BS EN IEC 60947-5-2:2020

BSI Standards Publication

Low-voltage switchgear and controlgear

Part 5-2: Control circuit devices and switching elements — Proximity switches

bsi.

This is a preview. Click here to purchase the full publication.

National foreword

This British Standard is the UK implementation of EN IEC 60947-5-2:2020. It is identical to IEC 60947-5-2:2019. It supersedes BS EN 60947-5-2:2007+A1:2012, which will be withdrawn on 27 March 2023.

The UK participation in its preparation was entrusted to Technical Committee PEL/121/1, Low voltage switchgear and controlgear.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2020
Published by BSI Standards Limited 2020

ISBN 978 0 580 96698 9

ICS 29.120.40; 29.130.20

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2020.

Amendments/corrigenda issued since publication

Date	Text affected

This is a preview. Click here to purchase the full publication.

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60947-5-2

March 2020

ICS 29.120.40; 29.130.20

Supersedes EN 60947-5-2:2007 and all of its amendments and corrigenda (if any)

English Version

Low-voltage switchgear and controlgear - Part 5-2: Control circuit devices and switching elements - Proximity switches (IEC 60947-5-2:2019)

Appareillage à basse tension - Partie 5-2: Appareils et éléments de commutation pour circuits de commande - Détecteurs de proximité (IEC 60947-5-2:2019)

Niederspannungsschaltgeräte - Teil 5-2: Steuergeräte und Schaltelemente - Näherungsschalter (IEC 60947-5-2:2019)

This European Standard was approved by CENELEC on 2019-11-22. 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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, 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

© 2020 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Ref. No. EN IEC 60947-5-2:2020 E

This is a preview. Click here to purchase the full publication.

European foreword

The text of document 121A/313/FDIS, future edition 4 of IEC 60947-5-2, 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 IEC 60947-5-2:2020.

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)	2020-09-27
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2023-03-27

This document supersedes EN 60947-5-2:2007 and all of its amendments and corrigenda (if any).

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 Directive(s).

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

Endorsement notice

The text of the International Standard IEC 60947-5-2:2019 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 60825 (series)	NOTE	Harmonized as EN 60825 (series)
IEC 61000-3-2:2018	NOTE	Harmonized as EN IEC 61000-3-2:2019 (not modified)
IEC 61000-3-3:2013	NOTE	Harmonized as EN 61000-3-3:2013 (not modified)
IEC 61000-3-3:2013/A1:2017	NOTE	Harmonized as EN 61000-3-3:2013/A1:2019 (not modified)
IEC 61076-2-101	NOTE	Harmonized as EN 61076-2-101
IEC 61076-2-104	NOTE	Harmonized as EN 61076-2-104
IEC 61076-2-105	NOTE	Harmonized as EN 61076-2-105
IEC 62471:2006	NOTE	Harmonized as EN 62471:2008 (modified)
IEC 62683-1:2017	NOTE	Harmonized as EN 62683-1:2017 (not modified)
ISO 7010	NOTE	Harmonized as EN ISO 7010

This is a preview. Click here to purchase the full publication.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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 – Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-14	2009	Environmental testing – Part 2-14: Tests – Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-27	2008	Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60068-2-30	2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	2005
IEC 60364	series	Low-voltage electrical installations	HD 60364	series
IEC 60445	2017	Basic and safety principles for man-machine interface, marking and identification – Identification of equipment terminals, conductor terminations and conductors	EN 60445	2017
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

This is a preview. Click here to purchase the full publication.

Publication	Year	Title	EN/HD	Year
IEC 60825-1	2014	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	2014
			+ AC	2017
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 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 61000-4-6	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
			+ AC	2015
IEC 61000-4-8	2009	Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EC 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
+ A1	2017		+ A1	2017
IEC 61000-4-13	2002	Electromagnetic compatibility (EMC) - Part 4-13: Testing and measurement techniques - Harmonics and interharmonics including mains signalling at a.c. power port, low frequency immunity tests	EN 61000-4-13	2002
+ A1	2009		+ A1	2009
+ A2	2015		+ A2	2016
IEC 61076-2	series	Connectors for electronic equipment – Product requirements – Part 2: Circular connectors	EN 61076-2	series
IEC 61140	-	Protection against electric shock - Common aspects for installation and equipment	EN 61140	2016

This is a preview. Click here to purchase the full publication.

Publication	Year	Title	EN/HD	Year
IEC 62443	series	Security for industrial automation and control systems	EN 62443	series
IEC 62471	series	Photobiological safety of lamps and lamp systems	EN 62471	series
IEC TR 62471-2	2009	Photobiological safety of lamps and lamp systems - Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety	-	-
CISPR 11 (mod)	2015	Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement	EN 55011	2016
+ A1	2016		+ A1	2017
IEC Guide 117	2010	Electrotechnical equipment - Temperatures of touchable hot surfaces	CLC Guide 29	2007

This is a preview. Click here to purchase the full publication.

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 the European Commission standardisation request C(2016) 7641 final of 30.11.2016[1], ('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 the Essential Requirements set out in Directive 2014/30/EU [2014 OJ L96]

Essential requirements of Directive 2014/30/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Annex I. 1(a) Electromagnetic disturbances	8.2.6.1, 8.2.6.3, 9.6.1, 9.6.3	
Annex I. 1(b) Electromagnetic immunity	8.2.6.1, 8.2.6.2, 9.6.1, 9.6.2	Full coverage of requirements for conducted and radiated disturbances in the range 150 kHz to 6 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.

This is a preview. Click here to purchase the full publication.

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, 5.3, 5.4, 6.1, 6.2, 6.3, 6.4, 7.1, 8.1, 8.2, 9.1, 9.2, 9.3, ANNEX B	
1 b)	1, 2, 3, 4, 5, 6.1, 6.2, 6.3, 7, 8.1, 8.2 ANNEX B	
1 c)	1, 2, 3, 4, 5, 6, 7, 8 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, 6.1, 8.1, 8.2, 8.4, 9.1, 9.2, 9.3, ANNEX B, ANNEX C	
2 b)	1, 2, 3, 4, 5.3, 5.4, 6.1, 6.3, 7.1, 8.1, 8.2, 9.2, 9.3	This document does not deal with any specific requirement on acoustic noise. Photobiological radiation risk (8.1) is covered by using the standard informed (EN 60825- 1/EN 62471 (all parts)).
2 c)	1, 2, 3, 4, 5, 6.4, 7, 8.1, 8.4, 9.1, ANNEX B, ANNEX C	

This is a preview. Click here to purchase the full publication.

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks/note
2 d)	1, 2, 3, 4, 5.3, 5.4, 6.1 7, 8.1, 8.2, 9.1, 9.2, 9.3, ANNEX B	
3 a)	1, 2, 3, 4, 5, 7, 8.4, 9.1, ANNEX B, ANNEX C	
3 b)	1, 2, 3, 4, 5, 8.1	In reference to the scope of this document the risk about biological/chemical effects and chemical stress (8.1) is not recognized and therefore not covered.
3 c)	1, 2, 3, 4, 5, 7.1, 8.1, 8.2, 9.3	

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.

This is a preview. Click here to purchase the full publication.

CONTENTS

This is a preview. Click here to purchase the full publication.