

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

**Interrupteurs pour appareils –
Partie 2-5: Règles particulières pour les sélecteurs**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SWITCHES FOR APPLIANCES –

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

FOREWORD

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International Standard IEC 61058-2-5 has been prepared by subcommittee 23J: Switches for appliances, of IEC technical committee 23: Electrical accessories.

This second edition cancels and replaces the first edition published in 1994 and constitutes a technical revision. The main changes from the first edition are as follows:

- scope;
- abnormal operation and fault conditions for electronic switches;
- components for electronic switches;
- EMC requirements.

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

CDV	Report on voting
23J/327/CDV	23J/338/RVC

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

This standard is to be read in conjunction with the IEC 61058-1:2000, *Switches for appliances – Part 1: General requirements*, and its amendments 1 (2001) and 2 (2007).

This Part 2-5 supplements or modifies the corresponding clauses in IEC 61058-1, so as to convert that publication into the IEC standard: *Particular requirements for change-over selectors*.

When a particular subclause of Part 1 is not mentioned in this Part 2-5, that subclause applies as far as reasonable. Where this standard states “addition”, “modification” or “replacement”, the relevant text of Part 1 is to be adapted accordingly.

In this standard:

- 1) the following print types are used:
 - requirements proper: in roman type;
 - *test specifications: in italic type;*
 - notes/explanatory matters: in small roman type.
- 2) subclauses, notes, figures and tables which are additional to those in Part 1 are numbered starting from 101. Annexes which are additional to those in Part 1 are lettered AA, BB, etc.

A list of all the parts in the IEC 61058 series, under the general title *Switches for appliances*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability 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.

SWITCHES FOR APPLIANCES –

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

1 Scope

Replacement:

1.1 This International Standard applies to change-over selectors (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 change-over selectors 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.

Change-over selectors 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 change-over selectors may be combined with mechanical change-over selectors giving full disconnection or micro-disconnection.

NOTE 2 Electronic change-over selectors 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 change-over selectors 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 change-over selectors.

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

1.2 This standard applies to change-over selectors intended to be incorporated in, on or with an appliance.

1.3 This standard also applies to change-over selectors incorporating electronic devices.

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable except as follows:

Addition:

**3.3.101
change-over selector**

a device designed to carry, but not to make or break, current, used for changing the connections of one or more electric circuits.

4 General requirements

This clause of Part 1 is applicable.

5 General notes on tests

This clause of Part 1 is applicable except as follows:

5.5.1 to 5.5.3 are not applicable.

Addition:

5.5.101 For the tests of Clauses 13 to 18, specimens Nos. 3 to 5 are used.

6 Rating

This clause of Part 1 is applicable.

7 Classification

This clause of Part 1 is applicable except as follows:

7.1.2 is not applicable.

Addition:

7.1.4.101 - 50 operating cycles;

7.1.7.101 - locked change-over selector;

7.1.7.102 - unlocked change-over selector;

7.1.7.103 - change-over selector actuated with a tool.

NOTE 101 Complex actuation of the actuating member (e.g. by the subsequent actuation in at least two different directions to complete the operation of the switch) is regarded as being a locking means.

8 Marking and documentation

This clause of Part 1 is applicable except as follows:

In Table 3, items Nos. 4.5 to 4.7 and 4.16 to 4.17 are not applicable.

Addition:

Table 101 – Change-over selector information

No.	Characteristic of change-over selector	Subclause	Means of information	
			Common type reference C.T.	Unique type reference U.T.
101	TYPE OF CHANGE-OVER SELECTOR			
101.1	Symbol for change-over selector		Ma	Do

8.3 *Addition:*

Symbol for change-over selector, given as a box around the symbol for the number of operating cycles

1E3

Addition:

8.101 The different positions of the actuating member shall be clearly marked.

Compliance is checked by inspection.

9 Protection against electric shock

This clause of Part 1 is applicable.

10 Provision for earthing

This clause of Part 1 is applicable.

11 Terminals and terminations

This clause of Part 1 is applicable.

12 Construction

This clause of Part 1 is applicable except as follows:

12.2.1 *Addition at the end of Subclause 12.2.1:*

The locking means for the actuating member shall be fixed in such a way that it cannot be displaced or removed, except by use of a tool.

Addition:

12.2.101 A change-over selector shall be capable of carrying specified rated currents, and also carrying for a specified time currents under specified abnormal circuit conditions, such as those of short circuit.

13 Mechanism

This clause of Part 1 is applicable except as follows:

13.1 is not applicable to change-over selectors classified according to 7.1.7.101 and 7.1.7.103.

14 Protection against solid foreign objects, ingress of, water, and humid conditions

This clause of Part 1 is applicable.

15 Insulation resistance and dielectric strength

This clause of Part 1 is applicable.

16 Heating

This clause of Part 1 is applicable except as follows:

For the test of Subclause 16.2.2 item j), the specimens are not subjected to the 20 operating cycles.

17 Endurance

This clause of Part 1 is applicable except as follows:

17.2.1 and 17.2.3.4.1 to 17.2.4.9 are not applicable.

Addition:

17.101 Mechanical endurance tests

Change-over selectors classified according to 7.1.4.1 to 7.1.4.6 are submitted to a mechanical endurance test. The thermal and mechanical conditions are according to 17.2.2 and 17.2.3. During the test no electrical load is applied to the change-over selectors.

For change-over selectors with locking means (classified according to 7.1.7.101), the locking mechanism is also submitted to the mechanical endurance test. This test, however, may be made separately, and separate test specimens may be used.

Change-over selectors classified according to 7.1.4.7, 7.1.4.8 and 7.1.4.101 are submitted to a mechanical endurance test, and following this to a temperature cycling test according to 11.1.1.3.4.

After the tests, the switch is deemed to comply if the conditions according to 17.2.5 are satisfied.

NOTE 101 For change-over selectors with screwless terminals, this test is carried out during the tests of 11.1.1.3.4.

17.102 Abnormal operation

Unlocked change-over selectors (classified according to 7.1.7.102) shall have sufficient switching capacity under abnormal operation.

For unlocked change-over selectors intended for both a.c. and d.c., compliance is checked by subjecting one set of test specimens to 10 cycles of operation at rated load having a $\cos \varphi = 0,6$, and another set of test specimens to 10 cycles of operation at d.c. rated non inductive load. Other change-over selectors are tested with the relevant nature of supply.

The unlocked change-over selectors are actuated by hand at an ambient temperature of $25\text{ °C} \pm 10\text{ °C}$

After the test, the switch is deemed to comply if

- all actions function as declared;
- the temperature rise at the terminals does not exceed 55 K when tested in accordance with 16.2, with the exception that the temperature rise test at the terminals is carried out at rated current.

18 Mechanical strength

This clause of Part 1 is applicable.

19 Screws, current-carrying parts and connections

This clause of Part 1 is applicable.

20 Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies

This clause of Part 1 is applicable.

21 Resistance to heat and fire

This clause of Part 1 is applicable.

22 Resistance to rusting

This clause of Part 1 is applicable.

23 Abnormal operation and fault conditions for electronic switches

This clause of Part 1 is applicable.

24 Components for electronic switches

This clause of Part 1 is applicable.