SLOVENSKI STANDARD
SIST EN IEC 60947-5-8:2021

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SIST EN 60947-5-8:2007

Nizkonapetostne stikalne naprave - 5-8. del: Krmilne naprave in stikalni elementi - Tripoložajna omogočilna stikala (IEC 60947-5-8:2020)

Low-voltage switchgear and controlgear - Part 5-8: Control circuit devices and switching elements - Three-position enabling switches (IEC 60947-5-8:2020)

Niederspannungsschaltgeräte - Teil 5-8: Steuergeräte und Schaltelemente - Drei-Stellungs-Zustimmschalter (IEC 60947-5-8:2020)

Appareillage à basse tension - Partie 5-8: Appareils et éléments de commutation pour circuit de commande - Interrupteurs de commande de validation à trois positions (IEC 60947-5-8:2020)

Ta slovenski standard je istoveten z: **EN IEC 60947-5-8:2021**

ICS:

29.130.20	Nizkonapetostne stikalne in krmilne naprave	Low voltage switchgear and controlgear

SIST EN IEC 60947-5-8:2021 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 60947-5-8

April 2021

ICS 29.130.20

Supersedes EN 60947-5-8:2006 and all of its amendments and corrigenda (if any)

English Version

Low-voltage switchgear and controlgear - Part 5-8: Control circuit devices and switching elements - Three-position enabling switches (IEC 60947-5-8:2020)

Appareillage à basse tension - Partie 5-8: Appareils et éléments de commutation pour circuits de commande - Interrupteurs de commande de validation à trois positions (IEC 60947-5-8:2020)

Niederspannungsschaltgeräte - Teil 5-8: Steuergeräte und Schaltelemente - Drei-Stellungs-Zustimmschalter (IEC 60947-5-8:2020)

This European Standard was approved by CENELEC on 2020-09-16. 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: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 121A/358/FDIS, future edition 2 of IEC 60947-5-8, 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 60947-5-8:2021.

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) 2021-10-02
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-04-02

This document supersedes EN 60947-5-8:2006 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 Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60947-5-8:2020 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 60204-1:2016	NOTE	Harmonized as EN 60204-1:2018 (modified)
IEC 60695-2-10:2013	NOTE	Harmonized as EN 60695-2-10:2013 (not modified)
IEC 60695-2-11:2014	NOTE	Harmonized as EN 60695-2-11:2014 (not modified)
IEC 60695-2-12:2010	NOTE	Harmonized as EN 60695-2-12:2010 (not modified)
IEC 60695-2-12:2010/A1:2014	NOTE	Harmonized as EN 60695-2-12:2010/A1:2014 (not modified)
IEC 60947-5-5:1997	NOTE	Harmonized as EN 60947-5-5:1997 (not modified)
IEC 60947-5-5:1997/A1:2005	NOTE	Harmonized as EN 60947-5-5:1997/A1:2005 (not modified)
IEC 60947-5-5:1997/A2:2016	NOTE	Harmonized as EN 60947-5-5:1997/A2:2017 (not modified)

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 60068-2-1	2007	Environmental testing - Part 2-1: Tests - Test A: Cold	EN 60068-2-1	2007
IEC 60068-2-2	2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat	EN 60068-2-2	2007
IEC 60068-2-6	2007	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	2008
IEC 60068-2-27	2008	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	2009
IEC 60947-1	2020	Low-voltage switchgear and controlgear - Part 1: General rules	EN IEC 60947-1	2021
IEC 60947-5-1	2016	Low-voltage switchgear and controlgear - Part 5-1: Control circuit devices and switching elements - Electromechanical control circuit devices	EN 60947-5-1	2017

Annex ZZ
(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 ZZ.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 ZZ.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)	6	
1 b)	4, 5, 6	
1 c)	4, 5, 6	Also refer to 2 a) to 2 d) and 3 a) to 3 c) in this table
2 a)	4, 5, 6.1, 6.3, 7.2, 8.1, 9.2, 9.3	
2 b)	6.1, 6.3, 8.1, 8.2, 9.1, 9.2, 9.3	This standard does not deal with any specific requirements on acoustic noise and optical radiation.
2 c)	4, 5, 6.2, 6.3, 8.1, 8.2, 9.2, 9.3	
2 d)	4, 5, 6.2, 6.3, 7, 8.1, 8.2, 9.2, 9.3	Special environmental conditions differing from those given in 7.1 are not covered by this standard.
3 a)	4, 5, 6.2, 6.3, 7, 9.2, 9.3	
3 b)	4, 5, 9.1	Special environmental conditions differing from those given in 7.1 are not covered by this standard.
3 c)	4, 5, 6.2, 7, 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.

IEC 60947-5-8

Edition 2.0 2020-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Low-voltage switchgear and controlgear – Part 5-8: Control circuit devices and switching elements – Three-position enabling switches

Appareillage à basse tension – Partie 5-8: Appareils et éléments de commutation pour circuits de commande – Interrupteurs de commande de validation à trois positions

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 5-8: Control circuit devices and switching elements – Three-position enabling 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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9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60947-5-8 has been prepared by subcommittee 121A: Low-voltage switchgear and controlgear, of IEC technical committee 121: Switchgear and controlgear and their assemblies for low voltage.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) due to the increasing range of useful applications of three-position enabling switches, note of scope, operational characteristics and tests are reviewed;
b) figures for example of devices incorporating enabling switch are added in Annex A;
c) new Annex B for procedure to determine reliability data for the switch used in functional safety applications is added.

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

FDIS	Report on voting
121A/358/FDIS	121A/369/RVD

Full information on the voting for the approval of this document can be found in the report on voting indicated in the above table.

This document should be used in conjunction with IEC 60947-1:2020 and IEC 60947-5-1:2016.

The provisions of the general rules, IEC 60947-1, are applicable to this standard, where specifically called for. General rules clauses and subclauses thus applicable, as well as tables, figures and annexes are identified by a reference to IEC 60947-1, for example 1.2.3 or Annex A of IEC 60947-1:2020.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60947 series, under the general title *Low-voltage switchgear and controlgear*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document 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.

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 5-8: Control circuit devices and switching elements – Three-position enabling switches

1 Scope

This part of IEC 60947 series specifies requirements for three-position enabling switches.

These switches are used as components of enabling devices to provide signals that,

a) when activated, allow machine operation to be initiated by a separate start control, and

b) when de-activated,

– initiate a stop function, and

– prevent initiation of machine operation.

NOTE 1 The enabling control function is described in 9.2.3.9 of IEC 60204-1:2016 but the application of three-position enabling switches is not limited to a component of the enabling device described in IEC 60204-1.

NOTE 2 This document does not deal with enabling devices.

These switches are intended to be connected to circuits which rated voltage does not exceed 250 V AC 50 Hz/60 Hz or 300 V DC.

EXAMPLE Devices incorporating three-position enabling switches are:

– push-button enabling devices;

– grip actuated enabling devices;

– foot actuated enabling devices.

See Annex A for more typical examples.

This document does not apply to:

– three-position enabling switches for non-electrical control circuits, for example hydraulic, pneumatic;

– enabling switches without three-position mechanism;

– emergency stop devices (see IEC 60947-5-5).

2 Normative references

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.

IEC 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-6:2007, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-27:2008, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60947-1:2020, *Low-voltage switchgear and controlgear – Part 1: General rules*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in Clause 3 of IEC 60947-1:2020 and Clause 2 of IEC 60947-5-1:2016, and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

Alphabetical index of definitions

3.1
enabling device
manually operated control device used in conjunction with a start control and which, when continuously actuated, allows a machine operation

3.2
three-position enabling switch
three-position switch having enabling contact(s)

3.3
actuating system
<three-position enabling switch> all the mechanical parts which transmit the actuating force to the contact elements

[SOURCE: IEC 60050-441:2000, 441-15-21, modified – "all the operating means of a control switch" replaced by "all the mechanical parts", note to entry deleted.]

3.4
actuator
<three-position enabling switch> part of the actuating system which is actuated by a part of the human body