

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Low-voltage switchgear and controlgear –  
Part 7-1: Ancillary equipment – Terminal blocks for copper conductors**

**Appareillage à basse tension –  
Partie 7-1: Matériels accessoires – Blocs de jonction pour conducteurs en cuivre**



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## CONTENTS

FOREWORD.....	5
1 Scope.....	7
2 Normative references .....	7
3 Terms and definitions .....	8
4 Classification.....	8
5 Characteristics .....	9
5.1 Summary of characteristics.....	9
5.2 Type of terminal block.....	9
5.3 Rated and limiting values .....	9
5.3.1 Rated voltages .....	9
5.3.2 Short-time withstand current.....	9
5.3.3 Standard cross-sections .....	9
5.3.4 Rated cross-section.....	9
5.3.5 Rated connecting capacity.....	9
6 Product information .....	10
6.1 Marking.....	10
6.1.1 Manufacturer or trade mark .....	10
6.1.2 Type reference .....	10
6.2 Additional information .....	10
7 Normal service, mounting and transport conditions.....	11
8 Constructional and performance requirements.....	11
8.1 Constructional requirements .....	11
8.1.1 Clamping units.....	11
8.1.2 Mounting .....	11
8.1.3 Clearances and creepage distances .....	11
8.1.4 Terminal block identification and marking .....	12
8.1.5 Resistance to abnormal heat and fire.....	12
8.1.6 Rated cross-section and rated connecting capacity.....	12
8.2 Performance requirements.....	12
8.2.1 Temperature-rise.....	12
8.2.2 Dielectric properties.....	12
8.2.3 Short-time withstand current.....	12
8.2.4 Voltage drop.....	12
8.2.5 Electrical performance after ageing (for screwless-type terminal blocks only).....	13
8.2.6 Contact pressure via insulating material (CoPI) .....	13
8.3 Electromagnetic compatibility.....	13
9 Tests.....	13
9.1 Kinds of test.....	13
9.2 General.....	13
9.3 Verification of mechanical characteristics.....	14
9.3.1 General .....	14
9.3.2 Attachment of the terminal block on its support.....	14
9.3.3 Mechanical properties of clamping units .....	15
9.4 Verification of electrical characteristics .....	17
9.4.1 General .....	17

9.4.2	Verification of clearances and creepage distances.....	17
9.4.3	Dielectric tests.....	17
9.4.4	Verification of the voltage drop.....	18
9.4.5	Temperature-rise test.....	19
9.4.6	Short-time withstand current test.....	20
9.4.7	Ageing test (for screwless-type terminal blocks only).....	20
9.4.8	Contact pressure via insulating material (CoPI) test.....	21
9.5	Verification of thermal characteristics.....	22
9.6	Verification of EMC characteristics.....	23
9.6.1	General.....	23
9.6.2	Immunity.....	23
9.6.3	Emission.....	24
Annex A	(informative) Main characteristics for terminal blocks.....	32
A.1	General.....	32
A.2	Properties of terminal blocks.....	32
A.3	Properties of test disconnect terminal blocks.....	32
Annex B	(informative) Items subject to extended tests for special product applications.....	33
Annex C	(informative) Examples for verifying the connecting capacity based on tests with both metric and AWG/kcmil conductors.....	34
C.1	General.....	34
C.2	Example 1: Testing with metric conductors.....	34
C.3	Example 2: Testing with metric and AWG/kcmil conductors.....	34
C.4	Example 3: Testing with AWG/kcmil conductors.....	34
Annex D	(normative) Requirements for test disconnect terminal blocks.....	35
D.1	Scope.....	35
D.2	Normative references.....	35
D.3	Terms and definitions.....	35
D.4	Classification.....	35
D.5	Characteristics.....	35
D.5.1	Summary of characteristics.....	35
D.5.2	Type of test disconnect terminal block.....	36
D.5.3	Rated and limiting values.....	36
D.6	Product information.....	36
D.6.1	Marking.....	36
D.6.2	Additional information.....	37
D.7	Normal service, mounting and transport conditions.....	37
D.8	Constructional and performance requirements.....	37
D.8.1	Constructional requirements.....	37
D.8.2	Performance requirements.....	38
D.8.3	Service life.....	39
D.8.4	Electromagnetic compatibility.....	39
D.9	Tests.....	40
D.9.1	Kinds of test.....	40
D.9.2	General.....	40
D.9.3	Verification of mechanical characteristics.....	40
D.9.4	Verification of electrical characteristics.....	40
D.9.5	Verification of thermal characteristics.....	44
D.9.6	Service life.....	44
D.9.7	Verification of EMC characteristics.....	44

Annex E (informative) Electrical and mechanical parameters for terminal blocks used with conductors of rated cross-section above 300 mm<sup>2</sup>/600 kcmil..... 47

Bibliography..... 49

  

Figure 1 – Arrangement for test according to 9.3.2..... 15

Figure 2 – Arrangement for tests according to 9.4.5 and 9.4.7, and for the verification of voltage drop..... 19

Figure 3 – Arrangement for test according to 9.5 ..... 23

Figure 4 – Point of test flame contact (view from the layer place below the terminal block)..... 23

Figure D.1 – Test requirements according to D.9.4.4 for verification of the voltage drop ..... 42

  

Table 1 – Test current for standard cross-sections and minimal requirement of rated connecting capacity (see 9.3.3.4 and 9.4.4, 9.4.5) ..... 24

Table 2 – Attachment test parameter, test values for flexion and pull-out and relationship between conductor cross-section and diameter for standard cross-section (see 9.3.2, 9.3.3.2 and 9.3.3.3)..... 27

Table B.1 – Additional items subject to agreement between manufacturer and user..... 33

Table D.1 – Operating cycles ..... 44

Table D.2 – Short-time withstand current and corresponding wire sizes ..... 45

Table E.1 – Electrical parameters for terminal blocks used with conductors of rated cross-section above 300 mm<sup>2</sup>/600 kcmil..... 47

Table E.2 – Mechanical parameters for terminal blocks used with conductors of rated cross-section above 300 mm<sup>2</sup>/600 kcmil..... 48

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

**Part 7-1: Ancillary equipment –  
Terminal blocks for copper conductors**

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IEC 60947-7-1 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. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2009. This edition constitutes a technical revision.

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

- a) Scope extension for smaller conductor cross-sections;
- b) Implementation of a contact pressure via insulation material (CoPI) test;
- c) Introduction of new informative Annex E for larger cross-sections;

- d) Reorganisation of all tables merged into two tables for electrical and mechanical values;
- e) Implementation of AWG-sizes conductor types as an equivalent type of metric conductor with examples in Annex C;
- f) Reorganisation of Annex D test disconnect terminal blocks to enhance readability;
- g) Introduction of new informative Annex A for main characteristics of terminal blocks.

This document shall be read in conjunction with IEC 60947-1:2020. The provisions of the general rules dealt with in IEC 60947-1:2020 are applicable to this document, where specifically called for. Clauses and subclauses, tables, figures and annexes thus applicable are identified by reference to IEC 60947-1:2020, e.g. 1.2 of IEC 60947-1:2020, Table 4 of IEC 60947-1:2020 or Annex A of IEC 60947-1:2020.

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

Draft	Report on voting
121A/646/FDIS	121A/674/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.

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.

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).

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- reconfirmed,
- withdrawn, or
- revised.

## LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

### Part 7-1: Ancillary equipment – Terminal blocks for copper conductors

#### 1 Scope

This part of IEC 60947 specifies requirements for terminal blocks and test disconnect terminal blocks according to Annex D with screw-type or screw-less-type clamping units primarily intended for industrial or similar use and to be fixed to a support to provide electrical and mechanical connection between copper conductors. It applies to terminal blocks intended to connect round copper conductors, with or without special preparation, having a cross-section between 0,05 mm<sup>2</sup>/30 AWG and 300 mm<sup>2</sup>/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. The tests on terminal blocks are made with AC or DC supply as required in relevant clauses of this document.

NOTE 1 This document is not intended for connecting devices for household purposes according to IEC 60998-1.

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

kcmil = 1 000 cmil;

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

1 mil = 1/1 000 inch.

NOTE 3 This document can be used as a guide in conjunction with an additional product risk assessment for:

- terminal blocks requiring the fixing of special devices to the conductors, for example quick connect terminations or wrapped connection, etc.;
- terminal blocks providing wire-binding screw (see IEC 60947-1:2020, Figure D.2), stud and nut terminations (see IEC 60947-1:2020, Figures D.4 and D.5), lug terminations (see IEC 60947-1:2020, Figure D.6) and terminal blocks providing direct contact to the conductors by means of edges or points penetrating the insulation, for example insulation displacement connection (IDC) (see IEC 60352-4:2020, Figure 2), etc.;
- special types of terminal blocks, for example with diodes or varistors or similar component holders, etc.;
- terminal blocks with capability to connect conductors with cross sections larger than 300 mm<sup>2</sup>/600 kcmil, see Annex E.

Where applicable in this document, the term "clamping unit" has been used instead of the term "terminal". This is taken into account in case of reference to IEC 60947-1:2020.

#### 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 60068-2-1:2007, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2:2007, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60695-11-5:2016, *Fire hazard testing – Part 11-5: Test flames – Needle-flame test method – Apparatus, confirmatory test arrangement and guidance*

IEC 60947-1:2020, *Low-voltage switchgear and controlgear – Part 1: General rules*