
Switches for appliances - Part 1: General requirements (IEC 61058-1:2000 + A1:2001, modified)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61058-1:2003](https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003)
<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

SIST EN 61058-1:2003

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

English version

Switches for appliances
Part 1: General requirements
(IEC 61058-1:2000 + A1:2001, modified)

Interrupteurs pour appareils
Partie 1: Règles générales
(CEI 61058-1:2000 + A1:2001, modifiée)

Geräteschalter
Teil 1: Allgemeine Anforderungen
(IEC 61058-1:2000 + A1:2001, modifiziert)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

This European Standard was approved by CENELEC on 2002-03-05. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of the International Standard IEC 61058-1:2000, prepared by SC 23J, Switches for appliances, of IEC TC 23, Electrical accessories, together with the common modifications prepared by CENELEC Reporting Secretariat SR 23J, was submitted to the formal vote and was approved by CENELEC as EN 61058-1 on 2002-03-05.

The text of document 23J/232/FDIS, future amendment 1 to IEC 61058-1:2000, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC on 2002-03-05 for inclusion into the European Standard.

This European Standard supersedes EN 61058-1:1992 + A1:1993.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-03-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-03-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, C, D, E, K, L, M, N, P, Q, R and ZB are normative and annexes B, F, G, H, J, S, T and ZA are informative.

Annexes ZA and ZB have been added by CENELEC.

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

Endorsement notice

The text of the International Standard IEC 61058-1:2000 + A1:2001 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

Add in the table of contents:

Annex ZA (informative) - Compliance checks to be carried out for switches for appliances complying with EN 61058-1:1992 + A1:1993

Annex ZB (normative) - Normative references to international publications with their corresponding European publications

Add the following annex:

Annex ZA (informative)

Compliance checks to be carried out for switches for appliances complying with EN 61058-1:1992 + A1:1993

Introduction

This informative annex relates to changed requirements. It informs where compliance checks are not required and where compliance checks are required to be carried out in order that a switch can be declared to meet the requirements of the new edition of EN 61058-1, if this switch already complies with EN 61058-1:1992 + A1:1993.

Clause 8:

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

Marking and documentation according to EN 61058-1:1992 + A1:1993 shall be aligned with the new edition of EN 61058-1, specifically for

- pollution degree,
- rated impulse withstand voltage,
- type and/or connection of switch.

9.1.2 and 9.1.3:

Compliance shall be checked if relevant.

14.2:

Compliance shall be checked for numeral 5 and 6 if relevant.

14.4:

No compliance checks are necessary.

15.3:

No compliance checks are necessary.

Clause 17:

No compliance checks are necessary.

Clause 20:

Compliance checks are required.

21.1.1 and 21.1.5:

Compliance checks are required.

Clause 25:

No compliance checks are necessary.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61058-1:2003

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

Annex ZB

(normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-1 (mod)	1996	Rotating electrical machines Part 1: Rating and performance	EN 60034-1 + corr. February	1998 2000
A1	1997		A1	1998
A2	1999		A2	1999
IEC 60038 (mod)	1983	IEC standard voltages ¹⁾	HD 472 S1 + corr. February	1989 2002
IEC 60050-151	1978	International Electrotechnical Vocabulary (IEV) Chapter 151: Electrical and magnetic devices	-	-
IEC 60050-411	1973	Chapter 411: Rotating machinery	-	-
IEC 60050-441	1984	Chapter 441: Switchgear, controlgear and fuses	-	-
IEC 60050-826 A1 A2	1982 1990 1995	Chapter 826: Electrical installations of buildings	HD 384.2 S2 ²⁾	2001
IEC 60060-1	1989	High-voltage test techniques Part 1: General definitions and test requirements	HD 588.1 S1 ³⁾	1991
IEC 60068-2-20	1979	Environmental testing Part 2-20: Tests - Test T: Soldering	HD 323.2.20 S3 ⁴⁾	1988
IEC 60068-2-75	1997	Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	1997
IEC 60085	1984	Thermal evaluation and classification of electrical insulation	HD 566 S1	1990

¹⁾ The title of HD 472 S1 is: Nominal voltages for low-voltage public electricity supply systems.

²⁾ HD 384.2 S2 is based on IEC 60050-826:1982 + A1:1990 + A2:1995 + A3:1999.

³⁾ HD 588.1 S1 includes corrigendum March 1990 to IEC 60060-1:1989.

⁴⁾ HD 323.2.20 S3 is based on IEC 60068-2-20:1979 + A2:1987.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60112	1979	Method for determining the comparative and the proof tracking indices of solid insulating materials under moist conditions	HD 214 S2	1980
IEC 60127	Series	Miniature fuses	EN 60127	Series
IEC 60127-2	1989	Part 2: Cartridge fuse-links	EN 60127-2 ⁵⁾	1991
IEC 60228 (mod)	1978	Conductors of insulated cables	HD 383 S2 ⁶⁾	1986
IEC 60228A (mod)	1982	Conductors of insulated cables First supplement: Guide to the dimensional limits of circular conductors	HD 383 S2	1986
IEC 60269-1	1998	Low-voltage fuses Part 1: General requirements	EN 60269-1	1998
IEC 60269-3-1 (mod)	1994	Part 3-1: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications) – Sections I to IV	HD 630.3.1 S3 ⁷⁾	2002
IEC 60335-1 (mod)	1991	Safety of household and similar electrical appliances Part 1: General requirements	EN 60335-1	1994
A1 (mod)	1994	Part 1: General requirements	A1	1996
IEC 60335-2 (mod)	Series	Part 2: Particular requirements	EN 60335-2	Series
IEC 60364-4-41 (mod)	1992	Electrical installations of buildings Part 4: Protection for safety	HD 384.4.41 S2	1996
A1	1996	Chapter 41: Protection against electric shock		
A2	1999			
IEC 60364-4-442 A1	1993 1995	Chapter 44: Protection against overvoltages	- ⁸⁾	-
A2	1999	Section 442: Protection of low-voltage installations against temporary overvoltages and faults between high-voltage systems and earth		

⁵⁾ EN 60127-2 includes corrigendum March 1990 to IEC 60127-2.

⁶⁾ HD 383 S2 is based on IEC 60228:1978 + IEC 60228A:1982.

⁷⁾ HD 630.3.1 S3 is based on IEC 60269-3-1:1994 + A1:1995 + A2:2001.

⁸⁾ HD 384.4.442 S1:1997 is not an endorsement of, but is related to IEC 60364-4-442:1993 + A1:1995.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60364-4-443 (mod) A1	1995 1998	Section 443: Protection against overvoltages of atmospheric origin or due to switching	HD 384.4.443 S1	2000
IEC 60384-14	1993	Fixed capacitors for use in electronic equipment Part 14: Sectional specification: Fixed capacitors for electromagnetic interference suppression and connection to the supply mains	-	-
IEC 60417-1	1998	Graphical symbols for use on equipment Part 1: Overview and a pplication	EN 60417-1 ⁹⁾	1999
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
IEC 60617-2	1996	Graphical symbols for diagrams Part 2: Symbol elements, qualifying symbols and other symbols having general application	EN 60617-2	1996
IEC 60664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1 + corr. November	1996 1996
IEC 60664-3	1992	Part 3: Use of coatings to achieve insulation coordination of printed board assemblies	HD 625.3 S1	1997
IEC 60669-1 (mod)	1998	Switches for household and similar fixed-electrical installations Part 1: General requirements	EN 60669-1	1999
IEC 60691	1993	Thermal-links - Requirements and application guide	EN 60691 ¹⁰⁾	1995
IEC 60695-2-1/X	All sheets	Fire hazard testing Part 2-1: Test methods - Glow wire	EN 60695-2-1/X	All sheets
IEC 60707	1999	Flammability of solid non-metallic materials when exposed to flame sources - List of test methods	EN 60707	1999
IEC 60730 (mod)	Series	Automatic electrical controls for household and similar use	EN 60730	Series
IEC 60730-1 (mod)	1999	Part 1: General requirements	EN 60730-1 + A11	2000 2002

⁹⁾ EN 60417-1:1999 is superseded by EN 60417-1:2002, which is based on IEC 60417-1:2000.

¹⁰⁾ EN 60691 is based on IEC 60691:1993 + A1:1995.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60730-2-9	2000	Part 2-9: Particular requirements for temperature sensing controls	EN 60730-2-9	2002
IEC 60738-1	1998	Thermistors - Directly heated positive step-function temperature coefficient Part 1: Generic specification	EN 60738-1	1999
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	EN 60893-1	1994
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	EN 60998-2-3	1993
IEC 61000	Series	Electromagnetic compatibility (EMC)	EN 61000	Series
IEC 61000-3-2	1995	Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN 61000-3-2 ¹¹⁾	1995
A1	1997		A1 ¹¹⁾	1998
A2	1998		A2 ¹¹⁾	1998
IEC 61000-3-3	1994	Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current ≤ 16 A	EN 61000-3-3 + corr. July	1995 1997
IEC/TR2 61000-3-5	1994	Part 3-5: Limits - 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	Part 4-1: Testing and measurement techniques - Overview of immunity tests	EN 61000-4-1 ¹²⁾	1994
IEC 61000-4-2	1995	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
A1	1998		A1	1998

¹¹⁾ EN 61000-3-2:1995 and its amendments are superseded by EN 61000-3-2:2000, which is based on IEC 61000-3-2:2000 (mod).

¹²⁾ EN 61000-4-1:1994 is superseded by EN 61000-4-1:2000, which is based on IEC 61000-4-1:2000.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-3 (mod)	1995	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3 ¹³⁾	1996
A1	1998		A1	1998
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 61000-4-6	1996	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	1996
IEC 61000-4-11	1994	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
IEC 61058-2-1	- ¹⁴⁾	Switches for appliances Part 2-1: Particular requirements for core switches	EN 61058-2-1	1994 ¹⁵⁾
IEC 61058-2-4	- ¹⁴⁾	Part 2-4: Particular requirements for cord switches	EN 61058-2-4	
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 on iron or steel	-	-
ISO 2093	1986	Electroplated coatings of tin - Specification and test methods	-	-
ISO 4046	1978	Paper, board, pulp and related terms - Vocabulary	-	-

¹³⁾ EN 61000-4-3:1996 is superseded by EN 61000-4-3:2002, which is based on IEC 61000-4-3:2002.

¹⁴⁾ Undated reference.

¹⁵⁾ Valid edition at date of issue.

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

SIST EN 61058-1:2003

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

INTERNATIONAL STANDARD

IEC 61058-1

Edition 3.1
2001-11

Edition 3:2000 consolidated with amendment 1:2001

Switches for appliances –

Part 1: General requirements

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 61058-1:2003](https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003)

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3c9fa766b486/sist-en-61058-1-2003>

© IEC 2001 Copyright - all rights reserved

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 the publisher.

International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE **CR**

For price, see current catalogue

CONTENTS

FOREWORD.....	11
1 Scope.....	15
2 Normative references.....	17
3 Definitions	25
3.1 General terms.....	25
3.2 Definitions relating to voltages, currents and wattage	31
3.3 Definitions relating to the different types of switches	35
3.4 Definitions relating to the operation of the switch.....	35
3.5 Definitions relating to connections to the switch	39
3.6 Definitions relating to terminals and terminations	41
3.7 Definitions relating to insulation	43
3.8 Definitions relating to pollution	47
3.9 Definitions relating to manufacturers' tests.....	47
4 General requirements	47
5 General notes on tests.....	49
6 Rating.....	55
7 Classification	57
7.1 Classification of switches.....	57
7.2 Classification of terminals.....	69
8 Marking and documentation	87
9 Protection against electric shock.....	105
10 Provision for earthing.....	109
11 Terminals and terminations.....	113
11.1 Terminals for copper conductors.....	113
12 Construction	131
12.1 Constructional requirements relating to protection against electric shock.....	131
12.2 Constructional requirements relating to safety during mounting and normal operation of the switch.....	133
12.3 Constructional requirements relating to the mounting of switches and to the attachment of cords.....	135
13 Mechanism	137
14 Protection against solid foreign objects, ingress of dust, water, and humid conditions	139
14.1 Protection against solid foreign objects	139
14.2 Protection against ingress of dust	139
14.3 Protection against ingress of water	141
14.4 Protection against humid conditions	143
15 Insulation resistance and dielectric strength	143
16 Heating.....	149
16.1 General requirements	149
16.2 Contacts and terminals	149
16.3 Other parts	153

17	Endurance	161
17.1	General requirements	161
17.2	Electrical endurance tests	169
18	Mechanical strength	185
19	Screws, current-carrying parts and connections	189
19.1	General requirements for electrical connections	189
19.2	Screwed connections	189
19.3	Current-carrying parts	195
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies	197
20.1	Clearances	197
20.2	Creepage distances	203
20.3	Solid insulation	209
20.4	Coatings of rigid printed board assemblies	209
21	Resistance to heat and fire	211
22	Resistance to rusting	213
23	Abnormal operation and fault conditions for electronic switches	215
24	Components	223
24.1	Protective devices	225
24.2	Capacitors	229
24.3	Resistors	231
25	EMC requirements	231
25.1	Immunity	233
25.2	Emission	237
Annex A (normative)	Measurement of clearances and creepage distances	271
Annex B (informative)	Diagram for the dimensioning of clearances and creepage distances	281
Annex C (normative)	Glow-wire test	283
Annex D (normative)	Proof tracking test	285
Annex E (normative)	Ball-pressure test	287
Annex F (informative)	Switch application guide	289
Annex G (informative)	Schematic diagram of families of terminals	293
Annex H (informative)	Flat quick-connect terminations, method for selection of female connectors	295
Annex J (informative)	Selection and sequence of tests of clause 21	297
Annex K (normative)	Relation between rated impulse withstand voltage, rated voltage and overvoltage category	299
Annex L (normative)	Pollution degree	301
Annex M (normative)	Impulse voltage test	303
Annex N (normative)	Altitude correction factors	305
Annex P (normative)	Types of coatings for rigid printed board assemblies	307
Annex Q (normative)	Measuring the insulation distance of a coated printed board with type A coating	309
Annex R (normative)	Routine tests	311
Annex S (informative)	Sampling tests	313
Annex T (informative)	Switch families	317

STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 61058-1:2003

<https://standards.iteh.ai/catalog/standards/sist/0443b5a0-7ebb-4a51-8b30-3987614b261c/sist-61058-1-2003>