KOHTKINDLATE MAJAPIDAMIS- JA MUUDE TAOLISTE ELEKTRIPAIGALDISTE LÜLITID. OSA 1: ÜLDNÕUDED

Switches for household and similar fixed electrical installations - Part 1: General requirements

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 60669-1:2018 sisaldab Euroopa standardi EN 60669-1:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 60669-1:2018 consists of the English text of the European standard EN 60669-1:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.02.2018.	Date of Availability of the European standard is 16.02.2018.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 29.120.40

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60669-1

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Supersedes EN 60669-1:1999, EN 60669-1:1999/IS1:2009

English Version

Switches for household and similar fixed electrical installations - Part 1: General requirements (IEC 60669-1:2017 , modified)

Interrupteurs pour installations électriques fixes domestiques et analogues - Partie 1: Exigences générales (IEC 60669-1:2017 , modifiée)

Schalter für Haushalt und ähnliche ortsfeste elektrische Installationen - Teil 1: Allgemeine Anforderungen (IEC 60669-1:2017 , modifiziert)

This European Standard was approved by CENELEC on 2017-02-13. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN 60669-1:2018 E

European foreword

The text of document 23B/1235/FDIS, future edition 4 of IEC 60669-1, prepared by IEC/SC 23B "Plugs, socket-outlets and switches" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60669-1:2018.

A draft amendment, which covers common modifications to IEC 60669-1 (23B/1235/FDIS), was prepared by CLC/TC 23BX "Switches, boxes and enclosures for household and similar purposes, plugs and socket outlets for d.c. and for the charging of electrical vehicles including their connectors" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2018-08-16
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2019-02-16

EN 60669-1:2018 supersedes EN 60669-1:1999.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60669-1:2017 are prefixed “Z”.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive.

For the relationship with EU Directive see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60669-1:2017 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

1 Scope

Replace NOTE 2 by “Void”

2 Normative references

Replace the text of Clause 2 by:

NOTE Normative references to international publications are listed in Annex ZA (normative).

3 Terms and definitions

Add the following definitions:

3.Z1
surface-type switch
switch, which when mounted, projects wholly above the surface on which it is mounted

3.Z2
flush-type switch
switch mainly intended to be mounted in a flush-type box

3.Z3
semi flush-type switch
switch mainly intended to be mounted in a semi flush-type box

3.Z4
panel-type switch
switch mainly intended for mounting to a panel having an aperture through which the intended accessible surface of the switch protrudes

3.Z5
architrave-type switch
switch having a cover plate of such proportions that it may be accommodated within an architrave

3.Z6
live part
[IEV 442-01-40] conductor or conductive part intended to be energized in normal use, including a neutral conductor, but, by convention, not the combined protective and neutral conductor (PEN)

Note 1 to entry: This concept does not necessarily imply a risk of electric shock.

3.Z7
type test
test of one or more switches made to a certain design to show that the design meets certain specifications

3.Z8
routine test
test to which each individual switch is subjected during and/or after manufacture to ascertain whether it complies with certain criteria

3.Z9
switch without gap construction
switch having a semiconductor switching device which has no contact gap

6 Ratings

6.1 **Replace** all subclause by:

Preferred values of rated voltage are 230 V, 250 V, 400 V, or 440 V.

6.2 **Replace** Table 2 by:

Table 2 - Relationship between rated current of the switch and rated power of the SBL circuit

Rated current of the switch [A]	**Rated power of the SBL circuit** [W]
Up to and including 10	100
Above 10 up to and including 13	150
Above 13 up to and including 16	200
Above 16 up to and including 20	250

7 Classification

7.7 **Add** NOTE Z1 and renumber existing note as NOTE 1:

NOTE Z1 See Annex ZB for special national conditions.

8 Marking

8.1 **Replace** NOTE 4 and NOTE 5 by:

NOTE 4 See Annex ZB for special national conditions.

Convenor note: The relevant national committees should propose the exact text for Annex ZB, SNC related to the notes in this paragraph.

8.3 **Replace** NOTE 2 by:

NOTE 2 See Annex ZB for special national conditions.

10 Protection against electric shock

10.2 **Add** note after first paragraph:

NOTE See Annex ZB for special national conditions.

10.3.2 **Replace** “Cover or cover plate” by “covers, cover-plates and other parts of the enclosure”.

10.3.3 **Replace** “Cover or cover plate” by “covers, cover-plates and other parts of the enclosure”.

Add note:

NOTE See Annex ZB for special national conditions.

10.5 **Add** NOTE Z1 and renumber existing note as NOTE 1

NOTE Z1 See Annex ZB for special national conditions.

11 Provision for earthing

11.2 **Add** note:

NOTE See Annex ZC for A-deviations.

12 Terminals

12.2.5 **Replace** the text of index a in Table 6 by “Void”

Add at the end of the subclause NOTE Z1 and renumber existing note as NOTE 1:

NOTE Z1 See Annex ZB for special national conditions.

Renumber NOTE by NOTE 1

12.2.6 **Replace** NOTE 2 by:

NOTE 2 See Annex ZB for special national conditions.

13 Constructional requirements

13.15.2 **Replace** note by:

NOTE See Annex ZB for special national conditions.

15 Resistance to ageing, protection provided by enclosures of switches, and resistance to humidity

15.1 **Replace** in the 10th paragraph, the value “55 %” by “75 %”.

19 Normal operation

19.3 **Replace** Table 19 by:

Table 19 – Values for I_{peak} and I^2t

(A)	I_{peak} [A]	I^2t [A²s]	Rated power of the SBL circuit [W]
Up to and including 10	108	2,8	100
Above 10 up to and including 13	142	5,5	150
Above 13 up to and including 16	170	9	200
Above 16 up to and including 20	192	13	250

Delete the paragraph before Table 20.

Replace Table 20 by:

Table 20 – Calculated circuit parameters

Rated current (A)	230 V	
	R_2 [Ω]	C [μF]
Up to and including 10	1,9	125
Above 10 up to and including 13	1,25	180
Above 13 up to and including 16	0,95	240
Above 16 up to and including 20	0,8	310

20 Mechanical strenght

20.1 **Replace** the first dash by:

– for all types of switches and their dedicated boxes, where applicable……..20.2

Delete the third dashed item.

22 Screws, current-carrying parts and connections

22.1 **Delete** the second sentence of the second paragraph.

23 Creepage distances, clearances and distances through sealing compound

Add the following subclause after 23.2:

23.Z1 Surface-type switches shall not have bare current-carrying strips at the back.

Compliance is checked by inspection.

Add the following clause after Clause 26:

Z1 Electromagnetic fields (EMF) requirements

Electromagnetic field generated by switches covered by this part of the standard are considered negligible. Therefore, these requirements are deemed to be met without performing any test.

Annex A Additional requirements for switches having facilities for the outlet and retention of flexible cables

Add the following after Subclause 7.10

8 Marking

8.1 **Add** the following paragraph at the end of this subclause:

In addition for switches where a cord anchorage is intended to clamp effectively flexible cables other than those nominal cross-sectional areas appropriate to the rating of the switch as given in Table 2, then the minimum and maximum size for which the anchorage is provided may be marked in an area adjacent to the anchorage, e.g. “6 mm – 16 mm“ or “6 – 16“. This information shall be put on the switch and/or the packaging unit.

13 Construction requirements

13.Z1 **Add** at the end of the subclause:

For flexible cable outlet switches:
- it shall be clear how the reliefs from strain and the prevention of twisting is intended to be effected,
- the cord anchorage, or at least part of it, shall be integrated with or permanently fixed to one of the components parts of the switch,
- makeshift methods, such as tying the flexible cable in a knot or tying the ends with a string, shall not be used,
- cord anchorage shall be suitable for the different types of flexible cables for which they are intended.

Rewirable switches with earthing connection shall be designed with ample space for slack of the earthing conductors in such a way that, if the strain relief should fail, the connection of the earthing conductor is subjected to strain after the connection of current carrying conductors and that, in the case of excessive stresses, the earthing conductor will break after the current carrying conductors.

Annex D Additional requirements for insulation-piercing terminals

Change “informative” by “normative”

Annex E Additional requirements and tests for switches intended to be used at a temperature lower than −5 °C

Replace NOTE 4 by:

NOTE See Annex ZB for special national conditions.

Add the following Annex after Annex ZC:

Annex ZD
Routine test

(Under consideration)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

Publication	Year	Title	EN/HD	Year
IEC 60038 (mod)	2009	IEC standard voltages	EN 60038	2011
IEC 60068-2-75	2014	Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests	EN 60068-2-75	2014
IEC 60112	2003	Method for the determination of the proof and the comparative tracking indices of solid insulating materials	EN 60112	2003
+A1	2009		+A1	2009
IEC 60212	2010	Standard conditions for use prior to and during the testing of solid electrical insulating materials	EN 60212	2011
IEC 60227-5	2011	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V - Part 5: Flexible cables (cords)	-	-
IEC 60228	2004	Conductors of insulated cables	EN 60228 + corr. May	2005 2005
IEC 60245-4	2011	Rubber insulated cables - Rated voltages up to and including 450/750 V - Part 4: Cords and flexible cables	-	-
IEC 60417-DB	-	Graphical symbols for use on equipment	-	-
IEC 60529	1989	Degrees of protection provided by enclosures (IP Code)	EN 60529 + corr. May	1991 1993
+A1	1999		+A1	2000
+A2	2013		+A2	2013
IEC 60669-2-1 (mod)	2002	Switches for household and similar fixed electrical installations - Part 2-1: Particular requirements - Electronic switches	EN 60669-2-1 + corr. December	2004 2007
			+A12	2010
+A1 (mod)	2008		+A1	2009
+A2	2015		+A2	201X [1)]

[1)] To be published.

Publication	Year	Title	EN/HD	Year
IEC 60695-2-10	2000	Fire hazard testing - Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2001 [2)]
IEC 60695-2-11	2014	Fire hazard testing - Part 2-11: Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT)	EN 60695-2-11	2014
IEC 60998-1 (mod)	2002	Connecting devices for low-voltage circuits for household and similar purposes - Part 1: General requirements	EN 60998-1	2004
IEC 60998-2-1 (mod)	-	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-1: Particular requirements for connecting devices as separate entities with screw-type clamping units	EN 60998-2-1	-
IEC 60998-2-2	-	Connecting devices for low-voltage circuits for household and similar purposes - Part 2-2: Particular requirements for connecting devices as separate entities with screwless-type clamping units	EN 60998-2-2	-
IEC 60998-2-3	-	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	-
IEC 60998-2-4	-	Connecting devices for low voltage circuits for household and similar purposes - Part 2-4: Particular requirements for twist-on connecting devices	EN 60998-2-4	-
IEC 61032	1997	Protection of persons and equipment by enclosures - Probes for verification	EN 61032	1998
ISO 1456	2009	Metallic and other inorganic coatings - Electrodeposited coatings of nickel, nickel plus chromium, copper plus nickel and of copper plus nickel plus chromium	EN ISO 1456	2009
ISO 2081	2008	Metallic and other inorganic coatings - Electroplated coatings of zinc with supplementary treatments on iron or steel	EN ISO 2081	2008
ISO 2093	1986	Electroplated coatings of tin; Specification and test methods	-	-

[2)] Superseded by EN 60695-2-10:2013 (IEC 60695-2-10:2013).

Annex ZB
(normative)

Special national conditions

Special national condition: National characteristic or practice that cannot be changed over a long period, e.g. climatic conditions, electrical earthing conditions. If it affects harmonization, it forms part of the European Standard.

For the countries in which the relevant special national conditions apply these provisions are normative, for other countries they are informative.

Clause	Special national condition
7.7	**Belgium, Finland, Germany, Netherlands, Norway and Sweden**
	Design B is not used due to installation practice.
8.1	**United Kingdom**
	Add after the first paragraph:
	The marking of the type reference is not used.
	Germany
	Add at the index n:
	n) the symbol that electrotechnical expertise is required (see IEC 60417-6182) is to be placed on the packaging.
8.3	**United Kingdom**
	Add at the end:
	The marking of the type reference is not used.
10.2	**Norway**
	Add after the first paragraph:
	Due to the lack of an earthing conductor in many existing old buildings, accessories requiring earth connection cannot normally be used.

Clause	Special national condition

10.3.3 **Norway**

Add after the first paragraph:

Due to the lack of an earthing conductor in many existing old buildings, accessories requiring earth connection cannot normally be used.

10.5 **Norway**

Add after the second paragraph:

Due to the lack of an earthing conductor in many existing old buildings, accessories requiring earth connection cannot normally be used.

12.2.5 **Finland, Norway and Sweden**

Add at the end:

The test shall be repeated with rigid solid conductors in the case they exist in the relevant IEC standard, if the first test has been made with rigid stranded conductors.
In the case rigid stranded conductors do not exist, the test may be made with rigid solid conductors only.

12.2.6 **Finland, Norway and Sweden**

Add the following paragraph at the end of the subclause**:**

An additional test with one rigid solid conductor and one rigid stranded conductor with the same nominal cross-sectional area connected at the same time is required for terminals allowing the connection of two conductors.

13.15.2 **Denmark, Finland, Norway, Sweden and Switzerland**

This subclause is mandatory.

Annex E **Finland, Norway and Sweden**

This annex is normative.