

STN	Spínače pre elektrické inštalácie v domácnostiach a podobné pevné elektrické inštalácie. Časť 2-5: Osobitné požiadavky. Spínače a súvisiace príslušenstvo na použitie v bytových a domových elektronických systémoch (HBES).	STN EN 60669-2-5 35 4108
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Switches for household and similar fixed electrical installations - Part 2-5: Particular requirements - Switches and related accessories for use in home and building electronic systems (HBES)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 03/17

Obsahuje: EN 60669-2-5:2016, IEC 60669-2-5:2013

Oznámením tejto normy sa od 31.08.2020 ruší
STN EN 50428 (35 4108) z apríla 2006

124455

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2017
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60669-2-5

September 2016

ICS 29.120.40

Supersedes EN 50428:2005

English Version

Switches for household and similar fixed electrical installations -
Part 2-5: Particular requirements - Switches and related
accessories for use in home and building electronic systems
(HBES)
(IEC 60669-2-5:2013 , modified)

Interrupteurs pour installations électriques fixes
domestiques et analogues - Partie 2-5: Prescriptions
particulières - Interrupteurs et appareils associés pour
usage dans les systèmes électroniques des foyers
domestiques et bâtiments (HBES)
(IEC 60669-2-5:2013 , modifiée)

Schalter für Haushalt und ähnliche ortsfeste elektrische
Installationen - Teil 2-5: Besondere Anforderungen -
Schalter und ähnliches Installationsmaterial zur
Verwendung in elektronischer Systemtechnik für Heim und
Gebäude (ESHG)
(IEC 60669-2-5:2013 , modifiziert)

This European Standard was approved by CENELEC on 2015-08-31. 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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

European foreword

The text of document 23B/1110/FDIS, future edition 1 of IEC 60669-2-5, prepared by 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 60669-2-5:2016.

A draft amendment, which covers common modifications to IEC 60669-2-5:2013 (23B/1110/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 the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-03-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-08-31

This document supersedes EN 50428:2005.

This standard has to be used in conjunction with EN 60669-1:1999 and EN 60669-2-1:2004 and their amendments. It lists the additional changes necessary to convert it into the European Standard: *"Switches for household and similar fixed electrical installations - Collateral standard - Switches and related accessories for use in home and building electronic systems (HBES)"*.

When this standard states "addition", "modification" or "replacement", the relevant text of EN 60669-1:1999 or EN 60669-2-1:2004 and their amendments (hereinafter called Part 1 and Part 2-1 respectively) is to be adapted accordingly.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 201 are additional to those in Part 2-1;
- additional annexes to Part 1 are lettered AA, BB, etc.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 60669-2-5:2013 are prefixed "Z".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

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(s).

For the relationship with EU Directive(s), see informative Annexes ZZA, ZZB and ZZC, which are integral parts of this document.

Endorsement notice

The text of the International Standard IEC 60669-2-5:2013 was approved by CENELEC as a European Standard with agreed common modifications.

COMMON MODIFICATIONS

2 Normative references

Replace the text of Clause 2 by:

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

Add the text of the BIBLIOGRAPHY in Annex ZA.

10.202.2 Limitation of the touch current from the device to the dedicated HBES network

Replace the NOTE by:

NOTE When it is possible to touch the HBES network also during maintenance, the limitation of the summation of touch current has to be considered in accordance to EN 50491-3.

26 EMC requirements

26.1 This clause is applicable with the following modifications:

Replace the 6th paragraph, Note 1 and the 7th paragraph by:

For HBES switches using RF (Radio Frequency), the RF-requirements of ETSI EN 300 220-1, ETSI EN 300 220-2 and ETSI EN 301 489-3 apply.

For immunity, the requirements of EN 60669-2-1:2004, its Amendment 1:2009 and its Amendment 12:2010 apply in addition to 26.2.

Replace the 8th paragraph and Note 2 by :

For HBES switches using PL (power line), the emission requirements of EN 50065-1 apply.

For immunity, the requirements of Part 2-1 and in addition the requirements of EN 50065-2-1 or EN 50065-2-3, if applicable, may apply.

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050	series	International Electrotechnical Vocabulary (IEV)	-	-
IEC 60364-4-41 (mod)	-	Low-voltage electrical installations - Part 4-41: Protection for safety -	HD 60364-4-41	2007
-	-	Protection against electric shock	+ corrigendum Jul.	2007
IEC 60664-1	2007	Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests	EN 60664-1	2007
IEC 60664-3	-	Insulation coordination for equipment within low-voltage systems - Part 3: Use of coating, potting or moulding for protection against pollution	EN 60664-3	2003
IEC 60669-1 (mod)	1998	Switches for household and similar fixed-electrical installations -	EN 60669-1	1999
+ A1 (mod)	1999	Part 1: General requirements	+ A1	2002
+ A2 (mod)	2006		+ A2	2008
IEC 60669-2-1 (mod)	2002	Switches for household and similar fixed electrical installations -	EN 60669-2-1	2004
-	-	Part 2-1: Particular requirements - Electronic switches	+ corrigendum Dec.	2007
+ A1 (mod)	2008		+ A1	2009
-	-		+ A12	2010
IEC 60670-1 (mod)	-	Boxes and enclosures for electrical accessories for household and similar fixed electrical installations -	EN 60670-1	2005
-	-	Part 1: General requirements	+ corrigendum Nov.	2007
-	-		+ corrigendum Mar.	2010

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60715	-	Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations	EN 60715	2001
IEC 60990	-	Methods of measurement of touch current and protective conductor current	EN 60990	1999
IEC 61000-2-2	-	Electromagnetic compatibility (EMC) - Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	EN 61000-2-2	2002
IEC 61000-3-2	-	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	EN 61000-3-2	2006
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 ≤ 16 A per phase and not subject to conditional connection	EN 61000-3-3	2013
IEC 61000-4-2	-	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
IEC 61000-4-4	-	Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	2012
IEC 61000-4-5	-	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2006

EN 60669-2-5:2016

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61000-4-6	-	Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields	EN 61000-4-6	2014
IEC 61000-4-8	-	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8	2010
IEC 61000-4-11	-	Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	2004
IEC 61000-4-20	2010	Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides	EN 61000-4-20	2010
IEC 61058-1 (mod.)	2000	Switches for appliances -	EN 61058-1	2002 ¹⁾
+ A1	2001	Part 1: General requirements	-	-
+ A2	2007		+ A2	2008
IEC 61140	2001	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2002
IEC 61558-2-6	-	Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V - Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers	EN 61558-2-6	2009
CISPR 14	series	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus	EN 55014	series
CISPR 15	-	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment	EN 55015	2013
CISPR 22 (mod)	-	Information technology equipment - Radio disturbance characteristics -	EN 55022	2010
-	-	Limits and methods of measurement	+ AC	2011

1) EN 61058-1:2002 includes IEC 61058-1:2000/A1:2001 (not modified).

Annex ZB

(informative)

A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CENELEC national member.

This European Standard falls under Directives 2014/30/EU, 2014/35/EU and 2014/53/EU.

NOTE (from CEN/CENELEC IR Part 2:2015, 2.16) Where standards fall under EC Directives or Regulations, it is the view of the Commission of the European Communities (OJ No C 59, 1982-03-09) that the effect of the decision of the Court of Justice in case 815/79 Cremonini/Vrankovich (European Court Reports 1980, p. 3583) is that compliance with A-deviations is no longer mandatory and that the free movement of products complying with such a standard should not be restricted within the EC except under the safeguard procedure provided for in the relevant Directive or Regulation.

A-deviations in an EFTA-country are valid instead of the relevant provisions of the European Standard in that country until they have been removed.

<u>Clause</u>	<u>Deviation</u>
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10.201	Denmark (Heavy Current Regulations, Chapter 6)
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In Denmark PELV is not allowed in bath zones in residence buildings.

In Denmark protection against contacts is always required for SELV circuits in bath zones in residence buildings. Furthermore, the maximum allowed SELV voltage is 12 V a.c. or 30 V d.c. in these areas.

Annex ZZA

(informative)

Relationship between this European standard and the essential requirements of Directive 2014/30/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under a Commission standardisation request as regards harmonised standards in support of Directive 2014/30/EU relating to electromagnetic compatibility, “M/xxx” / “C(20xx) xxxx final”²⁾, to provide one voluntary means of conforming to essential requirements of Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

**Table ZZA.1 – Correspondence between this European standard and
Annex I of Directive 2014/30/EU [2014 OJ L96]**

Essential requirements of Directive 2014/30/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
All	Clause 26	—

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

2) Mandate not yet available.

Annex ZZB

(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European standard has been prepared under a Commission standardisation request relating to harmonised standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZB.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

**Table ZZB.1 – Correspondence between this European standard and
Annex I of Directive 2014/35/EU [2014 OJ L96]**

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
All	All except Clause 26	—

WARNING 1: Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2: Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

Annex ZZC
(informative)**Relationship between this European standard and the essential requirements
of Directive 2014/53/EU [2014 OJ L153] aimed to be covered**

This European standard has been prepared under a Commission standardisation request as regards radio equipment in support of Directive 2014/53/EU, M/536, to provide one voluntary means of conforming to essential requirements of Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [2014 OJ L153].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZC.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding essential requirements of that Directive, and associated EFTA regulations.

**Table ZZC.1 – Correspondence between this European Standard and
Article 3 of Directive 2014/53/EU [2014 OJ L153]**

Safety objectives of Directive 2014/53/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
3.1 a)	All except Clause 26	—
3.1 b)	Clause 26	
3.2	Clause 26	



IEC 60669-2-5

Edition 1.0 2013-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Switches for household and similar fixed electrical installations –
Part 2-5: Particular requirements – Switches and related accessories for use in
home and building electronic systems (HBES)**

**Interrupteurs pour installations électriques fixes domestiques et analogues –
Partie 2-5: Prescriptions particulières – Interrupteurs et appareils associés pour
usage dans les systèmes électroniques des foyers domestiques et bâtiments
(HBES)**



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IEC 60669-2-5

Edition 1.0 2013-10

INTERNATIONAL STANDARD

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INTERNATIONAL
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ICS 29.120.40

ISBN 978-2-8322-1152-6

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**SWITCHES FOR HOUSEHOLD AND
SIMILAR FIXED ELECTRICAL INSTALLATIONS –****Part 2-5: Particular requirements –
Switches and related accessories for use in home
and building electronic systems (HBES)**

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International Standard IEC 60669-2-5 has been prepared by subcommittee 23B: Plugs, socket-outlets and switches, of IEC technical committee 23: Electrical accessories.

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

FDIS	Report on voting
23B/1110/FDIS	23B/1129/RVD

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 part of IEC 60669 is partially based on IEC 60669-1:1998, its Amendment 1:1999 and Amendment 2:2006 and IEC 60669-2-1:2002 and its Amendment 1:2008. In cases where parts of these standards apply, this will be mentioned explicitly by a normative cross-reference describing the extent to which the referenced element (clause, subclause, figure, table, etc.) applies. Subclauses, figures, tables or notes which are additional to those in IEC 60669-1 and IEC 60669-2-1 and their amendments are numbered starting from 101 and 201 respectively, additional annexes are lettered AA, BB, etc.

This part of IEC 60669 lists the changes necessary to convert those standards into a specific standard for home and building electronic systems (HBES) switches and related accessories.

In this standard, the following print types are used:

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

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

The following differences exist in the countries indicated below.

- Clause 26: all CENELEC countries.

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.

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 2-5: Particular requirements – Switches and related accessories for use in home and building electronic systems (HBES)

1 Scope

This part of IEC 60669 applies to HBES switches with a working voltage not exceeding 250 V a.c. and a rated current up to and including 16 A for household and similar fixed electrical installations either indoors or outdoors and to associated electronic extension units.

It applies to:

- HBES switches 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 (e.g. those used in ventilating fans) and for other purposes (e.g. heating installations);
- sensors, actuators, switched-socket-outlets, associated electronic extension units, etc.

In the present standard the word "HBES switch" is applied to describe all kinds of HBES devices e.g. switches, sensors, actuators, switched-socket-outlets, associated electronic extension units, etc.

The operation and control are performed:

- intentionally by a person via an actuating member, a key, a card, etc., via a sensing surface or a sensing unit, by means of touch, proximity, turn, optical, acoustic, thermal;
- by physical means, e.g. light, temperature, humidity, time, wind velocity, presence of people;
- by any other influence;

and transmitted:

- by an electronic signal via several media, e.g. powerline (mains), twisted pair, optical fibre, radio frequency, infra-red, etc.

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

This part of IEC 60669 also applies to mounting boxes for HBES switches, with the exception of those for flush-type HBES switches which are covered by IEC 60670-1.

NOTE 1 In the following country flush mounted boxes are covered by both EN 60670-1 and BS 4662: UK

Functional safety aspects of HBES switches are not covered by this standard. Functional safety requirements are covered by the standards of the devices which are controlled by the HBES.

In locations where special conditions prevail, e.g. higher temperature, special constructions may be required.

NOTE 2 This standard is not intended to cover devices falling within the scope of IEC 60730.

NOTE 3 Within this Part 2-5, for any reference to IEC 60669-2-1 and its Amendment 1:2008, the term “electronic switches” is replaced by “HBES switches”.

NOTE 4 In the following country, HBES switches complying with this standard are suitable for use at ambient temperatures not normally exceeding 35 °C, but occasionally reaching 40 °C: CN.

2 Normative references

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.

IEC 60050 (all parts), *International Electrotechnical Vocabulary*, available at: <http://www.electropedia.org>

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60669-1:1998, *Switches for household and similar fixed-electrical installations – Part 1: General requirements*
Amendment 1:1998
Amendment 2:2006

IEC 60669-2-1:2002, *Switches for household and similar fixed electrical installations – Part 2-1: Particular requirements – Electronic switches*
Amendment 1:2008

IEC 60364-4-41, *Low-voltage electrical installations– Part 4-41: Protection for safety – Protection against electric shock*

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

IEC 60670-1, *Boxes and enclosures for electrical accessories for household and similar fixed electrical installations – Part 1: General requirements*

IEC 60715, *Dimensions of low-voltage switchgear and controlgear – Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations*

IEC 60990, *Methods of measurement of touch current and protective conductor current*

IEC 61000-2-2, *Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current $\leq 16\text{A}$ 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 $\leq 16\text{ A}$ per phase and not subject to conditional connection*

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 61000-4-6, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

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*

IEC 61000-4-20:2010, *Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides*

IEC 61058-1, *Switches for appliances – Part 1: General requirements*

Amendment 1:2000

Amendment 2:2007

IEC 61140:2001, *Protection against electric shock – Common aspects for installation and equipment*

IEC 61558-2-6, *Safety of transformers, reactors, power supply units and similar products for supply voltages up to 1 100 V – Part 2-6: Particular requirements and tests for safety isolating transformers and power supply units incorporating safety isolating transformers*

CISPR 14 (all parts), *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus*

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

CISPR 22, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN