TECHNICAL REPORT

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Graphical symbols for electrical equipment in medical practice

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IEC TR 60878

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GRAPHICAL SYMBOLS FOR ELECTRICAL EQUIPMENT IN MEDICAL PRACTICE

FOREWORD

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8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

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IEC TR 60878 has been prepared by subcommittee 62A: Common aspects of electrical equipment used in medical practice, of IEC technical committee 62: Electrical equipment in medical practice. It is a Technical Report.

This fourth edition cancels and replaces the third edition published in 2015. This fourth edition constitutes a technical revision.

The main changes compared with IEC TR 60878:2015 are as follows:

- A total of 109 new symbols and safety signs that have been identified since the publication of the third edition have been added. For identification, the number of the new symbol or safety sign is printed in red followed by "New".

- Of the symbols and safety signs in the third edition, 14 have changes in their title or description. For identification, the number of a modified symbol or safety sign is printed in red followed by "Mod".

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

Draft	Report on voting
62A/1472/DTR	62A/1483/RVDTR

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

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

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

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

The contents of the corrigendum 1 (2023-02) have been included in this copy.

INTRODUCTION

This document is a collection of all graphical symbols used on medical electrical equipment. It is intended for the easy finding of a certain symbol and related ones in one single source, concentrating on this special field of application. For those more general symbols, for which the application on medical electrical equipment is subject to certain restrictions, these are pointed out in a section of the symbol description table headed "Further comments by IEC/TC 62".

This is not just "a collection of some symbols". The presented symbols should:

- comply with the drafting rules expressed in ISO/IEC 80416,

- use symbol elements in a consistent manner to facilitate user understanding and minimize errors, and

- sufficiently differ in appearance from each other, to avoid any confusion.

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IEC TR 60878:2022
https://standards.iteh.ai/catalog/standards/sist/3b3bfc6e-ab02-4b79-a780-f469470c0c47/iec-tr-60878-2022

GRAPHICAL SYMBOLS FOR ELECTRICAL EQUIPMENT IN MEDICAL PRACTICE

1 Scope

This document provides a compilation, for easy reference, of graphical symbols (graphics, title, description) and safety signs for medical electrical equipment. The graphical symbols are grouped in sections according to their specific field of application (see Clause 4).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60417, *Graphical symbols for use on equipment*, available at http://www.graphical-symbols.info/equipment

IEC 60601-1, *Medical electrical equipment – Part 1: General requirements for basic safety and essential performance*

IEC 60601-1-8:2006, *Medical electrical equipment – Part 1-8: General requirements for basic safety and essential performance – Collateral Standard: General requirements, tests and guidance for alarm systems in medical electrical equipment and medical electrical systems*
IEC 60601-1-8:2006/AMD1:2012
IEC 60601-1-8:2006/AMD2:2020

IEC 60601-2-18:2009, *Medical electrical equipment – Part 2-18: Particular requirements for the basic safety and essential performance of endoscopic equipment*

IEC 60601-2-22:2019, *Medical electrical equipment – Part 2-22: Particular requirements for basic safety and essential performance of surgical, cosmetic, therapeutic and diagnostic laser equipment*

IEC 60601-2-83:2019, *Medical electrical equipment – Part 2-83: Particular requirements for the basic safety and essential performance of home light therapy equipment*

IEC 60825-1:2014, *Safety of laser products – Part 1: Equipment classification and requirements*

IEC 61140, *Protection against electric shock – Common aspects for installation and equipment*

IEC 62056-21, *Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*

IEC 62570:2014, *Standard practice for marking medical devices and other items for safety in the magnetic resonance environment*

ISO 361, *Basic ionizing radiation symbol*

ISO 3166-1, *Codes for the representation of names of countries and their subdivisions – Part 1: Country codes*

ISO 3864-1, *Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings*

ISO 7000, *Graphical symbols for use on equipment – Registered symbols* (available from: http://www.graphical-symbols.info/equipment)

ISO 7001, *Graphical symbols – Public information symbols*

ISO 7010, *Graphical symbols – Safety colours and safety signs – Registered safety signs*

ISO 8601-1, *Date and time – Representations for information interchange – Part 1: Basic rules*

ISO 15223-1:2021, *Medical devices – Symbols to be used with information to be supplied by the manufacturer – Part 1: General requirements*

3   Terms and definitions

No terms and definitions are listed in this document.

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

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

4   General

This document primarily identifies graphical symbols published in IEC 60417 or in ISO 7000, and safety signs published in ISO 7010, and a few public information symbols in ISO 7001. A reference to the corresponding symbol or safety sign number is given.

NOTE 1   Reference numbers below 5 000 refer to ISO 7000, while reference numbers from 5 000 up refer to IEC 60417.

Some graphical symbols essential for compliance with other standards issued by IEC technical committee 62 or its subcommittees are also listed. They are identified by symbol numbers in the following format: **<standard>-####**, e.g. **60601-2-18-101** for graphical symbol No. 101 of IEC 60601-2-18.

NOTE 2   These symbols will be formally included in a future edition of IEC 60417 or ISO 7000. Some of the graphical symbols from these standards have been redrawn according to the basic design principles of ISO/IEC 80416 (all parts) for inclusion in this document.

In this document, symbols are ordered by application area, as shown in Table 1.

Many of the symbols listed in this document have already been used for several years on equipment and will be familiar to experts in that field; the meaning of others will become clear when viewed in context on the equipment itself, but it shall be appreciated that it is impossible to make self-evident the meaning of all symbols on complex equipment. In such cases, user training will be needed to ensure proper recognition. To avoid critical errors, it can be necessary to validate that properly trained users can correctly recognize the graphical symbol's meaning when viewed in the context.

However, it is strongly recommended that the meaning of all graphical symbols used on equipment be explained in the equipment's accompanying documents.

Table 1 – Grouping of symbols by application area

	Application area	Subclause No. (survey)	Subclause No. (description)
1	General: Controls	5.1	6.1
2	General: Movement related	5.2	6.2
3	General: Electricity and electronics	5.3	0
4	General: Light and optics	5.4	6.4
5	General: Miscellaneous	5.5	6.5
6	Transport, handling and packaging	5.6	6.6
7	Safety related	5.7	6.7
8	Safety signs	5.8	6.8
9	Classification and identification of equipment	5.9	6.9
10	Information and communication: Image, imaging	5.10	6.10
11	Information and communication: Audio	5.11	6.11
12	Information and communication: Data	5.12	6.12
13	Patient / person	5.13	6.13
14	Patient positioning	5.14	6.14
15	Medical instruments and blood processing	5.15	0
16	Dentistry and dentistry equipment	5.16	6.16
17	Patient monitoring	5.17	6.17
18	Ultrasound	5.18	6.18
19	Lithotripsy	5.19	6.19
20	Electrosurgery	5.20	6.20
21	Nuclear medicine	5.21	6.21
22	Diagnostic X-ray, CT, MR: Equipment and movement	5.22	6.22
23	Diagnostic X-ray, CT, MR: Function	5.23	6.23
24	Active Implantable Medical Devices	5.24	0
25	Biometric and facial recognition	5.25	6.25

The graphical symbols listed in this document are intended to be applied on or near equipment used in medical practice and in the equipment's accompanying documentation. They are not necessarily associated with graphical symbols used on drawings.
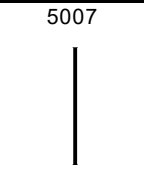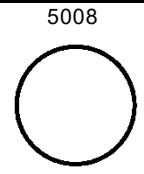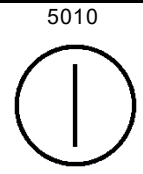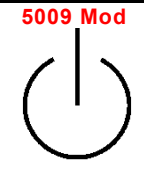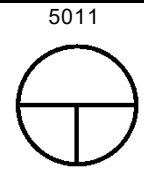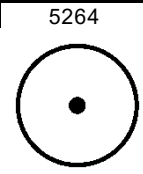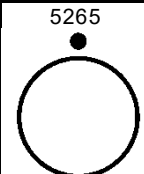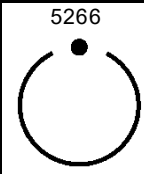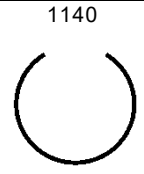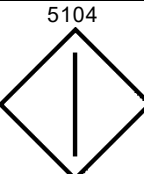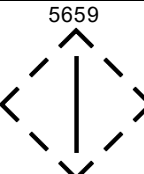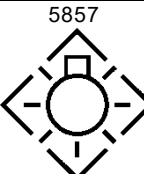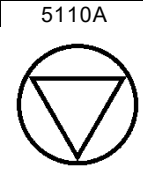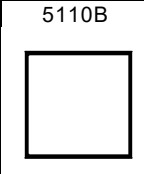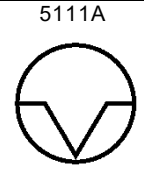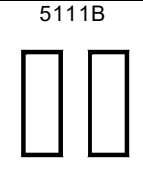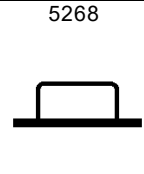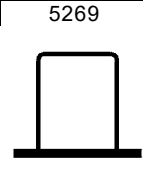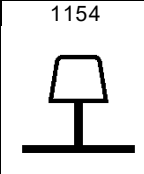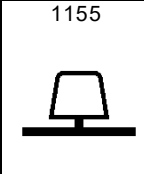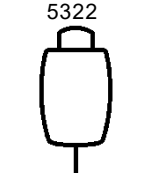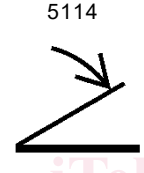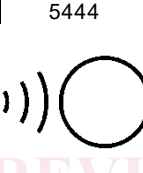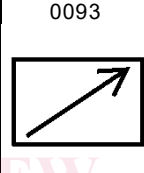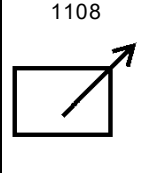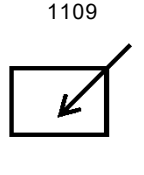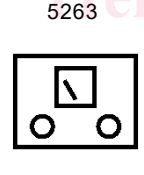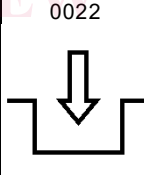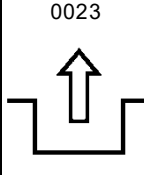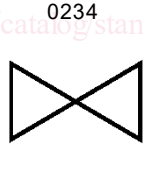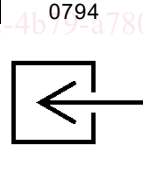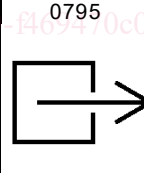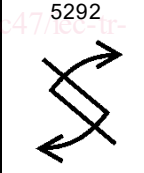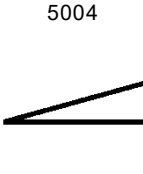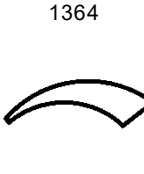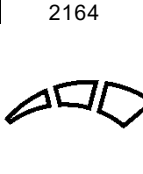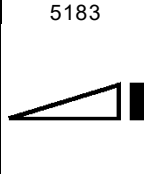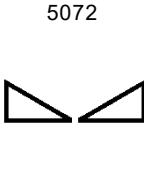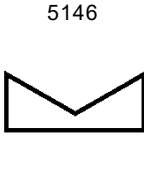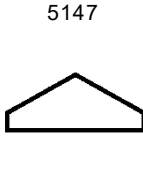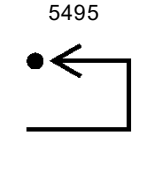
For symbol requirements not met by this document, refer in the first instance to published IEC or ISO symbols. Note that, where necessary, two or more symbols or symbol elements can be grouped together to convey a particular meaning. Some latitude in graphic design is permissible provided that the essential communicative characteristics of the basic symbol are maintained. For details, refer to ISO/IEC 80416 (all parts).
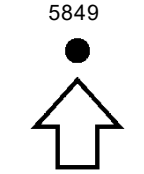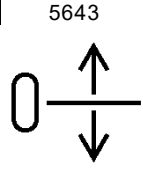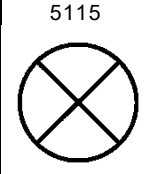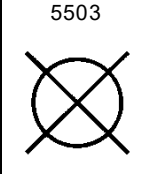
For safety signs, ISO 3864-1 requires that strict rules concerning shape, size and colour are adhered to.
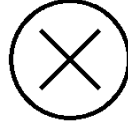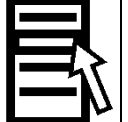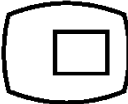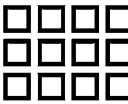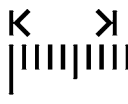
5   Graphical survey

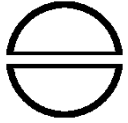NOTE   For a quick overview, this clause holds only the graphics, sorted by application areas. See Clause 4 for an overview of application areas. For titles, descriptions, and specific notes for application on medical electrical equipment, see Clause 6.

5.1 Collection 1 – General: Controls

5007	5008	5010	**5009 Mod**	5011	5264	5265	5266
1140	5104	5177	5659	5857	5110A	5110B	5178
5638	5111A	5111B	**6336 New**	5268	5269	1154	1155
5322	5114	1853	**6378 New**	0096	5444	0093	1108
1109	5263	**6379 New**	5090	5569	5570	0022	0023
5573	5574	0234	0018	0019	0794	0795	5292
5459	5628	5004	1364	5181	2164	5183	**6394 New**
5072	5146	5147	5495	5849	5643	5115	5503

Collection 1 – General: Controls

1326	**6334A New**	**6334B New**	**6335A New**	**6335B New**	5510	5289	5511

6089 New	**6089A New**	**6415 New**	5512	5753	5770	5658	

5.2 Collection 2 – General: Movement related

5022	0004	5023	0005	0521	0001	0253	5024

2765	2764	5025	5026	5029	5027	5028	5030

1111	0254	0493	1110	0924	0539	0258	0937

5655	5656	5822	5107A	5107B	5108A	5108B	**0547 New**

5124A	5124B	5125A	5125B	5862	5861	1116	1114

1117	1115	5628	5897	5898	0514	5738	5739

0020	0021	1173	5110A	5110B	5178	5638	5111A

5111B

5.3 Collection 3 – General: Electricity and electronics

0232	5005	5006	5926	**6181 New**	5031	5032	5032-1

5032-2	5033	5001A	5001B	5002	**6367 New**	**6368 New**	5546
					Li	Non-Li	

5639	0247	5017	5019	5018	5021	5020	5016

5115	5156	5534	5572	**6352 New**	5034	5035	5448

5424	5424-1	5424-2	5424-3	5134	5084	5093	5051

5140	5039	**6330A-1 New**	**6330B-1 New**	**6330A-2 New**	**6330B-2 New**	**6330A-3 New**	**6330B-3 New**

6330A-4 New	**6330B-4 New**	**6330A-5 New**	**6330B-5 New**				