AS 60669.2.1:2020

Australian STANDARD®

Switches for household and similar fixed electrical installations

Part 2.1: Particular requirements — Electronic switches (IEC 60669-2-1:2015, MOD)

STANDARDS Australia

AS 60669.2.1:2020

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The following are represented on Committee EL-004:

Australian Chamber of Commerce and Industry
Australian Industry Group
Consumer Electronics Suppliers Association
Consumers Federation of Australia
Electrical Compliance Testing Association of Australia
Electrical Regulatory Authorities Council
Engineers Australia
Joint Accreditation System of Australia and New Zealand
NSW Fair Trading
Plastics Industry Pipe Association of Australia

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First published as AS/NZS 60669.2.1:2013.
Revised and redesignated as AS 60669.2.1:2020.

Preface

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-004, Electrical Accessories, to supersede AS/NZS 60669.2.1:2013, *Switches for household and similar fixed electrical installations Part 2.1: Particular requirements — Electronic switches (IEC 60669-2-1, Ed.4.1 (2009) MOD).*

AS/NZS 60669.2.1:2013 will also remain current for 24 months from the date of publication of this Standard and after this time it will be superseded by AS 60669.2.1:2020. Regulatory authorities that reference this Standard in regulation may apply these requirements at a different time. Users of this Standard should consult with these authorities to confirm their requirements.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide electrical industries with requirements for electronic switches, intended for household and similar fixed electrical installations either indoors or outdoors.

This Standard is an adoption with national modifications and has been reproduced from IEC 60669-2-1:2002 +AMD1:2008+AMD2:2015, (ED 4.2), *Switches for household and similar fixed electrical installations — Part 2-1: Particular requirements — Electronic switches*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source document.

Appendix ZZ lists the variations to IEC 60669-2-1:2002 for the application of this Standard in Australia.

This Standard is to be used in conjunction with AS/NZS 60669.1:2013, *Switches for household and similar fixed-electrical installations, Part 1: General requirements*, which provides general requirements on this subject.

This document is structured as follows:

(a) Preface.

(b) IEC 60669-2-1 (unedited from the contents page to the final clause of the source document).

(c) Appendix ZZ — Australian variations to the source document.

The variations listed in Appendix ZZ address issues including the following:

(i) M rating test for all switches marked as suitable for controlling motors.

(ii) Requirements for the fitting of field-installed insulation when required to comply with the requirements for IP protection, insulation resistance and high voltage.

The variations described in Appendix ZZ form the Australian variations for the purposes of the CB Scheme for recognition of testing to standards for safety of electrical equipment (the CB Scheme).

As this document has been reproduced from an International Standard, the following applies:

(A) In the source text "this part of IEC 60669-2" should read "this Australian Standard".

(B) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

SWITCHES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 2-1: Particular requirements – Electronic switches

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.

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DISCLAIMER
This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.

This Consolidated version of IEC 60669-2-1 bears the edition number 4.2. It consists of the fourth edition (2002-09) [documents 23B/668/FDIS and 23B/682/RVD], its amendment 1 (2008-10) [documents 23B/894/FDIS and 23B/907/RVD] and its amendment 2 (2015-03) [documents 23B/1175/FDIS and 23B/1183/RVD]. The technical content is identical to the base edition and its amendments.

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 60669-2-1 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

This part of IEC 60669-2 shall be used in conjunction with IEC 60669-1. It lists the changes necessary to convert that standard into a specific standard for electronic switches.

In this publication, the following print types are used:

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

Subclauses, figures, tables or notes which are additional to those in part 1 are numbered starting from 101.

Annex AA is for information only.

The committee has decided that the contents of the base publication and its amendments 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

SWITCHES FOR HOUSEHOLD AND SIMILAR FIXED ELECTRICAL INSTALLATIONS –

Part 2-1: Particular requirements – Electronic switches

1 Scope

This clause of part 1 applies except as follows.

Replacement:

This standard applies to electronic switches and to associated electronic extension units for household and similar fixed electrical installations either indoors or outdoors.

It applies to electronic switches for a.c. only, for the operation of lamp circuits and the control of the brightness of lamps (dimmers) as well as the control of the speed of motors (for example, those used in ventilating fans) and for other purposes (for example, heating controls), with a rated voltage not exceeding 250 V and a rated current not exceeding 16 A.

The operation and/or control as mentioned above are performed by a person via an actuating member, a sensing surface or a sensing unit, by means of touch, proximity, turn, optical, acoustic, thermal or any other influence.

This standard also applies to general purpose electronic switches with included automatic functions where the operation and/or the control is initiated by a change of a physical quantity, for example light, temperature, humidity, time, wind velocity, presence of persons, etc.

This standard also applies to boxes for electronic switches, with the exception of mounting boxes for flush-type electronic switches.

This standard also applies to electronic RCS and electronic TDS with a rated voltage not exceeding 440 V and a rated current not exceeding 25 A, intended for household and similar fixed electrical installations, either indoors or outdoors.

NOTE 1 Switches including only passive components such as resistors, capacitors, inductors, PTC and NTC components, varistors, printed wiring boards and connectors are not considered as electronic switches.

NOTE 2 Electronic switches may have control circuits with a.c. or d.c. rated control voltages.

Electronic switches complying with this standard are suitable for use at ambient temperature not normally exceeding 25 °C but occasionally reaching 35 °C.

In locations where special conditions prevail, such as in ships, vehicles and the like and in hazardous locations, for example, where explosions are liable to occur, special constructions may be required.

NOTE 3 This standard is not intended to cover devices which are designed to be incorporated in appliances or are intended to be delivered together with a specific appliance and which are within the scope of IEC 60730 or IEC 61058-1.

Examples of designs of electronic switches and functions are shown in annex AA.

NOTE 4 Electronic switches without a mechanical switch in the main circuit do not provide a “full off-state”. Therefore, the circuit on the load side should be considered to be live.