



**SLOVENSKI STANDARD**  
**SIST EN IEC 61535:2024**

**01-november-2024**

---

**Inštalacijske spojke za trajni spoj v fiksnih napeljavah (inštalacijah)**

Installation couplers intended for permanent connection in fixed installations

Installationssteckverbinder für dauernde Verbindung in festen Installationen

Coupleurs d'installation pour connexions permanentes dans les installations fixes

**Ta slovenski standard je istoveten z: EN IEC 61535:2024**

---

**ICS:**

<https://standards.iteh.org/standards/iec/61535> 29.120.99 Druga električna dodatna oprema / [9867](https://standards.iteh.org/standards/iec/61535) Other electrical accessories / [sist-en-iec-61535-2024](https://standards.iteh.org/standards/iec/61535)

**SIST EN IEC 61535:2024**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN IEC 61535**

August 2024

ICS 29.120.99

Supersedes EN IEC 61535:2019

English Version

**Installation couplers intended for permanent connection in fixed installations  
(IEC 61535:2023)**

Coupleurs d'installation pour connexions permanentes dans les installations fixes  
(IEC 61535:2023)

Installationssteckverbinder für dauernde Verbindung in festen Installationen  
(IEC 61535:2023)

This European Standard was approved by CENELEC on 2024-06-12. 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, Türkiye and the United Kingdom.

[SIST EN IEC 61535:2024](https://standards.iteh.ai/catalog/standards/sist/en-iec-61535-2024)

<https://standards.iteh.ai/catalog/standards/sist/en-iec-61535-2024>



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 IEC 61535:2024 (E)****European foreword**

The text of document 23/1062/FDIS, future edition 3 of IEC 61535, prepared by IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61535:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2025-03-12 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2027-06-12 document have to be withdrawn

This document supersedes EN IEC 61535:2019 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 standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

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

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

**Endorsement notice**

<https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024>

The text of the International Standard IEC 61535:2023 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 standard indicated:

IEC 60309 (series)	NOTE	Approved as EN IEC 60309 (series)
IEC 60320 (series)	NOTE	Approved as EN 60320 (series)
IEC 60364 (series)	NOTE	Approved as HD 60364 (series)
IEC 60364-4-41:2005	NOTE	Approved as HD 60364-4-41:2017 + A11:2017
IEC 60364-5-52:2009	NOTE	Approved as HD 60364-5-52:2011 + A11:2017
IEC 61995 (series)	NOTE	Approved as EN 61995 (series)

## 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.cencenelec.eu](http://www.cencenelec.eu).

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-31	2008	Environmental testing – Part 2-31: Tests - Test Ec: Rough handling shocks, primarily for equipment-type specimens	EN 60068-2-31	2008
IEC 60112	2020	Method for determining the comparative and proof tracking indices of solid insulating materials under moist conditions	EN IEC 60112	2020
IEC 60529	– <sup>1)</sup>	Degrees of protection provided by enclosures (IP Code)	EN 60529 + A1 + A2	1991 2000 2013
IEC 60664-1	2020	Insulation co-ordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	EN IEC 60664-1	2020
IEC 60695-2-11	– <sup>1)</sup>	Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products	EN 60695-2-11	2021
IEC 60998-2-3	– <sup>1)</sup>	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	2004
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 <sup>2</sup> up to 35 mm <sup>2</sup> (included)	EN 60999-1	2000
IEC 61032	1997	Protection of persons and equipment by enclosures – Probes for verification	EN 61032	1998

<sup>1)</sup> Undated reference.

## 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 / Notes
(1)(a)	Clauses 1, 7, 8, Annex D, Annex E	
(1)(b)	Clauses 6.2, 6.3, 8.3, 8.4, 9, 11, 12, 19, 22, Annex A, Annex E	
(1)(c)	Clause 4	
(2)(a)	Clauses 9, 10, 12, 14, 16, 19.5, 20, 21, 23, Annex A	
(2)(b)	Clauses 11.2, 12.9, 15, 16, 17, 21.5	
(2)(c)	Clauses 10.1, 12, 24	
(2)(d)	Clauses 6, 10, 14, 21, 23, 24	
(3)(a)	Clauses 9.1, 12, 13, 18, 19.2, 19.3, 19.4, 20, 21.3, 21.4, 22	
(3)(b)	Clauses 13, 21, 24, 25, Annex F	
(3)(c)	Clauses 11.2, 12.2, 12.3	

**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 61535

Edition 3.0 2023-03

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

**Installation couplers intended for permanent connection in fixed installations**

**Coupleurs d'installation pour connexions permanentes dans les installations fixes**

Document Preview

[SIST EN IEC 61535:2024](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024)

<https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024>

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

ICS 29.120.99

ISBN 978-2-8322-6700-4

**Warning! Make sure that you obtained this publication from an authorized distributor.  
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.**

## CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope.....	9
2 Normative references .....	9
3 Terms and definitions .....	10
4 General requirements .....	12
5 Conditions for tests.....	13
5.1 General.....	13
5.2 Test conditions .....	13
5.3 Tests on non-rewirable installation couplers.....	13
5.4 Order of tests.....	13
5.5 Specification of tests.....	13
5.6 Compliance requirements .....	13
5.7 Routine tests for non-rewirable installation couplers .....	14
6 Ratings.....	14
6.1 Rated voltage .....	14
6.2 Rated current.....	14
6.3 Rated connecting capacity.....	15
6.4 Tests .....	15
7 Classification.....	15
8 Marking and documentation.....	16
8.1 General.....	16
8.2 Use of symbols or letters .....	16
8.3 Markings.....	16
8.4 Documentation.....	17
9 Dangerous compatibility .....	18
9.1 Unintended or improper connection.....	18
9.2 Engagement .....	18
9.3 Compatibility of different installation coupler systems .....	18
9.4 Compatibility with standard systems .....	18
10 Protection against electric shock .....	19
10.1 Degree of protection against ingress of solid foreign objects.....	19
10.2 Access to live parts.....	19
10.3 External parts .....	19
11 Terminals, terminations and connectable conductors.....	19
11.1 Terminals and terminations .....	19
11.1.1 General .....	19
11.1.2 Terminals of rewirable installation couplers .....	20
11.1.3 Terminations of non-rewirable installation couplers.....	20
11.2 Connectable conductors.....	20
12 Construction.....	21
12.1 Connection between earthing contacts.....	21
12.2 Locking against rotation .....	21
12.3 Mechanical strength of contacts.....	21
12.4 Housing of rewirable installation couplers .....	21



12.5	Housing of non-rewirable installation couplers .....	22
12.6	Dismantling and opening of rewirable installation couplers.....	22
12.7	Earthing contact and earthing terminal.....	22
12.8	Loose conductor strands .....	22
12.8.1	General .....	22
12.8.2	Strand test for rewirable installation couplers.....	23
12.8.3	Strand test for non-rewirable non-moulded-on installation couplers .....	23
12.8.4	Strand test for non-rewirable moulded-on installation couplers .....	23
12.9	Incorporation of electrical devices .....	23
12.10	Retaining means .....	24
12.11	Distribution blocks .....	24
12.12	Shrouds .....	24
12.13	Factory wiring .....	24
12.14	Stress test .....	24
12.14.1	General .....	24
12.14.2	Stress test of rewirable installation couplers .....	24
12.14.3	Stress test of non-rewirable installation couplers .....	25
12.15	Separation of non-rewirable installation couplers .....	25
13	Protection against harmful ingress of solid foreign objects and against harmful ingress of water .....	25
13.1	General.....	25
13.2	Protection against harmful ingress of solid foreign objects .....	25
13.3	Protection against harmful ingress of water .....	25
14	Insulation resistance and electric strength .....	26
14.1	General.....	26
14.2	Insulation resistance .....	26
14.3	Electric strength.....	26
15	Construction of contacts .....	27
15.1	Resiliency .....	27
15.2	Resistance of connections .....	27
15.3	Contact pressure .....	28
16	Temperature rise .....	28
17	Breaking capacity .....	29
18	Forces necessary to disengage the parts of the installation coupler.....	30
19	Cables and their connection .....	30
19.1	Capability of being fitted .....	30
19.2	Relief from pull, thrust and torsion .....	30
19.3	Cable anchorage.....	30
19.4	Capability to connect cables with different cross-sectional area .....	31
19.5	Sharp edges .....	33
20	Mechanical strength .....	33
21	Resistance to heat and ageing.....	34
21.1	Resistance to heat .....	34
21.2	Dry heat storage .....	34
21.3	Ball pressure test.....	34
21.4	Ageing of elastomeric and thermoplastic material .....	35
21.5	Current cycling test.....	35
22	Screws, current-carrying parts and connections.....	36

22.1	Screws and nuts .....	36
22.2	Screws and insulating material.....	37
22.3	Screws and rivets for electrical and mechanical connections.....	38
22.4	Metals of current-carrying parts .....	38
23	Clearances, creepage distances and distances through solid insulation.....	38
24	Resistance to abnormal heat and to tracking .....	42
24.1	Resistance to abnormal heat.....	42
24.2	Resistance to tracking.....	44
25	Resistance to rusting .....	44
Annex A (normative) Routine protective earth continuity tests .....		46
Annex B (normative) Test circuits for temperature rise test .....		47
Annex C (normative) Number of sets of test samples used for the tests and sequence of tests for each set .....		50
Annex D (informative) Guide to use .....		51
D.1	General.....	51
D.2	Applications .....	51
D.3	Examples of use of installation couplers .....	51
Annex E (normative) Warning symbol used in DC applications.....		54
Annex F (informative) Additional tests and requirements for installation couplers intended to be used in ambient air temperature below $-5^{\circ}\text{C}$ down to and including $-45^{\circ}\text{C}$ .....		55
F.1	General.....	55
F.2	General requirements on tests .....	55
F.3	Additional marking and documentation.....	55
F.3.1	Additional marking .....	55
F.3.2	Additional documentation.....	55
F.4	Mechanical strength at lower ambient air temperatures.....	55
Bibliography.....		57
Figure 1 – Apparatus for testing the cable anchorage .....		32
Figure 2 – Apparatus for measuring the distortion (example) .....		33
Figure 3 – Ball-pressure apparatus .....		35
Figure 4 – Explanation of "small part" .....		44
Figure B.1 – 1P + N + PE installation couplers, including N .....		47
Figure B.2 – 1P + N + PE installation couplers, including PE .....		47
Figure B.3 – 3P + N + PE installation couplers, 3 phases loaded .....		47
Figure B.4 – 3P + N + PE installation couplers, N and PE loaded.....		47
Figure B.5 – 1P + N + PE distribution block, phase and N loaded .....		48
Figure B.6 – 1P + N + PE distribution block, phase and PE loaded .....		48
Figure B.7 – 3P + N + PE to 1P + N + PE distribution block, 3 phases loaded.....		49
Figure B.8 – 3P + N + PE to 1P + N + PE distribution block, N and PE loaded .....		49
Figure D.1 – Examples of use of installation couplers .....		52
Figure D.2 – Magnified area of Figure D.1 to show installation couplers.....		53
Figure E.1 – Symbol "DO NOT CONNECT OR DISCONNECT UNDER LOAD" .....		54
Table 1 – Voltage rating for installation couplers in AC application .....		14

Table 2 – Voltage rating for installation couplers in DC application .....	14
Table 3 – Classification of installation couplers .....	15
Table 4 – Test currents for installation couplers .....	29
Table 5 – Forces to be applied to cable anchorages .....	31
Table 6 – Torque applied for the tightening and loosening test.....	37
Table 7 – Installation couplers intended for use in supply systems with a maximum voltage to earth of 150 V AC, rated impulse voltage 2,5 kV .....	38
Table 8 – Installation couplers intended for use in supply systems with a maximum voltage to earth of 300 V AC, rated impulse voltage 4,0 kV .....	39
Table 9 – Installation couplers intended for use in single-phase two-wire systems 50 V DC and single-phase three-wire systems 60 V DC, rated impulse voltage 0,8 kV .....	40
Table 10 – Installation couplers intended for use in single-phase two-wire systems 120 V DC and single-phase three-wire systems 240 V DC, rated impulse voltage 2,5 kV .....	41
Table 11 – Installation couplers intended for use in single-phase two-wire systems 220 V DC and single-phase three-wire systems 440 V DC, rated impulse voltage 4,0 kV .....	42
Table C.1 – Sets of samples .....	50

iTeh Standards  
(<https://standards.iteh.ai>)  
Document Preview

[SIST EN IEC 61535:2024](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024)

<https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024>

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**INSTALLATION COUPLERS INTENDED FOR PERMANENT  
CONNECTION IN FIXED INSTALLATIONS**

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 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.

IEC 61535 has been prepared by IEC technical committee 23: Electrical accessories. It is an International Standard.

This third edition cancels and replaces the second edition published in 2019. This edition constitutes a technical revision.

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

- a) inclusion of a definition for "live part" based on IEC 61140;
- b) additional optional cross medial documentation, e.g. marking with QR-Code;
- c) corrections on the consistent use of the expressions "earth", "earthing contact", "earthing circuit" and "protective earth(ing)" throughout the document;
- d) addition of missing compliance provisions to 13.3;
- e) update of Figure D.1 of Annex D;
- f) inclusion of new Annex F for cold climate requirements.

The text of this International Standard is based on the following documents:

Draft	Report on voting
23/1062/FDIS	23/1066/RVD

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

The language used for the development of this International Standard is English.

In this standard, the following print types are used:

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

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under [webstore.iec.ch](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.

[SIST EN IEC 61535:2024](https://standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024>

## INTRODUCTION

AC and DC installation couplers according to this document may be used, for example, in prefabricated buildings, commercial showrooms, installation cavities, such as suspended floors and ceilings, in partition walls and in any similar applications, or cable tray systems, cable ladder systems, cable ducting systems and cable trunking systems or in furniture complying with IEC 60364-7-713.

This document may be used as a guide for installation couplers with additional contacts for voltages other than mains voltages.

Particular requirements for installation couplers, for example, for use at higher or lower ambient temperatures, with higher mechanical durability (e.g. metal housings), with higher fire resistance and for use in control circuits (e.g. SELV), are under consideration.

National rules can have requirements concerning the accessibility of installation couplers.

National rules can specify who is allowed to carry out the connection and disconnection of installation couplers.

National rules can have requirements concerning installation couplers with metal conduits.

**iTeh Standards**  
**(<https://standards.iteh.ai>)**  
**Document Preview**

[SIST EN IEC 61535:2024](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024)

<https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fdf-41d0-8079-fce814dcb2e0/sist-en-iec-61535-2024>