

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Switches for appliances –
Part 1: General requirements**

**Interrupteurs pour appareils –
Partie 1: Règles générales**

[IEC 61058-1:2000](https://standards.iteh.ai/catalog/standards/iec/61058-1:2000)

<https://standards.iteh.ai/catalog/standards/iec/61058-1:2000>



THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2008 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester.

If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de la CEI ou du Comité national de la CEI du pays du demandeur.

Si vous avez des questions sur le copyright de la CEI ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de la CEI de votre pays de résidence.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland
Email: inmail@iec.ch
Web: www.iec.ch

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

- Catalogue of IEC publications: www.iec.ch/searchpub

The IEC on-line Catalogue enables you to search by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, withdrawn and replaced publications.

- IEC Just Published: www.iec.ch/online_news/justpub

Stay up to date on all new IEC publications. Just Published details twice a month all new publications released. Available on-line and also by email.

- Electropedia: www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in additional languages. Also known as the International Electrotechnical Vocabulary online.

- Customer Service Centre: www.iec.ch/webstore/custserv

If you wish to give us your feedback on this publication or need further assistance, please visit the Customer Service Centre FAQ or contact us:

Email: csc@iec.ch

Tel.: +41 22 919 02 11

Fax: +41 22 919 03 00

A propos de la CEI

La Commission Electrotechnique Internationale (CEI) est la première organisation mondiale qui élabore et publie des normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications CEI

Le contenu technique des publications de la CEI est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

- Catalogue des publications de la CEI: www.iec.ch/searchpub/cur_fut-f.htm

Le Catalogue en-ligne de la CEI vous permet d'effectuer des recherches en utilisant différents critères (numéro de référence, texte, comité d'études,...). Il donne aussi des informations sur les projets et les publications retirées ou remplacées.

- Just Published CEI: www.iec.ch/online_news/justpub

Restez informé sur les nouvelles publications de la CEI. Just Published détaille deux fois par mois les nouvelles publications parues. Disponible en-ligne et aussi par email.

- Electropedia: www.electropedia.org

Le premier dictionnaire en ligne au monde de termes électroniques et électriques. Il contient plus de 20 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans les langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International en ligne.

- Service Clients: www.iec.ch/webstore/custserv/custserv_entry-f.htm

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions, visitez le FAQ du Service clients ou contactez-nous:

Email: csc@iec.ch

Tél.: +41 22 919 02 11

Fax: +41 22 919 03 00

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Switches for appliances –
Part 1: General requirements**

**Interrupteurs pour appareils –
Partie 1: Règles générales**

<https://standards.iteh.ai/catalog/standards/iec/61058-1:2000>
<https://standards.iteh.ai/catalog/standards/iec/61058-1:2000>

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

PRICE CODE
CODE PRIX

CV

CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references.....	9
3 Definitions	13
3.1 General terms.....	13
3.2 Definitions relating to voltages, currents and wattage	16
3.3 Definitions relating to the different types of switches	18
3.4 Definitions relating to the operation of the switch.....	18
3.5 Definitions relating to connections to the switch	20
3.6 Definitions relating to terminals and terminations	21
3.7 Definitions relating to insulation	22
3.8 Definitions relating to pollution	24
3.9 Definitions relating to manufacturers' tests.....	24
4 General requirements	24
5 General notes on tests	25
6 Rating.....	28
7 Classification	29
7.1 Classification of switches.....	29
7.2 Classification of terminals.....	35
8 Marking and documentation	43
9 Protection against electric shock.....	51
10 Provision for earthing.....	54
11 Terminals and terminations.....	55
11.1 Terminals for unprepared copper conductors	55
11.2 Terminals for prepared copper conductors and/or terminals requiring the use of a special purpose tool.....	60
11.3 Additional requirements for terminals for supply connection and connection of external cords.....	64
12 Construction	65
12.1 Constructional requirements relating to protection against electric shock.....	65
12.2 Constructional requirements relating to safety during mounting and normal operation of the switch.....	66
12.3 Constructional requirements relating to the mounting of switches and to the attachment of cords.....	66
13 Mechanism	67
14 Protection against solid foreign objects, ingress of water and humid conditions	68
14.1 Protection against ingress of solid foreign objects	68
14.2 Protection against ingress of water	68
14.3 Protection against humid conditions	69
15 Insulation resistance and dielectric strength	70
16 Heating.....	72
16.1 General requirements	72
16.2 Contacts and terminals	72
16.3 Other parts	74

17	Endurance	78
17.1	General requirements	78
17.2	Electrical endurance tests	82
18	Mechanical strength	89
19	Screws, current-carrying parts and connections	91
19.1	General requirements for electrical connections	91
19.2	Screwed connections	91
19.3	Current-carrying parts	94
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies	95
20.1	Clearances	95
20.2	Creepage distances	97
20.3	Solid insulation	100
20.4	Coatings of rigid printed board assemblies	100
21	Fire hazard	101
21.1	Resistance to heat	101
21.2	Resistance to abnormal heat	102
22	Resistance to rusting	102
23	Abnormal operation and fault conditions for electronic switches	103
24	Components for electronic switches	107
24.1	Protective devices	107
24.2	Capacitors	110
24.3	Resistors	110
25	EMC requirements	110
25.1	Immunity	111
25.2	Emission	113
	Annex A (normative) Measurement of clearances and creepage distances	130
	Annex B (informative) Diagram for the dimensioning of clearances and creepage distances	135
	Annex C (Void)	136
	Annex D (normative) Proof tracking test	137
	Annex E (Void)	138
	Annex F (informative) Switch application guide	139
	Annex G (Void)	141
	Annex H (informative) Flat quick-connect terminations, method for selection of female connectors	142
	Annex J (Void)	143
	Annex K (normative) Relation between rated impulse withstand voltage, rated voltage and overvoltage category	144
	Annex L (normative) Pollution degree	145
	Annex M (normative) Impulse voltage test	146
	Annex N (normative) Altitude correction factors	147
	Annex P (normative) Types of coatings for rigid printed board assemblies	148
	Annex Q (normative) Measuring the insulation distance of a coated printed board with type A coating	149

Annex R (normative) Routine tests	150
Annex S (informative) Sampling tests	151
Annex T (informative) Switch families	153
Annex U (normative) Dimensions of tabs forming part of a switch	155
Annex V (informative) Requirements and tests for resistance to abnormal heat for unattended appliances)	156
Bibliography	158
Figure 1 – Examples of pillar terminals	115
Figure 2 – Examples of screw terminals and stud terminals	116
Figure 3 – Examples of saddle terminals	117
Figure 4 – Examples of lug terminals	117
Figure 5 – Examples of mantle terminals	118
Figure 6 – Examples of screwless terminals	119
Figure 7 – (Void)	120
Figure 8 – Female (test) connector of flat quick-connect termination	121
Figure 9a – Circuit for capacitive load test and simulated tungsten filament lamp load test for a.c. circuits	122
Figure 9b – Circuit for capacitive load test and simulated lamp load test for d.c. circuits	122
Figure 10 – Values of the capacitive load test circuit for test of switches rated 10/100 A 250 V~	123
Figure 11 – Mounting device for the impact test	124
Figure 12 – Ball pressure apparatus	125
Figure 13 – Test pin	125
Figure 14 – Continuous duty – Duty type S1	126
Figure 15 – Short-time duty – Duty type S2	127
Figure 16 – Intermittent periodic duty – Duty-type S3	128
Figure 17 – Diagram for short-circuit test	128
Figure 18 – Diagram for heating test	129
Figure 19 – Diagram for endurance test	129
Figure Q.1 – Measurement of the insulation distance	149
Figure U.1 – Tabs of flat quick-connect terminations	155
Table 1 – Test specimens	27
Table 2 – Type and connection of switches	36
Table 3 – Switch information	44
Table 4 – Resistive current carried by the terminal and related cross-sectional areas of terminals for unprepared conductors	56
Table 5 – (Void)	56
Table 6 – Pulling forces for screw-type terminals	58
Table 7 – Material and plating for tabs	62
Table 8 – Push and pull forces for tabs	62
Table 9 – Test conditions for Ta	63
Table 10 – Test conditions for Tb	64

Table 11 – Minimum insulation resistance	70
Table 12 – Dielectric strength.....	71
Table 13 – Permissible maximum temperatures.....	76
Table 14 – Temperatures for thermosetting materials used for electronic switches.....	78
Table 15 – Electrical endurance tests for the different types of electronic switches with or without electrical contact(s).....	80
Table 16 – Test loads for multiway switches	82
Table 17 – Test loads for electrical endurance tests for a.c. circuits.....	83
Table 18 – Test loads for electrical endurance tests for d.c. circuits.....	84
Table 19 – Minimum values of pull force.....	90
Table 20 – Torque values.....	92
Table 21 – Torque values for screwed glands.....	93
Table 22 – Minimum clearances for basic insulation	96
Table 23 – Minimum creepage distances for basic insulation.....	98
Table 24 - Minimum creepage distances for functional insulation.....	99
Table 25 – Test levels and conditions.....	101
Table 26 – Conventional fusing current versus rated current.....	105
Table 27 – Requirements for capacitors.....	110
Table 28 – Test levels and duration for voltage dips and short interruptions	111
Table 29 – Fast transient bursts	112
Table H.1 – Insertion and withdrawal forces for flat quick-connect terminations.....	142
Table K.1 – Rated impulse withstand voltage for switches energized directly from the low voltage mains.....	144
Table M.1 – Test voltages for verifying clearances at sea-level.....	146
Table N.1 – Altitude correction factors.....	147

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SWITCHES FOR APPLIANCES –

Part 1: General requirements

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 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.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61058-1 has been prepared by subcommittee 23J: Switches for appliances, of IEC technical committee 23: Electrical accessories.

This consolidated version of IEC 61058-1 consists of the third edition (2000) [documents 23J/221/FDIS and 23J/222/RVD], its amendment 1 (2001) [documents 23J/232/FDIS and 23J/233/RVD] and its amendment 2 (2007) [documents 23J/298/FDIS and 23J/299/RVD].

The technical content is therefore identical to the base edition and its amendments and has been prepared for user convenience.

It bears the edition number 3.2.

A vertical line in the margin shows where the base publication has been modified by amendments 1 and 2.

IEC 61058 consists of the following parts:

Part 1: General requirements;

Part 2-1: Particular requirements for cord switches;

Part 2-4: Particular requirements for independently mounted switches;

Part 2-5: Particular requirements for change-over selectors.

In this part, the following print types are used:

- requirements proper: roman type;
- *test specifications: italic type;*
- notes: smaller roman type.

Annexes A, C, D, E, K, L, M, N, P, Q and R form an integral part of this standard.

Annexes B, F, G, H, J, S and T are for information only.

The following differences exist in some countries:

- 7.1.2.9 The locked rotor power factor is 0,4 to 0,5 to reflect application conditions (USA).
- 15.3 The duration of the application of the test voltage is 1 min to assure the detection of defects in the insulation (USA).
- 17.2.4.7 The minimum number of operating cycles is 6 000 (USA).
- 17.2.5 The temperature rise at the terminals shall not exceed 30 °C (USA).
- Table 17 The make current for the inductive circuit is I-I to reflect actual application conditions (USA).
- Table 17 The horsepower ratings are used when controlling a motor rated in horsepower (USA).
- 25 EMC is not considered to be a safety-related matter (USA).

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

The contents of the corrigendum of January 2009 have been included in this copy.

SWITCHES FOR APPLIANCES –

Part 1: General requirements

1 Scope

1.1 This International Standard applies to switches (mechanical or electronic) for appliances actuated by hand, by foot or by other human activity, to operate or control electrical appliances and other equipment for household or similar purposes with a rated voltage not exceeding 480 V and a rated current not exceeding 63 A.

These switches are intended to be operated by a person, via an actuating member or by actuating a sensing unit. The actuating member or sensing unit can be integral with or arranged separately, either physically or electrically, from the switch and may involve transmission of a signal, for example electrical, optical, acoustic or thermal, between the actuating member or sensing unit and the switch.

Switches which incorporate additional control functions governed by the switch function are within the scope of this standard.

This standard also covers the indirect actuation of the switch when the operation of the actuating member or sensing unit is provided by a remote control or a part of an appliance or equipment such as a door.

NOTE 1 Electronic switches may be combined with mechanical switches giving full disconnection or micro-disconnection.

NOTE 2 Electronic switches without a mechanical switch in the supply circuit provide only electronic disconnection. Therefore, the circuit on the load side is always considered to be live.

NOTE 3 For switches used in tropical climates, additional requirements may be necessary.

NOTE 4 Attention is drawn to the fact that the standards for appliances may contain additional or alternative requirements for switches.

NOTE 5 Throughout this standard, the word "appliance" means "appliance or equipment".

NOTE 6 This part of IEC 61058 is applicable when testing incorporated switches. When other types of switches for appliances are tested, this part is applicable together with the relevant Part 2 of IEC 61058.

This part of IEC 61058 may, however, be applied for other types of switches which are not mentioned in a relevant Part 2 of IEC 61058, provided that the electrical safety is not disregarded.

1.2 This standard applies to switches intended to be incorporated in, on or with an appliance.

1.3 This standard also applies to switches incorporating electronic devices.

1.4 This standard also applies to switches for appliances such as

- switches intended to be connected to a flexible cable (cord switches) for which, however, particular requirements are given in IEC 61058-2-1;

NOTE In this document, the word "cable" means "cable or cord".

- switches integrated in an appliance (integrated switches);
- switches intended to be mounted separately from the appliance (independently mounted switches) other than those within the scope of IEC 60669-1, for which, however, particular requirements are given in IEC 61058-2-4;
- change-over selectors for which, however, particular requirements are given in IEC 61058-2-5.

1.5 This standard does not contain requirements for isolating switches.

1.6 This standard does not apply to devices which control appliances and equipment not actuated intentionally by a person. These are covered by IEC 60730.

2 Normative references

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

CISPR 14-1, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 15:2005, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment* ¹
Amendment 1 (2006)

IEC 60034-1:1996, *Rotating electrical machines – Part 1: Rating and performance* ²
Amendment 1 (1997)
Amendment 2 (1999)

IEC 60038:1983, *IEC standard voltages*

IEC 60050(151):1978, *International Electrotechnical Vocabulary (IEV) – Chapter 151: Electrical and magnetic devices*

IEC 60050(411):1973, *International Electrotechnical Vocabulary (IEV) – Chapter 411: Rotating machinery*

IEC 60050(441):1984, *International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses*

IEC 60050(826):1982, *International Electrotechnical Vocabulary (IEV) – Chapter 826: Electrical installations of buildings*
Amendment 1 (1990)
Amendment 2 (1995)

IEC 60060-1:1989, *High-voltage techniques – Part 1: General definitions and test requirements*

IEC 60065:2001, *Audio, video and similar electronic apparatus – Safety requirements* ³
Amendment 1 (2005)

IEC 60068-2-20:1979, *Environmental testing – Part 2-20: Tests – Test T: Soldering*

IEC 60068-2-75:1997, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60085:1984, *Thermal evaluation and classification of electrical insulation*

¹ A consolidated edition 7.1 (2007) exists, that includes CISPR 15 (2005) and its Amendment 1.

² There is a consolidated edition 10.2 (1999) that includes IEC 60034-1 and its amendments 1 (1997) and 2 (1999).

³ A consolidated edition 7.1 (2005) exists, that includes IEC 60065 (2001) and its Amendment 1.

IEC 60112:1979, *Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions*

IEC 60127 (all parts), *Miniature fuses*

IEC 60127-2:1989, *Miniature fuses – Part 2: Cartridge fuse-links*

IEC 60228:1978, *Conductors of insulated cables*

IEC 60269-1:1998, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-3-1:1994, *Low-voltage fuses – Part 3-1: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications) – Sections I to IV*

IEC 60335-1:1991, *Safety of household and similar electrical appliances – Part 1: General requirements*
Amendment 1 (1994)

IEC 60335 (all parts 2), *Safety for household and similar electrical appliances*

IEC 60384-14:1993, *Fixed capacitors for use in electronic equipment – Part 14: Sectional specification: Fixed capacitors for electromagnetic suppression and connection to the supply mains*

IEC 60417, *Graphical symbols for use on equipment*

IEC 60529:1989, *Degree of protection provided by enclosures (IP code)*

IEC 60617-2:1996, *Graphical symbols for diagrams – Part 2: Symbol elements, qualifying symbols and other symbols having general application*

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60664-3:1992, *Insulation coordination for equipment within low-voltage systems – Part 3: Use of coatings to achieve insulation coordination of printed board assemblies*

IEC 60669-1:1998, *Switches for household and similar fixed electrical installations – Part 1: General requirements*

IEC 60691:1993, *Thermal-links – Requirements and application guide*

IEC 60695-2-10:2000, *Fire hazard testing – Part 2-10: Glowing/hot-wire based test methods – Glow-wire apparatus and common test procedure*

IEC 60695-2-11:2000, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products*

IEC 60695-2-12, *Fire hazard testing – Part 2-12: Glowing/hot-wire based test methods – Glow-wire flammability test method for materials*

IEC 60695-2-13, *Fire hazard testing – Part 2-13: Glowing/hot-wire based test methods – Glow-wire ignitability test method for materials*

IEC 60695-10-2, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test*

IEC 60707:1999, *Flammability of solid non-metallic materials when exposed to flame sources – List of methods*

IEC 60730 (all parts), *Automatic electrical controls for household and similar use*

IEC 60730-1:1999, *Automatic electrical controls for household and similar use – Part 1: General requirements*

IEC 60730-2-9:2000, *Automatic electrical controls for household and similar use – Part 2-9: Particular requirements for temperature sensing controls*

IEC 60738-1:1998, *Thermistors directly heated positive step-function temperature efficient thermistors – Part 1: Generic specification*

IEC 60760:1989, *Flat, quick-connect terminations*

IEC 60893-1:1987, *Specification for industrial rigid laminated sheets based on thermosetting resins for electrical purposes – Part 1: Definitions, designations and general requirements*

IEC 60998-2-3:1991, *Connecting devices for low-voltage circuits for household and similar purposes – Part 2-3: Particular requirements for connecting devices as separate entities with insulation piercing clamping units*

IEC 61000 (all parts), *Electromagnetic compatibility (EMC)*

IEC 61000-3-2:1995, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 2: Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*⁴
Amendment 1 (1997)
Amendment 2 (1998)

IEC 61000-3-3:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 3: Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current ≤ 16 A*

IEC/TR2 61000-3-5:1994, *Electromagnetic compatibility (EMC) – Part 3: Limits – Section 5: Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 16 A*

IEC 61000-4-1:1992, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 1: Overview of immunity tests. Basic EMC publication*

IEC 61000-4-2:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test. Basic EMC publication*⁵
Amendment 1 (1998)

IEC 61000-4-3:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test*⁶
Amendment 1 (1998)

⁴ There is a consolidated edition 1.2 (1998) that includes IEC 61000-3-2 and its amendments 1 (1997) and 2 (1998).

⁵ There is a consolidated edition 1.1 (1999) that includes IEC 61000-4-2 and its amendment 1 (1998).

⁶ There is a consolidated edition 1.1 (1998) that includes IEC 61000-4-3 and its amendment 1 (1998).

IEC 61000-4-4:1995, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 4: Electrical fast transient/burst immunity test. Basic EMC publication*

IEC 61000-4-6:1996, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 6: Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-8, *Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test*

IEC 61000 4-11:1994, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 11: Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

IEC 61058-2-1, *Switches for appliances – Part 2-1: Particular requirements for cord switches*

IEC 61058-2-4, *Switches for appliances – Part 2-4: Particular requirements for independently mounted switches*

IEC 61058-2-5, *Switches for appliances – Part 2-5: Particular requirements for change-over selectors*

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

IEC 61210:1993, *Connecting devices – Flat quick-connect terminations for electrical copper conductors - Safety requirements*

ISO 1456:1988, *Metallic coatings – Electrodeposited coatings of nickel plus chromium and of copper plus nickel plus chromium*

ISO 2081:1986, *Metallic coatings – Electroplated coatings of zinc of iron or steel*

ISO 2093:1986, *Electroplated coatings of tin – Specification and test methods*

ISO 4046:1978, *Paper, board, pulp and related terms – Vocabulary*