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Nizkonapetostne stikalne in krmilne naprave - 4-1. del: Kontaktorji in motorski zaganjalniki - Elektromehanski kontaktorji in motorski zaganjalniki

Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters

Niederspannungsschaltgeräte - Teil 4-1: Schütze und Motorstarter - Elektromechanische Schütze und Motorstarter

Appareillage à basse tension - Partie 4-1: Contacteurs et démarreurs de moteurs
Contacteurs et démarreurs électromécaniques

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<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting 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. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

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TITLE:

Low-voltage switchgear and controlgear - Part 4-1: Contactors and motor-starters - Electromechanical contactors and motor-starters

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SC121A Officers support circulation of CDV for project IEC 60947-4-1 ED5.

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

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**Part 4-1: Contactors and motor-starters –
Electromechanical contactors and motor-starters**

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FOREWORD

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International Standard IEC 60947-4-1 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.

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428 This fifth edition cancels and replaces the fourth edition published in 2018. This edition
429 constitutes a technical revision.

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

- 432 • Objective in the scope
- 433 • Instantaneous only motor protective switching device IMPSD (3.4.32)
- 434 • Kinds of equipment (5.2.1)
- 435 • Methods of overload protection of motors (5.2.6)
- 436 • Adoption of the AC-7d from IEC 61095 Ed. 3 (in 5.4.2)
- 437 • Separately mounted overload relay of a starter (in 5.7.3 b))
- 438 • Starter and contactor suitable for use downstream to basic drive module (6.1.2 z))
- 439 • Reference to IEC TS 63058 for environmental aspects (in 6.4)
- 440 • Wiring subject to movement (in 8.1.3)
- 441 • Use of voltage transient limiting device (8.1.18)
- 442 • Accessible parts subject to temperature limits (in 8.2.2.3)
- 443 • Reference to Annex X of IEC 60947-1 for the co-ordination of MPSD with SCPD (8.2.5.4)
- 444 • Reference to IEC TR 63216 with different EMC environments (8.3.1)
- 445 • Reference to IEC TR 63201 for the embedded software design (8.4)
- 446 • Reference to IEC TS 63208 for cybersecurity aspects (8.5)
- 447 • Update and completion of the measurement method of the power consumption of the
448 electromagnet (9.3.3.2.1.2)
- 449 • Update of Annex C including rational about AC-3e
- 450 • Determination of the critical load current for photovoltaic applications (M.9.7)

451

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

FDIS	Report on voting
121A/224/FDIS	121A/233/RVD

453
454 Full information on the voting for the approval of this International Standard can be found in
455 the report on voting indicated in the above table.

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

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

459 This document shall be read in conjunction with IEC 60947-1:2020, *Low voltage switchgear*
460 *and controlgear – Part 1: General rules*. The provisions of the general rules are applicable to
461 this document, where specifically called for.

462 The provisions of the general rules dealt with IEC 60947-1 are applicable to this part of
463 IEC 60947 series where specifically called for. Clauses and subclauses, tables, figures and
464 annexes of the general rules thus applicable are identified by reference to IEC 60947-1:2020.
465 For example, 5.3.4.1 of IEC 60947-1:2020, Table 4 of IEC 60947-1:2020, or Annex A of
466 IEC 60947-1:2020.

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

- 470 • reconfirmed,
- 471 • withdrawn,
- 472 • replaced by a revised edition, or
- 473 • amended.

474 The contents of the interpretation sheet of March 2020 have been included in this copy.

475 The contents of the corrigendum of April 2020 have been included in this copy.

476

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.

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 4-1: Contactors and motor-starters – Electromechanical contactors and motor-starters

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486 1. Scope

487 This part of IEC 60947 is applicable to the following equipment:

- 488 – electromechanical contactors and starters including motor protective switching devices
489 (MPSD);
- 490 – actuators of contactor relays;
- 491 – contacts dedicated exclusively to the coil circuit of the contactor or the contactor relay;
- 492 – dedicated accessories (e.g. dedicated wiring, dedicated latch accessory);

493 intended to be connected to distribution circuits, motors circuits and other load circuits, the
494 rated voltage of which does not exceed 1 000 V AC or 1 500 V DC.

495 This document does not apply to:

- 496 – starters for DC motors;
- 497 – auxiliary contacts of contactors and contacts of contactor relays. These are covered by
498 IEC 60947-5-1;
- 499 – the short-circuit protective device integrated within starters other than MPSDs. This is
500 covered by IEC 60947-2 and IEC 60947-3;
- 501 – motor overload protection function performed by control units for built-in thermal protection
502 (PTC). They are covered by IEC 60947-8;
- 503 – the use of the equipment with additional measures within explosive atmospheres. These
504 are given in IEC 60079 series;

505 The objective of this document is to state:

- 506 • the characteristics and composition of the equipment (Clause 5);
- 507 • the conditions applicable to the equipment with reference to:
 - 508 • its operation (5.2.5) , protection functions (5.2.6, 5.7, 5.8),
 - 509 • its intended environments (Clause 6.5, 8.3.1) and applications (5.4, Annex C, Annex D,
510 Annex G, Annex H, Annex I, Annex M, Annex O) including safety applications
511 (Annex F, Annex K, Annex L),
 - 512 • its construction and performance (Clause 8) including requirements to reduce risks of
513 electric shock, thermal hazard, energy hazard, fire hazard and mechanical hazard,
514 reasonably foreseeable misuse, electromagnetic compatibility (EMC) issues, software
515 errors and security issues;
- 516 • the tests intended for confirming that these conditions have been met, and the methods to
517 be adopted for these tests (Clause 9);
- 518 • the information to be included with the equipment or in the product documentation (Clause
519 6).

520 2. Normative references

521 The following documents are referred to in the text in such a way that some or all of their
522 content constitutes requirements of this document. For dated references, only the edition