

# Low-voltage switchgear and controlgear —

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

The European Standard EN 60947-7-2:2002 has the status of a  
British Standard

ICS 29.120.99; 29.120.20

National foreword

This British Standard is the official English language version of EN 60947-7-2:2002. It is identical with IEC 60947-7-2:2002. It supersedes BS EN 60947-7-2:1996 which is withdrawn.

The UK participation in its preparation was entrusted by Technical Committee PEL/17, Switchgear, controlgear and HV-LV co-ordination, to Subcommittee PEL/17/2, Low-voltage switchgear and controlgear, which has the responsibility to:

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This British Standard, having been prepared under the direction of the Electrotechnical Sector Policy and Strategy Committee, was published under the authority of the Standards Policy and Strategy Committee on 27 November 2002

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 18, an inside back cover and a back cover.

The BSI copyright date displayed in this document indicates when the document was last issued.

Amendments issued since publication

| Amd. No. | Date | Comments |
|----------|------|----------|
|          |      |          |
|          |      |          |
|          |      |          |
|          |      |          |

© BSI 27 November 2002

ISBN 0 580 40817 5

EUROPEAN STANDARD

**EN 60947-7-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2002

ICS 29.120.99; 29.120.20

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

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

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Ref. No. EN 60947-7-2:2002 E

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## 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.

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## Endorsement notice

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

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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 mm<sup>2</sup> (250 kcmil) and for protective conductor terminal blocks with PEN function equal to and above 10 mm<sup>2</sup> (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 mm<sup>2</sup> and 120 mm<sup>2</sup> (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*

IEC 60715:1981, *Dimensions of low-voltage switchgear and controlgear – Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations*

Amendment 1 (1995)

IEC 60947-1:1999, *Low-voltage switchgear and controlgear – Part 1: General rules*

Amendment 1 (2000)

Amendment 2 (2001)

IEC 60947-7-1:2002, *Low-voltage switchgear and controlgear – Part 7-1: Ancillary equipment – Terminal blocks for copper conductors*

## **2 Definitions**

For the purpose of this part of IEC 60947, definitions given in IEC 60947-7-1, together with the following definitions, apply.

### **2.1**

#### **protective conductor terminal block**

device with one or more clamping units for connecting and/or joining protective conductors (PE and PEN conductors) with conducting connection to their supports, which may be designed with screw-type or screwless-type fixing means

NOTE 1 Supports are, for example, mounting rails, sheet metal cut-outs, mounting plates, etc.

NOTE 2 A protective conductor terminal block can be either partially insulated or not at all. It does not require any functional insulation.

### **2.2**

#### **partially insulated protective conductor terminal block**

device which is only insulated against live parts of other devices but not against the support itself

### **2.3**

#### **PEN conductor**

earthed conductor combining the functions of both protective conductor and neutral conductor

NOTE The acronym PEN results from the combination of both symbols PE for the protective conductor and N for the neutral conductor (see 2.1.15 of IEC 60947-1).

## **3 Classification**

Distinction is made between various types of protective conductor terminal blocks as follows:

- method of fixing the protective conductor terminal block to the support;
- type of clamping units: screw-type clamping units or screwless-type clamping units;
- ability to receive conductors with or without special preparation (e.g. cable lugs);
- terminal assemblies with identical or dissimilar clamping units;
- number of clamping units on each terminal assembly;
- service conditions;
- PE or PEN functions.