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Edition 4.0 2024-03
REDLINE VERSION

INTERNATIONAL STANDARD

colour inside

Switches for household and similar fixed electrical installations – Part 2-2: Particular requirements – Electromagnetic remote-control switches (RCS)



IEC 60669-2-2:2024-03 RLV(en)



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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SWITCHES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 2-2: Particular requirements – Electromagnetic remote-control switches (RCS)

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 60669-2-2:2006. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 60669-2-2 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2006. This edition constitutes a technical revision.

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

a) Revision of the present edition with reference to IEC 60669-1:2017 (Edition 4);
b) Introduction of a revision to Annex E "Additional requirements and tests for switches intended to be used at a temperature lower than −5 °C".

The text of this International Standard is based on the following documents:

Draft	Report on voting
23B/1486/FDIS	23B/1500/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. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

This part of IEC 60669 is to be used in conjunction with IEC 60669-1:2017. It lists the changes necessary to convert that standard into a specific standard for electromagnetic remote-control switches.

When a particular subclause of IEC 60669-1:2017 is not mentioned in this document, that subclause applies as far as reasonable.

In this document, the following print types are used:

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

Subclauses, figures or tables or notes which are additional to those in IEC 60669-1:2017 are numbered starting from 101.

A list of all parts of IEC 60669 series, under the general title *Switches for household and similar fixed electrical installations*, can be found on the IEC website.

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, or
- revised.

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SWITCHES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 2-2: Particular requirements – Electromagnetic remote-control switches (RCS)

1 Scope

IEC 60669-1:2017, Clause 1 is applicable except as follows:

Replacement of the first ~~sentence~~ paragraph with the following:

This part of IEC 60669 applies to electromagnetic remote control switches (hereinafter referred to as electromagnetic RCS) with a rated voltage not exceeding 440 V AC and a rated current not exceeding 63 A, intended for household and similar fixed electrical installations, either indoors or outdoors. For the control circuit, the rated control voltage does not exceed 440 V AC or 220 V DC.

The RCS coil ~~may or may not~~ can be either permanently energized or not permanently energized.

Electronic RCS are within the scope of IEC 60669-2-1 but not of this document.

RCS including only passive components such as resistors, capacitors, positive temperature coefficient (PTC) and negative temperature coefficient (NTC) components and printed ~~wiring~~ circuit boards are not considered to be electronic RCS.

~~Contactors are not covered by this standard.~~

Electromechanical contactors for household and similar purposes are within the scope of IEC 61095.

2 Normative references

IEC 60669-1:2017, Clause 2 is applicable with the following additions:

IEC 60085:~~2004~~2007, *Electrical insulation – Thermal ~~classification~~ evaluation and designation*

IEC 60317 (all parts), *Specifications for particular types of winding wires*

IEC 60445:~~1999~~2021, *Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals ~~and of terminations of certain designated conductors, including general rules for an alphanumeric system~~, conductor terminations and conductors*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

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

IEC 60669-1:2017, *Switches for household and similar fixed electrical installations – Part 1: General requirements*

~~IEC 60669-2-1:2002, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches*~~

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

IEC 61558-2-6:~~1997~~2021, *Safety of ~~power~~ transformers, reactors, power supply units and ~~similar~~ combinations thereof – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers for general ~~use~~ applications*

3 Terms and definitions

IEC 60669-1:2017, Clause 3 is applicable with the following additions:

3.~~17~~11
rated voltage

Addition of the following note:

Note 101 to entry: This definition is ~~only~~ applicable to the switching circuit only.

3.~~18~~12
rated current

Addition of the following note:

Note 101 to entry: This definition is ~~only~~ applicable to the switching circuit only.

Addition of the following new ~~definitions~~ terminological entries:

3.101
remote control switch
RCS
switch intended to be operated from a distance

3.101.1
electromagnetic RCS
RCS provided with a coil which is operated by means of impulses or which ~~may~~ can be permanently energized by means of a control circuit

3.101.2
electronic RCS
RCS containing electronic component(s)

3.102
rated control voltage
voltage assigned to the control circuit by the manufacturer

Note 101 to entry: The rated control voltage is generally the operating voltage of the electromagnetic control coil.

3.103
switching circuit
circuit which contains the parts which allow the rated current to flow through the RCS

3.104
control circuit
circuit which includes electrical parts to actuate the switching mechanism

3.105
control mechanism
mechanism which includes all the parts which are intended for the operation of the RCS

[SOURCE: IEC 60050-442:1998, 442-04-28, modified – the term "switch" has been replaced by "RCS".]

3.106
incorporated hand-operated device
device which allows the switching circuit to be operated, directly or indirectly

Note 101 to entry: An incorporated hand-operated device is not intended for the normal operation of the RCS.

~~**3.107**~~
~~**latching RCS**~~
~~RCS which is mechanically locked in either of the two positions, having a separate coil for each position~~

3.~~108~~107
disconnectable RCS
RCS ~~including~~ consisting of two parts, the first being used as a base and including the terminals, the other being removable and including the switching and the control circuits, the two parts being resiliently connected together using a means which allows joining and/or separating with or without the use of a tool

3.~~109~~108
rated control current
current required for initiation of the RCS, assigned to the current coil in the control circuit by the manufacturer (only for an RCS provided with a current sensitive coil)

3.~~110~~109
bistable RCS
RCS containing a control mechanism which, when not initiated electrically or actuated mechanically, remains stable in its operating position and will change its operating position on initiation or actuation

3.~~111~~110
monostable RCS
RCS containing a control mechanism which, on electrical initiation or mechanical actuation, changes the operating position of the switch which remains in this condition while the RCS is initiated or actuated, and returns to the position prior to initiation or actuation of the RCS after initiation or actuation is discontinued

3.~~112~~111
priority RCS
RCS used to operate directly or indirectly a first load circuit or group of load circuits the use of which at times can be dispensed with, and where the control circuit of the RCS is influenced by or connected to a second circuit or group of circuits (priority circuits or circuits) which when energized will thus initiate the control circuit of the RCS to de-energize the first load circuit or circuits for the time during which the second circuit or group of circuits is energized

Note ~~1~~ 101 to entry: The RCS may have a means for adjusting the sensitivity of the RCS control circuit to initiate the RCS depending on the total load or current delivered to any part of the circuits (priority switch with current coil) or be sensitive to the voltage (priority switch with voltage coil) applied to the second load or group of loads.

Note ~~2~~ 102 to entry: These devices are used to limit the total current into a home installation by disconnecting/connecting certain load circuits in the installation while leaving others (the priority circuits) connected.

3.~~113~~112
sequentially operated RCS
RCS which includes several switching or reversing contacts generally operated by means of a cam allowing different circuit combinations by successive impulses

Note 101 to entry: The number of impulses is given according to the number of lobes of the cam.

4 General requirements

IEC 60669-1:2017, Clause 4 is applicable with the following addition:

Addition after the first paragraph:

The operation of an RCS shall not be impaired when it is mounted at an angle deviating by not more than 5° from the specified position of use.

5 General ~~notes~~ remarks on tests

IEC 60669-1:2017, Clause 5 is applicable with the following additions:

~~**5.4** *Addition after the last paragraph:*~~

~~*For the tests of clause 101, three additional specimens are necessary.*~~

Addition to Table 1:

Table 1 – Number of specimens needed for the tests

Clauses and subclauses	Number of specimens	Number of additional specimens for dual current rating
101 Abnormal operation of the control circuit	PQR	

Addition of the following new subclause:

5.101 Incorporated hand-operated device

If an RCS is provided with an incorporated hand-operated device, it shall be tested as specified in Clause 19.

~~NOTE 1~~ *During the making and breaking capacity tests and the normal operation tests, the application of the voltage to the RCS coil always at the same phase angle ~~is to~~ should be avoided, as this application ~~may~~ can give misleading results.*

~~NOTE 2~~ *Precautions should be taken when using combinations equipped with synchronous motors and devices having similar operating characteristics.*

6 Ratings

IEC 60669-1:2017, Clause 6 is applicable except as follows: