



SLOVENSKI STANDARD
oSIST prEN IEC 61535:2022
01-marec-2022

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: prEN IEC 61535:2022

[oSIST prEN IEC 61535:2022](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-561f-4140-8079-fce814dcb2e0/osist-pr-en-iec-61535-2022)

ICS:

29.120.99

Druga električna dodatna
oprema

Other electrical accessories

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23/991/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TC 23 : ELECTRICAL ACCESSORIES	
SECRETARIAT: Belgium	SECRETARY: Mr Wim De Kesel
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input checked="" type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING	
<p>Attention IEC-CENELEC parallel voting</p> <p>The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p>	

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TITLE:

Installation couplers intended for permanent connection in fixed installations

PROPOSED STABILITY DATE: 2027

NOTE FROM TC/SC OFFICERS:

The comments to this CDV will be discussed during the next meeting of TC 23 MT6 which is scheduled for May 3rd/4th 2022.

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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.
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- International Standard IEC 61535 has been prepared by IEC technical committee 23: Electrical accessories.
- 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:
- Inclusion of definition for "live part" based on IEC 61140;
 - Additional optional marking with QR-Code;
 - Corrections on the consistent use of the expressions "earth", "earth contact", "earthing circuit" and "protective earth(ing)" throughout the document;
 - Addition of missing compliance clause to clause 13.3;
 - Update of figure D.1 of Annex D;
 - Editorial corrections and alignments throughout the document.
- The text of this International Standard is based on the following documents:

CDV	Report on voting
...	...

208
209 Full information on the voting for the approval of this International Standard can be found in the
210 report on voting indicated in the above table.

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

212 In this standard, the following print types are used:

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

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

- 219 • reconfirmed,
- 220 • withdrawn,
- 221 • replaced by a revised edition, or
- 222 • amended.

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224

INTRODUCTION

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

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

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

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

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

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

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INSTALLATION COUPLERS INTENDED FOR PERMANENT CONNECTION IN FIXED INSTALLATIONS

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1 Scope

246 This document applies to two-wire, up to five-wire installation couplers, with or without earthing
247 contact, if provided, with a rated voltage up to and including 500 V AC or DC and a rated
248 connecting capacity up to and including 10 mm² and a rated current not exceeding 32 A for
249 permanent connection in electrical installations. Installation couplers with additional contacts
250 for voltages other than mains voltages are outside the scope of this document.

251 An installation coupler consists of an installation female connector and an installation male
252 connector for permanent connection not intended to be engaged or disengaged under load nor
253 to be engaged or disengaged other than during first installation or during reconfiguration or
254 maintenance of the wiring system in which installation couplers have been installed. This means
255 that installation couplers are only intended for infrequent use.

256 Installation couplers are not suitable for use in place of socket-outlet systems. Installation
257 couplers are not suitable for use in place of devices for connecting luminaires (DCLs) according
258 to IEC 61995 (all parts) or in place of luminaire supporting couplers (LSCs).

259 Installation couplers complying with this document are suitable for use at ambient temperatures
260 not normally exceeding +40 °C, but their average over a period of 24 h does not exceed +35 °C,
261 with a lower limit of the ambient air temperature of –5 °C, either for indoor or outdoor use.

262 NOTE 1 Additional tests for use in cold climates are under consideration.

263 NOTE 2 For other temperatures, necessary information can be given in the manufacturer's installation instructions.

264 In locations where special conditions prevail, as in ships, vehicles and the like and in hazardous
265 locations, for example where explosions are liable to occur, special constructions can be
266 required.

267 NOTE 3 Installation couplers are intended to be installed by instructed or skilled persons.

268 NOTE 4 As a guide to use installation coupler systems, see Annex D.

2 Normative references

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

274 IEC 60068-2-31:2008, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling*
275 *shocks, primarily for equipment-type specimens*

276 IEC 60112, *Method for the determination of the proof and the comparative tracking indices of*
277 *solid insulating materials*

278 IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
279 IEC 60529:1989/AMD1:1999
280 IEC 60529:1989/AMD2:2013

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

283 IEC 60695-2-11, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-*
284 *wire flammability test method for end-products (GWEPT)*

285 IEC 60998-2-3, *Connecting devices for low-voltage circuits for household and similar purposes*
286 *– Part 2-3: Particular requirements for connecting devices as separate entities with insulation-*
287 *piercing clamping units*

288 IEC 60999-1:1999, *Connecting devices – Electrical copper conductors – Safety requirements*
289 *for screw-type and screwless-type clamping units – Part 1: General requirements and particular*
290 *requirements for clamping units for conductors from 0,2 mm² up to 35 mm² (included)*

291 IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

292 **3 Terms and definitions**

293 For the purposes of this document, the following terms and definitions apply.

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

- 296 • IEC Electropedia: available at <http://www.electropedia.org/>
- 297 • ISO Online browsing platform: available at <http://www.iso.org/obp>

298 Where the terms "voltage" and "current" are used in this document, they are RMS values, unless
299 otherwise specified.

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301 **rated voltage** [5fd1-41d0-8079-fce814dcb2e0/osist-pren-iec-61535-](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fd1-41d0-8079-fce814dcb2e0/osist-pren-iec-61535-2022)
302 voltage assigned to the installation coupler by the manufacturer [2022](https://standards.iteh.ai/catalog/standards/sist/ef1a9867-5fd1-41d0-8079-fce814dcb2e0/osist-pren-iec-61535-2022)

303 **3.2**
304 **rated current**
305 maximum current assigned to the installation coupler by the manufacturer

306 Note 1 to entry: Rated current refers to the installation coupler itself and not to an electric circuit.

307 **3.3**
308 **rated connecting capacity**
309 cross-sectional area of the largest conductor(s) to be connected as stated by the manufacturer
310 of the installation coupler

311 **3.4**
312 **permanent connection**
313 connecting method in an installation which is only opened for maintenance or wiring system re-
314 configuration

315 Note 1 to entry: The expression "permanent connection" is to be understood as a connection which is maintained
316 as long as an installation exists.

317 **3.5**
318 **installation coupler**
319 connecting device consisting of an installation female connector and an installation male
320 connector provided with retaining means for permanent connection not intended to be engaged
321 or disengaged under load nor to be engaged or disengaged other than during first installation,
322 during maintenance of the wiring system or during re-configuration of the wiring system

- 323 **3.6**
324 **installation male connector**
325 load side portion of an installation coupler which contains the male contacts
- 326 **3.7**
327 **installation female connector**
328 supply side portion of an installation coupler which contains the female contacts
- 329 **3.8**
330 **installation coupler system**
331 family of installation couplers consisting of one or more installation female connectors
332 compatible by mechanical coding features with one or more installation male connectors, with
333 the same ratings produced according to the specification of one manufacturer
- 334 Note 1 to entry: The meaning of one manufacturer is in this case of one and the same manufacturer.
- 335 **3.9**
336 **wiring system**
337 assembly made up of a cable or cables or busbars and the parts which secure and if necessary
338 enclose the cables or busbars
- 339 [SOURCE: IEC 60364-5-52:2009, 520.3.1, modified – "bare or insulated conductors" has been
340 replaced with "a cable".]
- 341 **3.10**
342 **rewirable installation coupler**
343 installation coupler so constructed that the cable can be replaced
- 344 **3.11**
345 **non-rewirable installation coupler**
346 installation coupler so constructed that it forms a complete unit with the cable after connection
347 and assembly by the manufacturer
- 348 Note 1 to entry: See also 12.14.
- 349 **3.12**
350 **non-rewirable moulded-on installation coupler**
351 non-rewirable installation coupler so constructed that the contacts, terminals or connections
352 and the attached cable ends are surrounded by insulating material manufactured by a moulding
353 process
- 354 **3.13**
355 **non-rewirable non-moulded-on installation coupler**
356 non-rewirable installation coupler so constructed that the contacts, terminals or connections
357 and the attached cable ends are surrounded by separate parts of insulating material
- 358 **3.14**
359 **distribution block**
360 device intended for branching of circuits
- 361 **3.15**
362 **retaining means**
363 arrangement by which an installation female connector and an installation male connector are
364 held in position when they are properly engaged and prevents unintentional disengagement
- 365 Note 1 to entry: The disengagement may be done by hand or by the use of a tool.

366 **3.16**
367 **cap**
368 removable barrier to prevent ready accessibility to an unused installation female connector

369 **3.17**
370 **routine test**
371 test to which each device is subjected during and/or after manufacture to ascertain whether it
372 complies with certain criteria

373 **3.18**
374 **type test**
375 test of one or more devices made to a certain design to show that the design meets certain
376 requirements

377 **3.19**
378 **readily accessible**
379 accessibility to touch extending from any point on a surface where persons usually stand or
380 move about to the limits which a person can reach with the hand, in any direction without
381 assistance

382 Note 1 to entry: See IEC 60364-4-41:2005, Annex B.

383 **3.20**
384 **terminal**
385 part of an accessory to which a conductor is attached, providing a reusable connection

386 **3.21**
387 **termination**
388 part of an accessory to which a conductor is permanently attached

389 [SOURCE: IEC 60050-442:1998, 442-06-06]
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390 **3.22**
391 **live part**
392 conductive part intended to be energized in normal conditions, including a neutral conductor
393 or mid-point conductor, but by convention not a PEN conductor or PEM conductor or PEL
394 conductor
395

396 Note 1 to entry: This concept does not necessarily imply a risk of electric shock.

397 [SOURCE: 3.4 of IEC 61140:2016]

398 **4 General requirements**

399 Installation couplers shall be so designed and constructed that, in normal use, their
400 performance is reliable and without danger to the user or damage to the surroundings.

401 *Compliance is checked by carrying out all the relevant tests specified in this document.*

402 NOTE In some countries, installation couplers are not permitted to be used where they will not be visible after
403 installation: CA, US

404 **5 Conditions for tests**

405 **5.1 General**

406 Tests shall be carried out to check compliance with the relevant requirements of this document.

407 Only connectors (male and female) of one installation coupler system according to the
408 specification of one and the same manufacturer shall be mated together for carrying out the
409 test.

410 Tests are as follows:

- 411 – type tests shall be made on representative specimens of each type of installation coupler;
- 412 – routine tests shall be made on each installation coupler as required in this document.

413 Tests of 5.2 to 5.6 are applicable to type tests and 5.7 to routine tests.

414 NOTE In the UK, where installation couplers have more than 5 wires, they shall meet the requirements of IEC 61535
415 as though they were included in the scope and shall be tested in such a way that all of the mains voltage pins are
416 subjected to the same level of testing.

417 5.2 Test conditions

418 Unless otherwise specified, the tests shall be carried out on specimens as delivered and under
419 conditions of normal use at an ambient temperature between 15 °C and 35 °C.

420 Where the value of the temperature is of importance, the test shall be carried out at
421 20 °C ± 5 °C.

422 5.3 Tests on non-rewirable installation couplers

423 For testing purposes, non-rewirable installation couplers shall be provided with cables of at
424 least 1 m length unless otherwise specified in this document.

425 5.4 Order of tests

426 If not otherwise specified in this document, the tests shall be carried out in the order of the
427 clauses/subclauses as specified in Annex C, Table C.1.

428 5.5 Specification of tests

429 Installation male connectors, caps, installation female connectors and distribution blocks shall
430 be tested in connection with their matching counterparts complying with this document.

431 The sets of test specimens shall undergo the tests as specified in Annex C, Table C.1.

432 5.6 Compliance requirements

433 Specimens are deemed not to comply with this document if there is more than one specimen
434 failure in any one of the tests.

435 If one specimen of a given set fails in a test due to an assembly or manufacturing fault, that
436 test and those preceding, which may have influenced the result of that test, are repeated on
437 another set of specimens of the same set number as specified in Annex C, Table C.1, all of
438 which shall then comply with the repeated tests.

439 NOTE The applicant can submit, together with the specified number of specimens, the additional set of specimens
440 which can be required should one specimen fail. The testing station will then, without further request, test additional
441 specimens and will reject only if a further failure occurs. If the additional set of specimens is not submitted at the
442 same time as the specified number of specimens, the failure of one specimen will entail rejection.

443 5.7 Routine tests for non-rewirable installation couplers

444 Routine tests for non-rewirable installation couplers are specified in Annex A.