

Low-voltage switchgear and controlgear - Part 7-4:
Ancillary equipment - PCB terminal blocks for copper
conductors

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

| | |
|---|--|
| See Eesti standard EVS-EN IEC 60947-7-4:2019 sisaldab Euroopa standardi EN IEC 60947-7-4:2019 ingliskeelset teksti. | This Estonian standard EVS-EN IEC 60947-7-4:2019 consists of the English text of the European standard EN IEC 60947-7-4:2019. |
| Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. | This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation. |
| Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 08.03.2019. | Date of Availability of the European standard is 08.03.2019. |
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English Version

**Low-voltage switchgear and controlgear - Part 7-4: Ancillary
equipment - PCB terminal blocks for copper conductors
(IEC 60947-7-4:2019)**

Appareillage à basse tension - Partie 7-4: Matériels
accessoires - Blocs de jonction pour cartes de circuits
imprimés pour conducteurs en cuivre
(IEC 60947-7-4:2019)

Niederspannungsschaltgeräte - Teil 7-4: Hilfseinrichtungen
- Leiterplatten-Anschlussklemmen für Kupferleiter
(IEC 60947-7-4:2019)

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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/255/FDIS, future edition 2 of IEC 60947-7-4, 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 60947-7-4:2019.

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) 2019-11-22
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-02-22

This document supersedes EN 60947-7-4:2013.

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Endorsement notice

The text of the International Standard IEC 60947-7-4:2019 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 60512-2-1 | NOTE Harmonized as EN 60512-2-1 |
| IEC 60512-5-1 | NOTE Harmonized as EN 60512-5-1 |
| IEC 60512-9-5:2010 | NOTE Harmonized as EN 60512-9-5:2010 (not modified) |
| IEC 60664-1:2007 | NOTE Harmonized as EN 60664-1:2007 (not modified) |
| IEC 60695-10-2 | NOTE Harmonized as EN 60695-10-2 |
| IEC 60695-11-5 | NOTE Harmonized as EN 60695-11-5 |
| IEC 60947-7-1:2009 | NOTE Harmonized as EN 60947-7-1:2009 (not modified) |
| IEC 60998-1:2002 | NOTE Harmonized as EN 60998-1:2004 |
| IEC 61984 | NOTE Harmonized as EN 61984 |

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.

| <u>Publication</u> | <u>Year</u> | <u>Title</u> | <u>EN/HD</u> | <u>Year</u> |
|--------------------|-------------|---|---------------|-------------|
| IEC 60068-2-20 | - | Environmental testing - Part 2-20: Tests - Test T: Test methods for solderability and resistance to soldering heat of devices with leads | EN 60068-2-20 | - |
| IEC 60352-1 | - | Solderless connections - Part 1: Wrapped connections - General requirements, test methods and practical guidance | EN 60352-1 | - |
| IEC 60352-2 | - | Solderless connections - Part 2: Crimped connections - General requirements, test methods and practical guidance | EN 60352-2 | - |
| IEC 60352-3 | - | Solderless connections - Part 3: Solderless accessible insulation displacement connections - General requirements, test methods and practical guidance | EN 60352-3 | - |
| IEC 60352-4 | - | Solderless connections - Part 4: Solderless non-accessible insulation displacement connections - General requirements, test methods and practical guidance | EN 60352-4 | - |
| IEC 60352-5 | - | Solderless connections - Part 5: Press-in connections - General requirements, test methods and practical guidance | EN 60352-5 | - |
| IEC 60352-6 | - | Solderless connections - Part 6: Insulation piercing connections - General requirements, test methods and practical guidance | EN 60352-6 | - |
| IEC 60352-7 | - | Solderless connections - Part 7: Spring clamp connections - General requirements, test methods and practical guidance | EN 60352-7 | - |
| IEC 60512-2-2 | 2003 | Connectors for electronic equipment - Tests and measurements - Part 2-2: Electrical continuity and contact resistance tests - Test 2b: Contact resistance - Specified test current method | EN 60512-2-2 | 2003 |

| | | | |
|-----------------|------|--|-----------|
| IEC 60512-4-1 | - | Connectors for electronic equipment -EN 60512-4-1 | - |
| | | Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof | |
| IEC 60512-5-2 | 2002 | Connectors for electronic equipment -EN 60512-5-2 | 2002 |
| | | Tests and measurements - Part 5-2: Current-carrying capacity tests - Test 5b: Current-temperature derating | |
| IEC 60512-11-7 | - | Connectors for electronic equipment -EN 60512-11-7 | - |
| | | Tests and measurements - Part 11-7: Climatic tests - Test 11g: Flowing mixed gas corrosion test | |
| IEC 60512-11-9 | - | Connectors for electronic equipment -EN 60512-11-9 | - |
| | | Tests and measurements - Part 11-9: Climatic tests - Test 11i: Dry heat | |
| IEC 60512-11-10 | - | Connectors for electronic equipment -EN 60512-11-10 | - |
| | | Tests and measurements - Part 11-10: Climatic tests - Test 11j: Cold | |
| IEC 60695-2-10 | - | Fire hazard testing - Part 2-10:EN 60695-2-10 | - |
| | | Glowing/hot-wire based test methods - Glow-wire apparatus and common test procedure | |
| IEC 60695-2-11 | - | Fire hazard testing - Part 2-11:EN 60695-2-11 | - |
| | | Glowing/hot-wire based test methods - Glow-wire flammability test method for end-products (GWEPT) | |
| IEC 60695-2-12 | - | Fire hazard testing - Part 2-12:EN 60695-2-12 | - |
| | | Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials | |
| IEC 60695-2-13 | - | Fire hazard testing - Part 2-13:EN 60695-2-13 | - |
| | | Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials | |
| IEC 60947-1 | 2007 | Low-voltage switchgear and controlgear -EN 60947-1 | 2007 |
| | | Part 1: General rules | |
| + A1 | 2010 | | + A1 2011 |
| + A2 | 2014 | | + A2 2014 |
| IEC 60998-2-3 | - | Connecting devices for low-voltage circuitsEN 60998-2-3 | - |
| | | for household and similar purposes - Part 2-3: Particular requirements for connecting devices as separate entities with insulation-piercing clamping units | |
| IEC 60999-1 | - | Connecting devices - Electrical copperEN 60999-1 | - |
| | | 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 ² up to 35 mm ² (included) | |
| IEC 60999-2 | - | Connecting devices - Electrical copperEN 60999-2 | - |
| | | conductors - Safety requirements for screw-type and screwless-type clamping units - Part 2: Particular requirements for clamping units for conductors above 35 mm ² up to 300 mm ² (included) | |
| IEC 61210 | - | Connecting devices - Flat quick-connectEN 61210 | - |
| | | terminations for electrical copper conductors - Safety requirements | |

| | | | |
|----------|---|--|---|
| ISO 6998 | - | Carbonaceous materials for the production- of aluminium - Pitch for electrodes - Determination of coking value | - |
|----------|---|--|---|

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CONTENTS

| | |
|--|----|
| FOREWORD..... | 4 |
| INTRODUCTION..... | 6 |
| 1 Scope..... | 7 |
| 2 Normative references | 7 |
| 3 Terms and definitions | 9 |
| 4 Classification..... | 10 |
| 5 Characteristics | 10 |
| 5.1 Summary of characteristics..... | 10 |
| 5.2 Type of PCB terminal block..... | 10 |
| 5.3 Rated and limiting values | 10 |
| 5.3.1 Rated voltages | 10 |
| 5.3.2 Rated current..... | 11 |
| 5.3.3 Standard cross-sections | 11 |
| 5.3.4 Maximum cross-section | 12 |
| 5.3.5 Connecting capacity | 12 |
| 6 Product information | 13 |
| 6.1 Marking..... | 13 |
| 6.2 Additional information | 13 |
| 7 Normal service, mounting and transport conditions..... | 13 |
| 8 Constructional and performance requirements..... | 13 |
| 8.1 Constructional requirements | 13 |
| 8.1.1 Clamping units..... | 13 |
| 8.1.2 Mounting and installation | 14 |
| 8.1.3 Clearances and creepage distances | 14 |
| 8.1.4 Terminal identification and marking | 14 |
| 8.1.5 Resistance to abnormal heat and fire..... | 15 |
| 8.1.6 Maximum cross-section and connecting capacity..... | 15 |
| 8.2 Performance requirements..... | 15 |
| 8.2.1 Temperature-rise (current-temperature derating) | 15 |
| 8.2.2 Dielectric properties..... | 15 |
| 8.2.3 Short-time withstand current..... | 15 |
| 8.2.4 Contact resistance | 16 |
| 8.2.5 Ageing tests | 16 |
| 8.3 Electromagnetic compatibility (EMC)..... | 16 |
| 9 Tests | 16 |
| 9.1 Kinds of test..... | 16 |
| 9.2 General..... | 16 |
| 9.3 Verification of mechanical characteristics..... | 17 |
| 9.3.1 General | 17 |
| 9.3.2 Attachment of the PCB terminal block on its support..... | 17 |
| 9.3.3 Vacant | 18 |
| 9.3.4 Verification of the maximum cross-section and connecting capacity..... | 18 |
| 9.3.5 Verification of maximum cross-section (special test with gauges) | 18 |
| 9.4 Verification of electrical characteristics | 19 |
| 9.4.1 General | 19 |

| | | |
|-----------------------|--|----|
| 9.4.2 | Verification of clearances and creepage distances..... | 19 |
| 9.4.3 | Dielectric tests..... | 19 |
| 9.4.4 | Verification of contact resistance | 20 |
| 9.4.5 | Temperature-rise test (current-temperature derating) | 22 |
| 9.4.6 | Short-time withstand current test | 24 |
| 9.4.7 | Ageing tests | 25 |
| 9.5 | Verification of thermal characteristics..... | 29 |
| 9.6 | Verification of EMC characteristics..... | 30 |
| 9.6.1 | General | 30 |
| 9.6.2 | Immunity..... | 30 |
| 9.6.3 | Emission..... | 30 |
| Annex A (informative) | Structure of a PCB terminal block..... | 31 |
| Annex B (informative) | Additional information to be specified between the manufacturer and the user | 32 |
| B.1 | Additional information available on request of the user | 32 |
| B.2 | Information for testing in addition to those mentioned above | 32 |
| Annex C (informative) | Examples of PCBs and PCB terminal blocks for high-current application | 33 |
| C.1 | Layout of high-current PCBs (schematic diagram)..... | 33 |
| C.2 | High-current PCB terminal blocks | 34 |
| Bibliography | | 35 |
| Figure 1 | – Test assembly for the measurement of contact resistance and temperature-rise .. | 22 |
| Figure 2 | – Example of wiring structure of a multi-tier PCB terminal block | 23 |
| Figure 3 | – Test assembly for the measurement of short-time withstand current..... | 25 |
| Figure 4 | – Test sequence | 26 |
| Figure 5 | – Test sequence for PCB terminal blocks with contact pressure via insulating material | 27 |
| Figure 6 | – Current cycling ageing test procedure | 29 |
| Figure A.1 | – Structure of a PCB terminal block | 31 |
| Figure C.1 | – Structure of a high current PCB | 33 |
| Figure C.2 | – PCB terminal block with soldered connection to the PCB..... | 34 |
| Figure C.3 | – PCB terminal block with screwed connection to the PCB | 34 |
| Table 1 | – Standard cross-sections of copper conductors | 11 |
| Table 2 | – Relationship between maximum cross-section and connecting capacity of PCB terminal blocks..... | 12 |
| Table 3 | – Standards for clamping units and connecting methods | 14 |
| Table 4 | – Tightening torques for PCB terminal blocks with screw-type clamping units..... | 18 |
| Table 5 | – Impulse withstand test voltages..... | 20 |
| Table 6 | – Dielectric test voltages corresponding to the rated insulation voltage | 20 |
| Table 7 | – Length of connectable conductors and conductor loops..... | 23 |
| Table 8 | – Examples of cross-sectional distribution of interconnections on printed circuit boards | 24 |

INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

**Part 7-4: Ancillary equipment –
PCB terminal blocks for copper conductors**

FOREWORD

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International Standard IEC 60947-7-4 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 2013. This edition constitutes a technical revision.

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

- a) additional test for PCB terminal blocks with clamping units, where contact pressure is transmitted through insulating materials;
- b) tightening torques for screws now given in Table 4 of this document (previously given in Table 4 of IEC 60947-1:2007); tightening torques added for an additional type of screw;
- c) new criteria for verification of contact resistance introduced;

- d) clarification in the description of the temperature-rise test (current-temperature derating); corrections in the test sequence according to Figure 4.

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

| FDIS | Report on voting |
|---------------|------------------|
| 121A/255/FDIS | 121A/265/RVD |

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

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

A list of all parts in the IEC 60947 series, published 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,
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INTRODUCTION

This document covers not only the terminal block requirements in accordance with the IEC 60947-7 series but also takes into account the specifications of connectors in accordance with IEC 61984 as the requirements for both components are highly similar owing to equivalent applications.