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# INTERNATIONAL STANDARD

REDLINE VERSION

Switches for appliances -  
Part 1: General requirements

Sample Document

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### **Switches for appliances - Part 1: General requirements**

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

This fifth edition cancels and replaces the fourth edition published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Extension to 600 V in the scope;
- b) Add requirements on ground-fuse (Clause 17);
- c) DC arc extinction test (Annex P and Clause 17);
- d) Table 5 re-arranged to line-up with classifications;
- e) Table 6 correction due to inhomogeneous values;
- f) Deletion of X3 capacitors in classification and in Table 19.

The text of this standard is based on the following documents:

| Draft        | Report on voting |
|--------------|------------------|
| 23J/494/FDIS | 23J/499/RVD      |

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 International Standard 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

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In this document, the following print types are used:

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- test specifications: *italic type*;
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- reconfirmed,
- withdrawn, or
- revised.

## 1 Scope

This part of IEC 61058 applies to switches or switching devices for appliances. The switches are intended to control electrical appliances and other equipment for household or similar purposes with a rated voltage not exceeding ~~480~~ 600 V and a rated current not exceeding 63 A.

In the IEC 61058 series the terms "switching devices" and "switches" are used interchangeably.

Switches for appliances are intended to be operated by

- a person via an actuating member,
- indirect actuation,
- an actuating sensing unit.

Transmission of a signal between the actuating member or sensing unit and the switch ~~may~~ can be connected by optical, acoustic, thermal, electrical or other relevant connection and ~~may~~ can include remote controlled units.

This document applies to switches for appliances ~~provided~~ with additional control functions ~~governed~~ provided by the switch ~~provided with using~~ electronic circuits ~~and devices that are necessary for the intended and/or correct operation of the switch.~~

This document applies to circuitry when evaluated with a switch and necessary for the switching function.

This part document applies in general to switches for appliances in conjunction with the following parts:

- Part 1-1: Requirements for mechanical switches, and/or
- Part 1-2: Requirements for electronic switches.

This document does not apply to ~~devices~~ switches covered by:

- IEC 60669 (all parts), *Switches for household and similar fixed-electrical installations*, and
- IEC 60730 (all parts), *Automatic electrical controls*.

~~This part of IEC 61058 does not contain requirements for safety isolating switches (IEC 60050-811:1991, 811-29-17).~~

~~NOTE 1 For switches used in tropical climates, additional requirements may be necessary.~~

NOTE-2 1 Attention is drawn to the fact that the end product standards for appliances ~~may~~ can contain additional or alternative requirements for switches (see Annex O).

NOTE-3 2 Throughout this document, the word "appliance" means "appliance or equipment".

## 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 60038, IEC standard voltages~~

~~IEC 60060-1, High-voltage techniques — Part 1: General definitions and test requirements~~

~~IEC 60065:2014, Audio, video and similar electronic apparatus — Safety requirements~~

~~IEC 60068-2-75, Environmental testing — Part 2-75: Tests — Test Eh: Hammer tests~~

~~IEC 60112:2003, Method for the determination of the proof and the comparative tracking indices of solid insulating materials  
Amendment 1:2009~~

IEC 60127 (all parts), *Miniature fuses*

~~IEC 60127-2, Miniature fuses — Part 2: Cartridge fuse links~~

IEC 60269-3, *Low-voltage fuses - Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household or similar applications) - Examples of standardized systems of fuses A to F*

IEC 60384-14, *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, *Graphical symbols for use on equipment* (available at: <http://www.graphical-symbols.info/equipment>)

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

IEC 60529:1989/AMD1:1999

IEC 60529:1989/AMD2:2013

IEC 60617, *Graphical symbols for diagrams*

IEC 60664-3:2003/2016, *Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution*

IEC 60691, *Thermal-links - Requirements and application guide*

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

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

IEC 60695-11-10, *Fire hazard testing - Part 11-10: Test flames - 50 W horizontal and vertical flame test methods*

IEC 60695-11-20, *Fire hazard testing - Part 11-20: Test flames - 500 W flame test method*

IEC 60730 (all parts), *Automatic electrical controls*

IEC 60730-1:2013/2022, *Automatic electrical controls - Part 1: General requirements*

IEC 60730-2-9:2015, *Automatic electrical controls - Part 2-9: Particular requirements for temperature sensing controls*

IEC 60730-2-9:2015/AMD1:2018

IEC 60730-2-9:2015/AMD2:2020

IEC 60738-1, *Thermistors - Directly heated positive temperature coefficient - Part 1: Generic specification*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) - Part 3.2: Limits - Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)*

IEC 61000-3-3, *Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current  $\leq 16$  A per phase and not subject to conditional connection*

IEC TS 61000-3-5, *Electromagnetic compatibility (EMC) - Part 3-5: Limits - Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 75 A*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test*

IEC 61000-4-3, *Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test*

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

IEC 61000-4-5, *Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test*

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

IEC 61000-4-11, *Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests for equipment with input current up to 16 A per phase*

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

IEC 61058-1-1:2016, *Switches for appliances - Part 1-1: Requirements for mechanical switches*

IEC 61058-1-2:2016, *Switches for appliances - Part 1-2: Requirements for electronic switches*

IEC 61210:2010, *Connecting devices - Flat quick-connect terminations for electrical copper conductors - Safety requirements*

IEC 62368-1:2023, *Audio/video, information and communication technology equipment - Part 1: Safety requirements*

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

CISPR 15:2013, *Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment*

CISPR 15:2018/AMD1:2024

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

#### 3.1 General terms and definitions

##### 3.1.1

##### **mechanical switching device**

switching device designed to close and open one or more electric circuits by means of separable contacts

Note 1 to entry: ~~In the IEC 61058 series the terms "switching devices" and "switches" are used interchangeably.~~ Any mechanical switching device may be designated according to the medium in which its contacts open and close, e.g. air, SF<sub>6</sub> ("sulphur hexafluoride"), oil.

[SOURCE: IEC 60050-441:1984, 441-14-02]

##### 3.1.2

##### **conductive part**

part which is capable of conducting current although it may not necessarily be used for carrying service current

[SOURCE: IEC 60050-441:1984, 441-11-09]

##### 3.1.3

##### **live part**

~~conductor or~~ conductive part intended to be energized under normal ~~operation~~ operating conditions, including the neutral conductor and mid-point conductor, but ~~by convention not~~ excluding the PEN conductor, PEM conductor and PEL conductor

Note 1 to entry: ~~For appliance switches, "live part" implies a risk of electric shock.~~

Note 2 to entry: ~~Unless otherwise specified, parts connected to a SELV supply or equal to or less than 24 V are not considered to be live parts.~~

[SOURCE: IEC 60050-195:2021, 195-02-19, modified – The domain <in electrical installations and equipment> has been removed.]

##### 3.1.4

##### **pole of a ~~switch~~ switching device**

portion of a switching device associated exclusively with one electrically separated conducting path of its main circuit and excluding those portions which provide a means for mounting and operating all poles together

Note 1 to entry: A ~~switch~~ switching device is called "single pole" if it has only one pole. If it has more than one pole, it may be called "multipole" (two-pole, three-pole, etc.) provided that the poles are coupled in such a manner as to operate together.

[SOURCE: IEC 60050-441:1984, 441-15-01, ~~modified – Pole of a switching device replaced by pole of a switch~~]

##### 3.1.5

##### **detachable part**

part which is removable without the use of a tool when the switch is mounted as in normal use

**3.1.6****tool**

screwdriver, ~~coin~~, or any other object which may be used to operate a nut, a screw or a similar part

**3.1.7****normal use**

use of the switch for the purpose for which it was made and declared

**3.1.8****unique type reference****UT**

identification marking on a switch such that by quoting it in full to the switch manufacturer a unique switch model can be identified

Note 1 to entry: This note applies to the French language only.

**3.1.9****common type reference****CT**

identification marking on a switch which does not require any further specific information additional to that provided by the marking requirements of this document for selection, installation and use in accordance with this document

~~Note 1 to entry: This note applies to the French language only.~~

**3.1.10****cover****cover plate****~~protective cover~~**

cover made of insulating material, used to cover live parts in order to avoid accidental electric contact and which is accessible when the switch is mounted as in normal use ~~but which can be removed with the aid of a tool~~

**3.1.11****signal indicator**

device associated with a switch to indicate the circuit state visually

~~Note 1 to entry: The device may or may not be controlled by the switch.~~

**3.1.12****unprepared conductor**

conductor which has been cut and the insulation of which has been removed for insertion into a terminal

Note 1 to entry: A conductor the shape of which is arranged for introduction into a terminal or the strands of which are twisted to consolidate the end is considered as an unprepared conductor.

[SOURCE: IEC 60050-442:1998, 442-01-26]

**3.1.13****prepared conductor**

conductor the end of which is fitted with an attachment such as eyelet, sleeve or cable lug

[SOURCE: IEC 60050-442:1998, 442-01-27]

**3.1.14****polarity reversal**

change of the polarity on the terminals connected to the load by a switching action