IEC 60947-7-4

Edition 2.0 2019-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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

Appareillage à basse tension – Partie 7-4: Matériels accessoires – Blocs de jonction pour cartes de circuits imprimés pour conducteurs en cuivre

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IEC 60947-7-4:2019-01 (en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.130.20

ISBN 978-2-8322-6402-7

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

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

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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;

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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,
- withdrawn,
- replaced by a revised edition, or
- amended.

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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.

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

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

1 Scope

This part of IEC 60947-7 specifies requirements for PCB terminal blocks primarily intended for industrial or similar use.

Mounting and fixing on the printed circuit board is made by soldering, press-in or equivalent methods to provide electrical and mechanical connection between copper conductors and the printed circuit board.

This document applies to PCB terminal blocks intended to connect copper conductors, with or without special preparation, having a cross-section between 0.08 mm^2 and 300 mm^2 (AWG 28-600 kcmil), intended to be used in circuits of a rated voltage not exceeding 1 000 V AC up to 1 000 Hz or 1 500 V DC.

NOTE 1 Large-cross-section terminal blocks are dedicated to the specific usage of high-current PCBs. The range up to 300 mm^2 is kept to cover any possible application. Examples of high current PCBs and PCB terminal blocks are shown in Annex C.

NOTE 2 AWG is the abbreviation of “American Wire Gage” (Gage (US) = Gauge (UK)).

1 kcmil = 1 000 cmil;

1 cmil = 1 circular mil = surface of a circle having a diameter of 1 mil;

1 mil = 1/1 000 inch.

This document can be used as a guide for special types of PCB terminal blocks with components, such as disconnect units, integrated cartridge fuse-links and the like or with other dimensions of conductors.

If applicable, in this document the term “clamping unit” is used instead of “terminal”. This is taken into account in the case of references to IEC 60947-1.

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 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60352-1, *Solderless connections – Part 1: Wrapped connections – General requirements, test methods and practical guidance*

IEC 60352-2, *Solderless connections – Part 2: Crimped connections – General requirements, test methods and practical guidance*

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