



SLOVENSKI STANDARD

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Nizkonapetostne stikalne in krmilne naprave - 5-1. del: Krmilne naprave in stikalni elementi - Elektromehanske krmilne naprave (IEC 60947-5-1:2016)

Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices (IEC 60947-5-1:2016)

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Appareillage à basse tension - Partie 5-1: Appareils et éléments de commutation pour circuits de commande - Appareils électromécaniques pour circuits de commande (IEC 60947-5-1:2016)

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ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear
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Supersedes EN 60947-5-1:2004

English Version

**Low-voltage switchgear and controlgear - Part 5-1: Control
circuit devices and switching elements - Electromechanical
control circuit devices
(IEC 60947-5-1:2016 + COR1:2016)**

Appareillage à basse tension - Partie 5-1: Appareils et
éléments de commutation pour circuits de commande -
Appareils électromécaniques pour circuits de commande
(IEC 60947-5-1:2016 + COR1:2016)

Niederspannungsschaltgeräte - Teil 5-1: Steuergeräte und
Schaltelemente - Elektromechanische Steuergeräte
(IEC 60947-5-1:2016 + COR1:2016)

This European Standard was approved by CENELEC on 2016-06-29. 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.

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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

EN 60947-5-1:2017**European foreword**

The text of document 121A/62/FDIS, future edition 4 of IEC 60947-5-1, prepared by SC 121A "Low-voltage switchgear and controlgear" of IEC/TC 121 "Switchgear and controlgear and their assemblies for low voltage" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60947-5-1:2017.

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) 2018-06-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-12-15

This document supersedes EN 60947-5-1:2004.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC 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 Directives.

For the relationship with EU Directives see informative Annexes ZZA and ZZB, which are integral parts of this document.

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Endorsement notice

The text of the International Standard IEC 60947-5-1:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60255 (series)	NOTE	Harmonized as EN 60255 (series).
IEC 61000 (series)	NOTE	Harmonized as EN 61000 (series).
IEC 61810 (series)	NOTE	Harmonized as EN 61810 (series).

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 60068-2-6	2007	Environmental testing -- Part 2-6: Tests	EN 60068-2-6	2008
		Test Fc: Vibration (sinusoidal)		
IEC 60068-2-14	2009	Environmental testing -- Part 2-14: Tests	EN 60068-2-14	2009
		Test N: Change of temperature		
IEC 60068-2-27	2008	Environmental testing -- Part 2-27: Tests	EN 60068-2-27	2009
		Test Ea and guidance: Shock		
IEC 60068-2-30	2005	Environmental testing -- Part 2-30: Tests	EN 60068-2-30	2005
		Test Db: Damp heat, cyclic (12 h + 12 h cycle)		
IEC 60073	2002	Basic and safety principles for man-machine interface, marking and identification - Coding principles for indicators and actuators	EN 60073	2002
IEC 60417-DB	2002	Graphical symbols for use on equipment	-	-
IEC 60617-DB	2012	Graphical symbols for diagrams	-	-
IEC 60695-2-10	2013	Fire hazard testing -- Part 2-10: Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure	EN 60695-2-10	2013
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 60695-2-12	2010	Fire hazard testing -- Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials	EN 60695-2-12	2010
+ A1	2014		+ A1	2014
IEC 60947-1	2007	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1	2007
+ A1	2010		+ A1	2011
+ A2	2014		+ A2	2014
IEC 60947-4-1	2009	Low-voltage switchgear and controlgear Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters	EN 60947-4-1	2010

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+ A1	2012		+ A1	2012
IEC 60947-5-5	1997	Low-voltage switchgear and controlgear --EN 60947-5-5 Part 5-5: Control circuit devices and switching elements - Electrical emergency stop device with mechanical latching function		1997
+ A1	2005		+ A1	2005
-	-		+ A11	2013
+ A2	2016		+ A2	2016
IEC 60999-1	1999	Connecting devices - Electrical copper conductors - Safety requirements for screw-type and screwless-type clamping units -- Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included)	EN 60999-1	2000
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	2014
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	2008	Electromagnetic compatibility (EMC) -- Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3	2006	Electromagnetic compatibility (EMC) -- Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2006
+ A1	2007		+ A1	2008
+ A2	2010		+ A2	2010
IEC 61000-4-4	2012	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	2014	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	2014
IEC 61000-4-6	2013	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	2009	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	2004	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 61000-4-13	2002	Electromagnetic compatibility (EMC) -- Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signaling at a.c. power port, low frequency immunity tests	EN 61000-4-13	2002
+ A1	2009		+ A1	2009
+ A2	2015		+ A2	2016
IEC 61140	2001	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2002
+ A1 (mod)	2004		+ A1	2006
CIE S 004/E	2001	Colours of light signals	-	-
CISPR 11 (mod)	2015	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement	EN 55011	2016

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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's standardisation request C(2016) 7641 final of 30.11.2016¹, ('M/552') as regards harmonised standards in support of Directive 2014/30/EU relating to electromagnetic compatibility, 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
Electromagnetic disturbances (emissions), Article 6 and Annex I 1.(a)	7.3.1, 7.3.3, 8.4.1, 8.4.3, 8.4.4	
Electromagnetic immunity to electromagnetic disturbances (immunity), Article 6 and Annex I 1.(b)	7.3.1, 7.3.2, 8.4.1, 8.4.2, 8.4.4	Full coverage of requirements for conducted and radiated disturbances in the range 150 kHz to 2,7 GHz

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.

¹ COMMISSION IMPLEMENTING DECISION C(2016) 7641 final of 30.11.2016 on a standardisation request to the European Committee for Standardisation, to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards harmonised standards in support 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.

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's 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/note
1 a)	1, 2, 3, 4, 5, Annex F, Annex K, Annex L, Annex M	
1 b)	1, 2, 3, 4, 5, 6, 8.2, 8.3, Annex E, Annex H, Annex J, Annex K, Annex L, Annex M	
1 c)	1, 2, 3, 4, 5 Also refer to 2 a) to 2 d) and 3 a) to 3 c) in this table	
2 a)	1, 2, 3, 4, 5.3, 7.1, 7.2, 7.3, 8.1, 8.3, Annex F	
2 b)	1, 2, 3, 4, 5.3, 7.1, 7.2, 8.2, 8.3, Annex H, Annex J	This standard does not deal with any specific requirements on acoustic noise and optical radiation.
2 c)	1, 2, 3, 4, 6, 7.1, 8.1, 8.2, 8.3, 8.4, Annex C, Annex J	
2 d)	1, 2, 3, 4, 5.3, 6, 7.1, 7.2, 8.1, 8.3, Annex F, Annex G, Annex J, Annex K, Annex L	
3 a)	1, 2, 3, 4, 6, 7, 8.1, 8.2, Annex C, Annex G, Annex J	

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3 b)	1, 2, 3, 4, 8.1	
3 c)	1, 2, 3, 4, 6, 7.1, 7.2, 8.2, 8.3, Annex H	

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Low-voltage switchgear and controlgear –
Part 5-1: Control circuit devices and switching elements – Electromechanical
control circuit devices**

**Appareillage à basse tension –
Partie 5-1: Appareils et éléments de commutation pour circuits de commande –
Appareils électromécaniques pour circuits de commande**

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