
Low-voltage switchgear and controlgear - Part 7-2: Ancillary equipment - Protective conductor terminal blocks for copper conductors

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EUROPEAN STANDARD

EN 60947-7-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2002

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Supersedes EN 60947-7-2:1995

English version

**Low-voltage switchgear and controlgear
Part 7-2: Ancillary equipment -
Protective conductor terminal blocks for copper conductors
(IEC 60947-7-2:2002)**

Appareillage à basse tension
Partie 7-2: Matériel accessoires -
Blocs de jonction de conducteur
de protection pour conducteurs en cuivre
(CEI 60947-7-2:2002)

Niederspannungsschaltgeräte
Teil 7-2: Hilfseinrichtungen -
Schutzleiter-Reihenklammern für
Kupferleiter
(IEC 60947-7-2:2002)

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This European Standard was approved by CENELEC on 2002-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 17B/1192/FDIS, future edition 2 of IEC 60947-7-2, prepared by SC 17B, Low-voltage switchgear and controlgear, of IEC TC 17, Switchgear and controlgear, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60947-7-2 on 2002-10-01.

This European Standard supersedes EN 60947-7-2:1995 + corrigendum January 1996.

This Part 7-2 shall be read in conjunction with EN 60947-1 and EN 60947-7-1. The provisions of the general rules dealt with in EN 60947-1 and the requirements for terminal blocks of EN 60947-7-1 are applicable to this standard, where specifically called for. Clauses and subclauses, tables, figures and annexes thus applicable are identified by reference to "IEC 60947-1" or "IEC 60947-7-1", e.g. 1.2 of IEC 60947-1, table 4 of IEC 60947-7-1 or annex A of IEC 60947-1.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2003-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-10-01

Annexes designated "normative" are part of the body of the standard.

In this standard, annexes A, B and ZA are normative.

Annex ZA has been added by CENELEC.

Endorsement notice
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The text of the International Standard IEC 60947-7-2:2002 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60439-1	1999	Low-voltage switchgear and controlgear assemblies Part 1: Type-tested and partially type-tested assemblies	EN 60439-1	1999
IEC 60715 + A1	1981 1995	Dimensions of low-voltage switchgear and controlgear - Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations	EN 60715	2001
IEC 60947-1 (mod)	1999	Low-voltage switchgear and controlgear Part 1: General rules	EN 60947-1 + corr. October	1999
A1	2000		A1	2000
A2	2001		A2	2001
IEC 60947-7-1	2002	Part 7-1: Ancillary equipment - Terminal blocks for copper conductors	EN 60947-7-1	2002

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IEC

60947-7-2

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Appareillage à basse tension –

Partie 7-2:

Matériels accessoires –

Blocs de jonction de conducteur de protection
pour conducteurs en cuivre

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Part 7-2:

Ancillary equipment –

Protective conductor terminal blocks
for copper conductors

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 7-2: Ancillary equipment –
Protective conductor terminal blocks for copper conductors

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60947-7-2 has been prepared by subcommittee 17B: Low-voltage switchgear and controlgear, of IEC technical committee 17: Switchgear and controlgear.

This second edition of IEC 60947-7-2 cancels and replaces the first edition, published in 1995, and constitutes a technical revision.

This standard shall be read in conjunction with IEC 60947-1 and IEC 60947-7-1. The provisions of the general rules dealt with in IEC 60947-1 and the requirements for terminal blocks of IEC 60947-7-1 are applicable to this standard, where specifically called for. Clauses and subclauses, tables, figures and annexes thus applicable are identified by reference to IEC 60947-1 or IEC 60947-7-1, e.g. 1.2 of IEC 60947-1, table 4 of IEC 60947-7-1 or annex A of IEC 60947-1.

The text of this standard is based on the following documents:

FDIS	Report on voting
17B/1192/FDIS	17B/1219/RVD

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

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

Annexes A and B form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2008. At this date, the publication will be

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

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LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 7-2: Ancillary equipment – Protective conductor terminal blocks for copper conductors

1 General

1.1 Scope

This part of IEC 60947 specifies requirements for protective conductor terminal blocks with PE function up to 120 mm² (250 kcmil) and for protective conductor terminal blocks with PEN function equal to and above 10 mm² (AWG 8) with screw-type or screwless-type clamping units, primarily intended for industrial applications.

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

kcmil = 1000 cmil

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

1 mil = 1/1000 inch

Protective conductor terminal blocks are used to form the electrical and mechanical connection between copper conductors and the fixing support.

It is applicable to protective conductor terminal blocks for the connection of round copper conductors with or without special preparation having a cross-section between 0,2 mm² and 120 mm² (AWG 24 and 250 kcmil), intended to be used in circuits of a rated voltage not exceeding 1 000 V a.c. up to 1 000 Hz or 1 500 V d.c., most commonly in conjunction with terminal blocks according to IEC 60947-7-1.

This standard may be used as guide for

- protective conductor terminal blocks requiring the fixing of special devices to the conductors, for example quick connect terminations or wrapped connections, etc.;
- protective conductor terminal blocks providing direct contact to the conductors by means of edges or points penetrating the insulation, for example insulation displacement connections, etc.

Where applicable in this standard, 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.

1.2 Normative references

The following referenced documents are indispensable for the application 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 60439-1:1999, *Low-voltage switchgear and controlgear assemblies – Part 1: Type-tested and partially type-tested assemblies*