.2 The symbols 0 and 1 are used to identify the two logic states of a binary variable. These states are referred to as 0-state and 1 -state.

2.3 A binary variable may be equated to any physical quantity for which two distinct ranges can be defined. These distinct ranges are referred to as logic levels and are denoted H and L. H is used to denote the logic level with the more positive algebraic value, and L is used to denote the logic level with the less positive algebraic value.

2.4 In the case of a system in which logic states are equated with other qualities of a physical quantity (for example positive or negative pulses, presence or absence of a pulse), H and L may be used to represent these qualities or may be replaced by more suitable designations.

3 Explanation of terms
To facilitate understanding of the descriptions for the binary logic elements, it is useful to define three terms.

3.1 "Internal logic state" describes a logic state assumed to exist inside a symbol outline at an input or an output.

3.2 "External logic state" describes a logic state assumed to exist outside a symbol outline:

- on an input line prior to any external qualifying symbol at that input, or

- on an output line beyond any external qualifying symbol at that output.

3.3 "Logic level" describes the physical quality assumed to represent a logic state of a binary variable (see clauses 2.2 and 2.3). For illustrations, see A00269_Illustration_a_EN.pdf below.

4 Composition of the symbol - Symbol construction

4.1 A symbol comprises an outline or combination of outlines together with one or more qualifying symbols. Application of the symbols requires in addition the representation of input and output lines. For illustrations, see A00269_Illustration_b_EN.pdf below. The single asterisks (*) denote possible positions for qualifying symbols relating to inputs and outputs.

If and only if the function of an element is completely determined by the qualifying symbols associated with its inputs and/or outputs, no general qualifying symbol is needed.

4.2 General additional information may be included in a symbol outline as described in IEC 61082-1.

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4.3 Information not standardized in this standard relating to a specific input [output] may be shown in square brackets inside the outline adjacent to the relevant input [output] and should follow [precede] any qualifying symbols applying to the input [output] as shown in symbol S01592 (12-28-14).

Additional information relating to the general logic function of the element may be shown in square brackets inside the outline.

4.4 All outputs of an element represented by a single un-subdivided symbol always have identical internal logic states determined by the function of the element except when indicated otherwise by an associated qualifying symbol or label inside the symbol outline. The subdivision of a symbol and the qualifying symbols referred to here include those explicitly shown and those only implied according to the simplification rules of clause 6.3.

4.5 In some figures, lowercase letters which are not part of the symbols have been shown outside the outline just to identify the inputs outputs] as referred to in the description.

4.6 The symbols and descriptions in this standard are intended for signal flow from left to right. If a symbol is instead intended for right-to-left flow, this is explicitly stated in the description of the symbol or indicated in the symbol itself.

When interpreting a symbol, one should assume, unless otherwise indicated, that a terminal shown on the left with respect to the normal reading orientation of the labels inside the symbol is an input, and that one shown on the right is an output. Inputs may also be shown on the right and outputs on the left if it aids the layout of the diagram or better conveys the structure of the device.

The direction of signal flow shall be clearly implied or indicated. Explicit indication may be done by using qualifying symbols that inherently indicate the direction of signal flow (such as qualifying symbols defined only for inputs or only for outputs, or general qualifying symbols that indicate flow direction) or by other symbols on the diagram that are connected mto the terminal.

If the direction of signal flow on a terminal line is not otherwise obvious, that line shall be marked with an arrowhead (symbol S00099 (02-05-01)) pointing in the direction of signal flow or with the symbol for bidirectional signal flow (symbol S01547 (12-10-02)), whichever applies. No arrowhead shall touch the outline or any other qualifying symbol. See, for example, symbol S01599 (12-29-06).

Applies to: S01463, S01464, S01465


A00269_Illustration_a_EN.pdf


A00269_Illustration_a_FR.pdf


A00269_Illustration_b_EN.pdf


A00269_Illustration_b_FR.pdf

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Application note A00270

The length-width ratio of outlines is arbitrary.
For combinations of outlines, see A00271.

Applies to: S01463, S01464, S01465

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Application note A00271

Use and combination of outlines
1 To reduce the space required for the representation of a group of associated elements, the outlines of the elements may be joined or embedded provided the following rules are observed.

1.1 There is no logic connection between elements when the line common to their outlines is in the direction of signal flow.

For illustrations, see A00271_Illustration_a.pdf below.

NOTE - This rule does not necessarily apply in those arrays in which there exist two or more directions of signal flow, for example indicated by a common control block, a common output element, or by dependency notation.

1.2 There is at least one logic connection between elements if the line common to the two outlines is perpendicular to the direction of ignal flow.

Because common control blocks are not elements, no logic connections to or from a common control block exist except those to the attached array and connections that are explicitly shown.

Each connection can be shown by the presence of qualifying symbols at one or both sides of the common line. If confusion is likely about number of logic connections, use should be made of the internal connection symbol (symbol S01475 (12-08-01)).

If no indications are shown on either side of the common line, it is assumed that there exists only one logic connection.

For illustrations, see A00271_Illustration_b EN.pdf below.

2 The common control block may be used in conjunction with an array of related elements as a point of placement for inputs or outputs associated with more than one element of the array, or with no element of the array. Such inputs and outputs shall be labelled if appropriate.

2.1 If an input shown at a common control block is an affecting input in the sense of dependency notation (see A00276), it is connected as an input only to those elements of the array in which its identifying number appears. If an input shown at a common control is not an affecting input in the sense of dependency notation, it is an input common to, or affecting, all elements of the array.

The common control block is placed on one end of an array of related elements.

Unless indicated otherwise, the element next to the common control block is assumed to be the lowest order element.

For illustrations, see A00271_Illustration_c.pdf below.

2.2 A common output, depending on all elements of the array, can be shown as the output of a common output element. In the case where any array element has more than one output, the common output element may be used only if those outputs always have identical internal logic states. There is one internal connection from each of the elements to the common output element and these shall not be shown. In addition, the common output element may have other inputs and they must be explicitly shown. The function of the common output element shall be indicated.

Each input of a common output element corresponding with an output of the array has the same internal logic state as that output.

A common output element is shown

- inside the common control block, or

- at the end of the array, opposite the common control block if there is one.

Where it is appropriate to show an array of common output elements, the double line needs to be shown only once.

For illustrations, see A00271_Illustration_d_EN.pdf below.

3 To represent an array of elements having the same qualifying symbols, it may be sufficient to show the symbols that are inside the outline in only the first of the outlines, provided no confusion is likely. Similarly, in the case of an array of elements each consisting of several identical subarrays, it is sufficient to show the first one in full and to represent each of the others by a simple outline. It is assumed that the identifying numbers of affecting inputs [outputs] in the sense of dependency notation and of inputs [outputs] affected thereby differ in each element of the array (for illustration of the concept see A00277). See also the simplifications resulting from the use of dependency notation.

For illustrations, see A00271_Illustration_e_EN.pdf below.

4 If in a simplified array of identical elements the representation of the functions of a terminal requires two or more lines connected together outside the outline, it is sufficient to show these lines only with the first element and represent them with each simplified element by a single line. Symbols outside the outline common to all lines connected together shall be shown with this single line. Symbols outside the outline not common to all lines connected together may be omitted, or the most suitable set may be shown.

For illustrations, see A00271_Illustration_f_EN.pdf below.

Applies to: S01463, S01464, S01465, S01587, S01596

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A00271_Illustration_f_EN.pdf

A00271_Illustration_f_FR.pdf

A00271_Illustration_c.pdf

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Application note A00272

The symbol defines the relationship between the internal logic state and the external logic state or level. If a symbol is not shown at an input or output, it is assumed that the internal logic 1-state corresponds to

- the external logic 1-state in a diagram using the symbol for logic negation, or

- the logic H-level in a diagram using the the symbol for logic polarity.

In the latter kind of diagram, external logic states do not exist.

The symbols for logic negation and logic polarity shall not be used together on the same diagram, except when internal connections with logic negation are to be shown on diagrams using the symbol for logic polarity. See symbols S01809 and S01478.

See also IEC 61082.

Applies to: S01466, S01467, S01468, S01469, S01470, S01471, S01472, S01473, S01474

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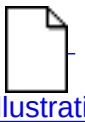
Application note A00273

An internal connection is a connection within a logic element. It is useful to be able to symbolize such a connection in order to show the logic relationships between elements whose outlines are combined. In many applications, it is also convenient to use the symbols to show the function of complex elements. In such cases, dependency notation (see A00276 and A00277) should be used to define effects of any internal inputs and outputs.

Applies to: S01475, S01476, S01477, S01478, S01479, S01480, S01481, S01482, S01483, S01484, S01485, S01486, S01487, S01488, S01489, S01490, S01809



A273_Illustration.pdf

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Application note A00274

If identical symbols are shown at two or more inputs to indicate functions of those inputs, the inputs are assumed to stand in an OR relationship. For example, see symbol S01664.

Applies to: S01503, S01504, S01505, S01506, S01507, S01508, S01509, S01510, S01511, S01512, S01513, S01514, S01519, S01520, S01521, S01522, S01526, S01527, S01530, S01532, S01533, S01536, S01543, S01544, S01545

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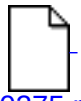
Application note A00275

See A00275.pdf

Applies to: S01547, S01548



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Application note A00276

Dependency notation
1 General explanation

Dependency notation is a means of denoting the relationships between inputs, between outputs, or between inputs and outputs, without actually showing all the elements and interconnections involved.

NOTE - Apart from its use in complex elements, dependency notation should not be used to replace the symbols for combinative elements.

The information provided by dependency notation supplements that provided by the qualifying symbols for an element's function.

In the convention for dependency notation, use will be made of the terms "affecting" and "affected". In the case where it is not evident which inputs must be considered as being the affecting or the affected ones (for example, if they stand in an AND relationship), the choice may be made in any convenient way.

In some complex elements, outputs may have an effect on inputs and other outputs. For the sake of simplicity, the text of sections 2 and 3 refers to "affecting inputs" only, but it should be understood that the recommended notation applies to affecting outputs also.

2 Convention

Dependency notation usually defines relationships between internal logic states. However, in the case of 3-state outputs, passive-pull-down outputs, passive-pull-up outputs and open-circuit outputs (symbols S01493 (12-09-03) through S01498 12-09-08)), ENABLE dependency (A00284) defines relationships between the internal logic states of affecting inputs and the external states of affected outputs.

Application of dependency notation is accomplished by

- labelling the input affecting other inputs or outputs with a particular letter symbol denoting the relationship involved followed by an identifying number, and

- labelling each input or output affected by that affecting input with that same number.

If it is the complement of the internal logic state of the affecting input [output] that does the affecting, a bar shall be placed over the identifying number at the affected input [output].

NOTE - For an example of use, see symbol S01669 (12-42-11). For a technique avoiding the use of a bar, see the note with symbol S01691 (12-49-04).

If the affected input or output requires a label to denote an effect it has on the element, this label shall be prefixed by the identifying number of the affecting input.

If an input or output is affected by more than one affecting input, the identifying numbers of each of the affecting inputs shall appear in the label of the affected one, separated by commas.

The left-to-right order of these identifying numbers is the same as the sequence of the affecting relationships (see also section 25).

Two affecting inputs labelled with different letters shall not have the same identifying number unless one

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of the letters is A (see section 23).

If two affecting inputs have the same letter and the same identifying number, they stand in an OR relationship to each other.

If the labels denoting the functions of affected inputs or outputs must be numbers (for example, outputs of a coder), the identifying numbers to be associated with both affecting inputs and affected inputs or outputs shall be replaced by another character selected to avoid ambiguity, for exampie Greek letters.

An affecting input affects only the corresponding affected inputs and outputs of the symbol.

3 Types of dependency

The following types of dependency are defined.

AND, OR, and NEGATE dependencies are used to denote Boolean relationships between inputs and/or outputs.

INTERCONNECTION dependency is used to indicate that an input or output imposes its logic state on one or more other inputs and/or outputs.

TRANSMISSION dependency is used to indicate controlled transmission paths between affected ports.

CONTROL dependency is used to identify a timing input or a clock input of a sequential element and to indicate which inputs are controlled by it.

SET and RESET dependencies are used to specify the internal logic states of an RS-bistable element when the R- and S-inputs both stand at their internal 1-States.

ENABLE dependency is used to identify an Enable input and to indicate which inputs and/or outputs are controlled by it (for example which outputs take on their high-impedance condition).

MODE dependency is used to identify an input that selects the mode of operation of an element and to indicate the inputs and/or outputs that depend on that mode.

ADDRESS dependency is used to identify the Address inputs of a memory.

Table I (see A00276_Table_EN.pdf below) lists the various dependencies and summarizes their effects. More detailed definitions appear in A00277 through A00289, together with illustrations of the concepts.

In these illustrations, following general symbols are used.

S01566 (12-27-01) through S01578 (12-27-13)
S01607 (12-30-01)
S01610 (12-32-01)
S01623 (12-34-01)
S01626 (12-36-01) through S01629 (12-36-04)
S01636 (12-38-01) through S01643 (12-38-08)
S01655 (12-40-01)
S01674 (12-44-01) and S01675 (12-44-02)
S01678 (12-46-01) through S01682 (12-46-05)
S01685 (12-48-01) through S01687 (12-48-03)
S01706 (12-50-01) through S01710 (12-50-05)
S01723 (12-52-01)

In Table I, the word "action" implies

- that affecting inputs will have their normally defined effect on the function of the element;

- that affected outputs will take on the internal logic States determined by the function of the element.

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Applies to: S01550, S01551, S01552, S01553, S01554, S01555, S01556, S01557, S01558, S01559, S01560, S01561, S01562, S01563, S01564, S01565, S01766, S01767, S01773, S01774, S01775, S01776, S01777, S01810, S01811



A00276_Table_EN.pdf



A00276_Table_FR.pdf

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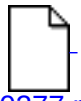
Application note A00277

See A00277.pdf

Applies to: S01810, S01811



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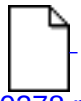
Application note A00278

See A00278.pdf

Applies to: S01550, S01551



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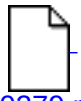
Application note A00279

See A00279.pdf

Applies to: S01552, S01553



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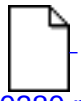
Application note A00280

See A00280.pdf

Applies to: S01554, S01555



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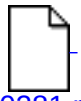
Application note A00281

See A00281.pdf

Applies to: S01556, S01557, S01776, S01777, S01804, S01805



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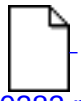
Application note A00282

See A00282.pdf

Applies to: S01558, S01559



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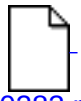
Application note A00283

See A00283.pdf

Applies to: S01560, S01561



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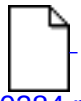
Application note A00284

See A00284.pdf

Applies to: S01562



A00284.pdf

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Application note A00285

MODE dependency (M-dependency)
1 MODE dependency is used to indicate that the effects of particular inputs and outputs of an element depend on the mode in which the element is operating.

For comparison of C-, EN-, and M-effects on inputs, see A00286.

The use of the bit-grouping symbol and the solidus is explained in A00288 and A00289, respectively.

- M-dependency affecting inputs:

For illustrations, see A00285_Illustration_a.pdf below.

Mode 0 (b = 0, c = 0): the outputs remain at their existing states as none of the inputs has an effect.

Mode 1 (b = 1, c = 0): parallel loading takes place through inputs e and f.

Mode 2 (b = 0, c = 1): shifting down and serial loading through input d take place.

Mode 3 (b = 1, c = 1): counting up by increment of 1 per clock pulse takes place (input a).

- Determining the function of an output:

For illustrations, see A00285_Illustration_b.pdf below.

If input a stands at its interna1 1-state establishing mode 1 output b will stand at its internal 1-state if the content of the register equals 15. If input a stands at its internal 0-state, output b will stand at its interna1 1-state if the content of the register equals 0.

For explanation, see also A00289.

- Modifying dependent relationships of outputs:

For illustrations, see A00285_Illustration_c.pdf below.

At output e the label set causing negation (if c = 1) is effective in modes 2 and 3 only. In modes 0 and 1, this output stands at its normally defined state as if it had no labels.

At output f the label set has effect if the mode is not 0, so output f is negated (if c = 1) in modes 1, 2 and 3. In mode 0 the label set has no effect so the output stands at its normally defined state. In this example 0,4 is equivalent to (1/2/3) 4.

At output g there are two label sets. The first set, causing negation (if c = 1), is effective only in mode 2. The second set, subjecting g to AND dependency on d, has effect only in mode 3.

Note that in mode 0 none of the dependency relationships has any effect on the outputs, so e, f and g will all stand at the same state.

2 In complex elements with a large number of different modes, application of the convention for MODE dependency may lead to a very extended labelling.

In such cases, the inputs and outputs affected by any affecting Mm-input are simply labelled with the letter

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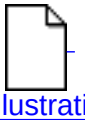
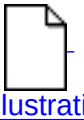
M, but then the diagram containing the symbol must also contain either a table in which the effects of these inputs in the different modes are clearly explained or a statement as to where such a table is to be found. If no confusion is likely, these letters M may be omitted.

Applies to: S01563, S01564, S01654


A00285_Illustration_a.pdf


A00285_Illustration_b.pdf


A00285_Illustration_c.pdf

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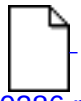
Application note A00286

See A00286.pdf

Applies to: S01558, S01559, S01562, S01563, S01564, S01565



A00286.pdf

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Application note A00287

See A00287.pdf



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Application note A00288

See A00288.pdf

Applies to: S01550, S01551, S01552, S01553, S01554, S01555, S01556, S01557, S01559, S01560, S01561, S01562, S01563, S01564, S01565, S01810, S01811



A00288.pdf

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Application note A00289

See A00289.pdf

Applies to: S01493, S01550, S01551, S01552, S01553, S01554, S01555, S01556, S01557, S01559, S01560, S01561, S01562, S01563, S01564, S01565, S01766, S01767, S01773, S01774, S01775, S01776, S01777, S01810, S01811



A00289.pdf

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Application note A00290

See A00290.pdf



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Application note A00291

The qualifying symbol for the function of the element indicates the number of inputs which must take on the internal 1-state to cause the outputs to take on their internal 1-states.
Subject to this rule other qualifying symbols may be developed.

Applies to: S01566, S01567, S01569, S01570, S01571, S01572, S01573, S01574, S01575, S01576, S01577, S01578

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Application note A00293

The symbol for amplification (S01457) may be combined with other symbols for functions. The absence of this symbol does not necessarily indicate the absence of special amplification.

Applies to: S01594, S01595, S01596, S01597

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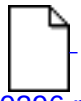
Application note A00296

See A00296.pdf

Applies to: S01610, S01611, S01791



A00296.pdf

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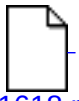
Application note A00297

See S01618.pdf

Applies to: S01618



S01618.pdf

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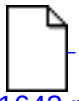
Application note A00301

See S01643.pdf.

Applies to: S01643



S01643.pdf

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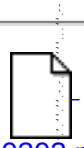
Application note A00303

See A00303.pdf.

Applies to: S01655, S01656



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Application note A00304

See A00304.pdf

Applies to: S01491, S01659, S01660, S01661, S01662, S01663, S01664, S01665, S01666, S01667, S01668, S01669, S01670, S01671, S01672, S01673



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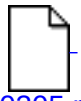
Application note A00305

See A00305.pdf

Applies to: S01665



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Application note A00306

In some applications (for example fail-safe systems) it is necessary to indicate the internal logic state of the otputs of a bistable element at the moment the supply is switched on. The symbols associated to this application note show how this maybe done. The qualifying symbols may be applied to other types of bistable elements.

Applies to: S01671, S01672, S01673

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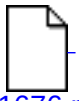
Application note A00308

See S01676.pdf

Applies to: S01676



S01676.pdf

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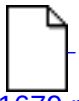
Application note A00309

See S01679.pdf

Applies to: S01679



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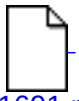
Application note A00312

See S01691.pdf

Applies to: S01691



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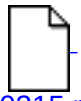
Application note A00315

See A00315.pdf

Applies to: S01723



A00315.pdf

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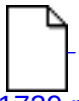
Application note A00316

See S01729.pdf

Applies to: S01729



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Application note A00317

See A00317.pdf below.

Applies to: S01731, S01734, S01735, S01736, S01737, S01738, S01739, S01740, S01741, S01742, S01743, S01744



A00317.pdf

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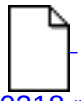
Application note A00318

See A00318.pdf

Applies to: S01732, S01733



A00318.pdf

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Application note A00319

See S01747.pdf.



S01747.pdf

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Application note A00321

The symbol (S00216) and # (S00217) shall be used when it is necessary to distinguish between analogue and digital signals. They may also be added to a general qualifying symbol or placed adjacent to symbols for internal connections (S01475, S01479 and S01481) if confusion is likely regarding whether the function or signal is digital or analogue.

Applies to: S01748, S01749, S01750, S01751, S01752

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Application note A00322

Any necessary supplementary information may be added to the symbol, provided no confusion is likely.

Applies to: S01753, S01754, S01755, S01756, S01757, S01759, S01760, S01761, S01762, S01763, S01764, S01765, S01766, S01767, S01768, S01769, S01770, S01771, S01772

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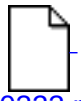
Application note A00323

See A00323.pdf

Applies to: S01778



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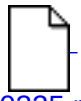
Application note A00325

See A00325.pdf

Applies to: S01781



A00325.pdf

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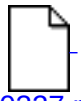
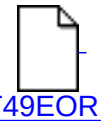
Application note A00327

See A00327.pdf

Applies to: S01791


A00327.pdf 
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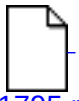
Application note A00328

See S01795.pdf.

Applies to: S01795



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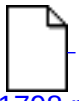
Application note A00330

See S01798.pdf

Applies to: S01798



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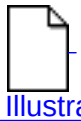
Application note A00335

See S01491_Illustration.

Applies to: S01491



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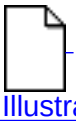
Application note A00336

See S01492_Illustration.

Applies to: S01492



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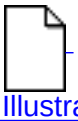
Application note A00337

For an illustration to S01503, see S01503_illustration.pdf

Applies to: S01503



S01503_Illustration.pdf

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Application note A00338

The description to the symbol may give the reader the impression that this is a dynamic input. This is not always the case, as it must be remembered that the internal logic state or level may possibly be modified by the effects of other inputs (for example Cm-inputs). If inputs represented by symbols S01505 to S01514 have a dynamic character, symbol S01472 should be used in addition. See, for example symbol S01683.

Applies to: S01505, S01506, S01507, S01508, S01509, S01510, S01511, S01512, S01513, S01514

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Application note A00339

For an illustration to S01516 and S01517, see S01516_illustration.pdf

Applies to: S01516, S01517

S01516_illustration.pdf

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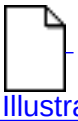
Application note A00340

For an illustration to S01518, see S01518_illustration.pdf

Applies to: S01518



S01518_Illustration.pdf

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Application note A00341

See S01605note.pdf.

Applies to: S01605



S01605_note.pdf

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Application note A00342

See S01621.pdf



S01621.pdf

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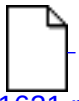
Application note A00343

See S01621.pdf

Applies to: S01621



S01621.pdf

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Application note A00344

See S01680.pdf.



S01680.pdf

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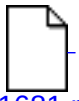
Application note A00345

See S01681.pdf

Applies to: S01681



S01681.pdf

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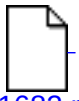
Application note A00346

See S01682.pdf

Applies to: S01682



S01682.pdf

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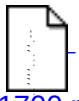
Application note A00347

See S01700.pdf

Applies to: S01700



S01700.pdf

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Application note A00348

Symbols in accordance with the superseded IEC 117-15 (60117-15) Recommended graphical symbols, Part 15: Binary Logic Elements, will be required for a prolonged changeover period but should be progressively superseded by the symbols in this standard. Although non-preferred, the use of other binary logic symbols recognized by official national standards, that is distinctive shapes in place of symbols S01566, S01567, S01574, S01575, S01576, S01577, S01579, S01580 and S01582 shall not be considered to be in contradiction to this standard. Usage of these other symbols in combination to form complex symbols (for example, use as embedded symbols) is discouraged.

Applies to: S01566, S01567, S01574, S01575, S01576, S01577, S01579, S01580, S01582

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Application note A00349

For an example of an instrument diverter switch used in a voltage measuring circuit, see the attached file A00349.pdf

Applies to: S01844



A00349.pdf

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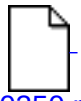
Application note A00350

For an example of a diverter switch used in a current measuring circuit, see attached file A00350.pdf

Applies to: S01845



A00350.pdf

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Application note A00351

The following symbols shall be oriented as described or shown within this standard with respect to the inputs, outputs and outlines of the elements in which they appear. That is, these symbols, together with any associated terminal lines, shall be mirrored when the direction of signal flow is reversed:
S01239 (10-15-01) Amplifier, general symbol
S01466 (12-07-01) Logic negation, shown at an input
S01467 (12-07-02) Logic negation, output
S01468 (12-07-03) Polarity indicator, input
S01469 (12-07-04) Polarity indicator, output
S01470 (12-07-05) Polarity indicator, input, right to the left
S01471 (12-07-06) Polarity indicator, output, right to the left
S01472 (12-07-07) Dynamic input
S01473 (12-07-08) Dynamic input with logic negation
S01474 (12-07-09) Dynamic input with polarity indicator
S01475 (12-08-01) Internal connection
S01477 (12-08-03) Internal connection with dynamic character
S01478 (12-08-04) Internal connection with negation and dynamic character
S01479 (12-08-05) Internal input (left hand side)
S01480 (12-08-05A) Internal input (right-hand side)
S01481 (12-08-06) Internal output (right-hand side)
S01482 (12-08-07) Internal output (left-hand side)
S01499 (12-09-08A) Output with special amplification
S01500 (12-09-08B) Input with special amplification
S01516 (12-09-24) Bit grouping for multibit input
S01517 (12-09-25) Bit grouping for multibit output
S01540 (12-09-47) Line grouping at the input side
S01541 (12-09-48) Line grouping at the output side

Applies to: S01239, S01466, S01467, S01468, S01469, S01470, S01471, S01472, S01473, S01474, S01475, S01477, S01478, S01479, S01480, S01481, S01482, S01499, S01500, S01516, S01517, S01540, S01541

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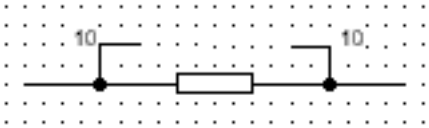

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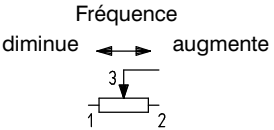
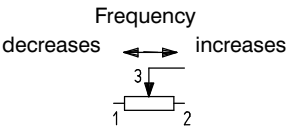
La fréquence croît lorsque la partie mobile 3 est déplacée vers la borne 2.



Frequency is increased when wiper 3 is moved towards terminal 2.



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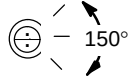
TYPES DE FAISCEAU

– Omnidirectionnel 

– Unidirectionnel 

– Bidirectionnel 

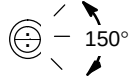
– Bidirectionnel
(ouverture du faisceau:150°) 

BEAM TYPES

– Omnidirectional 

– Unidirectional 

– Bidirectional 

– Bidirectional
(beam 150° apart) 

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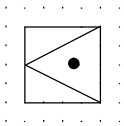
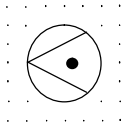
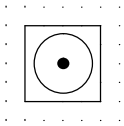
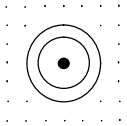
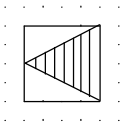
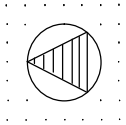
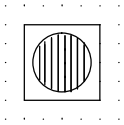
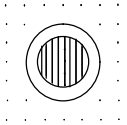
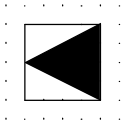
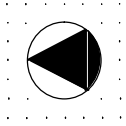
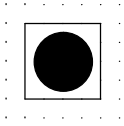
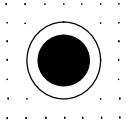
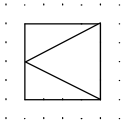
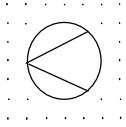
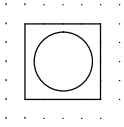
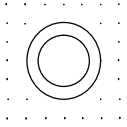
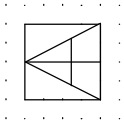
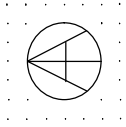
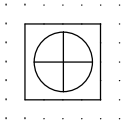
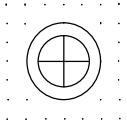
INDICATION DE COULEURS

Tableau 1

INDICATION OF COLOURS

Table 1

couleur colour	unidirectionnel uni–directional		omnidirectionnel omni–directional	
	en hauteur elevated	en surface surface	en hauteur elevated	en surface surface
vert green				
jaune yellow				
rouge red				
blanc white				
bleu blue				

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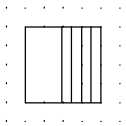
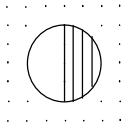
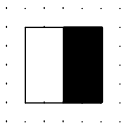
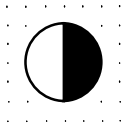
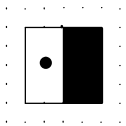
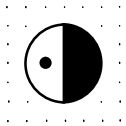
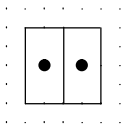
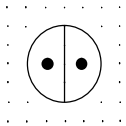
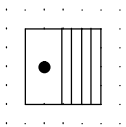
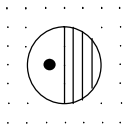
INDICATION DE COULEURS

Tableau 2

INDICATION OF COLOURS

Table 2

couleur colour	bidirectionnel bi–directional	
	en hauteur elevated	en surface surface
blanc/jaune white/yellow		
blanc/rouge white/red		
vert/rouge green/red		
vert/vert green/green		
vert/jaune green/yellow		

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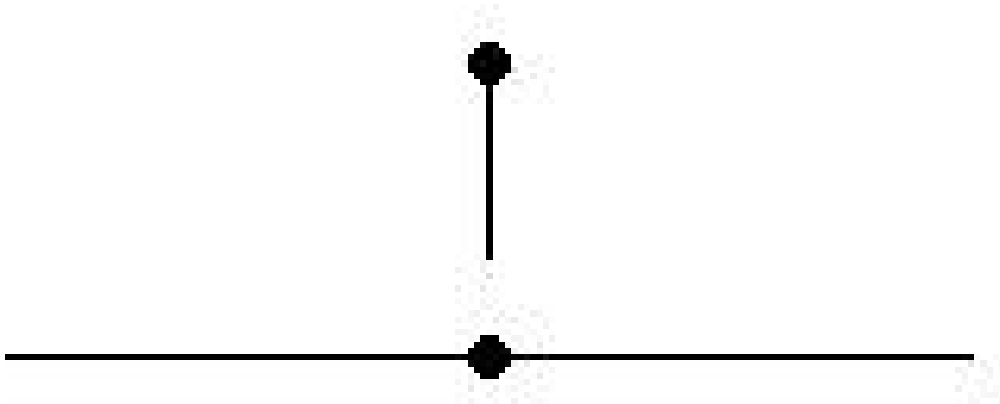
Indicateur de point de contrôle
Exemple:

Test point indicator
Example:



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Exemple avec diagramme de position

Il est parfois utile d'indiquer la fonction de chaque position du commutateur en complétant, par un texte, le diagramme de position. Il est également possible d'indiquer les limites imposées mécaniquement au mouvement du dispositif de commande, comme indiqué dans les exemples suivants:

Example with position diagram

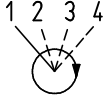
It is sometimes convenient to indicate the purpose of each switch position by adding text to the position diagram. It is also possible to indicate limitations of movement of the operating device as in the examples which follow:

Le dispositif de commande (par exemple un bouton rotatif) ne peut être déplacé qu'entre les positions 1 et 4 dans les deux sens



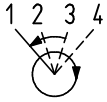
The operating device (for example handwheel) can be turned only from positions 1 to 4 and back

Le dispositif de commande ne peut tourner que dans le sens des aiguilles d'une montre



The operating device can be turned in the clockwise direction only

Le dispositif de commande peut être déplacé à volonté, dans le sens des aiguilles d'une montre, mais ne peut être déplacé dans le sens inverse qu'entre les positions 3 et 1



The operating device can be turned in the clockwise direction without limitation and may be turned in the counter–clockwise direction only between positions 3 and 1

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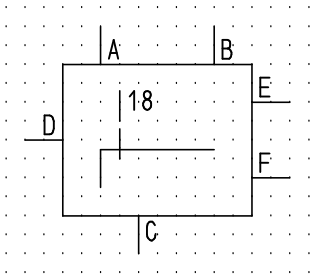
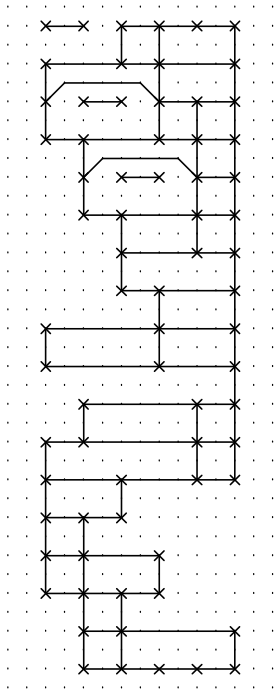
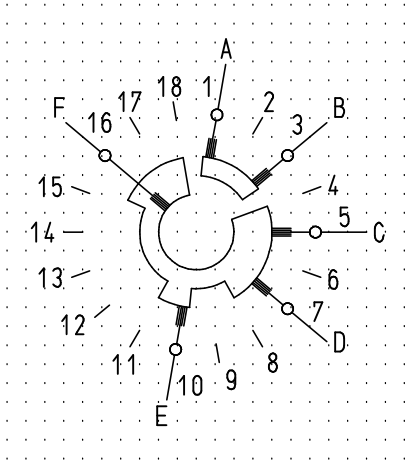
No.	Symbole Symbol	Légende	Description
07–12–02		EXEMPLES: Commutateur à galette, à 18 positions à six bornes, repérées ici A à F, réalisé comme indiqué ci–dessous (commutateur représenté en position 1) Les lettres figurées ne font pas partie du symbole.	EXAMPLES: 18–position rotary wafer switch with six terminals, here designated A to F, constructed as shown below (switch shown in position 1) The letters shown are not part of the symbol.

Tableau des connexions
Table of connections

Direction Position	Bornes connectées Interconnections of terminals A B C D E F
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	



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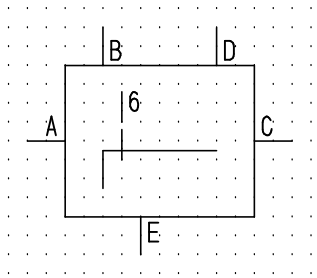
---''-''-''-''-...-''''-...-''-

No.	Symbole Symbol	Légende	Description
07–12–03		Commutateur à tambour à six positions et à cinq bornes, réalisé comme indiqué ci–dessous:	Six–position rotary drum switch with 5 terminals, constructed as shown below:

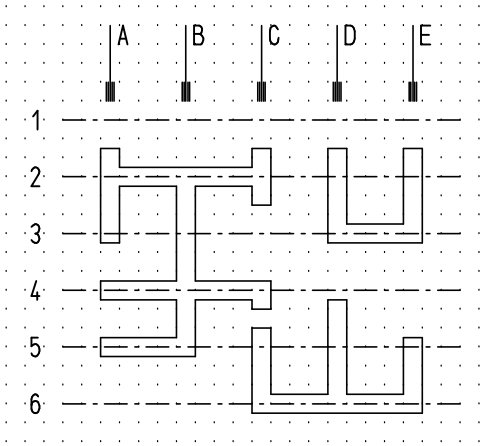


Tableau des connexions
Table of connections

Direction Position	Bornes connectées Interconnections of terminals				
	A	B	C	D	E
1				○	○
	+		+	○	○
2	+	+	+	○	○
	+	+	+	○	○
3	+	+		○	○
		+			
4	+	+	+		
		+	+ –	–	
5	+	+	–	–	–
			–	–	–
6			–	–	–

Les symboles (+ – ○) du tableau indiquent les bornes qui sont respectivement connectées entre elles dans n'importe quelle position (position de repos ou position intermédiaire) de l'organe de commande du commutateur, c'est à dire que les bornes, ayant le même symbole qui les marque, par exemple +, sont reliées entre elles.

Si d'autres symboles sont nécessaires, on utilisera les caractères courants sur une machine à écrire tels que x, =.

Les lettres figurées ne font pas partie du symbole.

The symbols (+ – ○) in the table indicate the terminals that are connected together at any position (rest–position or intermediate position) of the switch, i.e. terminals having the same indicating symbols, for example +, are interconnected.

Where additional symbols are required, the characters available on a typewriter should be used, for example x, =.

The letters shown are not part of the symbol.

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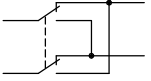
Commutateur intermédiaire pour va-et-vient

Schéma équivalent des circuits

Intermediate switch

Equivalent circuit diagram



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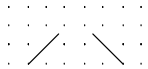
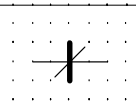
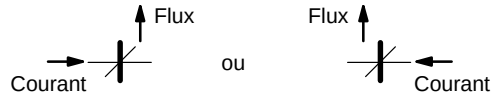
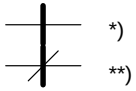
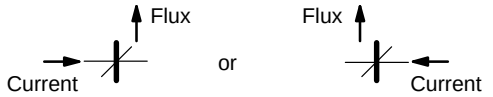
SECTION 4 – ÉLÉMENTS DE SYMBOLE

SECTION 4 – SYMBOL ELEMENTS

No.	Symbole Symbol	Légende	Description
04–04–01		Tore de ferrite	Ferrite core
04–04–02	 ou / or	Indicateur de direction flux/courant Ce symbole indique que la ligne traversant perpendiculairement le symbole du tore représente un enroulement du tore, et il indique aussi la relation entre le sens du courant et le sens du flux. Ce symbole n'est pas applicable dans une représentation topographique.	Flux/current direction indicator This symbol indicates that a horizontal line drawn at a right angle through a core symbol represents a core winding, and it also gives the relative directions of current and flux. This symbol is not applicable for topographical representation.
04–04–03		Tore de ferrite avec un seul enroulement La ligne oblique est supposée donner par réflexion la correspondance entre le sens du courant et celui du flux comme indiqué ci–dessous.  Pour faciliter le dessin, les lignes représentant les conducteurs sont souvent tracées à travers le symbole du tore bien qu'elles ne représentent pas un enroulement placé sur celui–ci. Sauf en représentation topographique, l'utilisation du trait oblique est obligatoire pour indiquer la présence d'un enroulement placé sur le tore. EXEMPLE:  *) **) *) Conducteur traversant le symbole du tore **) Enroulement sur le tore	Ferrite core with one winding The oblique line may be regarded as a reflector that relates the directions of current and flux as shown below.  For drawing convenience, lines representing conductor are often shown crossing core symbols even though there is no winding on the magnetic circuit. Except in topographical representation the use of the oblique stroke is mandatory in all cases where a line through the core symbol represents a winding. EXAMPLE:  *) **) *) Conductor crossing the core symbol **) Winding on the core

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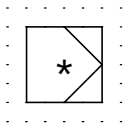
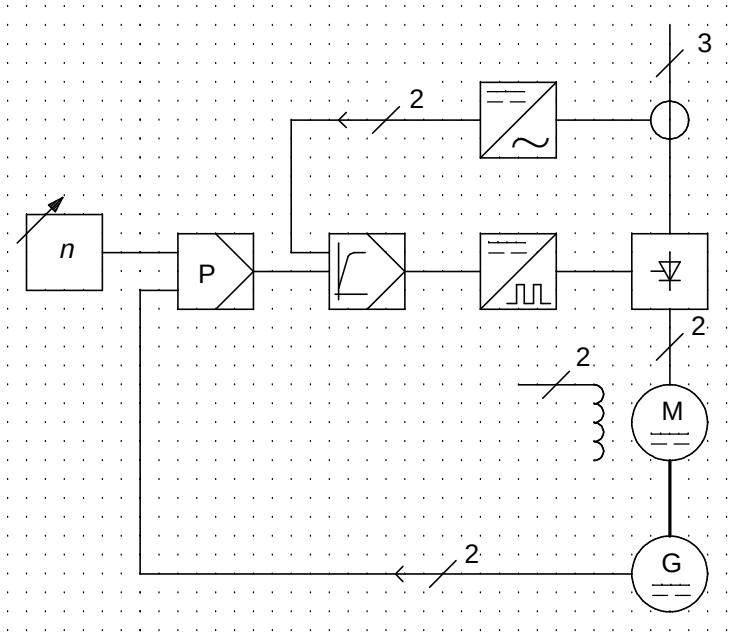
No.	Symbole Symbol	Légende	Description
06–19–01		Régulateur en boucle fermée L'astérisque doit, soit être remplacé par un symbol littéral ou graphique indiquant le comportement de transition, soit être omis. Pour présenter un régulateur en boucle ouverte le symbole doit être utilisé avec une entrée seulement. EXEMPLE:	Closed–loop controller The asterisk shall either be replaced by letter(s) or a graph denoting the transition behavior, or be omitted. To indicate an open–loop controller the symbol shall be used with only one input. EXAMPLE:



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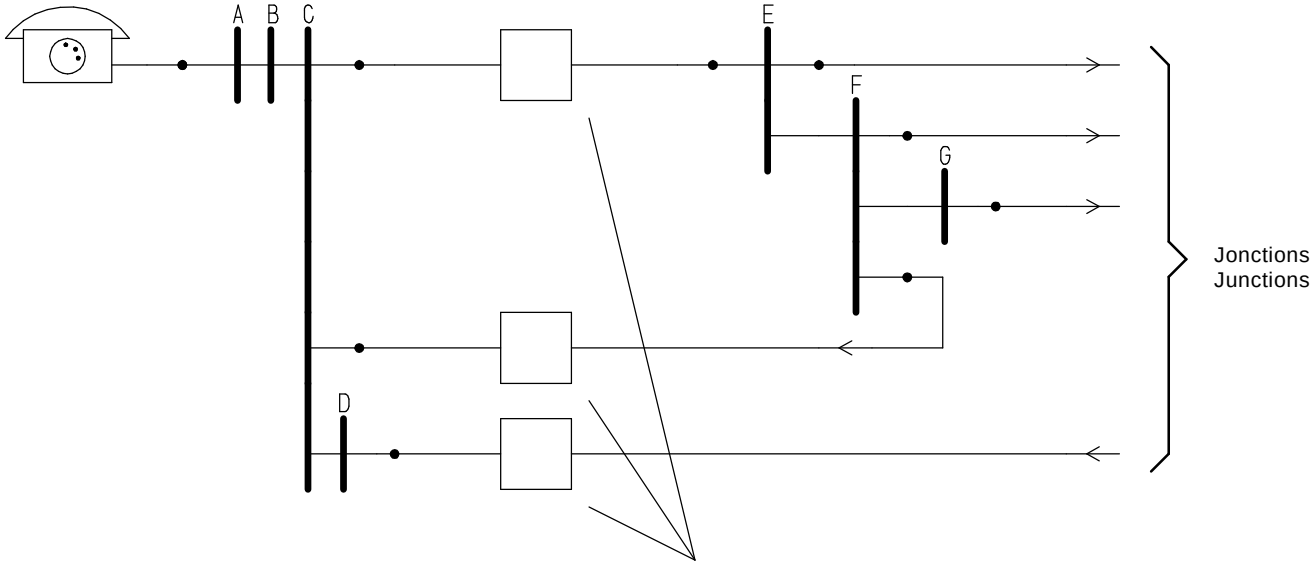
No.	Symbole Symbol	Légende	Description
09-01-12	Voir ci-dessous See below	Schéma de liaison d'un système de commutation avec deux étages de marquage, ABC ou ABCD et E, EF ou EFG, reliés par d'autres équipments figurés par des carrés. Les appels sont acheminés comme suit: 1.) appels entrant à travers DCBA; 2.) appels entre abonnés appartenant au même central à travers ABC, EF et CBA; 3.) appels sortant à travers ABC ou bien E, EF et EFG.	Trunking diagram for a switching system which consists of two marking stages, ABC or ABCD and E, EF or EFG, interconnected by other equipment represented by the squares. Calls are routed as follows: 1.) incoming calls via DCBA; 2.) calls between subscribers connected to the same exchange via ABC, EF and CBA; 3.) outgoing calls via ABC and either E, EF or EFG.



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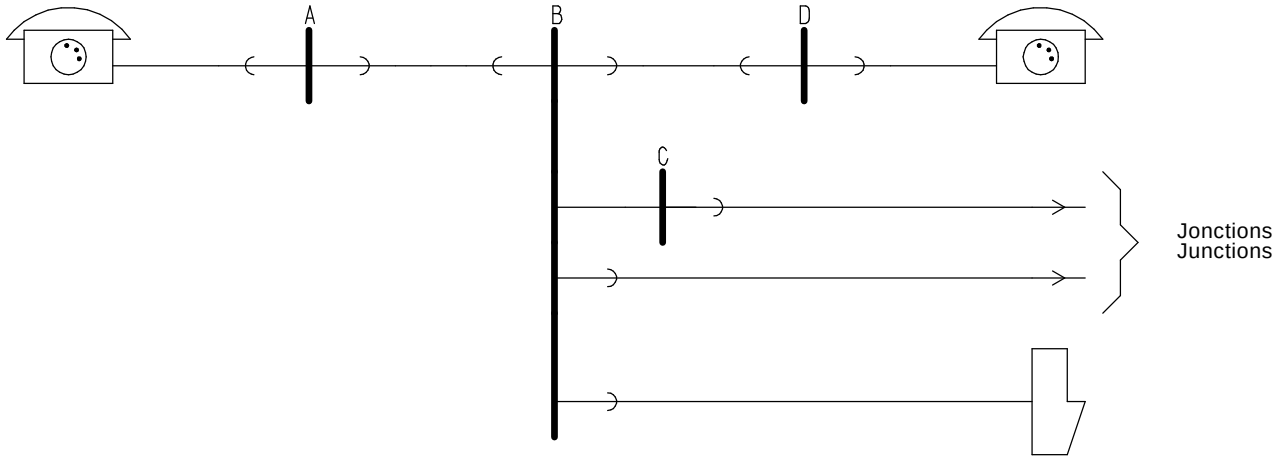
No.	Symbole Symbol	Légende	Description
09-01-13	Voir ci-dessous See below	Schéma de liaison d'un système de commutation avec trois étages de commutation: 1.) Etage de présélection A; 2.) Etage de sélection d'acheminement B ou BC; 3.) Etage final de sélection D.	Trunking diagram of a switching system showing three switching stages: 1.) preselection stage A; 2.) route selection stage B or BC; 3.) final selection stage D.



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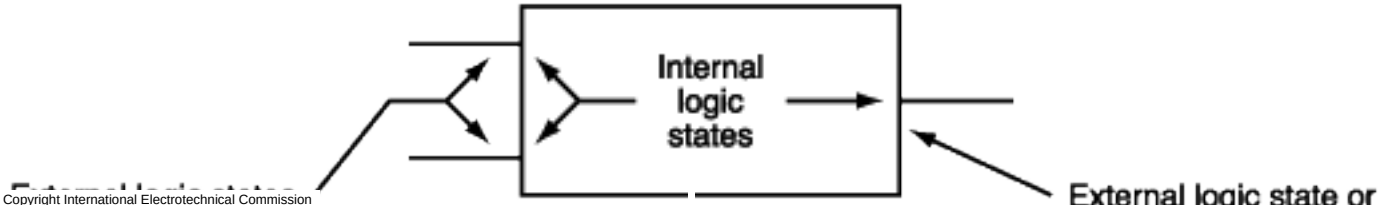

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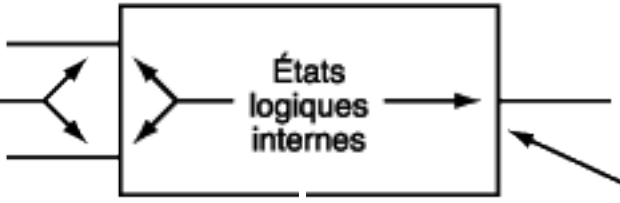

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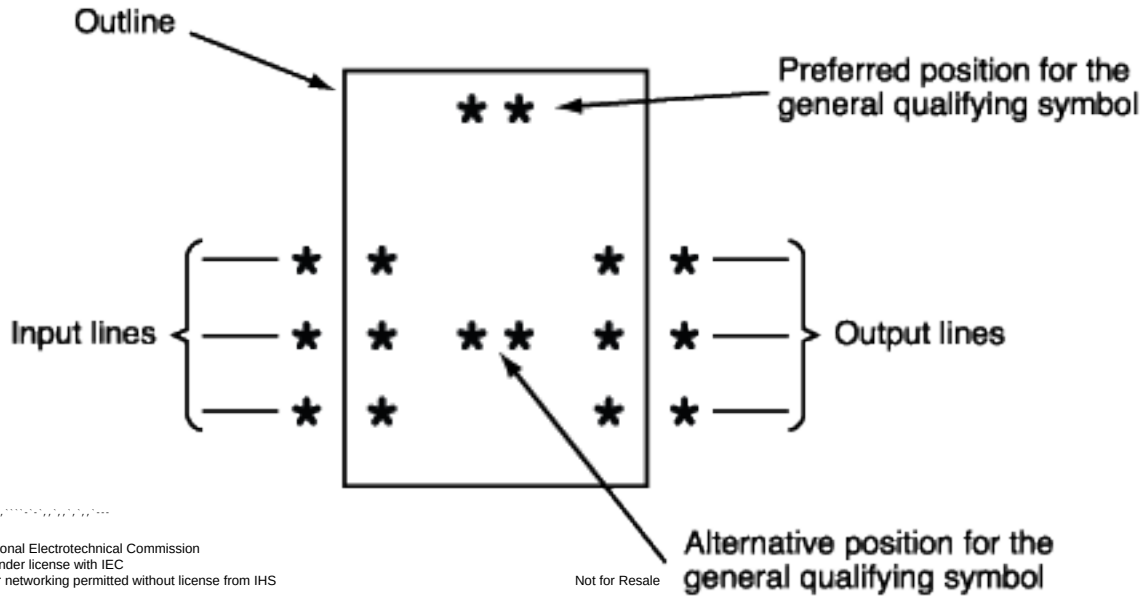
Illustration



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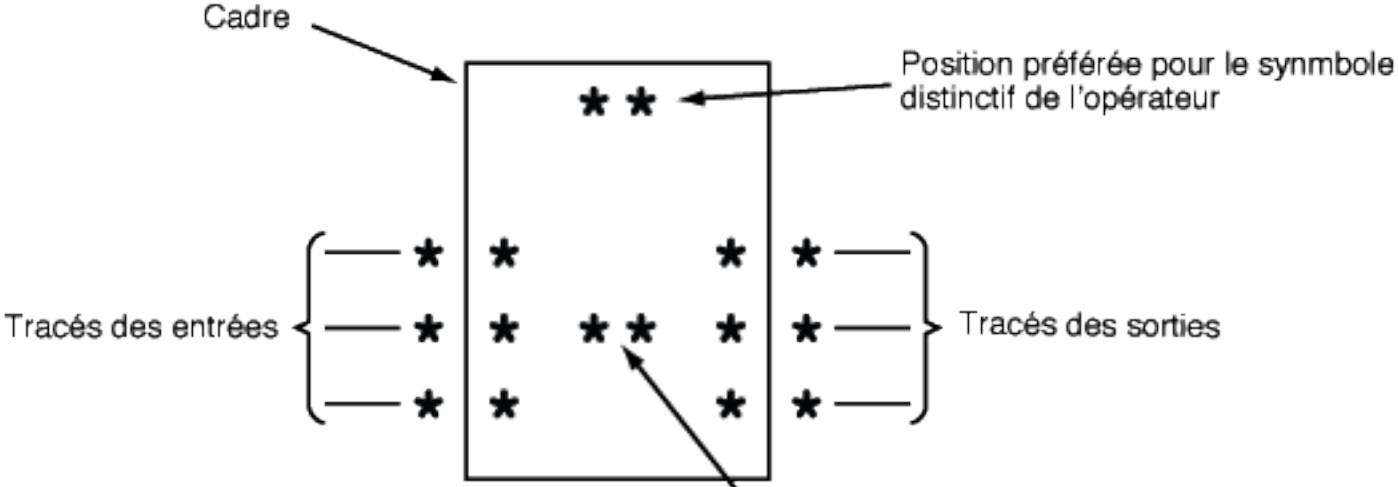

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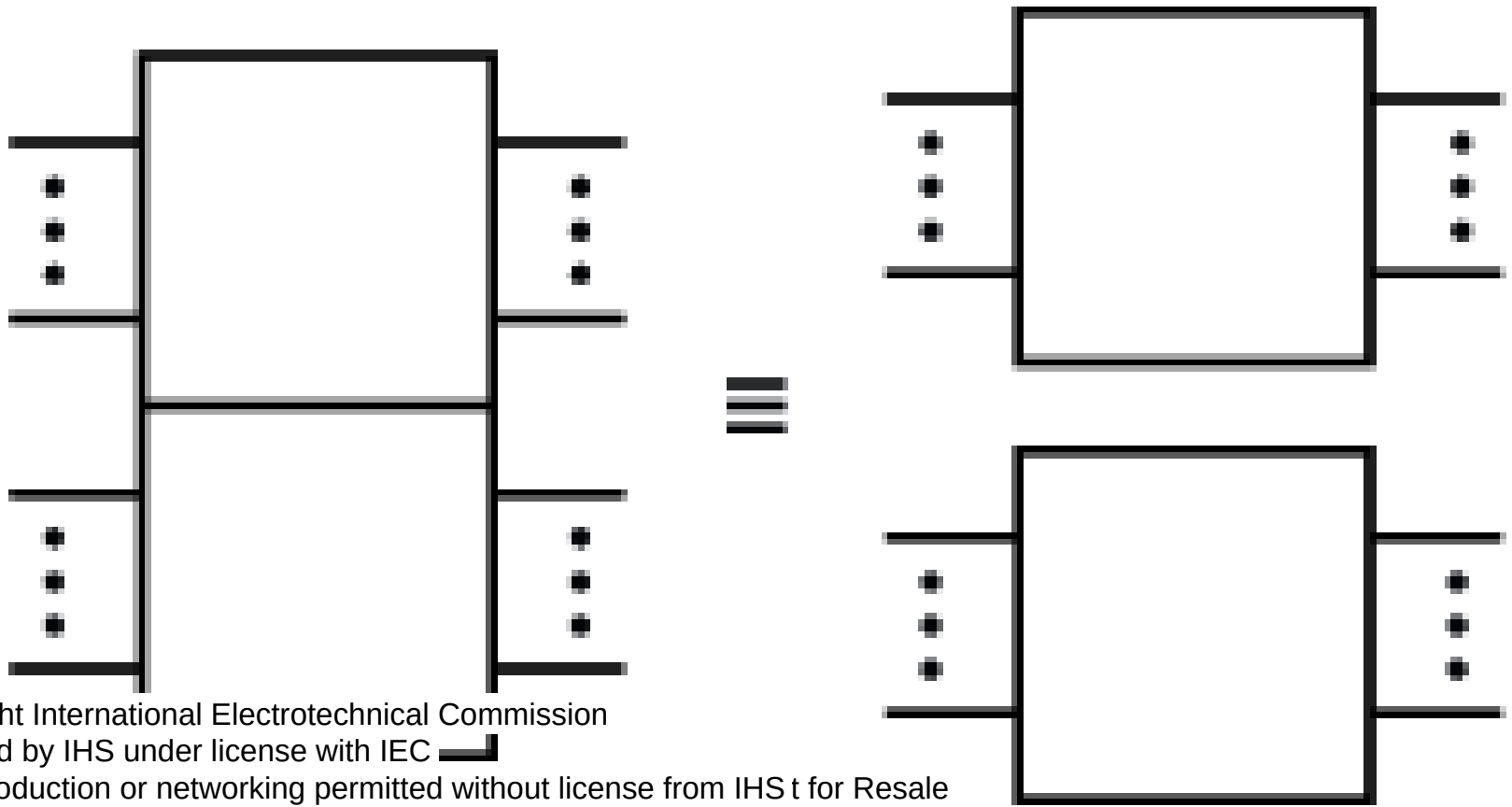

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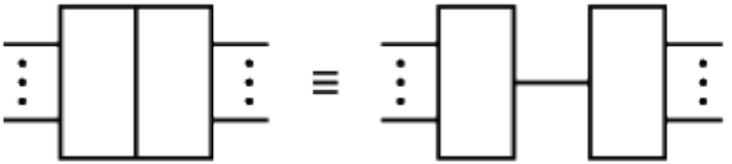

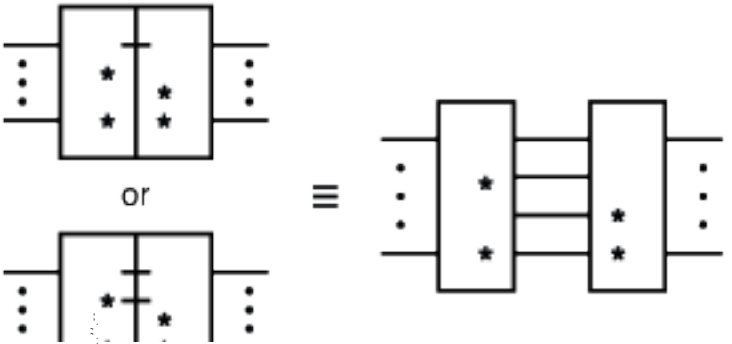

Each asterisk denotes a position for a qualifying symbol

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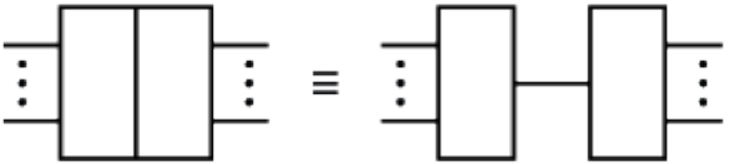

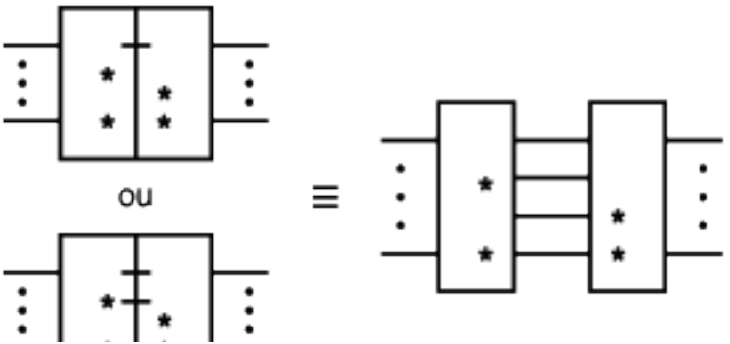

Chaque astérisque indique une position d'un symbole distinctif

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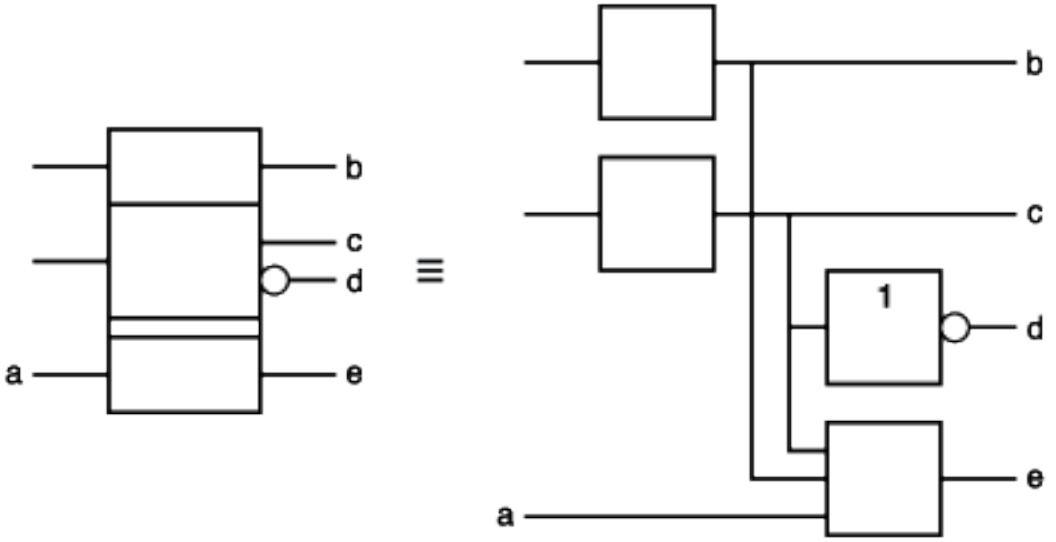

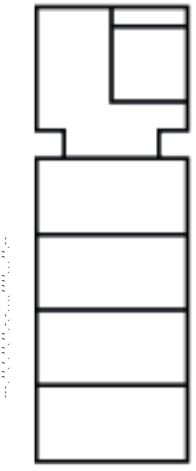

Aray with common output element
inside the common control block



Array with two common output elements

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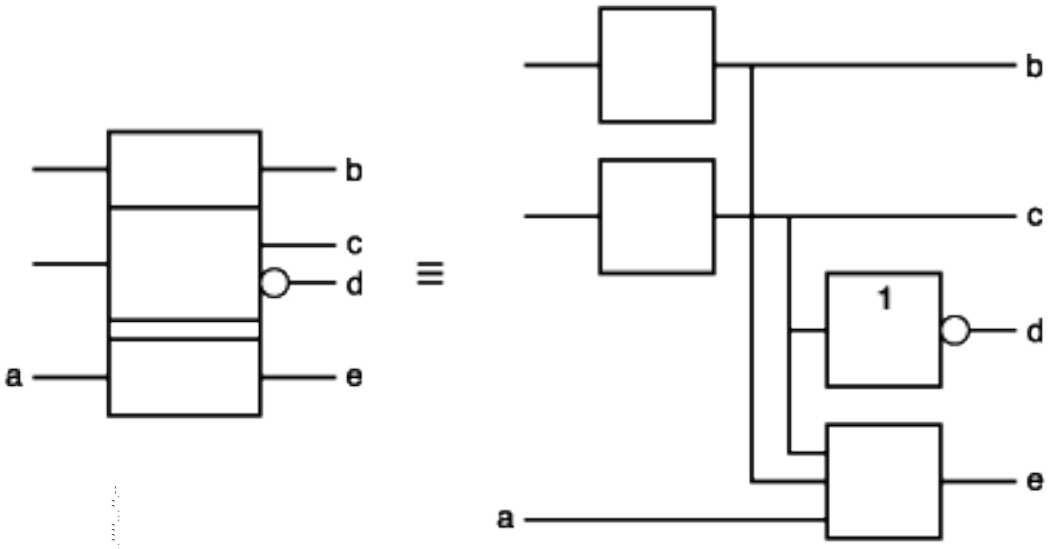

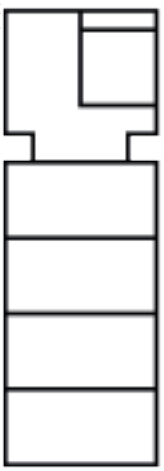

Groupement avec opérateur commun de sortie à l'intérieur du symbole de comuns



Groupement avec deux opérateurs communs de sortie

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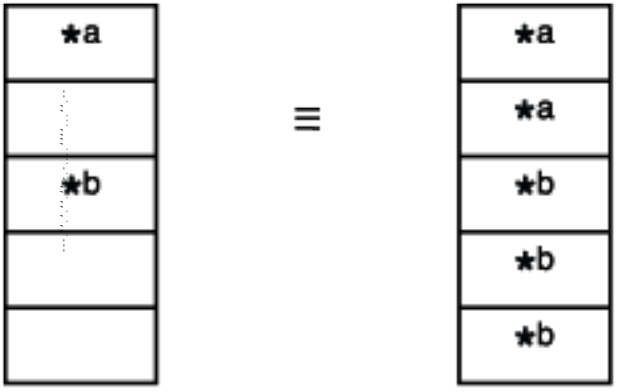
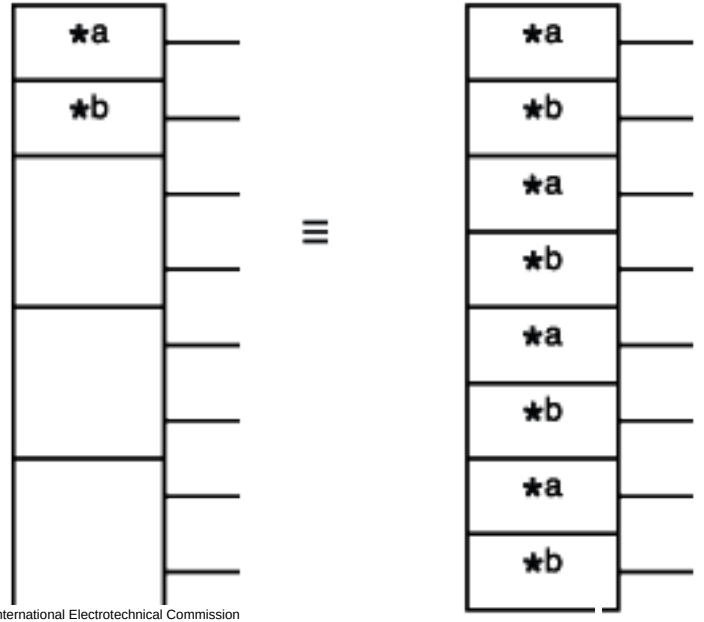
Illustrations



Array of elements with identical general qualifying symbols



Two successive arrays of elements



Two interlaced arrays of elements

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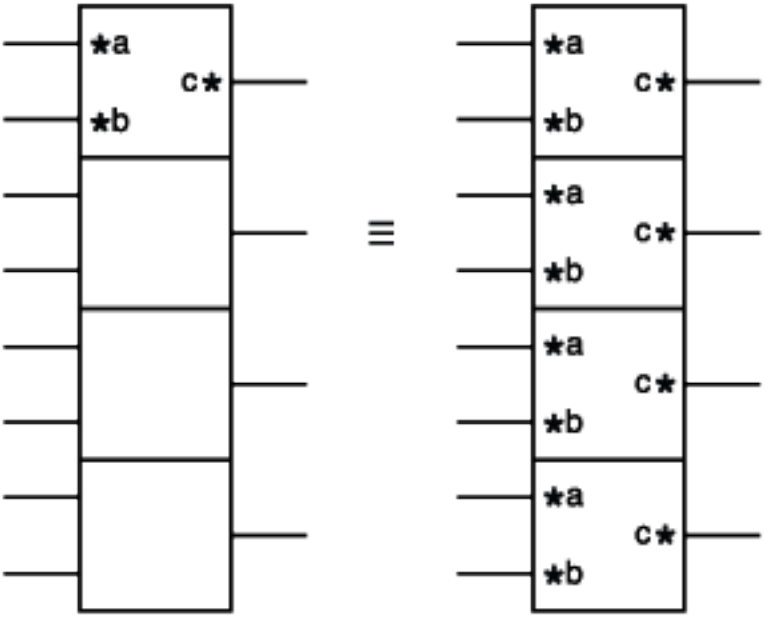
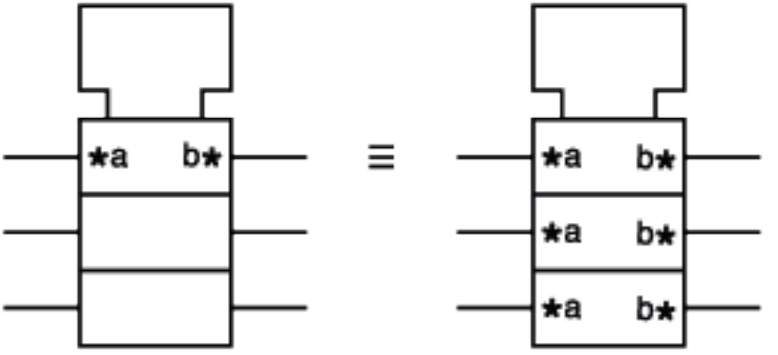


Array of elements with identical qualifying symbols associated with inputs and outputs, shown without common control block



Array of elements with identical qualifying symbols asociated with inputs and outputs, shown with common control block

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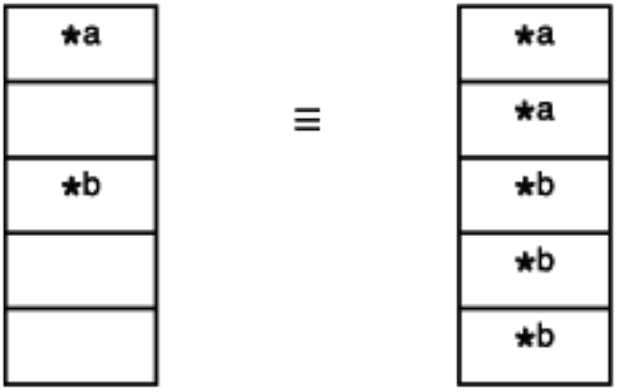
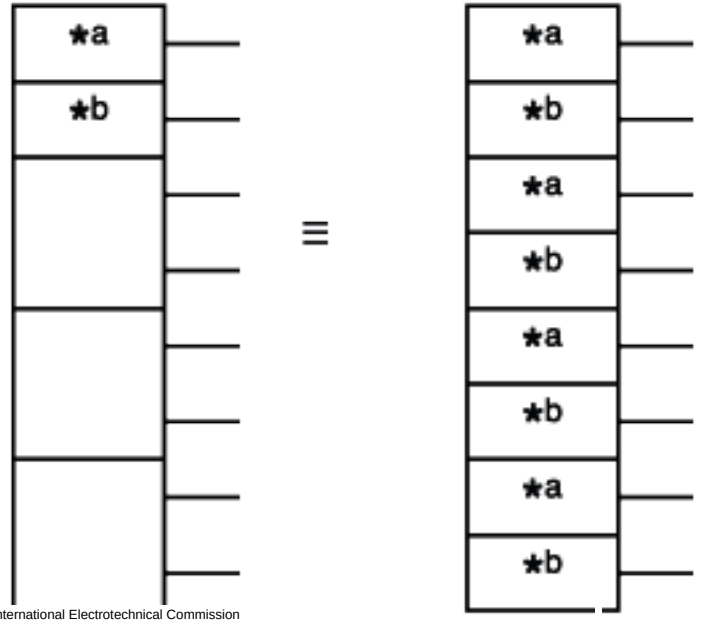
Illustrations



Groupement d'opérateurs ayant le même symbole distinctif d'opérateur



Deus groupes sucessifs d'opérateurs



Groupement de guatre paires d'opérateurs

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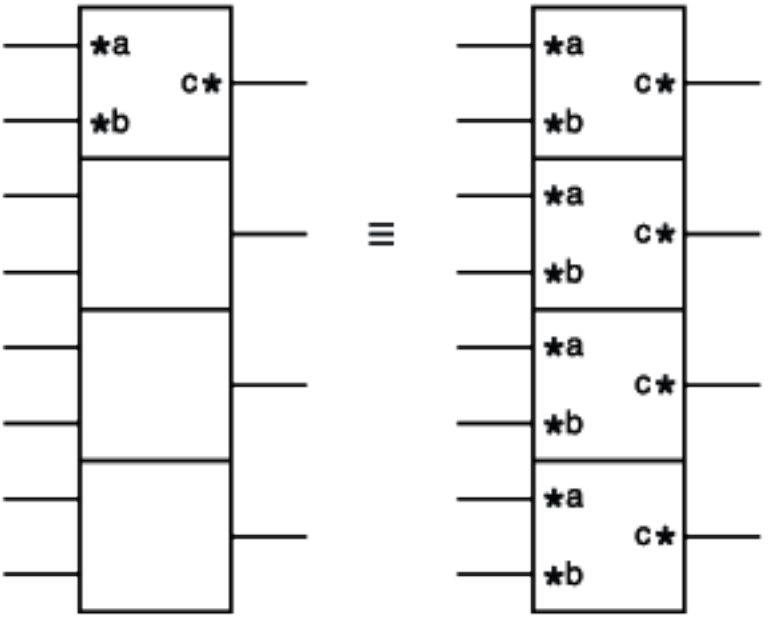
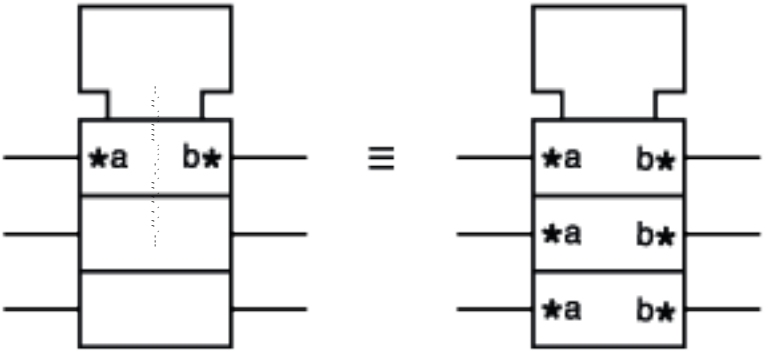


Groupement d'opérateurs avec symboles distinctifs associés aux acceès identiques et figuré sans sysmbole des communs



Groupement d'opérateurs avec symboles distinctifs associés aux accès indetiques et figuré avec symbole des communs

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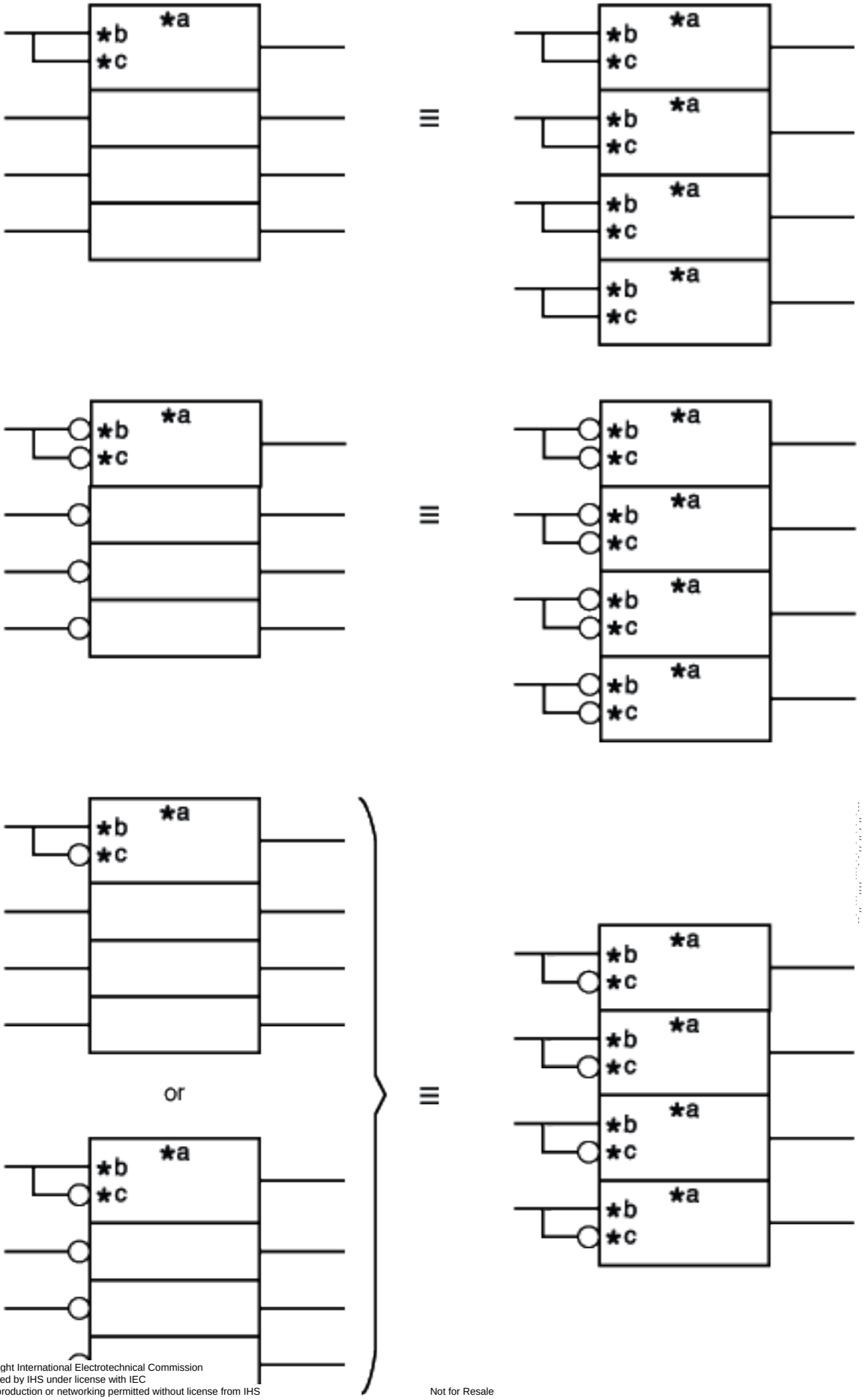

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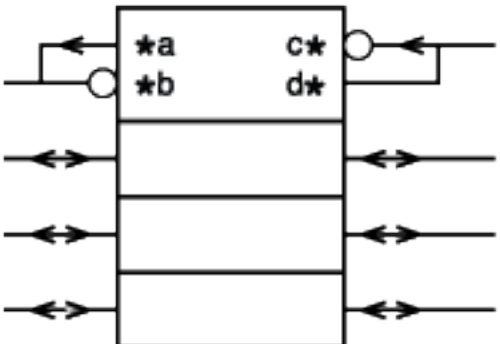

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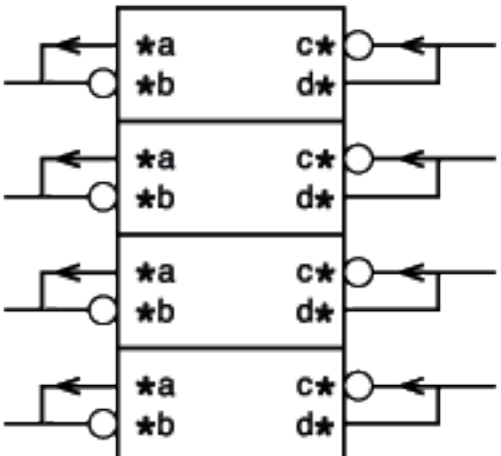

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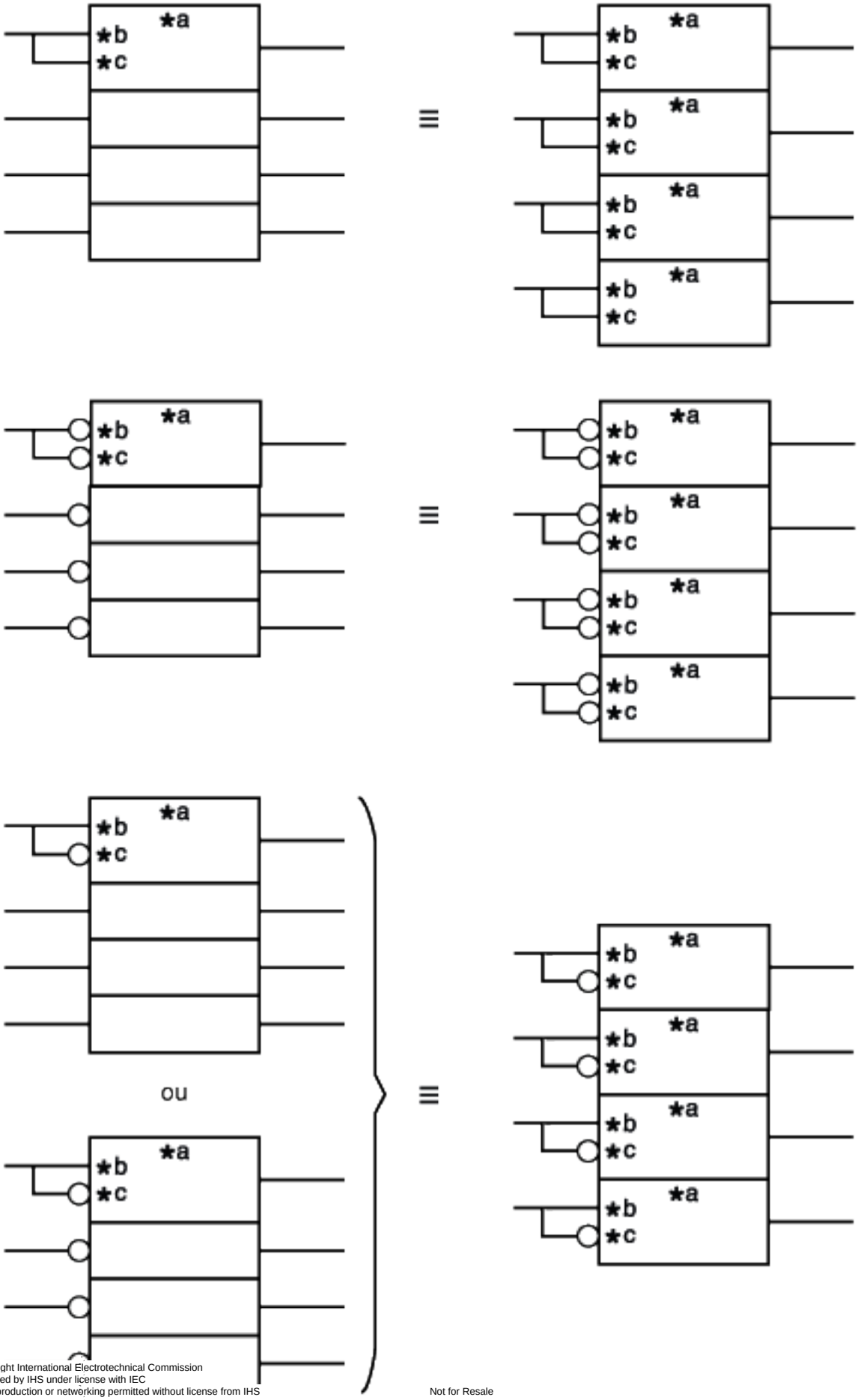

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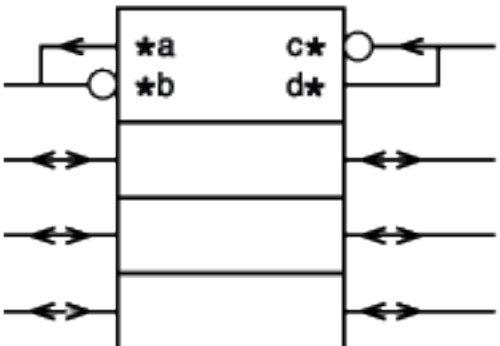

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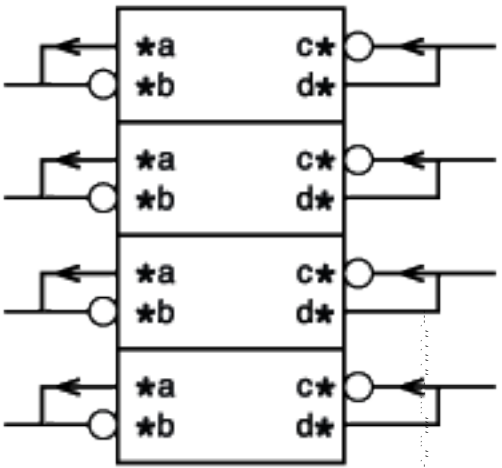

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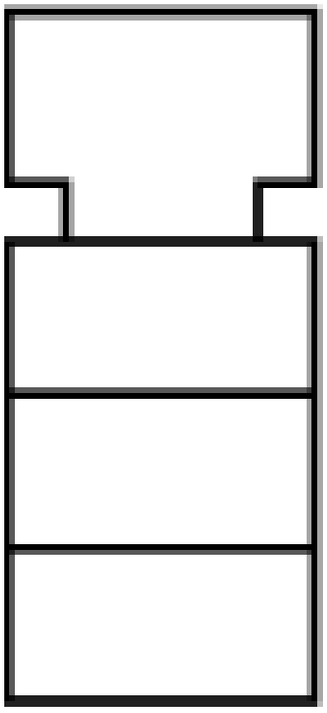

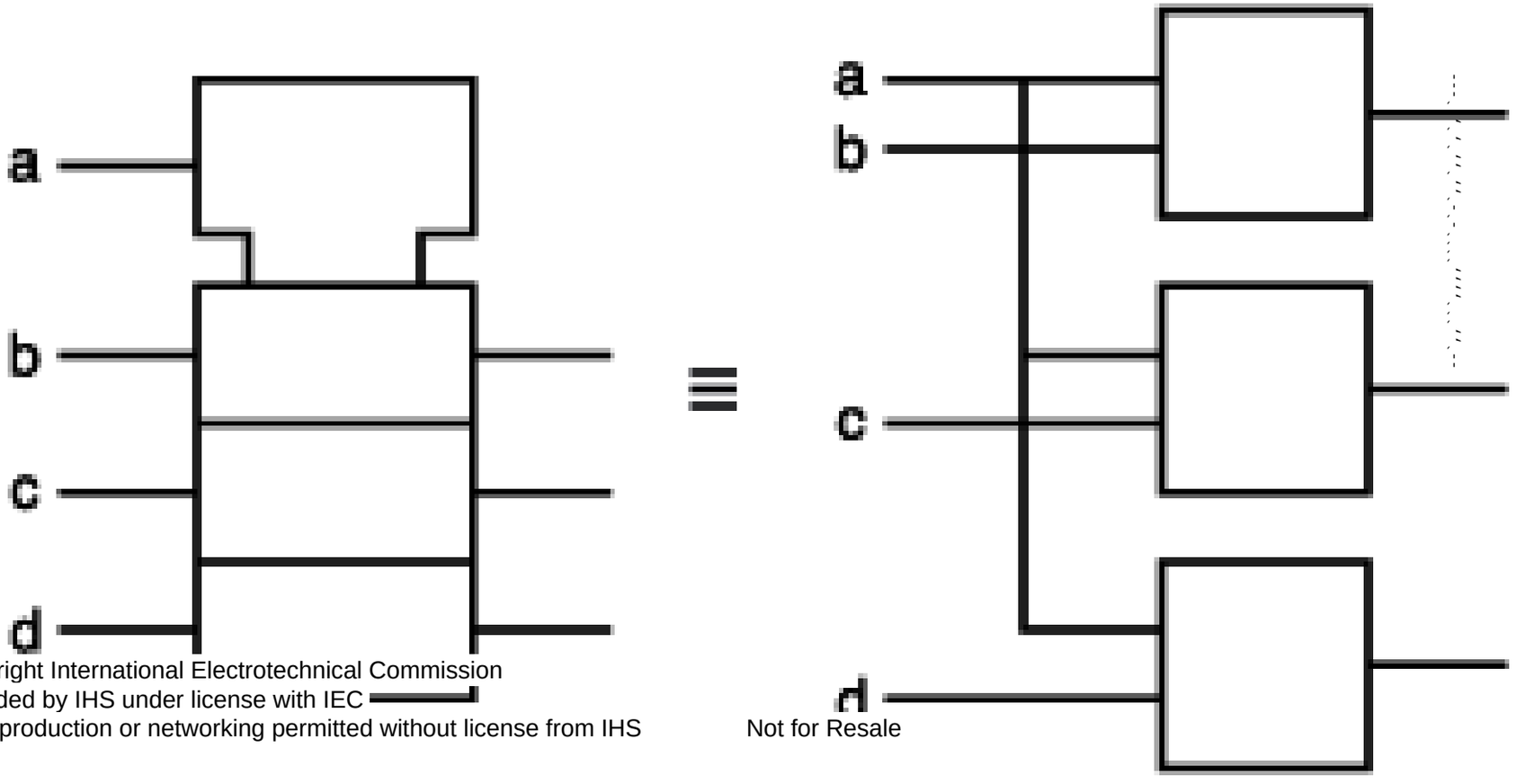

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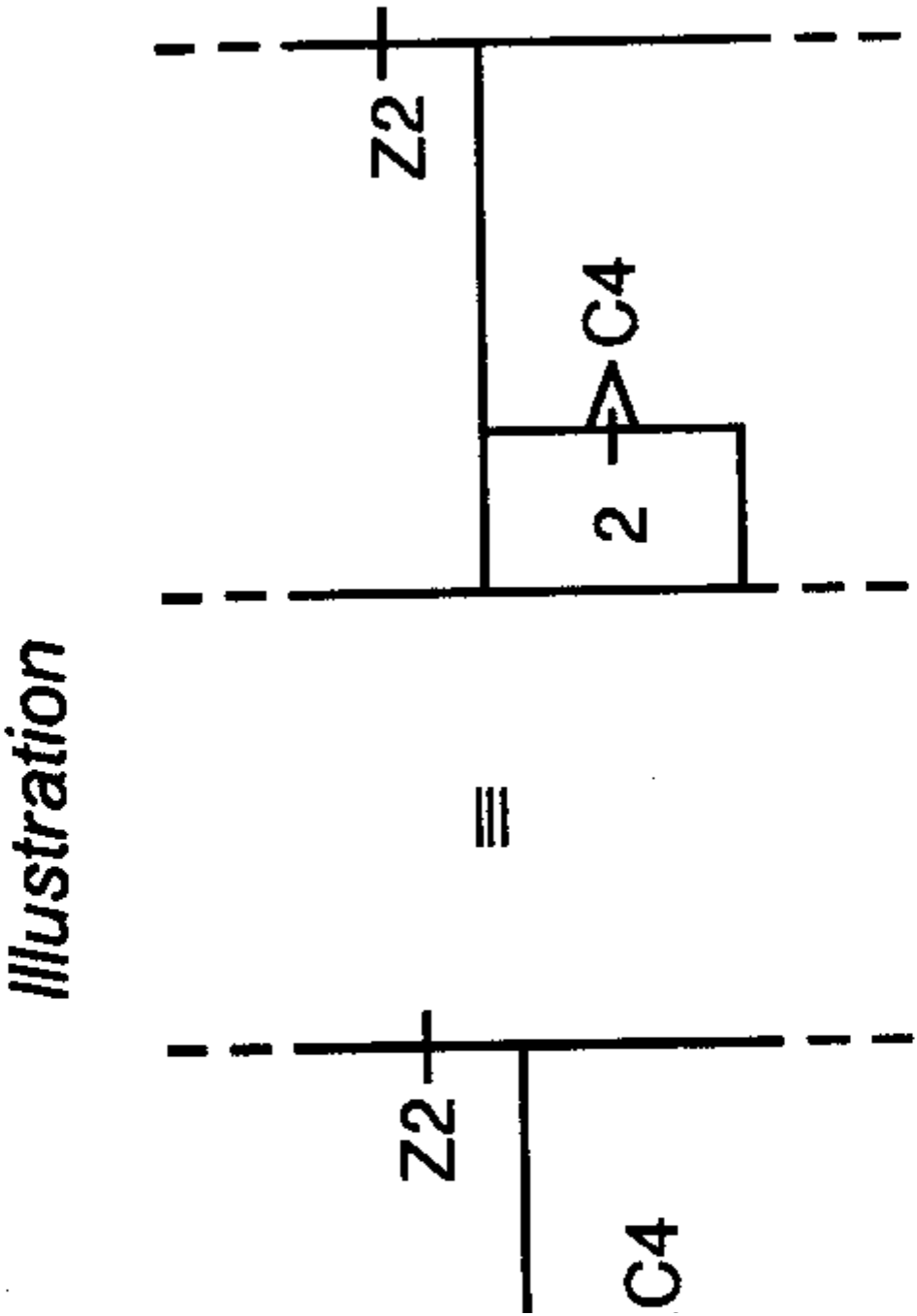

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Accès non concernés par une information logique binaire, sens de propagation de l'information et accès avec rappel interne

L'un des symboles 13-04-01 à 13-04-04 de la CEI 60617-13 être utilisé pour indiquer un accès intéressé par un signal ogique ou par un signal numérique.

Pour des entrées d'alimentation, le symbole 13-05-01 de EI 60617-13 peut être utilisé.

).3 En principe, le sens de propagation de l'information dans un symbole est de la gauche vers la droite et du haut vers le bas. Si cette règle ne peut pas être appliquée ou si le sens de propagation n'est pas évident, celui-ci peut être indiqué par des flèches orientant les trajets de signaux. Ces flèches ne doivent toucher aucun cadre ni aucun symbole distinctif. Voir, par exemple, le symbole 12-29-06.

10 Non-logic connections and signal-flow indicators, internal pulldown and internal pullup

10.1 Symbols 13-04-01 through 13-04-04 of IEC 60617-13 may be used to denote an input or an output carrying analogue or digital signals respectively.

10.2 For supply voltage inputs, use symbol 13-05-01 of IEC 60617-13.

10.3 In principle, the direction of signal flow within a symbol is from left to right and from top to bottom. If this rule cannot be maintained and the direction of signal flow is not obvious, then the signal lines should be marked with arrowheads pointing in the direction of signal flow. These arrowheads shall not touch the outline or any qualifying symbol. See, for example, symbol 12-29-06.

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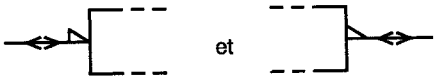
Propagation bilatérale de l'information

NOTES

Comme exemple d'application, voir le symbole 12-29-08.

Sur une connexion comportant le symbole de propagation bilatérale, il convient que tout symbole de polarité logique pointe vers la droite ou vers le bas, par exemple :



3 Dans certains cas, la présence du symbole de polarité logique rend inutile l'emploi du symbole de propagation bilatérale, par exemple :



4 Il convient que la propagation bilatérale de l'information ne soit pas représentée sur une seule ligne entrée/sortie

— si les indications de négation ou de polarité sont différentes pour les fonctions d'entrée et de sortie (sauf dans les cas permis par 6.4), ou

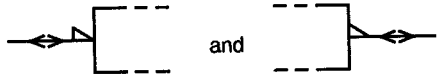
— si les marquages associés aux fonctions d'entrée et de sortie sont différents et s'il peut y avoir confusion quant aux marquages intéressant uniquement les entrées et uniquement les sorties.

Bidirectional signal flow

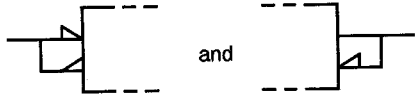
NOTES

1 For an example of use, see symbol 12-29-08.

2 On a connecting line with bidirectional signal flow, any symbol for logic polarity should point to the right or down, for example:



3 In some cases, the appearance of the symbols for logic polarity makes the use of the symbol for bidirectional signal flow unnecessary, for example:



4 Bidirectional signal flow should not be shown on a single input-output line

— if the negation or polarity indications are different for the input and output functions (except as permitted by 6.4), or

— if the labels associated with the input and output functions are different and confusion is likely regarding which portion of the labels applies to the input and which to the output.

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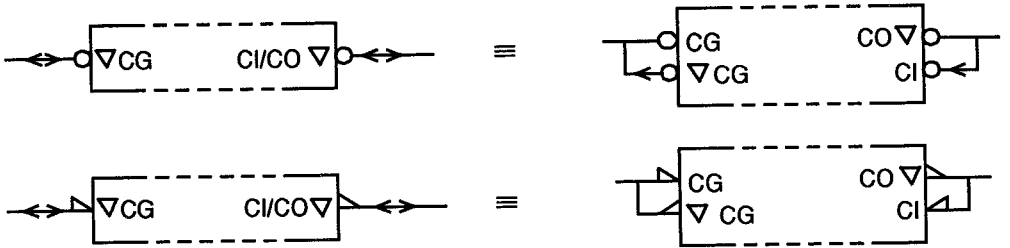
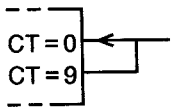
Illustrations



Dans ce cas, la propagation bilatérale de l'information ne doit pas être représentée sur une seule ligne parce qu'il en résulterait une confusion.



In this case, bidirectional signal flow shall not be shown on a single line, because confusion would be likely.

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Table I - Types of dependency

Type of dependency	Letter symbol	Effect on affected input or output if the affecting input stands at its:		See note
		1-state	0-state	
ADDRESS	A	Permits action (address selected)	Prevents action (address not selected)	A00287
CONTROL	C	Permits action	Prevents action	A00282
ENABLE	EN	Permits action	– Prevents action of affected inputs – Imposes external high-impedance condition on open-circuit and 3-state outputs (internal state of 3-state outputs unaffected) – Imposes high-impedance L-level on passive-pull-down outputs and high-impedance H-level on passive-pull-up outputs – Imposes 0-state on other outputs	A00284
AND	G	Permits action	Imposes 0-state	A00277
MODE	M	Permits action (mode selected)	Prevents action (mode not selected)	A00285
NEGATE	N	Complements state	No effect	A00279
RESET	R	Affected output reacts as it would to S=0, R=1	No effect	A00283
SET	S	Affected output reacts as it would to S=1, R=0	No effect	A00283
OR	V	Imposes 1-state	Permits action	A00278
TRANSMISSION	X	Transmission path established	No transmission path established	A00281
INTERCONNECTION	Z	Imposes 1-state	Imposes 0-state	A00280

NOTE - An affected input [output] carrying an identifying number with a bar over it is affected by the logic state of the affecting input that is the complement of that indicated in the table above

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Tableau I - Types of dépendances

Type de dépendance	Symbol littéral	Effet sur l'accès influencé si l'accès influençant est à:		Voir note
		l'état 1	l'état 0	
ADRESSE	A	Action permis (address sélectionnée)	Action bloquée (address non sélectionnée)	A00287
COMMANDE	C	Action permise	Action bloquée	A00282
VALIDATION	EN	Action permise	– Action de la sortie influ- encée bloquée – Etat externe "haute impédance" imposé à une sortie à circuit ouvert ou à une sortie 3 états; état interne d'une sortie 3 états non influencée – Niveau L "haute impédance" imposé à une sortie à circuit ouvert directe de type H; niveau H "haute impéd- ance" imposé à une sortie à circuite ouvert directe de type L – Etat 0 imposé aux autres sorties	A00284
ET	G	Action permise	Etat 0 imposé	A00277
MODE	M	Action permise (mode sélectionné)	Action bloquée (mode non sélectionné)	A00285
NEGATION	N	Etat interne complémenté	Etat interne non modifié	A00279
MISE À ZÉRO	R	Etat interne de la sortie comme pour S=0, R=1	Etat interne non modifié	A00283
MISE À UN	S	Etat interne de la sortie comme pour S=1, R=0	Etat interne non modifié	A00283
OU	V	Etat 1 imposé	Action permise	A00278
TRANSMISSION	X	La voie de transmission est établie	La voie de transmission n'est pas établie	A00281
INTERCONNECTION	Z	Etat 1 imposé	Etat 0 imposé	A00280

NOTE – Un accès influencé marqué d'un numéro d'identification surmonté d'une barre est influencé par l'état logique complémentaire de celui indiqué, dans le tableau ci-dessus, pour l'accés influençant.

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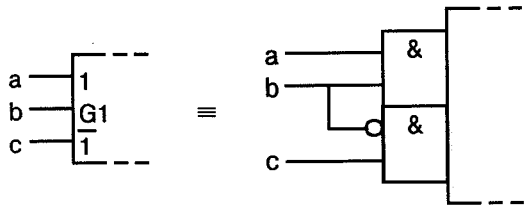
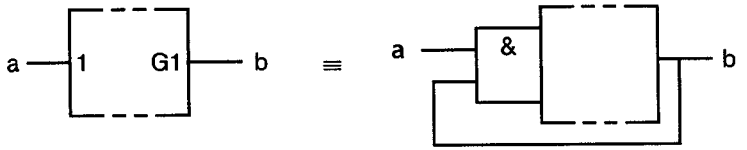
Dépendance ET (dépendance G)

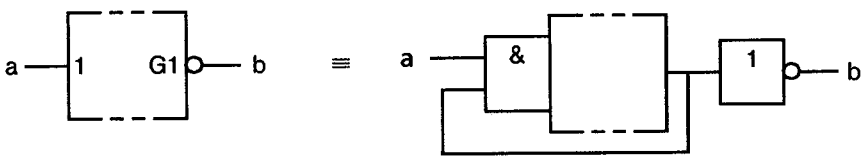
t accès influencé par un accès Gm est lié à celui-ci par une
:tion ET.

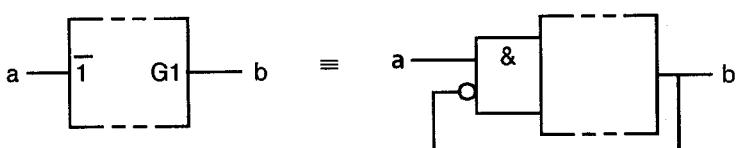
14 AND dependency (G-dependency)

Each input [output] affected by a Gm-input [Gm-output] stands in an AND relationship with this Gm-input [Gm-output].









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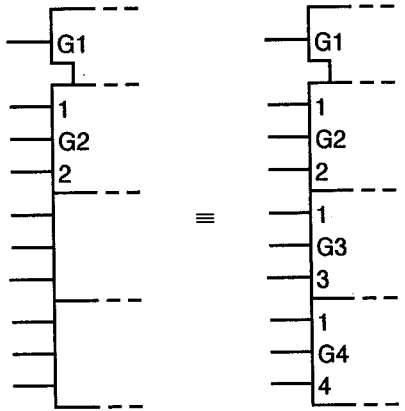

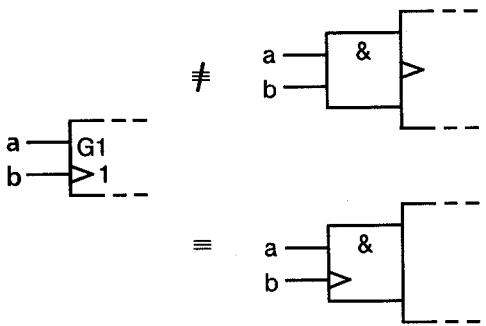

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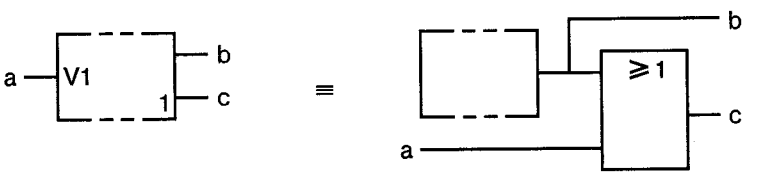

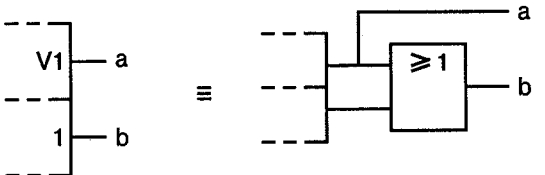

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Dépendance de NEGATION (dépendance N)

accès influencé par un accès Nm est lié à celui-ci par une
tion OU-EXCLUSIF.

16 NEGATE dependency (N-dependency)

Each input [output] affected by a Nm-input [Nm-output] stands in an EXLCUSIVE-OR relationship with this Nm-input [Nm-output].

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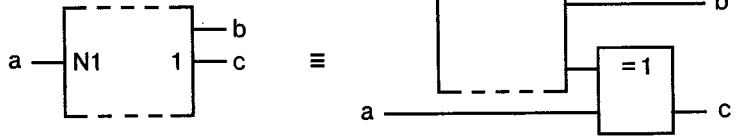
Illustration

Pour a = 0, on a $c = \overline{b}$
Pour a = 1, on a $c = \overline{b}$



If a = 0, then $c = \overline{b}$
If a = 1, then $c = \overline{b}$

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Dépendance d'INTERCONNEXION (dépendance Z)

otation de dépendance d'INTERCONNEXION indique qu'un
s impose son état logique interne à un ou plusieurs autres accès.
ıme exemple d'application, voir le symbole 12-28-13.

at logique interne d'un accès influencé par un accès Zm est le
ne que celui de cet accès Zm, sauf modification par une autre
tion de dépendance.

17 INTERCONNECTION dependency (Z-dependency)

INTERCONNECTION dependency is used to indicate that an input [output] imposes its internal logic state on one or more other inputs and/or outputs. For an example of use, see symbol 12-28-13.

The internal logic state of an input [output] affected by a Zm-input [Zm-output] is identical to the internal logic state of its affecting Zm-input [Zm-output] unless modified by additional dependency notation.

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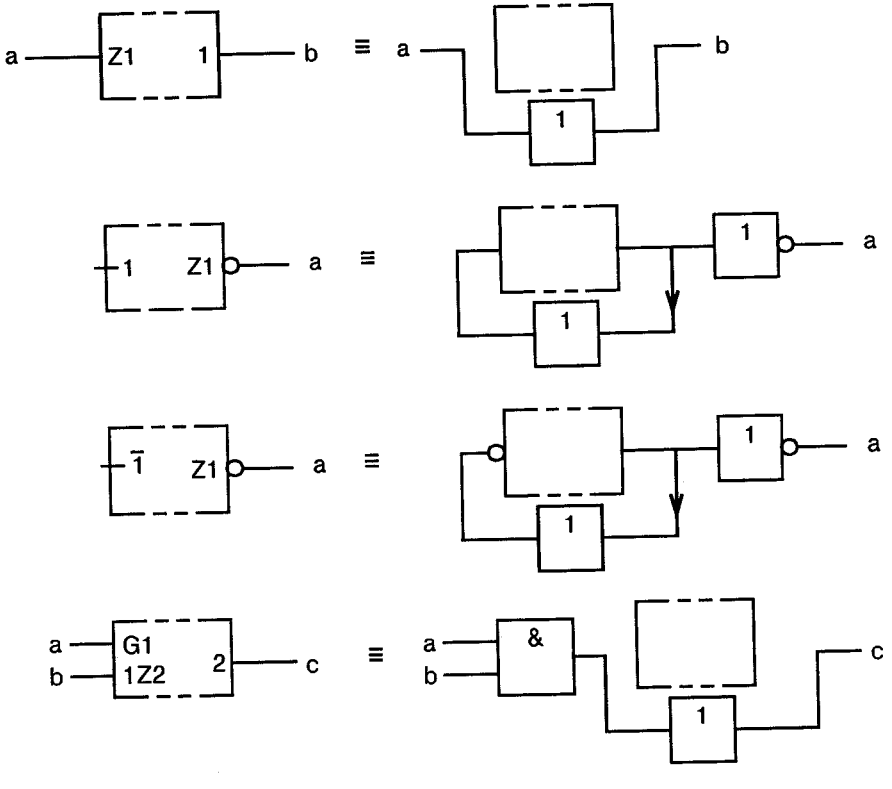

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Dépendance de TRANSMISSION (dépendance X)

La dépendance de TRANSMISSION est destinée à indiquer la commande d'une voie de transmission entre des accès déterminés. Sauf indication contraire, la voie de transmission est bilatérale. La dépendance de TRANSMISSION donne un moyen de symboliser un simple commutateur électronique et rend possible la représentation de dispositifs compliqués d'une manière concise.

17A TRANSMISSION dependency (X-dependency)

TRANSMISSION dependency is used to indicate controlled transmission paths between affected ports (inputs, outputs and/or input-outputs). Unless otherwise indicated, the transmission paths are bidirectional. The TRANSMISSION dependency provides a way of symbolizing simple analogue switches and it enables more complicated devices to be depicted in a concise manner.

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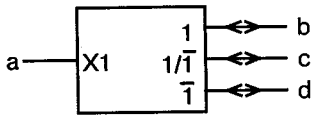
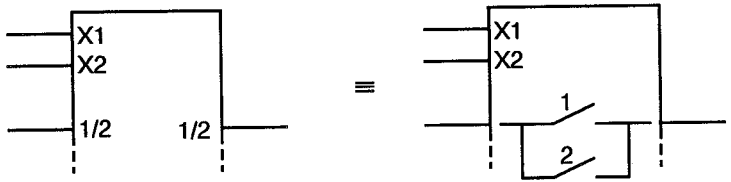
Quand l'entrée a est à l'état interne 1, la voie de transmission bilatérale est établie entre b et c.

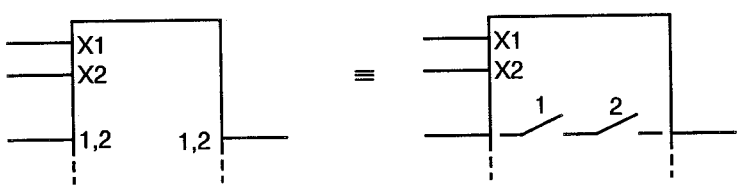
Quand l'entrée a est à l'état interne 0, la voie de transmission bilatérale est établie entre c et d.



If input a stands at its internal 1-state, there is a bidirectional transmission path between b and c.

If input a stands at its internal 0-state, there is a bidirectional transmission path between c and d.





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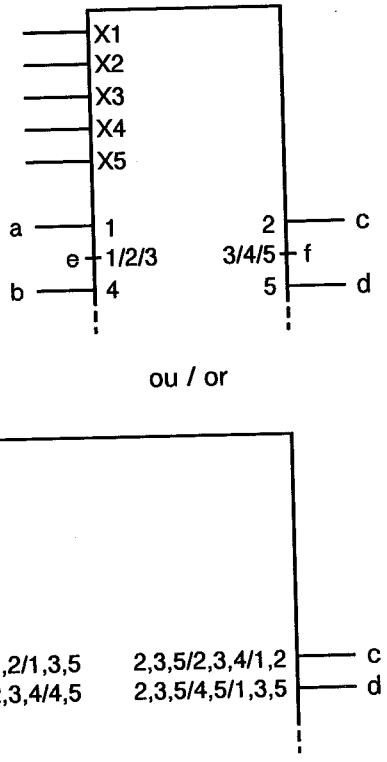
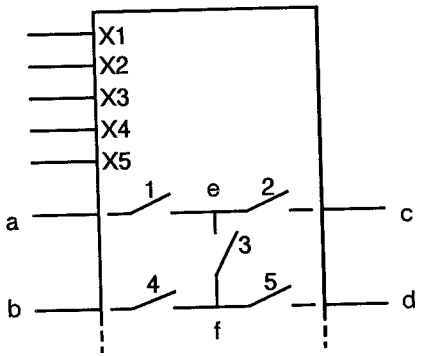
L sation des accès virtuels permet de simplifier une suite compli-
q de notations de dépendance :



The use of virtual inputs and outputs can simplify an otherwise complicated string of dependency notations:

≡



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Dépendance de COMMANDE (dépendance C)

épendance de COMMANDE doit être utilisée seulement pour des ateurs séquentiels et peut exprimer une relation plus compliquée ET. Elle identifie une entrée qui déclenche une action, telle que rée d'horloge d'un opérateur bistable déclenché sur front, ou rée de validation d'une bascule transparente.

18 CONTROL dependency (C-dependency)

CONTROL dependency shall be used only for sequential elements and may imply more than a simple AND relationship. It identifies an input that produces action, for example the clock of an edge-triggered bistable circuit or the data enable of a level-operated transparent latch.

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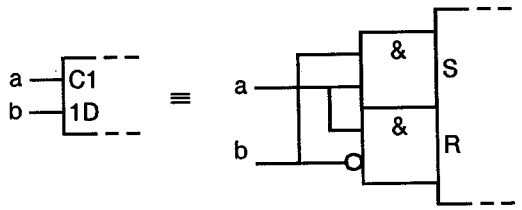
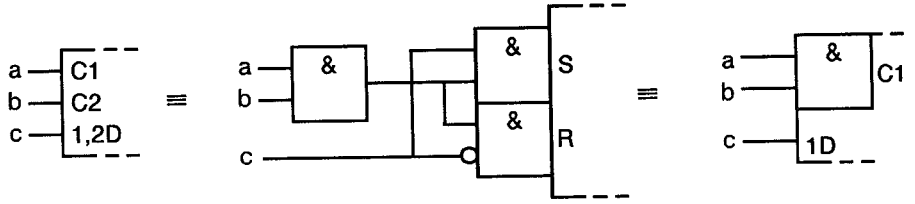
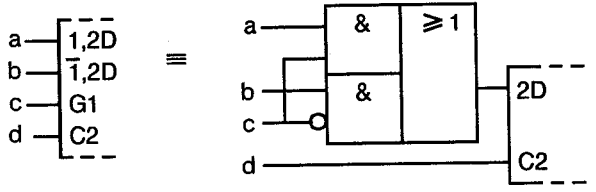


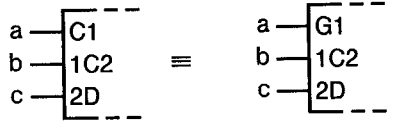


9.1 est appliqué.



Use has been made of 9.1.

NOTE — Cette illustration est exclusivement explicative car l'utilisation d'une entrée Cm influençant une autre entrée Cm n'est pas recommandée.



NOTE — This illustration has been included for explanatory purposes, but the use of a Cm-input to affect a second Cm-input is not recommended.

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Dépendance MISE À UN (dépendance S) et dépendance MISE À ZÉRO (dépendance R)

dépendances ne sont utilisées que s'il est nécessaire de spéci-
effet des entrées R et S sur une bascule bistable pour la com-
son R = S = 1. Comme exemple d'application, voir la note du
bole 12-42-07.

e entrées influençantes R et S ne peuvent agir que sur les sorties.

19 SET and RESET dependency (S- and R-dependency)

SET and RESET dependencies are used if it is necessary to specify the effect of the combination R = S = 1 on a bistable element. These dependencies should not be used if such specification is not necessary. For an example of application, see the note with symbol 12-42-07.

Affecting S- and R-inputs can affect only outputs.

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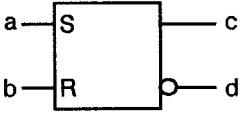
États logiques externes

a	b	c	d
0	0	inchangé	
0	1	0	1
1	0	1	0
1	1	non spécifié	

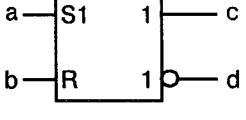


External logic states

a	b	c	d
0	0	unchanged	
0	1	0	1
1	0	1	0
1	1	unspecified	

États logiques externes

a	b	c	d
0	0	inchangé	
0	1	0	1
1	0	1	0
1	1	1	0



External logic states

a	b	c	d
0	0	unchanged	
0	1	0	1
1	0	1	0
1	1	1	0

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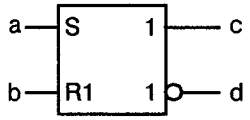
États logiques externes

a b	c d
0 0	inchangé
0 1	0 1
1 0	1 0
1 1	0 1

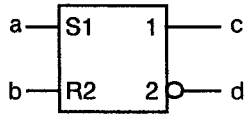


External logic states

a b	c d
0 0	unchanged
0 1	0 1
1 0	1 0
1 1	0 1

États logiques externes

a b	c d
0 0	inchangé
0 1	0 1
1 0	1 0
1 1	1 1



External logic states

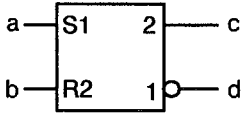
a b	c d
0 0	unchanged
0 1	0 1
1 0	1 0
1 1	1 1

NOTE — La situation non complémentaire des états des sorties de la dernière ligne de la table de vérité est seulement pseudo-stable. Le retour simultané des entrées a et b à 0 produit des états complémentaires stables, mais imprévisibles, des sorties.

NOTE — The non-complementary output pattern in the last line of the truth table is only pseudo-stable. The simultaneous return of a and b to 0 produces an unforeseeable stable and complementary output pattern.

États logiques externes

a b	c d
0 0	inchangé
0 1	0 1
1 0	1 0
1 1	0 0



External logic states

a b	c d
0 0	unchanged
0 1	0 1
1 0	1 0
1 1	0 0

NOTE — La note de la précédente illustration est applicable.

NOTE — The note with the preceding illustration applies.

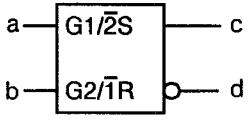
NOTES

1 La signification de la barre inclinée est donnée dans la section 25.

2 Cet exemple n'utilise pas de dépendances S et R, mais complète la collection des cas possibles et illustre le fait qu'une dépendance S ou R ne peut pas influencer des entrées.

États logiques externes

a b	c d
0 0	inchangé
0 1	0 1
1 0	1 0
1 1	inchangé



External logic states

a b	c d
0 0	unchanged
0 1	0 1
1 0	1 0
1 1	unchanged

NOTES

1 The use of the solidus is explained in section 25.

2 This example does not use the S- and R-dependencies, but completes the set of alternatives to the unspecified case and demonstrates the fact that S- and R-dependencies cannot affect inputs.

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Dépendance de VALIDATION (dépendance EN)

La dépendance de VALIDATION est utilisée pour représenter une
dépendance de VALIDATION qui n'influence pas toutes les sorties d'un
opérateur. Elle peut aussi être utilisée lorsqu'une ou plusieurs entrées
d'un opérateur sont influencées.

20 ENABLE dependency (EN-dependency)

ENABLE dependency is used to indicate an ENABLE input that does not necessarily affect all outputs of an element. It can also be used if one or more inputs of an element are affected.

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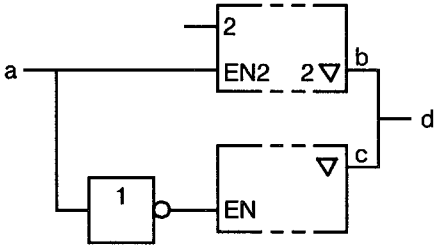
Illustrations

Etats logiques internes

a	d
0	c
1	b



External logic states

a	d
0	c
1	b

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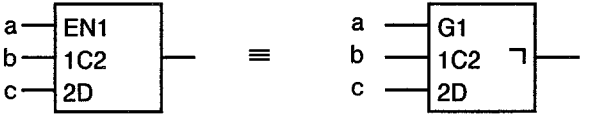
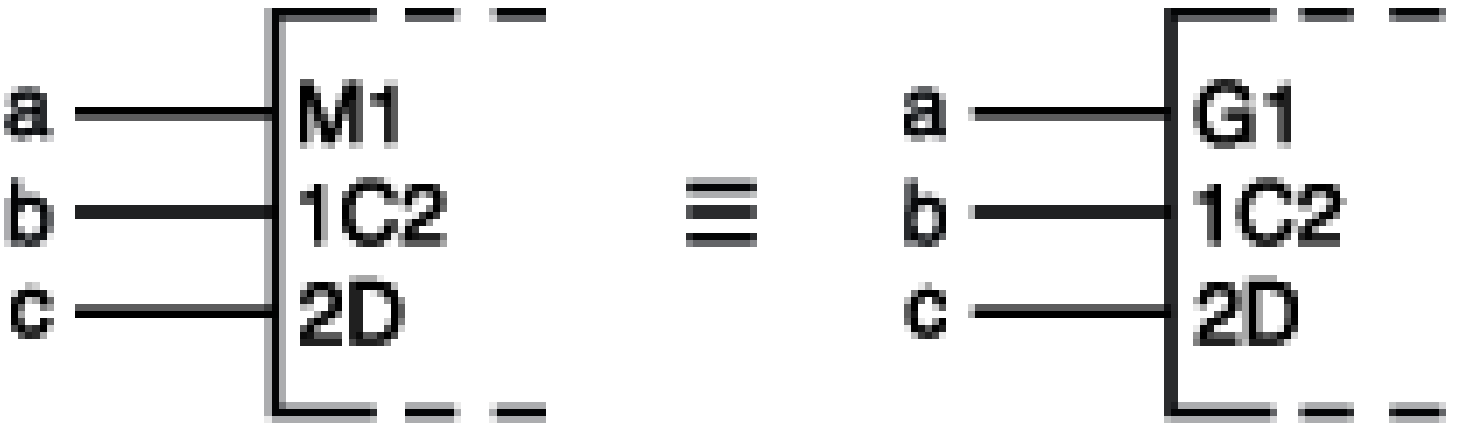
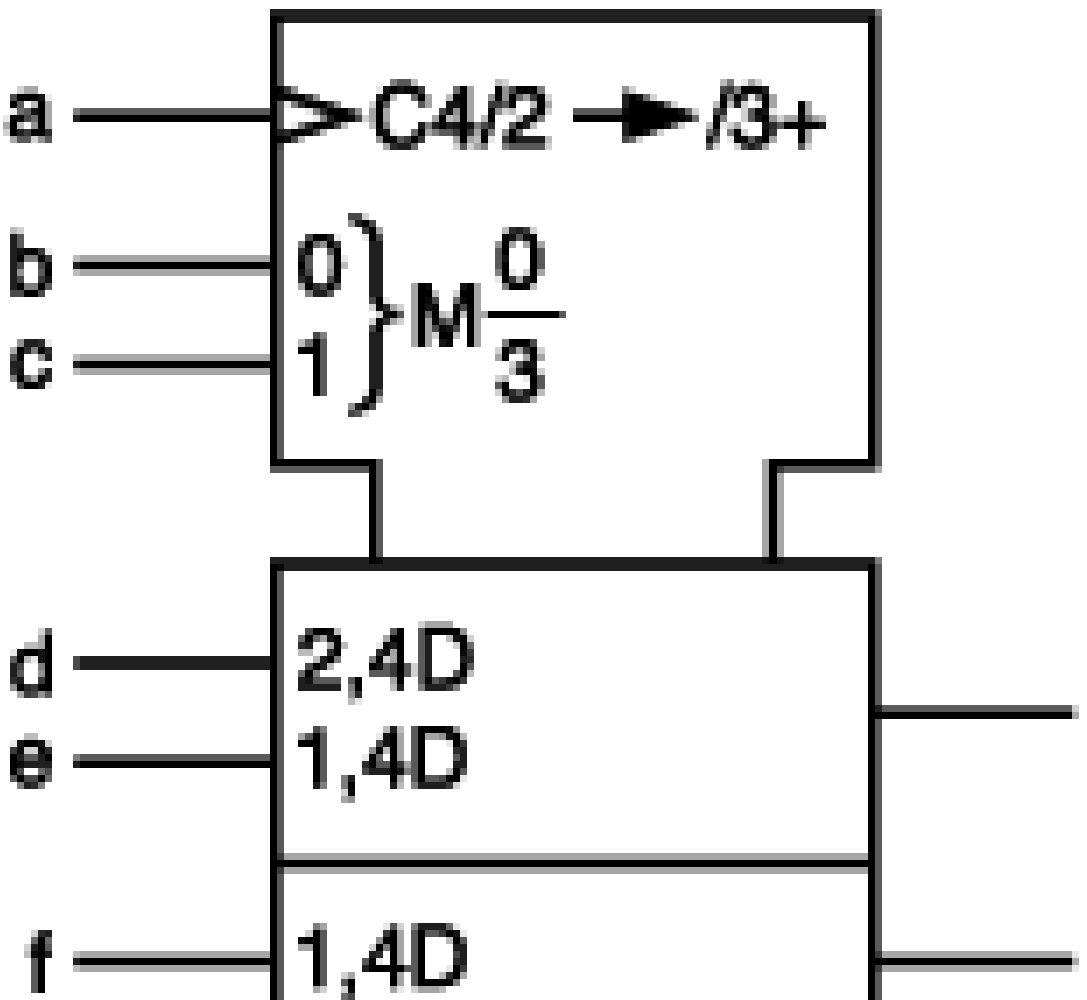


r la comparaison des influences C, EN et M sur les entrées, voir
ection 22.

For comparison of C-, EN-, and M-effects on inputs, see section 22.





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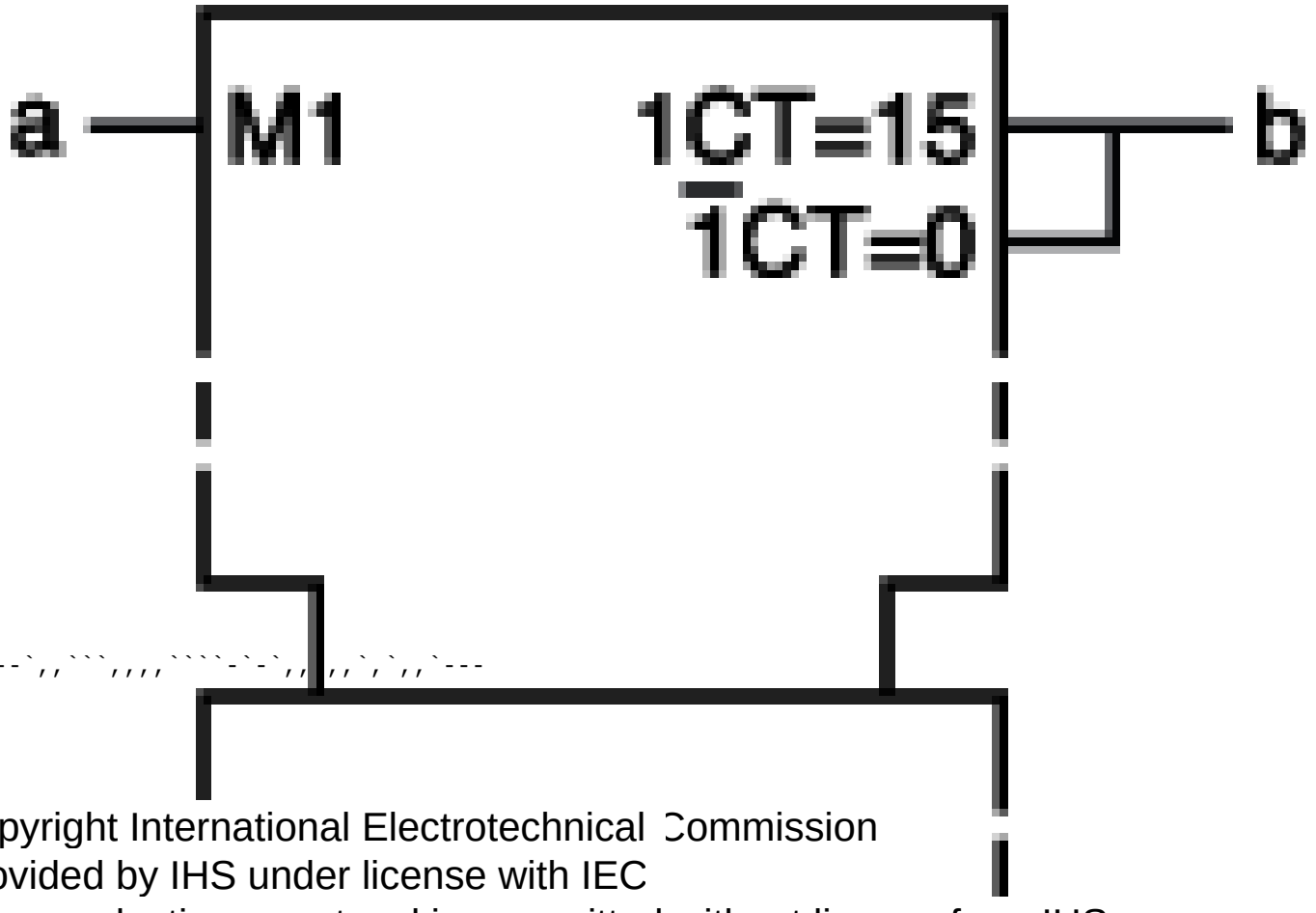

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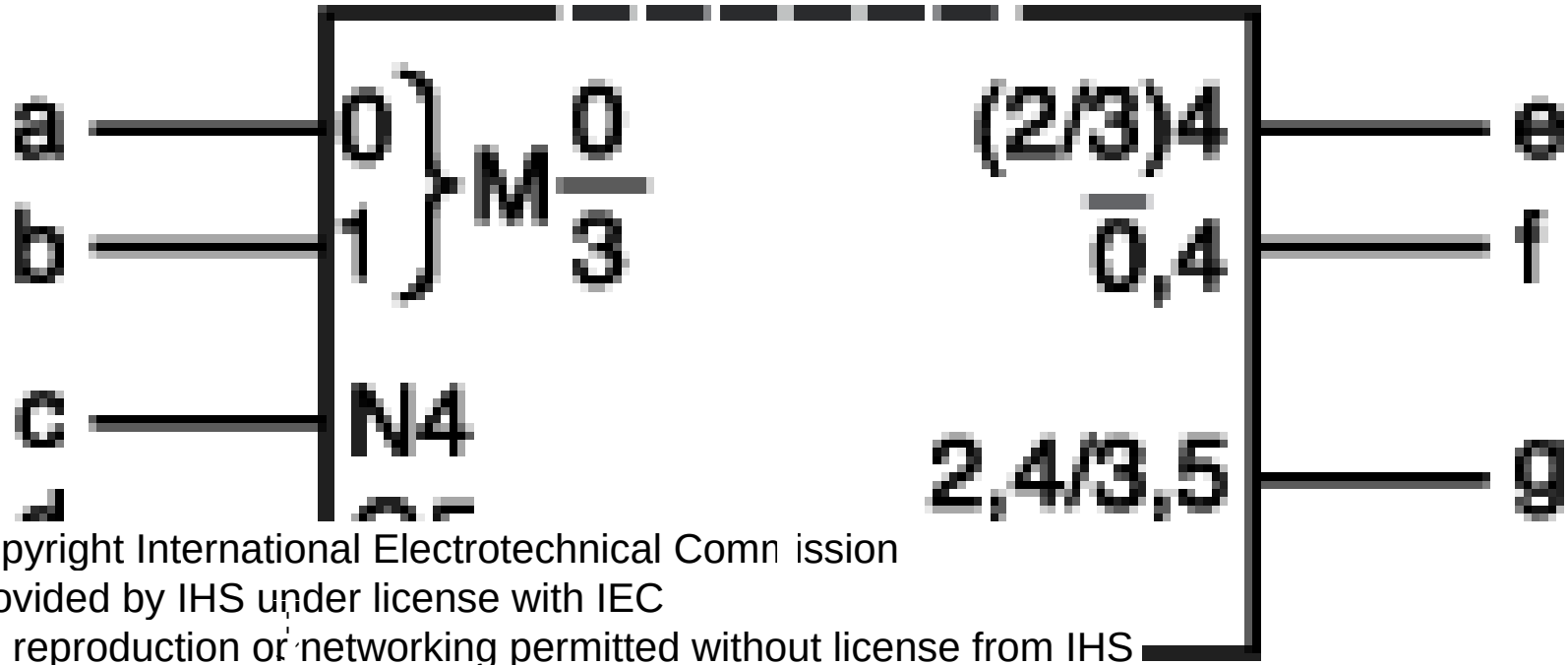

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22 Comparaison entre les influences C, EN et M sur les entrées

Les entrées Cm, ENm et Mm ont une influence semblable sur les entrées qu'elles influencent, mais elles diffèrent par les applications pour lesquelles elles ont été prévues :

— Cm est destinée à identifier une entrée qui déclenche une action;

— ENm est destinée à identifier une entrée ayant une action préparatoire simple;

— Mm est destinée à identifier une ou plusieurs entrées qui, séparément ou ensemble, produisent plusieurs actions préparatoires.

22 Comparison of C-, EN-, and M-effects on inputs

With regard to affected inputs, Cm-, ENm,- and Mm-inputs all have the same effect. However, their intended applications are different:

— Cm should be used to identify an input that produces action;

— ENm should be used to identify an input that produces a single preparatory effect;

— Mm should be used to identify one or more inputs that singly or together produce alternative preparatory effects.

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Dépendance ADRESSE (dépendance A)

La dépendance ADRESSE permet une claire représentation
érateurs tels que les mémoires, qui utilisent une commande des
es par «adresses» pour sélectionner des sections spécifiées d'un
ateur complexe composé de n sous-groupements, tous sembla-
et dont les sorties sont réunies chacune à chacune par une
tion OU (ou une autre fonction, expressément indiquée sous le
ole distinctif de la fonction de l'opérateur, par exemple
A
◇
). Il est possible de représenter chaque sous-groupement par
seul opérateur en indiquant quel est celui d'entre eux qui donne
son état logique interne à la sortie de la fonction OU. Dans tous les
sous-groupements, l'opérateur ainsi sélectionné est celui influencé
par celle des entrées influençantes Am qui est portée à l'état interne
1. L'opérateur complet est donc symbolisé en représentant une seule
section prise comme type au lieu de toutes les sections identiques qui
le composent.

23 ADDRESS dependency (A-dependency)

23.1 ADDRESS dependency provides a clear representation of those elements, particularly memories, which use address control inputs to select specified sections of a multidimensional array. ADDRESS dependency allows a symbolic representation of only a single general case of the sections of the array, rather than requiring a symbolic presentation of the entire array. An input of the array shown at a particular element of this general section is common to the corresponding elements of all sections of the array. An output of the array shown at a particular element of this general section is the result of the OR function of the outputs of the corresponding elements of the selected sections. If any function other than OR is performed, this should be indicated by adding the appropriate qualifying symbol below the general qualifying symbol, for example: RAM
&
◇
.

Si une sortie figure comme «sortie à circuit ouvert» ou «sortie 3-états» sur un élément particulier de la «section type», cette indication se rapporte à une sortie du «groupement» et non aux sorties des sections.

Les entrées non influencées par une entrée influençante ADRESSE agissent sur toutes les sections du groupement tandis que celles influencées par une entrée ADRESSE n'agissent que sur la section sélectionnée par ladite entrée ADRESSE.

Une entrée influençante ADRESSE est marquée par la lettre A suivie d'un numéro d'identification correspondant à la section particulière sélectionnée par cette entrée.

Dans la «section type» figurée dans le symbole, les entrées et sorties influencées par une entrée Am sont marquées de la lettre A qui tient lieu de numéro d'identification, le numéro identifiant chacune des sections étant sous- entendu. La lettre A est donc soumise aux règles générales de la notation de dépendance pour les numéros d'identification associés aux accès influencés.

Si une sortie influencée par une entrée Am présente d'autres marquages, ceux précédant la lettre A influencent la sortie de la section sélectionnée, tandis que ceux placés après la lettre A influencent la sortie du groupement, c'est à dire après application de la fonction OU (ou de la fonction expressément indiquée) liant les sorties similaires des sections.

If the label of an output of the array shown at a particular element of this general section indicates that this output is an open-circuit output or a 3-state output, then this indication refers to the output of the array and not to those of the sections of the array.

Inputs which are not affected by any affecting ADDRESS input have their normally defined effect on all sections of the array, whereas inputs affected by an ADDRESS input have their normally defined effect only on the section selected by that ADDRESS input.

An affecting ADDRESS input is labelled with the letter A followed by an identifying number which corresponds to the address of the particular section of the array selected by this input.

Within the general section presented by the symbol, inputs and outputs affected by an Am-input are labelled with the letter A, which stands for the identifying numbers, i.e. the addresses, of the particular sections. This letter A is subject to the rules of dependency notation concerning identifying numbers associated with affected inputs and outputs.

If an output affected by an Am-input also has other labels, then the labels preceding the letter A affect the output of the section selected by this Am-input and the labels placed behind the letter A affect the output of the array, that is, after the application of the OR function (or the indicated function) to the corresponding outputs of the selected sections of the array.

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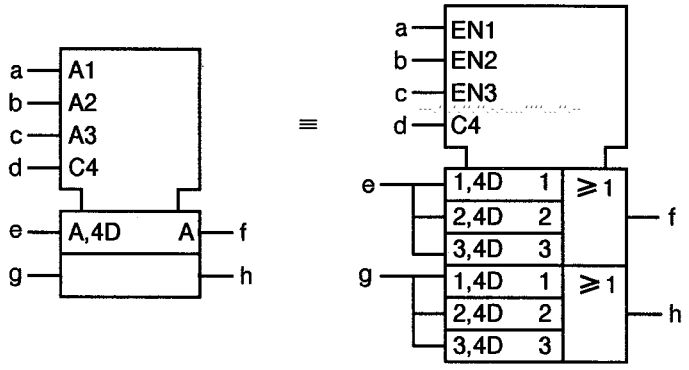
Illustration



23.2 Les numéros d'identification des entrées influençantes Am s'identifient aux adresses des sections sélectionnées par ces entrées. Il n'est pas nécessaire qu'ils diffèrent des numéros choisis pour d'autres dépendances (par exemple G, V, N, ...), du fait que dans la section type du symbole ne figure que la lettre A.

S'il y a plusieurs séries d'entrées Am influençantes pour permettre des accès indépendants, éventuellement simultanés à des sections d'un groupement, les symboles spécifiques de ces entrées sont 1A, 2A, ... au lieu de A. Parce qu'elles interviennent sur les mêmes sections du groupement, ces séries d'entrées Am peuvent avoir les mêmes numéros d'identification.

Deux entrées influençantes Am, présentant le même numéro d'identification, n'ont pas de relation mutuelle pas plus qu'avec d'autres entrées influençantes (Gm, Vm, Nm, ...) présentant le même numéro d'identification.

23.2 The identifying numbers of affecting ADDRESS inputs correspond to the addresses of the sections selected by these inputs. They need not necessarily differ from those of other affecting dependency-inputs (for example, G, V, N, ...), because in the general section presented by the symbol they are replaced by the letter A.

If there are several sets of affecting Am-inputs for the purpose of independent and possibly simultaneous access to sections of the array, then the letter A is modified to 1A, 2A, ... Because they have access to the same sections of the array, these sets of Am-inputs may have the same identifying numbers.

Two affecting ADDRESS inputs having the same identifying number stand in no relation to each other nor to any affecting dependency-input (for example, Gm, Vm, Nm, ...) having the same identifying number.

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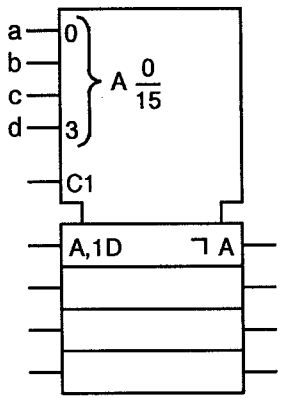
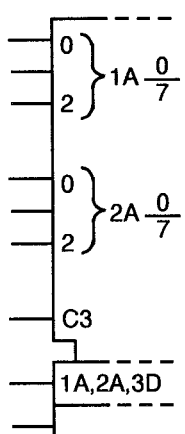
F l'emploi du symbole de groupement numérique, voir la s on 24.

The use of the bit-grouping symbol is explained in section 24.



Groupement à 16 sections, chacune de 4 opérateurs bistables D déclenchés par impulsion (voir la section 41).

Array of 16 sections, each 4 pulse-triggered D-bistables (see section 41)



Une section particulière (parmi 8) est sélectionnée sous l'influence simultanée des deux séries d'entrées Am.

A particular section (among 8) is selected if it is selected by both sets of Am-inputs.

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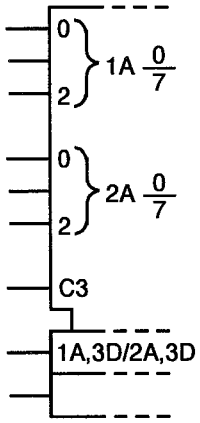
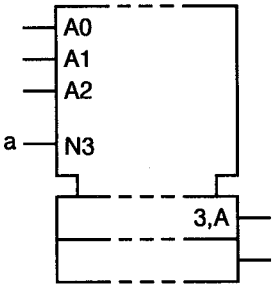
Une section particulière (parmi 8) est sélectionnée soit sous l'influence des deux séries d'entrées Am soit sous la seule influence de l'une d'entre elles.



A particular section (among 8) is selected if it is selected either by one or by both sets of Am-inputs.

Pour a = 1

Les états logiques internes des sorties du groupement résultent des fonctions OU des compléments des états logiques des sorties des sections sélectionnées.

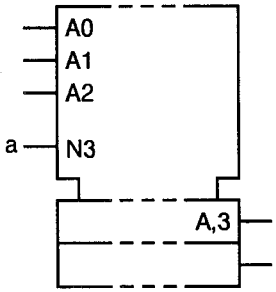


Suppose a = 1

The internal logic states of the outputs of the array are the results of the OR functions of the complements of the logic states of the outputs of the selected sections.

Pour a = 1

Les états logiques internes des sorties du groupement sont les compléments des fonctions OU résultant des états logiques des sorties des sections sélectionnées.



Suppose a = 1

The internal logic states of the outputs of the array are the complements of the results of the OR functions of the logic states of the outputs of the selected sections.

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Techniques particulières de symbolisation pour la notation de dépendance

Signaux codés sur des entrées influençantes

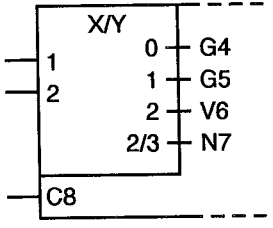
.1 Lorsque l'effet d'entrées influençantes recevant des signaux s est obtenu après décodage, il est admis d'incorporer le symde transcodeur (12-32-01).

24 Special techniques used in dependency notation

24.1 Use of a coder to produce affecting inputs

24.1.1 If the effect of a set of affecting inputs is produced by decoding the signals on these inputs, the symbol for a coder (12-32-01) may be used as an embedded symbol.

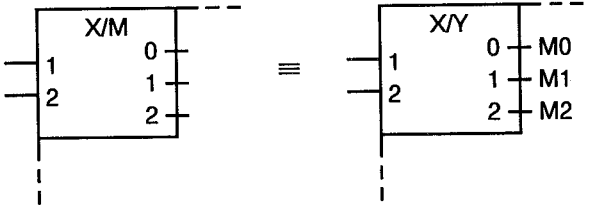
Illustration



24.1.2 Quand toutes les entrées influençantes issues d'un transcodeur sont du même type et quand leur numéro d'identification correspond avec les numéros portés à la sortie du transcodeur, Y peut être remplacé, dans le symbole X/Y, par le symbole littéral du type de dépendance concerné et il est recommendé alors d'omettre les marquages aux entrées influençantes.

24.1.2 If all affecting inputs produced by a coder are of the same type and if their identifying numbers correspond with the numbers shown at the outputs of the coder, the Y in the qualifying symbol X/Y may be replaced by the letter denoting the type of dependency and the indications of the affecting inputs should then be omitted.

Illustration



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24.2 Utilisation du symbole de groupement numérique

Quand toutes les entrées influençantes issues d'un transcodeur sont du même type avec des numéros d'identification en séquence, mais éventuellement différant des numéros figurant aux sorties du transcodeur, il peut être fait usage du symbole de groupement numérique (symbole 12-09-24) en remplaçant l'astérisque par le symbole du type de dépendance suivi de $\frac{m1}{m2}$, m1 étant le plus petit numéro d'identification et m2 le plus grand. Il faut que le nombre des numéros d'identification (m2 – m1 + 1) soit égal au nombre des sorties du transcodeur.

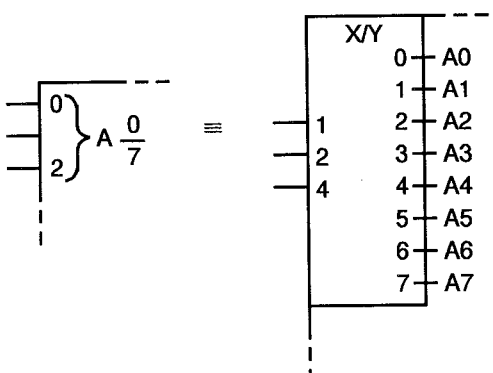
Afin de réduire l'espace nécessaire pour indiquer les nombres qui sont des puissances de 2 et comportent plus de 3 chiffres, m1 et m2 peuvent être remplacés par un nombre de 1 à 3 chiffres – ce nombre étant une puissance de 2 – suivi, selon le cas, de la lettre k indiquant un facteur de multiplication égal à 1 024 ou de la lettre M indiquant un facteur de multiplication égal à 1 048 576. Par exemple, 1 024 peut être remplacé par 1k, 65 536 par 64k et 1 048 576 par 1M.

24.2 Use of bit grouping to produce affecting inputs

If all affecting inputs produced by a coder are of the same type and have consecutive identifying numbers (not necessarily corresponding with the numbers that would have been shown at the outputs of the coder), the bit grouping symbol (symbol 12-09-24) can be used. In this case, the asterisk shall be replaced by the letter denoting the type of dependency followed by $\frac{m1}{m2}$. The m1 shall be replaced by the smallest identifying number and the m2 shall be replaced by the largest. The range of the identifying numbers (m2 – m1 + 1) must equal the number of outputs of the coder.

To reduce the space required for showing numbers that are powers of 2 and have more than 3 digits, m1 and m2 may be replaced by a 1-to-3-digit number that is a power of 2 followed by k indicating a multiplication factor of 1 024 or by M indicating a multiplication factor of 1 048 576, whichever applies. For example, 1 024 may be replaced by 1k, 65 536 by 64k, and 1 048 576 by 1M.

Illustrations



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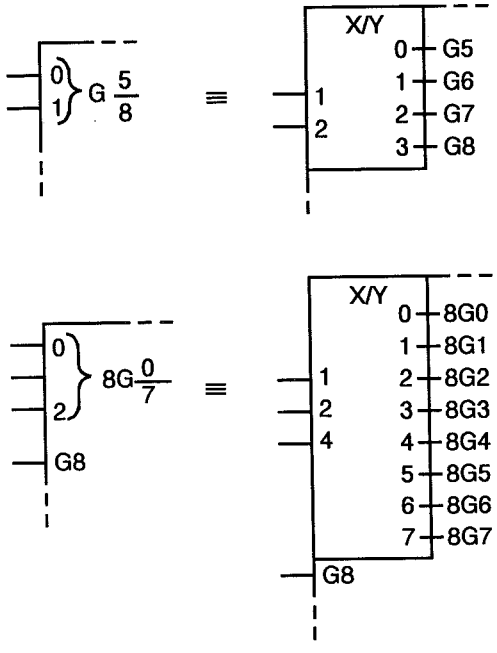

24.3 Marquage d'entrées ayant une propriété intrinsèque de mise en mémoire

Il est fréquent qu'une entrée, différente d'une entrée D, ait une propriété intrinsèque de mise en mémoire. Une telle entrée peut être marquée mD,* , où

— m doit être remplacé par le numéro d'identification de l'entrée influençant la mise en mémoire;

— l'astérisque doit être remplacé par le symbole indiquant la fonction de la donnée mémorisée. Si ce symbole est un numéro, la virgule qui suit le D peut être omise.

24.3 Designation of labelled inputs having inherent storage

It often occurs that a labelled input other than a D-input has inherent storage. Such an input may be labelled mD,* , in which

— m shall be replaced by the identifying numbers of the inputs that affect the storage operation;

— the asterisk shall be replaced by the symbol denoting the function of the stored input. If that symbol is a number, the comma following the D may be omitted.

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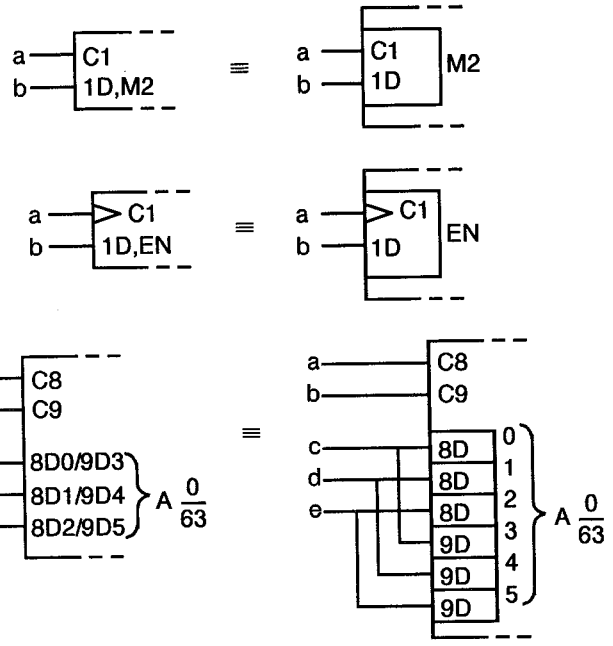
Illustrations



Voir aussi la section 25.

See also section 25.

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Ordre de marquages des accès

Ordre de marquages des entrées

.0 Si un ou plusieurs des symboles 12-09-47, 12-09-08B et 09-02 sont nécessaires sur l'une des entrées, ils doivent être ésentés, comme requis, dans cet ordre (12-09-47, 12-09-08B, 09-02), la lecture se faisant de l'entrée vers l'intérieur de ment.

es symboles doivent être dessinés entre la ou les lignes d'entrée et ut autre symbole distinctif de l'accès, par exemple une notation de épendance.

25 The ordering of labels associated with inputs and with outputs

25.1 Order of input labels

25.1.0 If one or more of the symbols 12-09-47, 12-09-08B and 12-09-02 are required at an input, they shall be shown, as needed, in that order (12-09-47, 12-09-08B, 12-09-02) reading from the input towards the interior of the element.

These symbols shall be drawn between the input line(s) and any input-qualifying symbol, for example, dependency notation.

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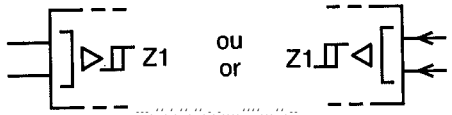
Illustration

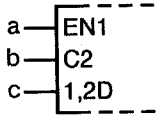


25.1.1 Quand une entrée exerçant une seule fonction est influencée par d'autres accès, son symbole distinctif doit être précédé des marquages des accès influençants. L'ordre de lecture de gauche à droite doit correspondre à celui dans lequel ces influences doivent intervenir. Une entrée influencée n'exerce plus d'action sur la fonction de l'opérateur si l'un quelconque des accès qui l'influencent est dans l'état logique interne impliquant cette invalidation, quels que soient les états logiques des autres accès influençants.

25.1.1 If an input exerting a single function is affected by other inputs, the qualifying symbol for that function shall be preceded by the identifying numbers of the affecting inputs. The left-to-right order of these identifying numbers shall be the order in which the effects or modifications must be applied. The affected input exerts no function if the logic state of any one of the affecting inputs or outputs, considered separately, would cause the affected input to have no effect, regardless of the logic states of other affecting inputs.

Illustration

c n'a aucun effet
aussi bien pour
a = 0 que pour b = 0.



If either a = 0 or b = 0,
then c has no effect.

25.1.2 Quand une entrée exerce plusieurs fonctions ou plusieurs influences, l'indication de chacune de ces fonctions peut être donnée sur différentes entrées connectées extérieurement (voir les exemples des symboles 12-33-07, 12-49-11, 12-49-15). Toutefois, cette présentation n'est souvent pas avantageuse. Cette entrée peut être figurée une seule fois avec différents marquages séparés par des barres inclinées. Aucune signification n'est attachée à leur ordre d'inscription. Si l'une de ces fonctions n'est pas symbolisée par un marquage, une barre inclinée doit précéder le premier marquage (voir l'exemple du symbole 12-49-13).

25.1.2 If an input exerts more than one function or has more than one set of labels of affecting inputs, the indications of these functions or these sets may be shown on different input lines, which must be connected together outside the outline (see examples 12-33-07, 12-49-11, 12-49-15). However, there are cases in which this method of presentation is not advantageous. In those cases, the input may be shown once with the different sets of labels separated by solidi. No meaning is attached to the order of these sets of labels. If one of the functional effects of an input is that of an unlabelled input of the element, a solidus shall precede the first set of labels shown (see, for example, symbol 12-49-13).

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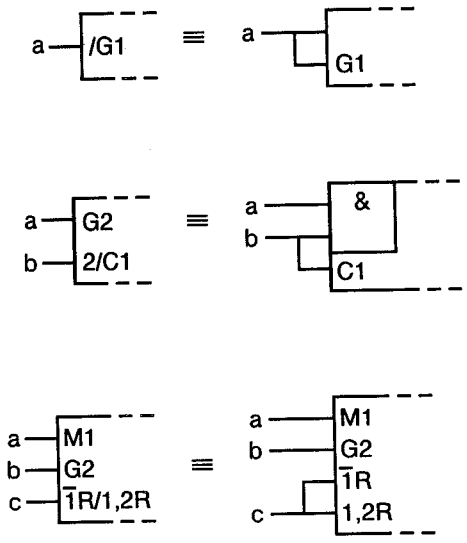

25.1.3 Quand toutes les entrées d'un opérateur combinatoire sont invalidées (influencées pour ne pas participer à la fonction de l'opérateur), les états logiques internes des sorties de cet opérateur ne sont pas déterminés par son symbole.

Quand toutes les entrées d'un opérateur séquentiel sont invalidées (influencées pour ne pas participer à la fonction de l'opérateur), le contenu de l'opérateur reste inchangé et les sorties conservent leur état logique interne préexistant.

25.1.3 If all inputs of a combinative element are disabled (caused to have no effect on the function of the element), the internal logic states of the outputs of the element are not specified by the symbol.

If all inputs of a sequential element are disabled (caused to have no effect on the function of the element), the content of this element is not changed and the outputs remain at their existing internal logic states.

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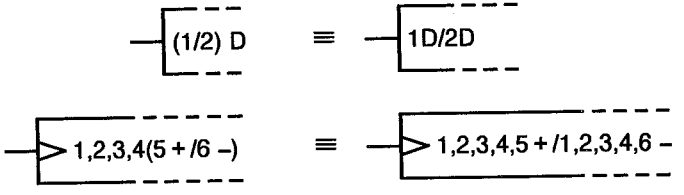
25.1.4 Les marquages peuvent être condensés par mise en facteur algébriques.

25.1.4 Labels may be factored using algebraic techniques.

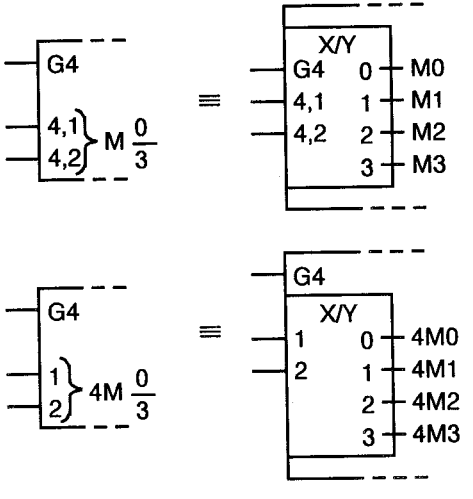
Illustrations



25.1.5 De façon générale, la notation de dépendance située sur les entrées à gauche du symbole de groupement numérique s'applique aux entrées du codeur, et la notation de dépendance située après le symbole de regroupement numérique s'applique aux entrées affectées par les sorties du codeur. Toutefois, pour les entrées à mémorisation implicite, voir 25.1.6.

25.1.5 In general, dependency notation shown at the inputs to the left of the bit-grouping symbol applies to the inputs of the coder, and dependency notation shown after the bit-grouping symbol applies to the inputs fed by the outputs of the coder. However, for inputs with inherent storage, see 25.1.6.

Illustrations



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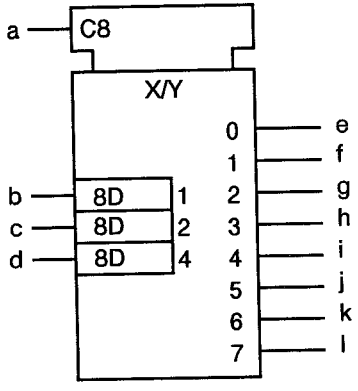
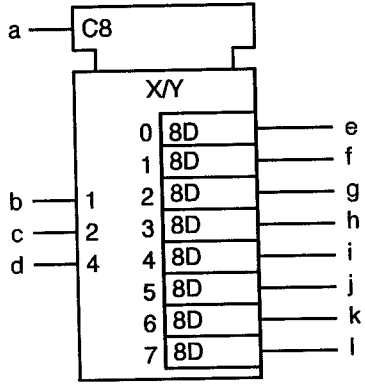
25.1.6 Tout élément de logique combinatoire avec registre de mémorisation sur toutes ses entrées est fonctionnellement équivalent à cet même élément avec un registre de mémorisation sur ses sorties. Ainsi l'élément A ci-dessous est fonctionnellement équivalent à l'élément B.

25.1.6 Any combinatorial logic element together with a storage register on all its inputs is functionally equivalent to that same element together with a storage register on its outputs. Thus element A below is functionally equivalent to element B.



A

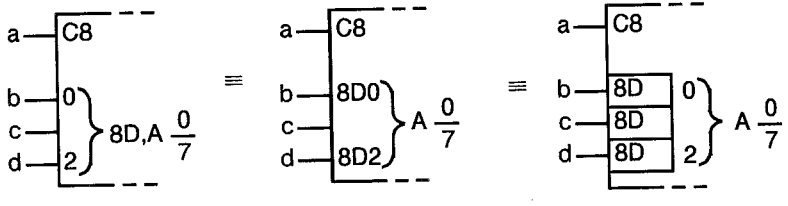


B

De ce fait, la mémorisation implicite sur une entrée peut être indiquée en plaçant «mD», défini à l' article 24.3, soit entre le symbole de groupement numérique et le symbole montrant la fonction de mémorisation d'entrée, soit directement sur les entrées.

Because of this, inherent storage at an input may be indicated by placing the "mD", as defined in clause 24.3, either between the bit-grouping symbol and the symbol denoting the function of the stored input, or directly at the inputs.

Illustration



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Ordre de marquages des sorties

2 **1** Les divers symboles, y compris les numéros d'identification ès influençants, doivent être placés dans l'ordre suivant :

— le symbole d'effet différé de sortie (12-09-01), s'il est appli- cable, est placé le premier, précédé si nécessaire par les indica- ions des entrées concernées;

— suivent les symboles déterminant l'état logique interne de la sortie ou impliquant des modifications de cet état, l'ordre de lecture de gauche à droite correspondant à celui de leur intervention sur les propriétés de cette sortie; comme exemple d'application, voir le symbole 12-49-15;

— suivent les symboles indiquant l'influence éventuelle de cette sortie sur d'autres accès de l'opérateur.

es symboles de sortie à circuit ouvert, de sortie à circuit ouvert directe, sortie avec amplification particulière ou de sortie 3 états doivent être dessinés adjacents aux tracés des sorties, comme décrit avec ces symboles (12-09-03 ... 12-09-08A).

Quand une sortie comporte plusieurs rôles indépendants pouvant être considérés comme étant liés par une fonction interne OU (par exemple en fonction du mode comme étant d'action), les marquages correspondants peuvent être placés au regard de plusieurs sorties connectées extérieurement. Il y a cependant des cas où cette représentation n'est pas avantageuse. Alors les différents marquages, séparés par des barres inclinées, sont placés au regard de la sortie.

Deux numéros d'identification consécutifs d'entrées influençantes doivent être séparés par une virgule (voir la section 12), à moins qu'un symbole non numéral ne soit par ailleurs placé entre eux.

25.2 Order of output labels

25.2.1 If an output has a number of different labels, regardless of whether they are identifying numbers of affecting inputs or outputs or not, these labels shall be shown in the following order:

— if the postponed output symbol (12-09-01) has to be shown, this comes first, if necessary preceded by the indications of the inputs to which it must be applied;

— followed by the qualifying symbols determining or modifying the internal logic state of the output, such that the left-to-right order of these labels correspond to the order in which their effects must be applied. For application, see symbol 12-49-15;

— followed by the label indicating the effect of the output on inputs and other outputs of the element.

Symbols for open-circuit, passive-pull-down, passive-pull-up and 3-state outputs, and outputs with special amplification (drive capability) shall each be drawn adjacent to their output lines as described with these symbols (12-09-03 ... 12-09-08A).

If an output needs several different sets of labels which can be considered to stand in an internal OR relationship (for example, depending on the mode of action), these sets may be shown on different output lines which must be connected together outside the outline. However, there are cases in which this method of presentation is not advantageous. In those cases the output may be shown once with the different sets of labels separated by solidi.

Two adjacent identifying numbers of affecting inputs in a set of labels not already separated by a non-numeric character shall be separated by a comma (see section 12).

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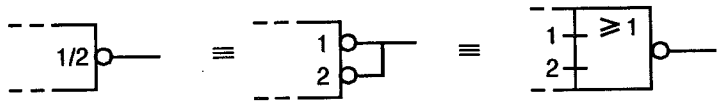
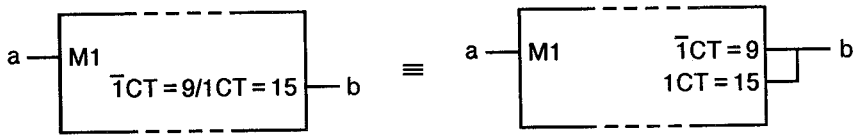
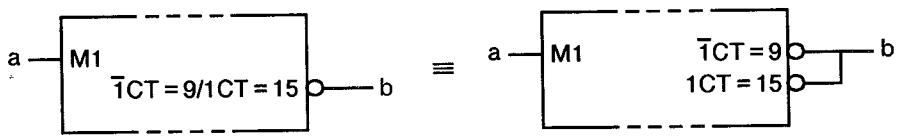
Illustrations



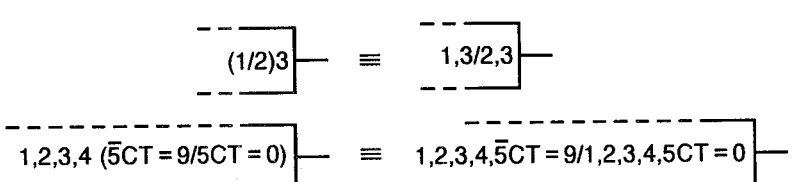




25.2.2 Les marquages peuvent être condensés par mise en facteurs algébriques.

25.2.2 Labels may also be factored using algebraic techniques.

Illustrations



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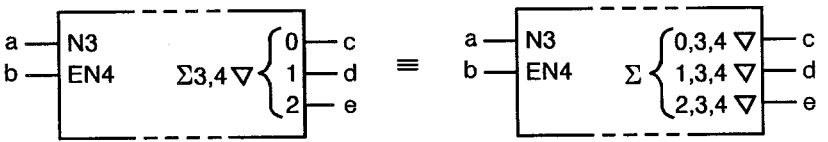
.3 Lorsque le symbole de groupement numérique aux sorties (bole 12-09-25) est utilisé et que les ensembles de marquages de une des sorties du groupement ne diffèrent que dans l'indication poids, ces ensembles de marquage des sorties, y compris les boles de sortie à circuit ouvert, de sortie à circuit ouvert directe, ortie avec amplification particulière ou de sortie 3 états (symboles 9-03 ... 12-09-08A) mais ne comprenant pas l'indication des s peuvent ne figurer qu'une seule fois, entre le symbole sub- it é à l'astérisque et le symbole de groupement numérique pourvu e l'ordre de succession correct des marquages, sauf ceux du poids du symbole de groupement numérique, soit maintenu.

25.2.3 If the bit grouping symbol for outputs (symbol 12-09-25) is used and the sets of labels of all outputs grouped together differ only in the indications of the weights, the sets of labels, including the symbols for open-circuit, passive-pull-down, passive-pull-up and 3-state outputs, and outputs with special amplification (drive capability) (symbols 12-09-03 ... 12-09-08A) but excluding the indications of the weights, may be shown only once between the symbol replacing the asterisk and the grouping symbol, provided that, except for the grouping symbol and the weights, the proper order of the labels is maintained.

Illustration

NOTE — Pour la signification de Σ, voir le symbole 12-39-02.



NOTE — For the meaning of Σ, see symbol 12-39-02.

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Notes générales

26.1 Tous les symboles distinctifs intérieurs s'appliquent aux états internes des entrées et des sorties de l'opérateur concerné (voir les sections 1, 2 et 3).

26.2 La plupart des exemples concernent des dispositifs commercialisés, et les numéros des broches (pour un boîtier donné) sont indiqués pour la commodité du lecteur. Certaines références se rapportent à un fabricant particulier pour éviter toute incertitude du fait de variantes possibles entre produits de plusieurs fabricants portant le même numéro.

26.3 Lorsqu'il n'est pas fait usage du symbole de polarité logique, c'est la convention de logique positive qui est utilisée.

26.4 Un opérateur donné peut être symbolisé de plusieurs façons (voir, par exemple, les symboles 12-28-10 et 12-28-11). Pour une meilleure compréhension du schéma, la complémentarité est souvent utile spécialement dans le cas d'opérateurs combinatoires; ainsi un opérateur OU est figuré par le symbole ET avec accès complémentés. Pour un schéma donné, il convient de choisir le symbole en fonction de l'application à laquelle se rapporte ce schéma (voir CEI 61082-2 pour plus de détails).

26 General notes

26.1 All qualifying symbols inside the outline are defined in terms of the internal logic states of the relevant inputs and outputs (see sections 1, 2, and 3).

26.2 In many cases, examples are based on commercial devices, and terminal numbers (for one unspecified package type) have been shown for the assistance of the reader. Where the type number implies the product of a specific manufacturer, this is done to avoid uncertainties caused by functional variations that sometimes occur between devices that have the same generic portion of the type number and are made by different manufacturers.

26.3 Where the logic polarity indicator has not been used, positive logic convention is assumed.

26.4 A given element may be symbolized in more than one way depending on the purpose it serves in the system (for example, symbols 12-28-10 and 12-28-11). Also, use is often made of the complementary representation especially of combinative elements to enhance the understanding of the diagram. For example, an OR element is shown by the symbol for an AND but with negated inputs and outputs. In any case, the choice of the symbol should be governed by the relevant application of the element being shown on the diagram (see IEC 61082-2 for detailed information).

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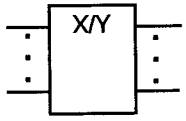
No.	Symbole Symbol	Légende	Description
32-01		Codeur, symbole général Convertisseur de code, symbole général La relation entre les entrées et les sorties doit être indiquée — soit par l'utilisation d'indications sur les symboles distinctifs généraux ainsi que des marquages aux entrées et sorties, — soit par l'utilisation d'un tableau de références. X et Y peuvent être remplacés par des indications représentant respectivement l'information en entrée et l'information en sortie.	Coder, general symbol Code converter, general symbol The relationship between inputs and outputs shall be shown by — indications in the general qualifying symbol together with labels at the inputs and outputs, — and/or by a referenced table. X and Y may be replaced by appropriate indications of the code used to represent the information at the inputs and at the outputs respectively.

32.1 Relations entre entrées et sorties des codeurs

32.1.1 Indication concernant les codes d'entrée et de sortie du symbole distinctif général

Cette méthode de conversion de code repose sur la règle suivante :

Les états logiques internes des entrées déterminent, selon le code d'entrée, une valeur interne ou son équivalent. Cette valeur interne est reproduite par les états logiques internes des sorties, selon le code de sortie.

32.1 Relationships between inputs and outputs of coders

32.1.1 Indication of input and output codes in the general qualifying symbol

This method of indicating code conversion is based on the following rule:
Depending on the input code, the internal logic states of the inputs determine an internal value (or its equivalent). This internal value is reproduced by the internal logic states of the outputs, depending on the output code.

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Les relations entre les états logiques internes des entrées et la valeur interne doivent être indiquées :

— soit en marquant des nombres aux entrées, auquel cas la valeur interne est la somme des nombres marqués aux entrées qui sont à l'état interne 1; ou

— soit en remplaçant X par une indication appropriée du code d'entrée et en marquant aux entrées des caractères se rapportant à ce code.

Les relations entre la valeur interne et les états logiques internes des sorties doivent être indiquées :

— soit en marquant à chaque sortie la liste des nombres représentant les valeurs internes pour lesquelles cette sortie est dans l'état interne 1. Ces nombres doivent être séparés par des barres inclinées. Ce marquage peut aussi être appliqué lorsque Y est remplacé par une lettre indiquant un type de dépendance (voir aussi section 24). Lorsqu'une suite continue de valeurs internes produit l'état 1 d'une sortie, on peut marquer le premier et le dernier nombre de cette suite, séparés par trois points, par exemple : 4 ... 9 = 4/5/6/7/8/9;

— soit en remplaçant Y par une indication appropriée du code de sortie et en marquant aux sorties des caractères se rapportant à ce code.

The relationships between the internal logic states of the inputs and the internal value shall be indicated in one of the following ways:

— label the inputs with numbers, in which case the internal value equals the sum of the numbers associated with those inputs that stand at their internal 1-states; or

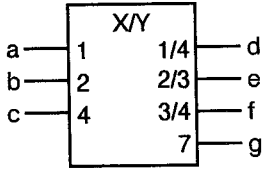
— replace X by an appropriate designation of the input code and label the inputs with characters that refer to this code.

The relationships between the internal value and the internal logic states of the outputs shall be indicated in one of the following ways:

— label each output with a list of numbers representing the internal values that lead to the internal 1-state of that output. These numbers shall be separated by solidi. This method may also be applied when Y is replaced by a letter denoting a type of dependency (see also section 24). If a continuous range of internal values produces the internal 1-state of an output, this can be indicated by two numbers that are inclusively the beginning and the end of the range, with these two numbers separated by three dots, for example, 4 ... 9 = 4/5/6/7/8/9; or

— replace Y by an appropriate indication of the output code and label the outputs with characters that refer to this code.

Illustration



La sortie d est dans l'état interne 1 pour les combinaisons suivantes des états logiques internes des entrées a, b et c :

a = 1 b = 0 c = 0
a = 0 b = 0 c = 1

NOTE — Le symbole distinctif général BIN/6 peut aussi être utilisé à la place de X/Y. Voir 32.1.1.1 et 32.1.1.2.

Output d stands at its internal 1-state for the following combinations of internal logic states at inputs a, b, and c:

a = 1 b = 0 c = 0
a = 0 b = 0 c = 1

NOTE — Alternatively, the general qualifying symbol BIN/6 may be used instead of X/Y. See 32.1.1.1 and 32.1.1.2.

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ou Y est remplacé par une indication d'un code spécifique, res règles s'appliquent.

le texte suivant, les codes sont subdivisés en trois catégories :

- les codes d'addition,
- les codes d'indication directe,
- les codes d'identification.

32.1.1.1 Codes d'addition

Avec ces codes, tels que «X», une valeur numérique interne correspond à la somme du poids des entrées [sorties] qui se trouvent à l'état interne 1.

indication de la relation entre les états logiques internes des entrées [sorties] et la valeur interne doit être réalisée en remplaçant X [Y] du symbole distinctif par l'indication appropriée du code d'accès et en marquant aux accès les numéros indiquant leurs poids individuels.

Les codes d'addition sont définis de la manière suivante :

BIN Code binaire
Code dans lequel les poids individuels sont tous des puissances de 2. Le poids décimal ou les exposants décimaux des entrées [sorties] doivent être des puissances de 2.

BCD Code décimal codé en binaire (8-4-2-1)
Code dans lequel chaque chiffre est codé en binaire sur 4 bits de poids relatifs 8, 4, 2 et 1.

If X or Y is replaced by an indication of a specific code, further rules apply.

In the following text, the codes are subdivided into three categories:

- summing codes,
- direct-indication codes, and
- identification codes.

32.1.1.1 Summing Codes

With these codes, like "X", there is an internal numeric value that corresponds to the sum of the weights of the inputs [outputs] that stand at their internal 1-states.

The indication of the relationships between the internal logic states of the inputs [outputs] and the internal value shall be accomplished by replacing X [Y] of the qualifying symbol with an appropriate indication of the input [output] code and by labelling the inputs [outputs] with numbers indicating their individual weights.

The following summing codes are defined:

BIN Binary code
The number code in which the individual weights are all powers of 2. Inputs [outputs] shall be labelled either with decimal weights or with decimal exponents of the powers of 2.

BCD 8-4-2-1 Binary-coded decimal
The number code in which each digit in the decimal representation of a number is encoded as a binary number in 4 bits with the relative weights of 8, 4, 2, and 1.

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Exemple :

Nombre décimal	Code BCD
0	0000
1	0001
8	1000
9	1001
10	0001 0000
11	0001 0001
175	0001 0111 0101

Les accès doivent être marqués d'un poids décimal, par exemple 1, 2, 4, 8, 10, 20, etc.

NOTE — En entrée, le comportement de l'élément n'est pas spécifié par le symbole si la valeur interne produite par n'importe quel jeu de quatre entrées dépasse 9 ($\times 10^n$). En sortie, le comportement de l'élément n'est pas spécifié par le symbole si la valeur interne requiert plus de chiffres qu'il n'y en a à la sortie.

–3 Code excès de 3
Code BCD dans lequel la valeur interne de chacun des 4 accès est 3 ($\times 10^n$) inférieure à la somme de ces accès. Voir la note concernant le BCD.

Example:

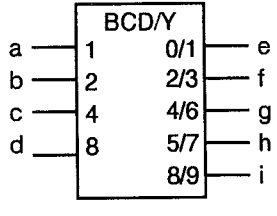
Decimal number	BCD code
0	0000
1	0001
8	1000
9	1001
10	0001 0000
11	0001 0001
175	0001 0111 0101

Inputs [outputs] shall be labelled with decimal weights, for example 1, 2, 4, 8, 10, 20, etc.

NOTE — For inputs, the behaviour of the element is unspecified by the symbol if the internal value produced by any set of four inputs exceeds 9 ($\times 10^n$). For outputs, the behaviour of the element is unspecified by the symbol if the internal value requires more digits than are provided at the outputs.

X–3 Excess-three code
The BCD code in which the internal value of each 4 inputs [outputs] is 3 ($\times 10^n$) less than the sum of those inputs [outputs]. See note to BCD.

Illustration



La sortie i est dans l'état interne 1 pour les combinaisons suivantes des états logiques internes des entrées a, b, c et d :

a = 0 b = 0 c = 0 d = 1
a = 1 b = 0 c = 0 d = 1

NOTE — Le symbole distinctif général BCD/5 peut aussi être utilisé à la place de BCD/Y. Voir 32.1.1.2.

Output i stands at its internal 1-state for the following combinations of internal logic states at inputs a, b, c, and d:

a = 0 b = 0 c = 0 d = 1
a = 1 b = 0 c = 0 d = 1

NOTE — Alternatively, the general qualifying symbol BCD/5 may be used instead of BCD/Y. See 32.1.1.2.

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Pour les codes BCD non valides, c'est-à-dire ceux qui produiraient une valeur interne supérieure à 9, les états de sortie résultants ne sont pas spécifiés par ce symbole. Si le symbole distinctif général était BIN/Y, le symbole montrerait alors que toutes les sorties sont à l'état interne 0 pour les valeurs internes supérieures à 9.

2CPL Code du complément à deux

Code à n bit (x_{n-1}, ..., x_0) représentant un nombre y de valeur $-2^{k+n-1} \leq y \leq 2^{k+n-1} - 2^k$. (Pour les entiers, $k = 0$. Pour les fractions à virgule fixe, k est négatif.)

Les poids individuels de x_0 à x_{n-2} sont de puissances de 2 (2^k à 2^{k+n-2}). Le bit additionnel (x_{n-1}) indique -2^{k+n-1}. La relation entre les valeurs des bits individuels et y peut être exprimée par

$$y = -2^{k+n-1} x_{n-1} + \sum 2^{k+i} x_i$$

Un nombre négatif [positif] est représenté par 2^k plus le complément (complément logique) du nombre positif [négatif] correspondant.

Exemple :

Nombre décimal	Complément à deux de 4 bits
7	0111
2	0010
1	0001
0	0000
–1	1111
–2	1110
–7	1001
–8	1000

Aux accès doit être affecté soit le poids décimal positif soit l'exposant d'une puissance de 2 comportant le bit (signé) de poids le plus fort.

For invalid BCD codes, that is, those that would produce an internal value greater than 9, the resulting output states are not specified by this symbol. If the general qualifying symbol were BIN/Y, then the symbol would show that all outputs stand at the internal 0-state for internal values greater than 9.

2CMPL Twos complement code

The n-bit number code (x_{n-1}, ..., x_0) representing a number y in the range $-2^{k+n-1} \leq y \leq 2^{k+n-1} - 2^k$. (For integers, $k = 0$. For fixed-point fractions, k is negative.)

The individual weights of x_0 through x_{n-2} are powers of 2 (2^k through 2^{k+n-2}). The additional bit (x_{n-1}) indicates -2^{k+n-1}. The relationship between the values of the individual bits and y can be expressed by

$$y = -2^{k+n-1} x_{n-1} + \sum 2^{k+i} x_i$$

A negative [positive] number is represented by 2^k plus the ones-complement (logic complement) of the corresponding positive [negative] number.

Example:

Decimal number	4-bit two's-complement
7	0111
2	0010
1	0001
0	0000
–1	1111
–2	1110
–7	1001
–8	1000

Inputs [outputs] shall be labelled either with positive decimal weights or with exponents of the powers of 2 including the highest order (sign) bit.

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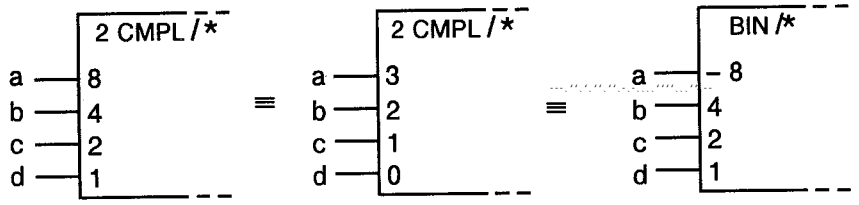
Illustration



32.1.1.2 Codes d'indication directe

Avec ces codes, tels que «Y», la relation entre la valeur interne et l'état logique interne de chaque accès doit être indiquée en remplaçant X[Y] du symbole distinctif par une indication appropriée du code d'accès et en marquant chaque entrée par un nombre indiquant la valeur interne produite, ou en marquant chaque sortie par une liste de nombres indiquant les valeurs internes qui mènent à l'état interne 1 de la sortie. Ces nombres doivent être séparés par des barres inclinées.

Si une suite continue de valeurs internes produit l'état interne 1 d'une sortie, ou peut marquer le premier et le dernier nombre de cette suite, séparés par trois points, par exemple :
4 ... 9 = 4/5/6/7/8/9.

Les codes sont définis de la manière suivante :

m Code général à m états (m doit être remplacé par un nombre)
Code dans lequel m combinaisons d'états logiques internes sont définies pour les entrées ou éventuellement pour les sorties.

32.1.1.2 Direct-indication codes

With these codes, like "Y", the relationship between the internal numeric value and the internal logic state of each input [output] shall be indicated by replacing X [Y] of the qualifying symbol with an appropriate indication of the input [output] code and by labelling each input with a number indicating the internal value produced, or by labelling each output with a list of numbers indicating those internal values that lead to the internal 1-state of that output. These numbers shall be separated by solidi.

If a continuous range of internal values produces the internal 1-state of an output, this may be indicated by two numbers that are inclusively the beginning and the end of the range, with these two numbers separated by three dots, for example:
4 ... 9 = 4/5/6/7/8/9.

The following codes are defined:

m General code with m states (m shall be replaced by a number)
A code in which m combinations of internal logic states are defined for inputs or possibly for outputs.

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HPRI Code d'accès de priorité la plus élevée
Code d'accès dans lequel l'entrée de poids le plus élevé a la priorité si plus d'une entrée est à l'état interne 1. Si aucune entrée n'est à l'état interne 1, la valeur interne est zéro.

DEC Code décimal
Code comportant 10 accès de poids 0 à 9.

NOTE — Si l'accès de poids zéro est omis, la valeur interne du zéro correspond à tous les accès qui sont à l'état interne 0.

OCT Code octal
Code comportant 8 accès de poids 0 à 7. Voir la note concernant le DEC.

HEX Code hexadécimal
Code comportant 16 accès de poids 0 à 15. Voir la note sur le DEC.

Si ces codes, à l'exception du HPRI, sont utilisés en entrée et que plus d'une entrée est à l'état interne 1, le comportement de l'élément n'est pas spécifié par le symbole.

HPRI Highest-priority input code
An input code in which the input with the highest weight takes priority if more than one input stands at its internal 1-state. If no input stands at its internal 1-state, the internal value is zero.

DEC Decimal code
The code in which 10 inputs [outputs] exist and have the weights 0 through 9.

NOTE — If the input [output] with the weight of zero is omitted, the internal value of zero corresponds to all inputs [outputs] standing at their internal 0-states.

OCT Octal code
The code in which 8 inputs [outputs] exist and have the weights 0 through 7. See note to DEC.

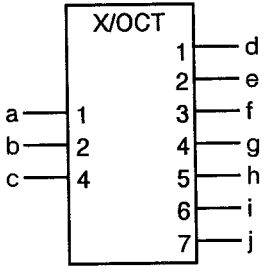
HEX Hexadecimal code
The code in which 16 inputs [outputs] exist and have the weights 0 through 15. See note to DEC.

Except for HPRI, if these codes are used for inputs and more than one input stands at its internal 1-state, the behaviour of the element is not specified by the symbol.

Illustrations

La sortie h est dans l'état interne 1 pour la combinaison suivante des états logiques internes des entrées a, b et c :
a = 1 b = 0 c = 1

NOTE — Le symbole distinctif général BIN/OCT peut aussi être utilisé à la place de X/OCT.



Output h stands at its internal 1-state for the following combination of internal logic states at inputs a, b, and c:
a = 1 b = 0 c = 1

NOTE — Alternatively, the general qualifying symbol BIN/OCT may be used instead of X/OCT.

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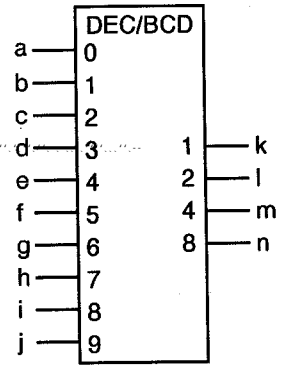
Si l'entrée j est dans l'état interne 1, les sorties k et n sont dans l'état interne 1.



If input j stands at its internal 1-state, outputs k and n stand at their internal 1-states.

32.1.1.3 Codes d'identification

Avec ces codes, il n'y a pas de valeur numérique interne. Par contre, chaque modèle d'accès identifie un symbole (par exemple la lettre «E») ou un autre objet selon un système de codage précisé. L'équivalent de la valeur numérique interne est le symbole ou l'objet identifié par le modèle d'accès. Voici des exemples de codes : ISO Latin-1, ASCII, EBCDIC et 7-Segments. La relation entre le symbole ou l'objet interne et l'état de logique interne de chaque accès doit être indiquée en remplaçant X [Y] du symbole distinctif par une indication appropriée du code d'accès et en marquant chaque accès d'une indication appropriée sur sa position de bit dans le cadre de ce code.

Si un code identifiant un symbole est utilisé dans un codeur avec un code associé aux valeurs numériques internes, la conversion vers ou à partir de ces valeurs numériques internes est basée sur la représentation décimale symbolique de ces nombres ou valeurs internes. S'il n'y a pas de représentation symbolique pour une valeur dans le code, le comportement de l'élément pour cette valeur n'est pas spécifié par son symbole.

32.1.1.3 Identification codes

With these codes there is no internal numeric value. Instead, each input [output] pattern identifies a symbol (for example the letter "E") or other object according to a named coding scheme. The equivalent of the internal numeric value is the symbol or object identified by the input [output] pattern. Examples of these codes are ISO Latin-1, ASCII, EBCDIC, and 7-segment. The relationship between the internal symbol or object and the internal logic state of each input [output] shall be indicated by replacing X [Y] of the qualifying symbol with an appropriate indication of the input [output] code and by labelling each input [output] with an appropriate indication of its bit position within the code.

If a code identifying a symbol is used in a coder together with a code that is associated with internal numeric values, the conversion to or from these codes is based on the symbolic decimal representation of those internal numeric values. If there is no symbolic representation for a value in the code, the behaviour of the element for that value is unspecified by the symbol for the element.

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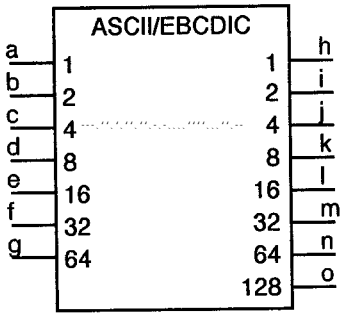
Illustration



32.1.2 Emploi des tableaux de codage

Au lieu des codes et des marquages définis précédemment, on peut aussi utiliser le symbole distinctif général X/Y (ou un autre symbole distinctif, plus approprié), accompagné d'une référence appropriée au tableau (voir modèle d'antériorité : symbole 12-33-09) dans lequel la ılation entre les entrées et les sorties est indiquée. La corres- ɔndance entre les entrées [sorties] et les colonnes du tableau peut re donnée de la façon qui conviendra, par exemple en utilisant des désignations de connexion. Dans ce cas, on doit éviter tout marquage interne qui pourrait prêter à confusion avec un marquage relevant de l'une des autres méthodes.

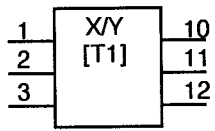
32.1.2 Use of coding tables

As an alternative to the use of the previously defined codes and labelling, the general qualifying symbol X/Y (or another, more appropriate, qualifying symbol) may be used together with an appropriate reference to a table (as, for example, in symbol 12-33-09) in which the relationship between the inputs and outputs is indicated. The correspondence between inputs [outputs] and the columns in the table may be given in any convenient way, for example by using terminal designations. In this case, any internal labelling that might be confused with that arising in one of the other methods shall be avoided.

T1

Entrées			Sorties		
1	2	3	10	11	12
0	0	0	1	0	0
0	0	1	0	0	0
0	1	0	0	1	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	0	1
1	1	1	0	0	0

Illustration



T1

Inputs			Outputs		
1	2	3	10	11	12
0	0	0	1	0	0
0	0	1	0	0	0
0	1	0	0	1	0
0	1	1	0	0	0
1	0	0	0	0	0
1	0	1	0	0	0
1	1	0	0	0	1
1	1	1	0	0	0

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Remplacement de X et de Y par d'autres indications que les indications du code d'entrée ou de sortie

32.2.1 Le nombre interne d'un codeur peut aussi être produit par d'autres moyens, par exemple un compteur (le contenu est le nombre interne), un commutateur multi-directionnel (la position produit le nombre interne), etc. Dans ces cas, X doit être remplacé par une indication appropriée du moyen intéressé.

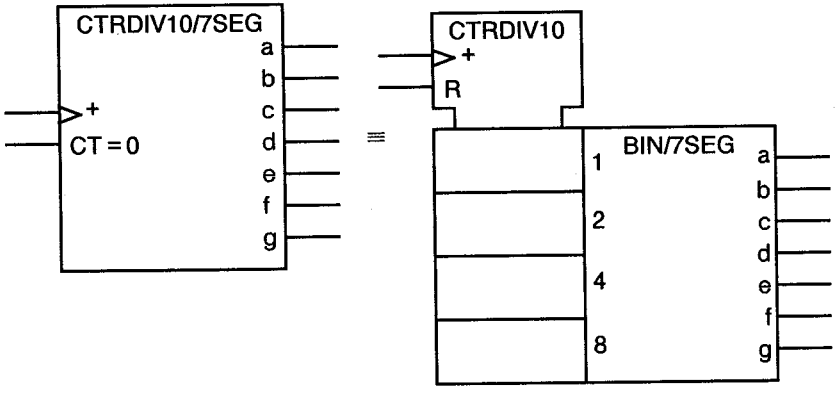
32.2 Replacement of X and Y by indications other than designations of the input code or the output code

32.2.1 The internal value of a coder may also be produced by other means, for example by a counter whose content is the internal value, by a multi-position switch whose position produces the internal value, etc. In such cases, the X shall be replaced by an appropriate indication of the means involved.

Illustrations

Compteur avec sorties en code 7 segments

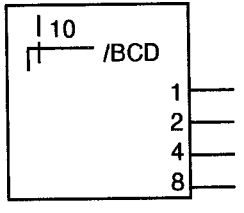
NOTE — Pour la signification de CTRDIV10, voir le symbole 12-48-03.



Counter with 7-segment-display outputs

NOTE — For the meaning of CTRDIV10 see symbol 12-48-03.

Commutateur numérique à dix directions produisant des sorties en code BCD



10-position switch producing a BCD output

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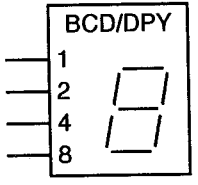
32.2 Le nombre interne d'un codeur peut aussi être reproduit [illegible] n afficheur, ou peut représenter une valeur destinée à devenir le [illegible] nu d'un opérateur ou un nombre sur lequel une opération [illegible] ématique est effectuée. Dans ces cas, Y doit être remplacé par l[illegible] mbole distinctif de la fonction concernée.

32.2.2 The internal value of a coder may also be represented by a visual display or be regarded as a value to become the content of an element or as a value on which a mathematical operation is performed. In such cases, the Y shall be replaced by the general qualifying symbol of the function involved.

Illustration

Afficheur 7 segments avec entrées en code BCD



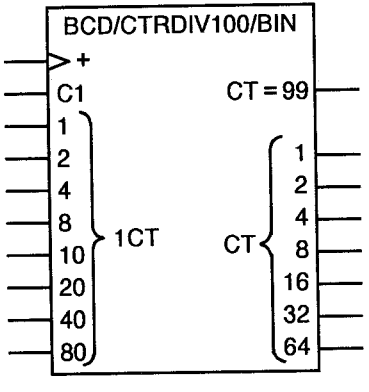
7-segment display with BCD-inputs

32.2.3 Il peut être nécessaire, notamment en présence d'un re[illegible] stre interne, de spécifier un code d'entrée et un code de sortie en [illegible] us du type de registre entre les entrées et les sorties, par exemple [illegible] CD/CTRDIV100/BIN.

32.2.3 It may be necessary, especially if an internal register is involved, to specify both an input code and an output code in addition to the type of register found in between the inputs and outputs, for example, "BCD/CTRDIV100/BIN".

Illustration

Compteur, divisant par 100, avec entrées en code BCD et sorties en code binaire



Counter, dividing by 100, with BCD-inputs and outputs in binary code

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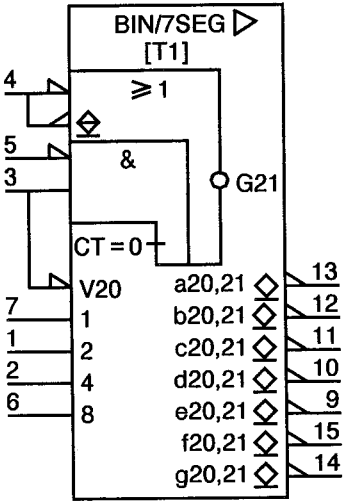
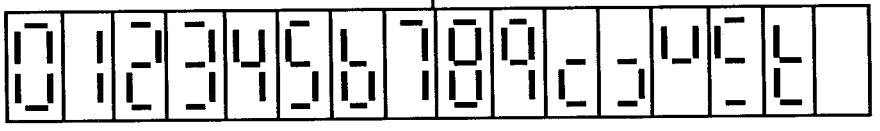


Décodeur/amplificateur du code binaire vers le code 7 segments (modèle d'antériorité : SN 74LS47)

NOTE — Cet exemple illustre l'emploi du symbole de polarité logique aux accès externes conjointement à l'emploi du symbole de négation logique à une connexion interne (voir la section 7).

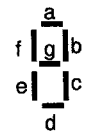
Table T1 des chiffres affichés:

Affichages correspondant aux valeurs numériques



Numerical designations and resultant displays

Identification des segments :

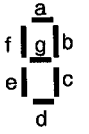


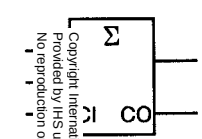
Decoder/driver, binary-to-seven-segment (e.g. SN 74LS47)

NOTE — This example shows the use of the polarity indicator at external connections together with the use of the negation indicator at internal connections (see section 7).

Font table T1:

Segment-identification:





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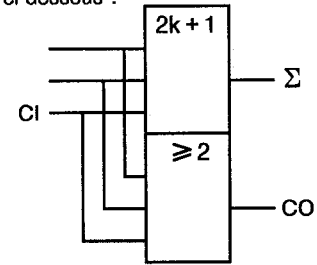
Additionneur complet à un seul bit

NOTE — Un additionneur complet simple à un bit peut aussi être représenté par la combinaison du symbole de l'opérateur d'IMPARITÉ et de celui de l'opérateur à seuil, comme il est montré ci dessous :



Single-bit full adder

NOTE — A simple single-bit full adder may alternatively be depicted by the combination of the symbol for the ODD element (modulo 2 adder) and the logic threshold element as shown below:

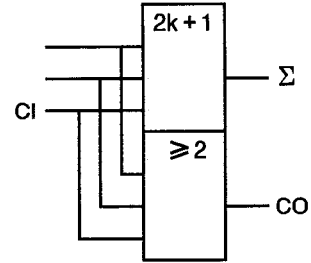


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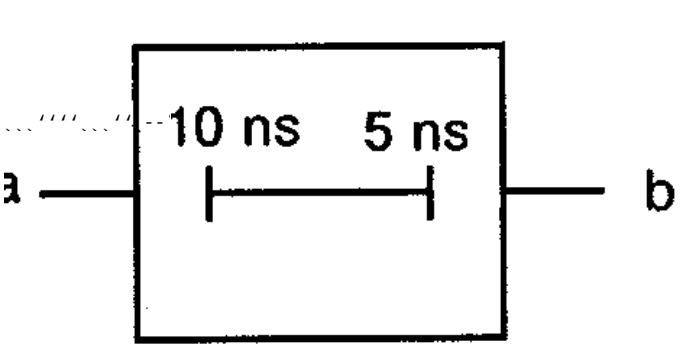
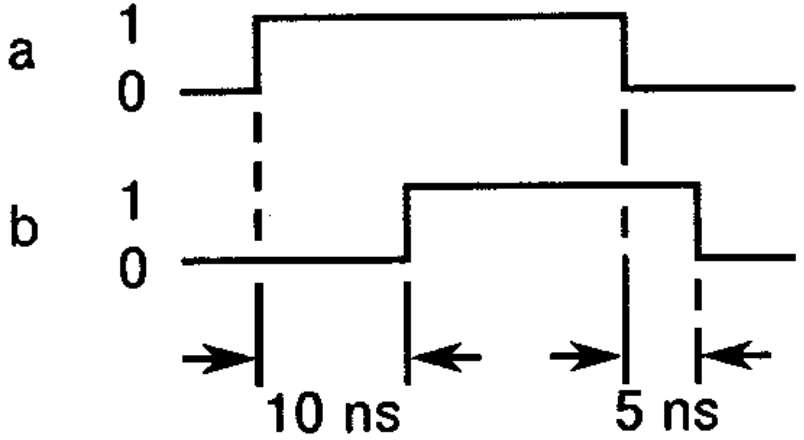
Illustration





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Opérateurs bistables

Le symbole d'un opérateur bistable ne comporte pas de ...bole distinctif de fonction, celle-ci étant indiquée par les symboles ...ctifs des accès.

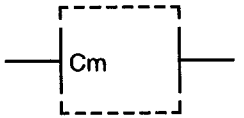
Pour les opérateurs bistables commandés par une entrée Cm (...bole 12-18-01), il est nécessaire de distinguer entre quatre types ...érateurs : bascules, opérateurs bistables déclenchés sur front et ...érateurs bistables déclenchés sur front avec effet différé en sortie. ...n accord avec les légendes du symbole d'entrée dynamique (12-07-07) et du symbole d'effet différé en sortie (12-09-01) :

41 Bistable elements

41.1 The symbol for a bistable element does not contain a general qualifying symbol for the function, the latter being indicated by qualifying symbols associated with the inputs and outputs.

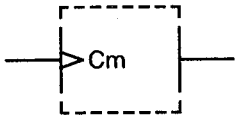
41.2 For bistable elements controlled by Cm-inputs (symbol 12-18-01), it is necessary to distinguish between four types, that is, latches, edge-triggered bistables, pulse-triggered bistables, and data-lock-out bistables. In accordance with the descriptions of the symbols for a dynamic input (12-07-07) and for a postponed output (12-09-01):

indique une bascule commandée



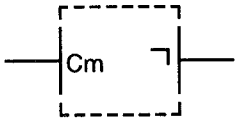
indicates a latch

indique un opérateur bistable déclenché sur front



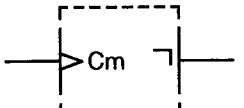
indicates an edge-triggered bistable

indique un opérateur bistable déclenché par impulsion



indicates a pulse-triggered bistable

indique un opérateur bistable déclenché sur front avec effet différé en sortie



indicates a data-lock-out bistable

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s le cas des opérateurs bistables déclenchés par impulsion et enchés sur front avec ou sans effet différé en sortie, les états ues des entrées influencées par l'entrée Cm sont supposés es tout le temps que l'entrée Cm est dans son état interne 1. Si entrées changent d'état durant ce temps, la fonction de l'opéra- n'est pas définie par le symbole.

même symbologie est employée pour des opérateurs plus com- es tels que registres à décalage et compteurs pour indiquer s'ils déclenchés par impulsion, déclenchés sur front ou déclenchés r front avec effet différé en sortie. Dans le cas d'opérateurs avec ffet différé en sortie, si on fait référence au contenu de l'opérateur, par exemple par une sortie CT, sa valeur ne doit être considérée qu'après exécution de la fonction d'effet différé en sortie.

For edge-triggered, pulse-triggered and data-lock-out bistables, the inputs affected by the Cm-input are assumed to be stable during the period that the Cm-input stands at its internal 1-state. If they do change their states during this period, the function of the element is not specified by the symbol.

The same symbology is used for more complex elements such as shift registers and counters to indicate whether they are of the edge-triggered, the pulse-triggered or the data-lock-out type. For elements of the pulse-triggered or the data-lock-out type, if reference is made to the content of the element (for example, by a CT-output), this content shall be considered as being the content after the application of the postponed-output symbol.

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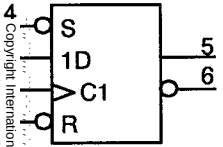
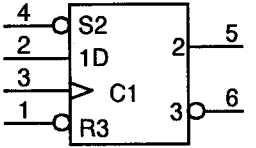


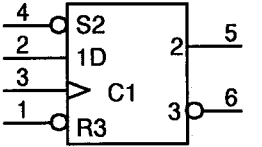
Bascule D déclenchée sur front (modèle d'antériorité : une partie de SN 7474)

NOTE — Si l'effet de la combinaison S = R = 1 est spécifié, il peut être représenté en utilisant les dépendances S et R (section 19).
Par exemple :



Edge-triggered D-bistable (e.g. part of SN 7474)

NOTE — If the effect of the combination S = R = 1 is specified, this effect may be shown using the S- and R-dependency (section 19).
For example:



Ta de fonction :

Entrées			Sorties	
1	2	3	13	4
–	–	L	L	H
H	–	H	L	H
–	L	H	L	H
L	∫	H	⊓	⊔
L	H	H	⊓	⊔
L	H	∫	⊓	⊔

NOTE — Les deuxième et troisième lignes de la table de fonction indiquent les niveaux logiques que les sorties prennent après achèvement de toute impulsion de sortie commencée avant que l'entrée considérée ait pris son niveau indiqué.

Function table:

Inputs			Outputs	
1	2	3	13	4
–	–	L	L	H
H	–	H	L	H
–	L	H	L	H
L	∫	H	⊓	⊔
L	H	H	⊓	⊔
L	H	∫	⊓	⊔

NOTE — The second and third line of the function table each indicate the logic levels the outputs will take on after the completion of any output pulse started before the relevant input took on its indicated level.

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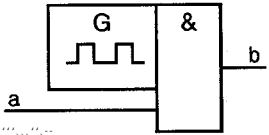
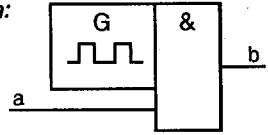
Schéma explicatif :



Explanatory diagram:



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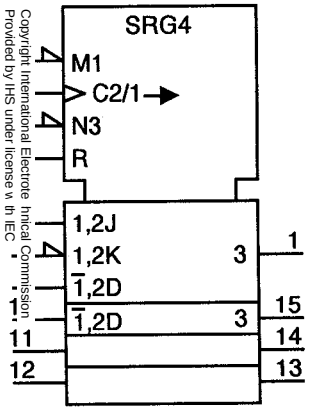
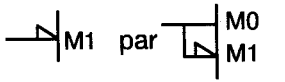


Registre à décalage à 4 étages à entrées et sorties parallèles
(modèle d'antériorité : CD 4035A)

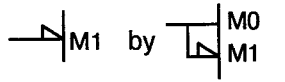
NOTE — L'emploi du signe barre peut être évité en remplaçant



et $\overline{1}$ par 0.

Shift register, 4-bit, parallel in/parallel out
(e.g. CD 4035A)

NOTE — The use of the bar can be avoided by replacing



and $\overline{1}$ by 0.

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Afficheurs

Il convient de reconnaître que les signaux visuels (optiques) luits par les afficheurs, par exemple la diode électroluminescente D), l'afficheur à cristaux liquides (LCD), les barres ou matrices à ts, constituent des sorties extérieures de ces opérateurs.

Pour la représentation des afficheurs comme opérateurs pour tions complexes, voir chapitre VI.

52 Display elements

52.1 It should be recognized that the visual (optical) signals produced by display elements, for example LED or LCD, bar or dot matrices, are external outputs of those elements.

52.2 For the representation of complex-function display elements see chapter VI.

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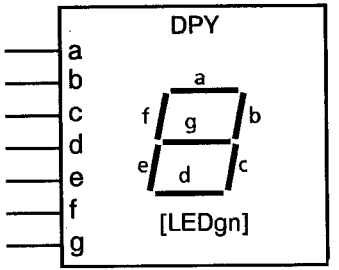
Illustrations

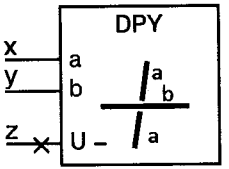
désignations a ... g aux entrées font référence aux aux visuels («segments») sur l'afficheur.

indications a ... g sur les segments peuvent être ses.

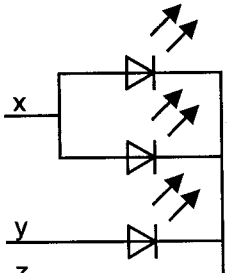


The designations a ... g at the inputs refer to the visual signals ("segments") on the display.

The indications a ... g at the segments may be omitted.



peut représenter
could represent



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Afficheur alphanumérique, 4 caractères à 16 segments (modèle d'antériorité : HDSP 6504)

[T1] Identification des segments :

Alphanumeric display, four 16-segment characters (e.g. HDSP 6504)

[T1] Segment identification:

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54.1 Généralités

t le contenu des règles et des concepts des sections antérieures
t être employé. Cependant, la notation de dépendance peut être
sée seulement si aucune confusion avec d'autres indications n'est
sible.

54.2 Désignations des accès

'intérieur du cadre du symbole, il convient que tous les accès
oient désignés par des noms de broches fournis par la documenta-

54.1 General

All of the rules and concepts of the previous sections may be employed. However, dependency notation may be used only if no confusion with other labelling is likely.

54.2 Input and output designation

Inside the symbol outline, all inputs and outputs should be designated with the terminal names appearing on the selected data sheet or

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du fabricant du modèle d'antériorité ou par tout autre document
olémentaire, comme désigné avec le symbole 12-54-01. Cette
imentation ou un autre document est, de préférence, une fiche de
nées utilisant des noms d'accès extraits d'un répertoire normalisé.
ailleurs, il convient que les abréviations de ces noms soient prises
onsidération seulement si ces noms sont inopportunément longs.
:onsidération de l'évidence, des noms de broches peuvent être
dus ou supplémentés.

s marquages définis dans les chapitres III à V sont utilisés dans la
he de données avec un sens différent, on doit les compléter pour
évenir toute confusion (par exemple DBUS à la place de D signifie
Bus de données).

Si les marquages fournis par le fabricant du modèle d'antériorité empêchent d'utiliser le symbole de groupement numérique pour une représentation claire d'un bus de données, ces marquages peuvent être modifiés pourvu que la correspondance avec la fiche de données soit encore possible.

4.3 Noms complémentaires d'accès

Les noms complémentaires («barres») d'accès peuvent être convertis dans leur formule non complémentaire dans le symbole en utilisant les symboles de négation ou de polarité selon la convention adoptée. Si un accès dessert deux fonctions utilisées en polarités opposées, une branche de la connexion peut être utilisée pour écrire séparément les deux marquages et éviter ainsi la barre de négation.

other documentation referenced in the description of symbol 12-54-01. This data sheet or other documentation should preferably be one that uses terminal names from a terminal-naming standard. Further abbreviation of these names should be considered only if these names are inconveniently long. For clarity, terminal names may be expanded or supplemented.

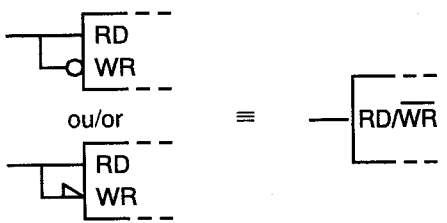
If labels defined in chapters III through V are used on the data sheet with a meaning other than that defined in those chapters, such labels shall be expanded to prevent confusion (for example DBUS instead of D).

In cases where the manufacturer's labelling prevents the use of the bit-grouping symbol for a clear representation of a bus, these labels may be modified provided correspondance with the data sheet is still possible.

54.3 Negated terminal names

Negated terminal names may be converted to the unnegated form inside the symbol by using the negation or polarity symbols, depending upon the convention in force. If an input or output serves two functions that are activated at opposite polarities, a branch on the connecting line may be used to permit two separate labels to be shown, thus avoiding a negation bar.

Illustration



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Ecriture des fonctions barres sur une seule ligne

ymbole ¬ 11-2.3 de l'ISO 31-11 doit être utilisé à la place de la
de complémentarité définie à la section 12 pour écrire les nota-
sur une seule ligne.

e symbole est immédiatement suivi d'un numéro d'identification
le sens de la notation de dépendance, ce symbole s'applique à
uméro d'identification seulement.

ce symbole n'est pas immédiatement suivi par un numéro d'iden-
ication dans le sens de la notation de dépendance, la négation
s'applique aux caractères à droite du symbole jusqu'au premier des caractères suivants:

— une parenthèse de fermeture sans celle d'ouverture, ou

— une barre oblique qui elle même n'est pas incluse entre des parenthèses à la droite du symbole, ou

— la fin d'un tiret.

54.4 In-line negation indication

If only an in-line notation can be used, the symbol ¬ (symbol 11-2.3 of ISO 31-11) shall be used instead of the negation bar defined in section 12.

If this symbol is immediately followed by an identifying number in the sense of dependency notation, it applies to that identifying number only.

If this symbol is not immediately followed by an identifying number in the sense of dependency notation, the negation applies to the string to the right of the symbol up to the first of the following:

— an unmatched closing parenthesis, or

— a solidus that is itself not enclosed within a matching set of parentheses to the right of the symbol, or

— the end of the string.

Illustrations

$$\neg RASEN \equiv \overline{RASEN}$$

$$(\neg RAS)EN \equiv \overline{RAS} \cdot EN$$

$$(\neg RAS)\neg EN \equiv \overline{RAS} \cdot \overline{EN}$$

$$\neg(\neg RAS)EN \equiv \overline{\overline{RAS} \cdot EN}$$

$$\neg RAS/EN \equiv \overline{RAS}/EN$$

$$\neg(RAS/EN) \equiv \overline{RAS/EN}$$

$$\neg(\neg(RAS/EN)/CAS) \equiv \overline{\overline{RAS/EN}/CAS}$$

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Groupement de fonctions

nvient que les connexions soient regroupées par fonctions et, s'il lieu, réparties en connexions de commande et connexions de nées. Les connexions de commande peuvent aboutir au «cadre du bole des commandes». Le cadre du symbole des communs est é comme il est dit dans la section 5.

4. Ecriture des longues désignations

n peut répartir dans le sens de la hauteur l'écriture des longues désignations associées aux accès, en l'incluant dans un cadre ouvert du côté opposé à l'accès, comme figuré ci-dessous. L'écriture répartie doit être justifiée le long du côté du cadre en tenant compte des espaces. Pour éviter toute ambiguïté comme celle qui serait due à la coupure d'une barre de négation, les caractères sous barre ne doivent pas être séparés. Il convient de ne pas découper inconsidérément une désignation car elle risque d'être mal comprise.

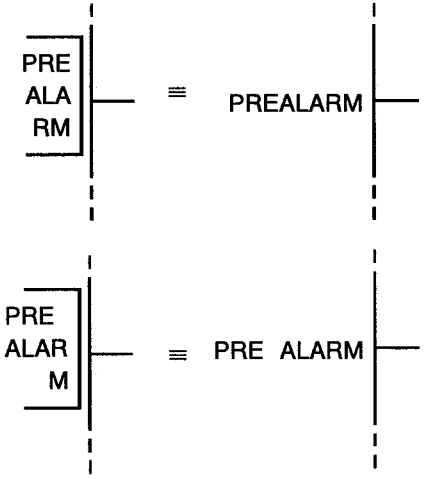
54.5 Functional grouping

The connecting lines should be functionally grouped and, where appropriate, be partitioned into control and data lines. The control lines may appear on the "control block outline" for which the common control block outline as described in section 5 is used.

54.6 Long character strings

Long character strings associated with input or output lines may be narrowed (at the expense of height) by inclusion in an open box as shown below. The box shall open away from the input or output line. The broken character string shall be justified flush against the closed side, taking into account embedded spaces. To avoid ambiguity as to the continuity of a negation bar, multiple characters under a single bar shall not be split. Strings should not be broken in such a way that readability is impaired or an intended space is lost.

Illustrations



NOTE — PREALARM est dérivé de «avant alarme».
PRE ALARM est dérivé de «preset alarm», c'est-à-dire «alarme préconditionnée».

NOTE — PREALARM is derived from "before alarm".
PRE ALARM is derived from "preset alarm".

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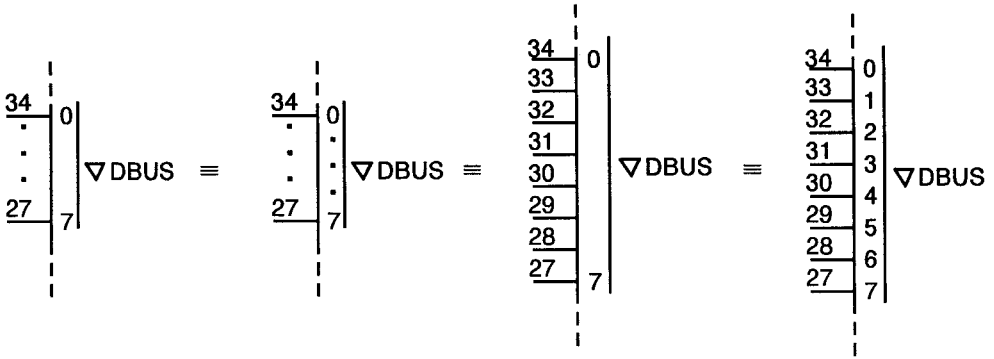
Identifications et marquages consécutifs des accès

groupement des marquages des accès et l'identification des ies peuvent être simplifiés quand les marquages internes et ex- es sont consécutifs en écrivant seulement le premier et le dernier ces marquages, les lignes de connexion étant séparées par des ts ou des traits courts. Points et traits courts peuvent être aussi trés à l'intérieur du cadre du symbole.

54.7 Consecutive labels and terminal designations

If both the internal labels and the (external) terminal designations are consecutive, then grouping of inputs [outputs] may be simplified by showing only the first and last connecting lines and their respective labels, the connecting lines being separated by dots or short strokes. Dots or short strokes may also be shown inside the symbol outline.

Illustration



54.8 Tables de fonction et tables de vérité

Quand des tables sont utilisées pour donner des informations complémentaires sur le fonctionnement du circuit, il est bon que la table des entrées se réfère aux niveaux logiques ou aux états logiques externes.

Si la table des entrées se réfère aux états logiques externes du schéma logique théorique ou quand une convention logique simple a été adoptée, alors dans la table un marquage provenant d'un autre apparaissant à l'intérieur du symbole à un accès portant le symbole de négation doit être modifié en ajoutant (ou en enlevant) la barre de négation. Il convient que tous les autres marquages apparaissent dans la table sans modification. Pour un exemple d'application, voir le symbole 12-56-02.

54.8 Function tables and truth tables

When tables are used to provide additional information about the behavior of the circuit, the table entries should refer to logic levels or to external logic states.

If the table entries refer to external logic states on a theoretical logic diagram or when using a single logic convention, then, in the table, any label derived from one appearing inside the symbol at an input or output bearing a negation symbol must be modified by adding (or removing) a negation bar. All other labels should appear on the table without modification. For an example of use, see symbol 12-56-02.

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Schémas internes

dépeindre le fonctionnement d'un opérateur de fonction com-e, un schéma considéré comme un schéma interne peut être iné à l'intérieur du cadre du symbole. Dans ce cas, les règles antes doivent être observées:

— l'indication de négation ou de polarité doit être dessinée à 'extérieur du cadre du symbole aux accès auxquels il s'applique pour indiquer la relation entre l'état logique interne de l'accès et son état logique externe ou son niveau logique;

— par définition, les états logiques – et non les niveaux logiques – existent à l'intérieur du cadre d'un symbole. C'est pourquoi le symbole de polarité logique ne peut être utilisé dans un schéma interne et, si nécessaire, le symbole de négation doit être appliqué;

— les marquages des accès doivent être écrits à l'intérieur et à côté du cadre du symbole ou à l'intérieur et à côté des cadres des symboles inscrits dans le schéma interne. Les marquages contenant des numéros d'identification dans le sens de la notation de dépendance ne doivent être écrits qu'à l'intérieur des cadres des symboles internes auxquels ils s'appliquent. Quand des marquages sont répétés après l'application de la négation logique, ils doivent être modifiés en ajoutant (ou en enlevant) la barre de négation;

— seules les connexions entre éléments du schéma interne n'ont pas besoin d'être marquées.

54.9 Internal diagrams

To depict the functional behavior of a complex-function element, a diagram inside the outline of a symbol (referred to as an internal diagram) may be used. In this case, the following rules shall be observed:

— the negation or polarity indicator shall be shown at the symbol outline at those inputs [outputs] to which it applies to indicate the relationship between the internal logic state of the input [output] and its external logic state or logic level;

— by definition, logic states, and not logic levels, exist within the outline of a symbol. Therefore the symbol for logic polarity cannot be used on an internal diagram, and the symbol for logic negation shall be applied where appropriate;

— input and output labels shall be shown inside and adjacent to the symbol outline and/or inside and adjacent to the outlines of the symbols appearing on the internal diagram. Labels containing identifying numbers in the sense of dependency notation shall only be shown inside the outlines of the internal symbols to which they apply. When labels are repeated after the application of logic negation, they shall be modified by adding (or removing) a negation bar;

— connections solely between elements of the internal diagram need not be labelled.

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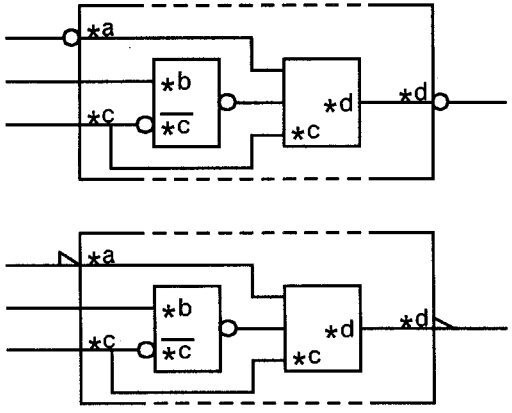
Illustrations

*a . . . *d représentent quatre différents marquages.



*a . . . *d represent four different labels.

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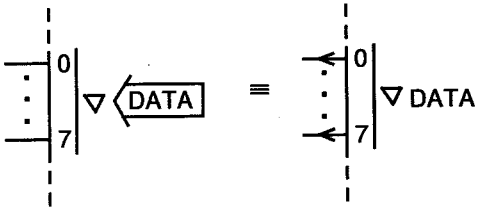

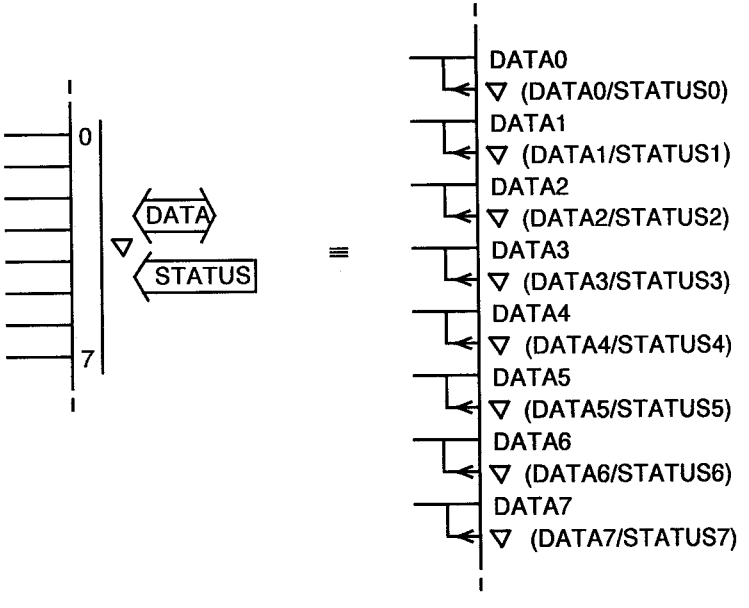

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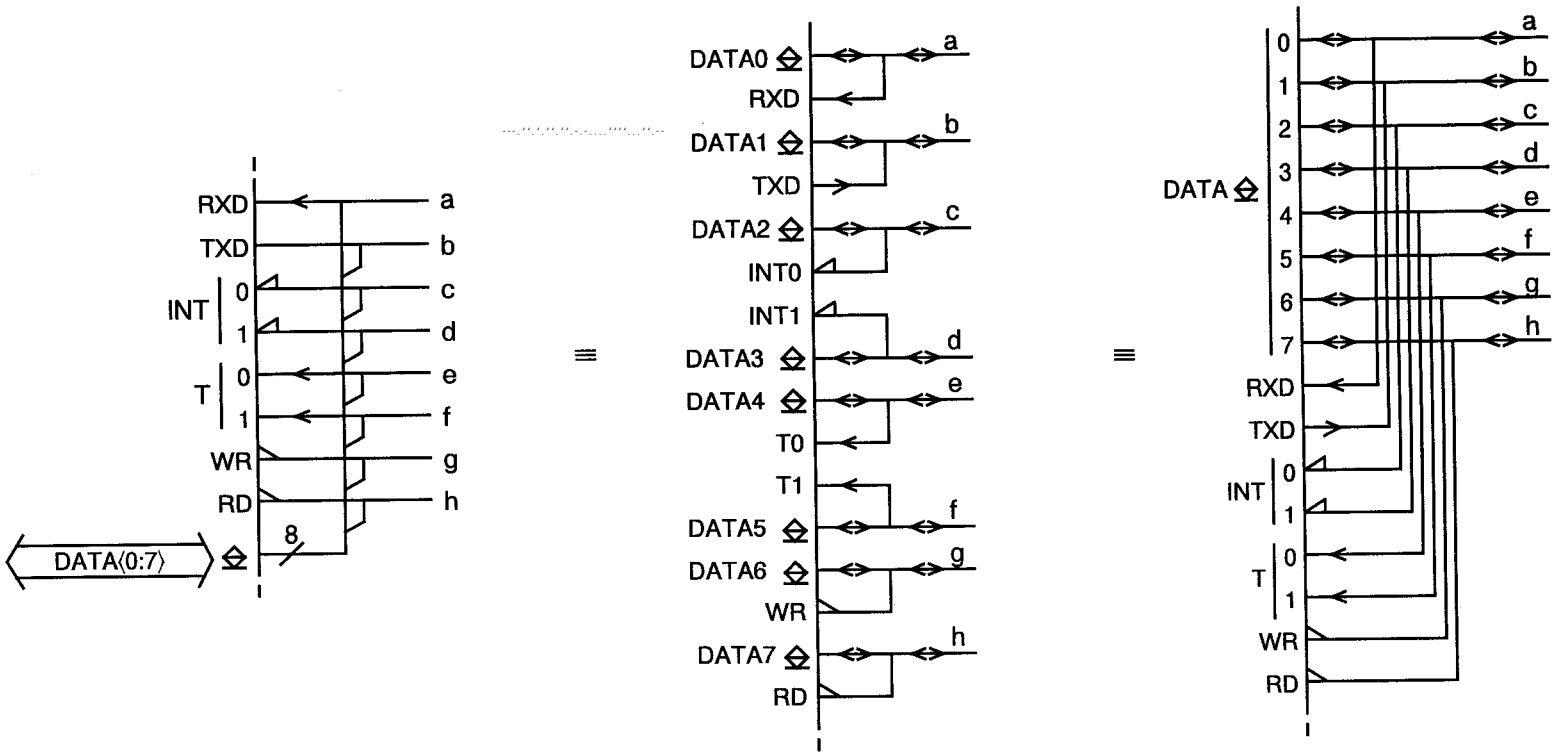

Pour la correspondance entre la séquence des désignations de broches et la séquence des numéros de bits, voir 4.6.2 de la CEI 61082-1 : l'ordre de séquencement des désignations de broches et les numéros de bits doivent être tels que l'ordre de gauche à droite corresponde à l'ordre de haut en bas.

55.2 Représentation de voies de données

La technique utilisée pour l'indication des bus peut être étendue pour représenter les voies de données dans un schéma interne comme indiqué plus bas.

For the correspondence between the sequence of terminal designations and the sequence of bit numbers, see 4.6.2 of IEC 61082-1: the order of sequence of the terminal designations and the bit numbers shall be such that a left-to-right order corresponds to a top-to-bottom order.

55.2 Data path representation

The technique used for bus indicators may be extended to represent data paths (buses) on an internal diagram as follows.

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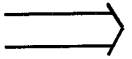
Illustrations

Source d'une voie de données unidirectionnelle



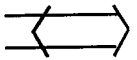
Source of a unidirectional data path

Destination d'une voie de données unidirectionnelle



Destination of a unidirectional data path

Source et destination d'une voie de données bidirectionnelle

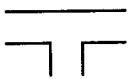


Source and destination of a bidirectional data path

NOTE — La séparation entre les pointes des flèches est arbitraire, mais il convient que celles-ci se trouvent sur la même branche d'une jonction.

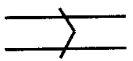
NOTE — The separation of the arrowheads is arbitrary, but they should both appear on the same branch of a junction.

Jonction de voies de données



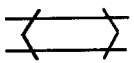
Junction of data paths

Indication de la direction du flux de données



Indication of data flow direction

Indication d'un flux de données bidirectionnel

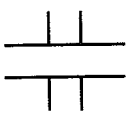


Indication of bidirectional data flow

NOTE — La séparation entre les pointes des flèches est arbitraire, mais il convient que celles-ci se trouvent sur la même branche d'une jonction.

NOTE — The separation of the arrowheads is arbitrary, but they should both appear on the same branch of a junction.

Croisement sans connexion



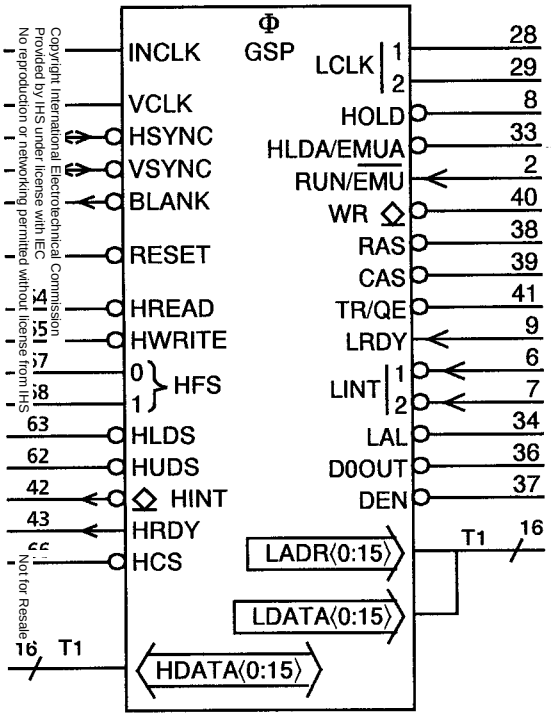
Crossing without connection

S'il n'y a pas d'indication de source, on suppose que toutes les branches sont bidirectionnelles.

If no source is shown, all branches are assumed to be bidirectional.

Les noms et/ou la largeur de la voie de données peuvent être indiqués à l'intérieur ou à côté de la voie de données.

The names and/or the width of the data path may be indicated inside or adjacent to the data path.



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Processeur de système graphique (modèle d'antériorité : Texas Instruments TMS34010)

Le tableau T1 est considéré comme étant une partie du symbole et doit être inclus dans le schéma du circuit ou dans un document annexe.

NOTES

1 La technique décrite dans la CEI 61082-2, paragraphe 5.3, est appliquée pour simplifier les deux bus de 16 bit.

2 Il est fait référence au tableau ci-dessous.

Graphics system processor (e.g. Texas Instruments TMS34010)

The table T1 is considered to be part of the symbol and shall be shown on the circuit diagram or in a supporting document.

NOTES

1 Use has been made of the technique described in IEC 61082-2, subclause 5.3, to simplify the two 16-bit-wide busses.

2 Reference is made to the table shown below.

T1

BIT	HDATA	LADR/LDATA
0	60	10
1	59	11
2	58	12
3	57	13
4	56	14
5	55	15
6	54	16
7	53	17
8	51	19
9	50	20
10	49	21
11	48	22
12	47	23
13	46	24
14	45	25
15	44	26

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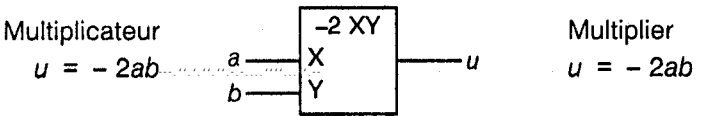
Illustrations



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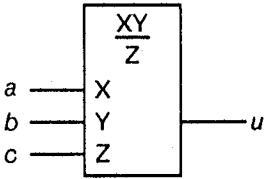
Multiplicateur-diviseur

$$u = \frac{ab}{c}$$

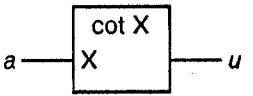


Multiplier-divider

$$u = \frac{ab}{c}$$

Fonction cotangente

u = cot a

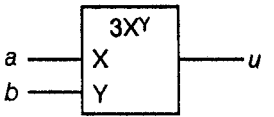


Cotangent function

u = cot a

Fonction exponentielle

$u = 3a^b$



Exponential function

$u = 3a^b$

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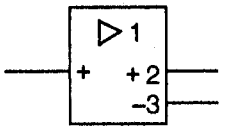
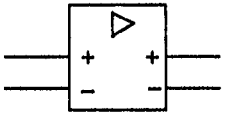
Amplificateur à deux sorties, l'une directe avec une amplification de 2, l'autre inverse avec une amplification de –3



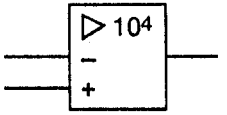
Amplifier with two outputs, the upper, non-inverting, has an amplification of 2, the lower, inverting, has an amplification of –3

Amplificateur différentiel à deux sorties, avec amplification non spécifiée



Differential amplifier with two outputs, whose amplification is not specified

Amplificateur différentiel de grand gain avec une amplification nominale de 10 000

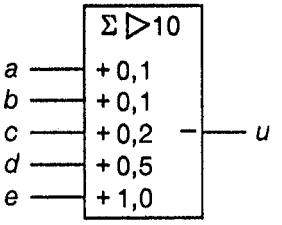


High-gain differential amplifier with a nominal amplification of 10 000

Amplificateur sommateur

$u = -10\,(0{,}1a + 0{,}1b + 0{,}2c + 0{,}5d + 1{,}0e)$

$= -(a + b + 2c + 5d + 10e)$



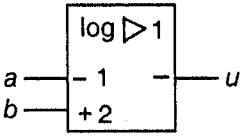
Summing amplifier

$u = -10\,(0{,}1a + 0{,}1b + 0{,}2c + 0{,}5d + 1{,}0e)$

$= -(a + b + 2c + 5d + 10e)$

Amplificateur logarithmique

$u = -\log(-a + 2b)$



Logarithmic amplifier

$u = -\log(-a + 2b)$

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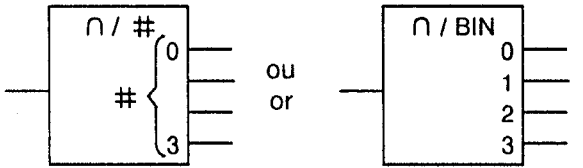
Illustration

vertisseur analogique-numérique trans-ant le signal analogique d'entrée en un numérique pondéré à quatre éléments res



Analogue-to-digital converter that converts the input value into a 4-bit weighted binary code

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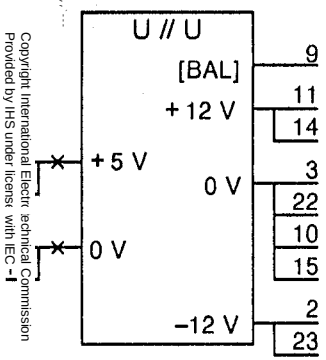
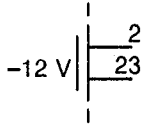


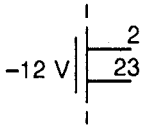
Convertisseur-séparateur, DC en DC
(modèle d'antériorité: PM671P)

Les liaisons internes sont représentées, par exemple, entre accès 2 et 23. Si cette précision n'est pas nécessaire, des symboles de groupement de marquages peuvent être utilisés, par exemple:



Converter, d.c.-to-d.c., isolating
(e.g., PM671P)

Internal branches are shown, e.g., between terminals 2 and 23. If it is not important to emphasize this fact, label-grouping symbols may be used, e.g.:



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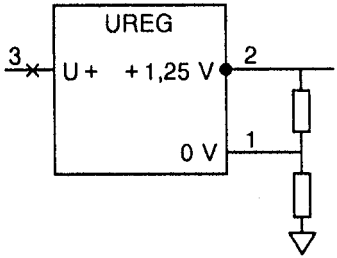
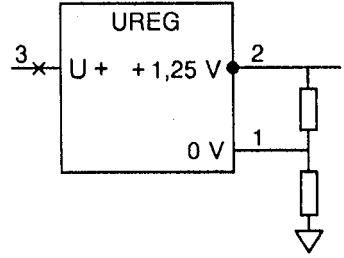
NOTE — Bien que la tension entre les accès 1 et
it fixe, un réseau extérieur peut être utilisé
obtenir une tension régulée entre l'accès 2
autre point dans le réseau:



NOTE — Although the voltage between terminals 2 and 1 is fixed, an external network can be used to obtain a different regulated voltage between terminal 2 and another point in the network:



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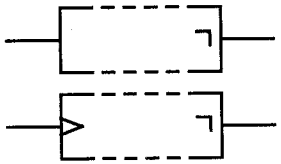
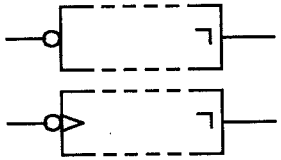
S'il n'y a pas d'autres entrées exerçant une action prépondérante, la transition à la sortie a lieu quand l'entrée passe

— dans un schéma utilisant le symbole de négation logique :

de son état externe 1 à son état externe 0



de son état externe 0 à son état externe 1



If there are no other inputs with an overriding effect, the transition at the output takes place when the input changes

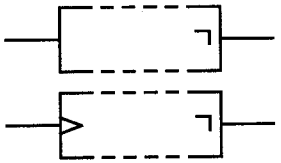
— in a diagram using the symbol for logic negation:

from its external 1-state to its external 0-state

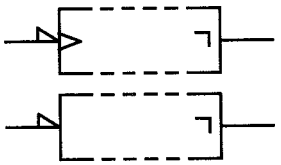
from its external 0-state to its external 1-state

— dans un schéma utilisant le symbole de polarité logique :

de son niveau H à son niveau L



de son niveau L à son niveau H



— in a diagram using the symbol for logic polarity:

from its H-level to its L-level

from its L-level to its H-level

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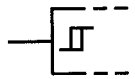
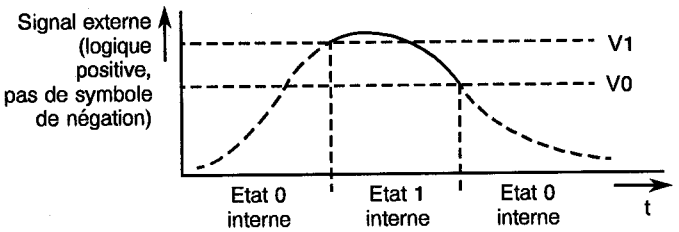
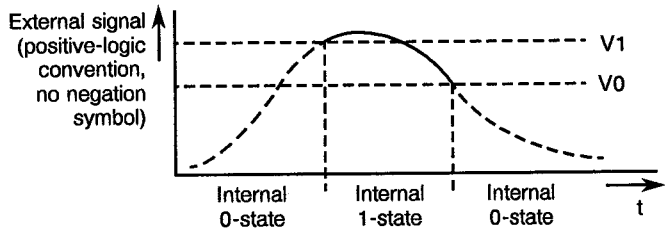
No.	Symbole Symbol	Légende	Description
12-09-02		Entrée à seuils Entrée à hystérésis L'entrée prend l'état interne 1 quand le niveau externe du signal atteint une valeur de seuil V1, et conserve cet état jusqu'à ce que ce niveau repasse en sens inverse par V1 et atteigne une autre valeur de seuil V0. Quand ce symbole figure, sans symbole de négation ou de polarité, dans un schéma utilisant soit le symbole de polarité logique, soit la convention de logique positive, V1 est plus positif que V0. S'il figure sur un schéma utilisant la convention logique négative, V1 est plus négatif que V0. Si la négation ou le symbole de polarité est présent à l'entrée, la relation entre V1 et V0 est inversée. La section 30 montre l'utilisation du symbole comme symbole distinctif de l'opérateur pour un élément.  NOTE — L'absence de ce symbole n'indique pas nécessairement qu'il n'y a pas d'hystérésis. La plupart des composants habituels indiquent cette caractéristique dans une certaine mesure. Il est recommandé d'utiliser ce symbole uniquement si l'identification de la caractéristique est importante dans l'utilisation du composant.	Bi-threshold input Input with hysteresis The input takes on its internal 1-state when the external signal level reaches a threshold value V1. It maintains this state until the external signal level has returned through V1 and reaches another threshold value V0. If this symbol (without the negation symbol or polarity symbol) appears on a diagram that uses either the symbol for logic polarity or the positive-logic convention, V1 is more positive than V0. If it appears on a diagram that uses the negative-logic convention, V1 is more negative than V0. If the negation or polarity symbol is present at the input, the relationship between V1 and V0 is reversed. Section 30 shows the use of the symbol as a general qualifying symbol for an element.  NOTE — The absence of this symbol does not necessarily indicate the absence of hysteresis. Most practical devices exhibit this characteristic to some extent. This symbol should only be used when an identification of the characteristic is important to the application of the device.

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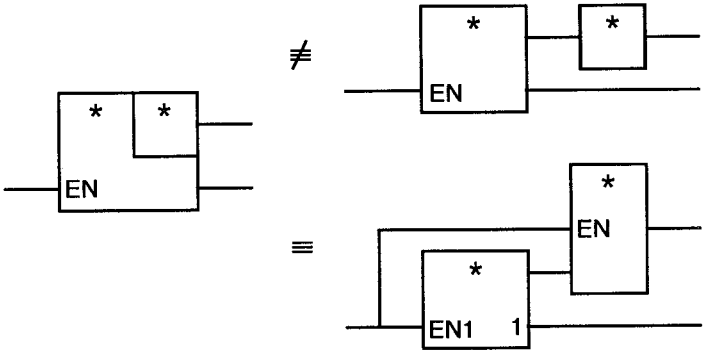
Illustrations



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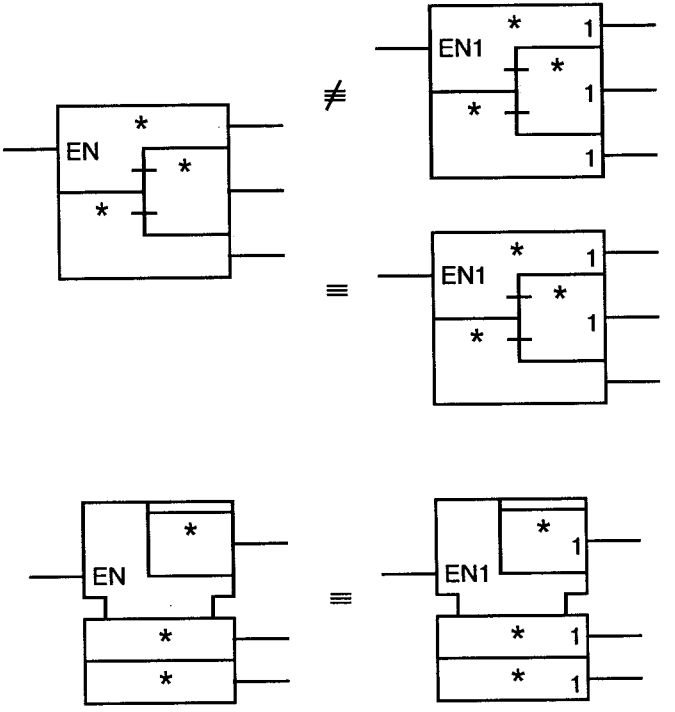

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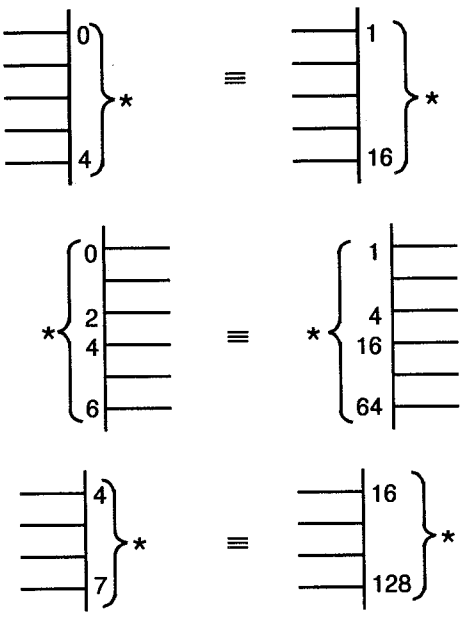

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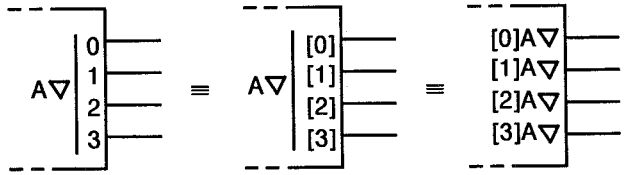
Illustrations

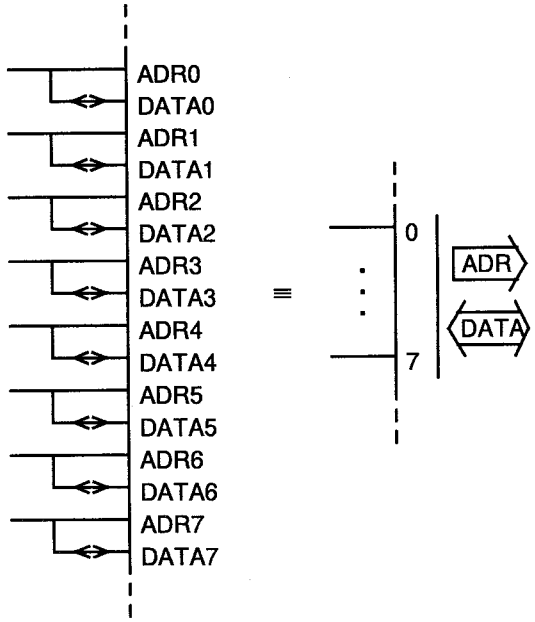


L'omission des crochets autour des chiffres 0, ..., 3 comme indiqué dans la figure la plus à gauche est autorisée seulement s'il n'y a pas de confusion possible avec les poids ou les numéros d'identification dans le sens de la notation de dépendance.

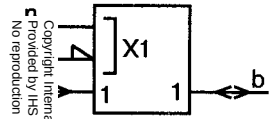


The omission of the brackets around the numbers 0, ..., 3 as shown in the leftmost figure is allowed only if no confusion is likely with weights or identifying numbers in the sense of dependency notation.

Bien que les entrées ADRESSE produisent un nombre, le symbole de groupement de marquage est adéquat ici si les entrées et sorties DATA ne produisent ou ne représentent pas un nombre.



Although the ADDRESS inputs produce a number, the label-grouping symbol is appropriate here if the DATA inputs and DATA outputs do not produce or represent a number.



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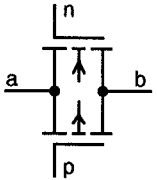
Opérateur de transmission CMOS

NOTES

1 Les flèches sont facultatives.

2 Ce symbole représente un opérateur de transmission interne pour des circuits intégrés tels que CD 4013B; il est équivalent à :

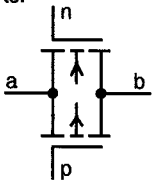


CMOS transmission gate

NOTES

1 The arrowheads are optional.

2 The symbol represents an internal transmission gate used in many integrated circuits such as CD 4013B and is equivalent to:



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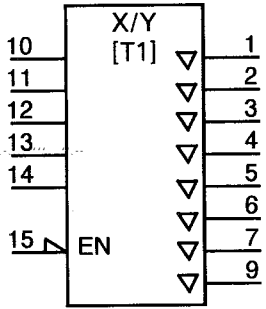

Convertisseur de code programmé
(modèle d'antériorité : TBP 18S030,
précédemment SN 74S288)

Les relations entrée-sortie proviennent d'une mémoire PROM (ou ROM).

«T1» se réfère à une table décrivant la fonction logique de l'opérateur, par exemple :

Coder for arbitrary code
(e.g. TBP 18S030, formerly SN 74S288)

The combinative relationships between inputs and outputs are implemented in a PROM (or a ROM).

"T1" refers to a table showing the logic function of the device, for example:

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T1

Entrées					Sorties (opérateur validé)							
14	13	12	11	10	9	7	6	5	4	3	2	1
L	L	L	–	–	H	L	H	L	L	L	L	L
L	L	H	L	L	H	L	H	L	L	L	L	L
L	L	H	L	H	H	L	H	L	L	L	L	H
L	L	H	H	–	H	H	L	L	L	L	L	H
L	H	L	L	L	H	L	H	L	L	L	L	L
L	H	L	L	H	H	L	H	L	L	L	H	L
L	H	L	H	–	H	H	L	L	L	L	H	L
L	H	H	L	L	H	L	H	L	L	L	L	L
L	H	H	L	H	H	L	H	L	L	H	L	L
L	H	H	H	–	H	H	L	L	L	H	L	L
H	L	L	–	–	L	L	H	L	L	L	L	L
H	L	H	–	–	L	L	H	L	H	L	L	H
H	H	L	–	–	L	L	H	H	L	L	H	L
H	H	H	–	–	L	L	H	H	H	H	L	L

– = quelconque (sans importance)

T1

Inputs					Outputs (with device enabled)							
14	13	12	11	10	9	7	6	5	4	3	2	1
L	L	L	–	–	H	L	H	L	L	L	L	L
L	L	H	L	L	H	L	H	L	L	L	L	L
L	L	H	L	H	H	L	H	L	L	L	L	H
L	L	H	H	–	H	H	L	L	L	L	L	H
L	H	L	L	L	H	L	H	L	L	L	L	L
L	H	L	L	H	H	L	H	L	L	L	H	L
L	H	L	H	–	H	H	L	L	L	L	H	L
L	H	H	L	L	H	L	H	L	L	L	L	L
L	H	H	L	H	H	L	H	L	L	H	L	L
L	H	H	H	–	H	H	L	L	L	H	L	L
H	L	L	–	–	L	L	H	L	L	L	L	L
H	L	H	–	–	L	L	H	L	H	L	L	H
H	H	L	–	–	L	L	H	H	L	L	H	L
H	H	H	–	–	L	L	H	H	H	H	L	L

– = irrelevant (don't care)

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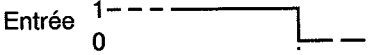

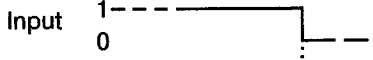

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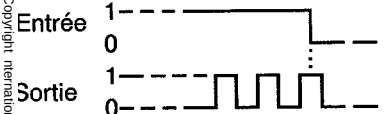

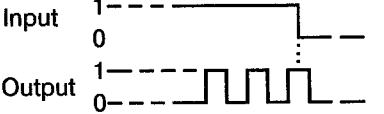

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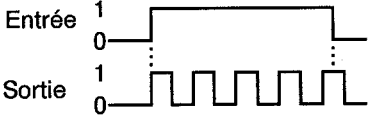

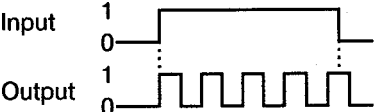

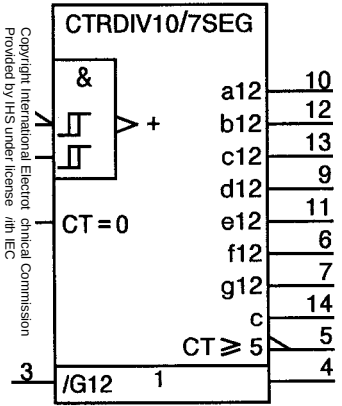

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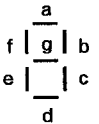
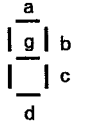
Compteur/diviseur décimal avec sorties codées pour afficheur à 7 segments et opérateur indépendant pour validation de l'élément suivant d'une cascade
(modèle d'antériorité : CD 4026)

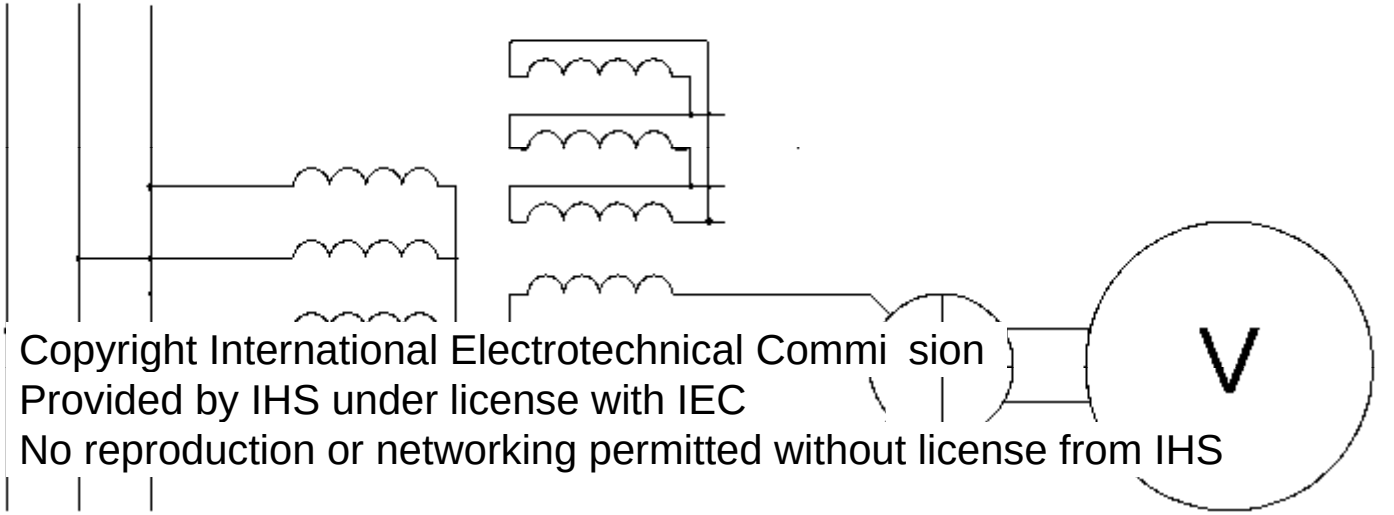
Identification des segments :



Decade counter/divider with decoded 7-segment-display outputs
(e.g. CD 4026)

Segment identification:





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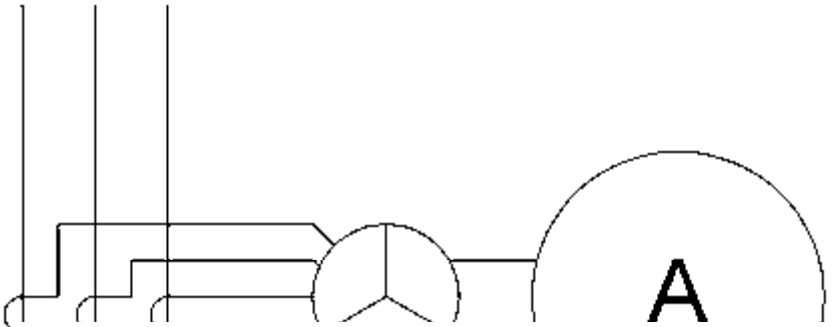

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