

Connectors for frequencies below 3 MHz —

**Part 17: Detail specification for
interconnection devices which permit
multi-directional mating, for use with
rechargeable batteries**

The European Standard EN 60130-17:1999 has the status of a
British Standard

ICS 31.220.10

National foreword

This British Standard is the English language version of EN 60130-17:1999. It is identical with IEC 60130-17:1998.

The UK participation in its preparation was entrusted by Technical Committee EPL/48, Electromechanical components for electronic equipment, to Subcommittee EPL/48/2, Connectors for electronic equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 35 and a back cover.

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Connectors for frequencies below 3 MHz
Part 17: Detail specification for interconnection devices which permit
multi-directional mating, for use with rechargeable batteries
(IEC 60130-17:1998)

Connecteurs utilisés aux fréquences
jusqu'à 3 MHz
Partie 17: Spécification particulière
des dispositifs d'interconnexion qui
permettent un acouplement
multidirectionnel, à utiliser avec
des batteries rechargeables
(CEI 60130-17:1998)

Steckverbinder für Frequenzen
unter 3 MHz
Teil 17: Bauartspezifikation für
Verbindungselemente für
wiederaufladbare Batterien mit
Steckmöglichkeiten in mehreren
Richtungen
(IEC 60130-17:1998)

This European Standard was approved by CENELEC on 1999-05-01. 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.

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CENELEC

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

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Documents

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Foreword

The text of the International Standard IEC 60130-17:1998, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the formal vote and was approved by CENELEC as EN 60130-17 on 1999-05-01 without any modification.

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) 2000-08-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2002-08-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60130-17:1998 was approved by CENELEC as a European Standard without any modification.

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CONNECTORS FOR FREQUENCIES BELOW 3 MHz –

Part 17: Detail specification for interconnection devices which permit multi-directional mating, for use with rechargeable batteries

1 General

1.1 Scope

This part of IEC 60130 is a connector detail specification for a battery interconnection system for portable computers, cellular telephones and other electronic devices requiring power not to exceed 50 V d.c. SELV (Safety Extra Low Voltage).

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60130. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 60130 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards

IEC 60130-0:1970, *Connectors for frequencies below 3 MHz – Part 0: Guide to drawing information in detail specifications*

IEC 60130-1:1988, *Connectors for frequencies below 3 MHz – Part 1: General requirements and measuring methods*

IEC 60512-1:1994, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 1: General*

IEC 60512-2:1985, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 2: General examination, electrical continuity and contact resistance tests, insulation resistance tests and voltage stress tests*

IEC 60512-3:1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 3: Current-carrying capacity tests*

IEC 60512-4:1976, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 4: Dynamic stress tests*

IEC 60512-5:1992, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests*

IEC 60512-6:1984, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 6: Climatic tests and soldering tests*

IEC 60512-7:1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 7: Mechanical operating tests and sealing tests*

IEC 60512-8:1993, *Electromechanical components for electronic equipment; basic testing procedures and measuring methods – Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations*

ISO 468:1982, *Surface roughness – Parameters, their values and general rules for specifying requirements*

1.3 Ratings and characteristics

Rated voltage:	Maximum 50 V d.c.
Current rating:	4 A, 30 °C temperature rise
Insulation resistance:	1 000 MΩ
Climatic category:	30/070/10
Printed board thickness:	1,6 mm
Contact spacing:	5 mm

1.4 Marking

1.4.1 On each connector

Each connector shall have the identification of the number one contact position marked as indicated on the fixed connector in this detail specification.

Additional markings shall include the following information:

- a) mark of origin (manufacturer's name or trade mark);
- b) year and month (or week) of manufacture;
- c) IEC type designation, according to clause 2.

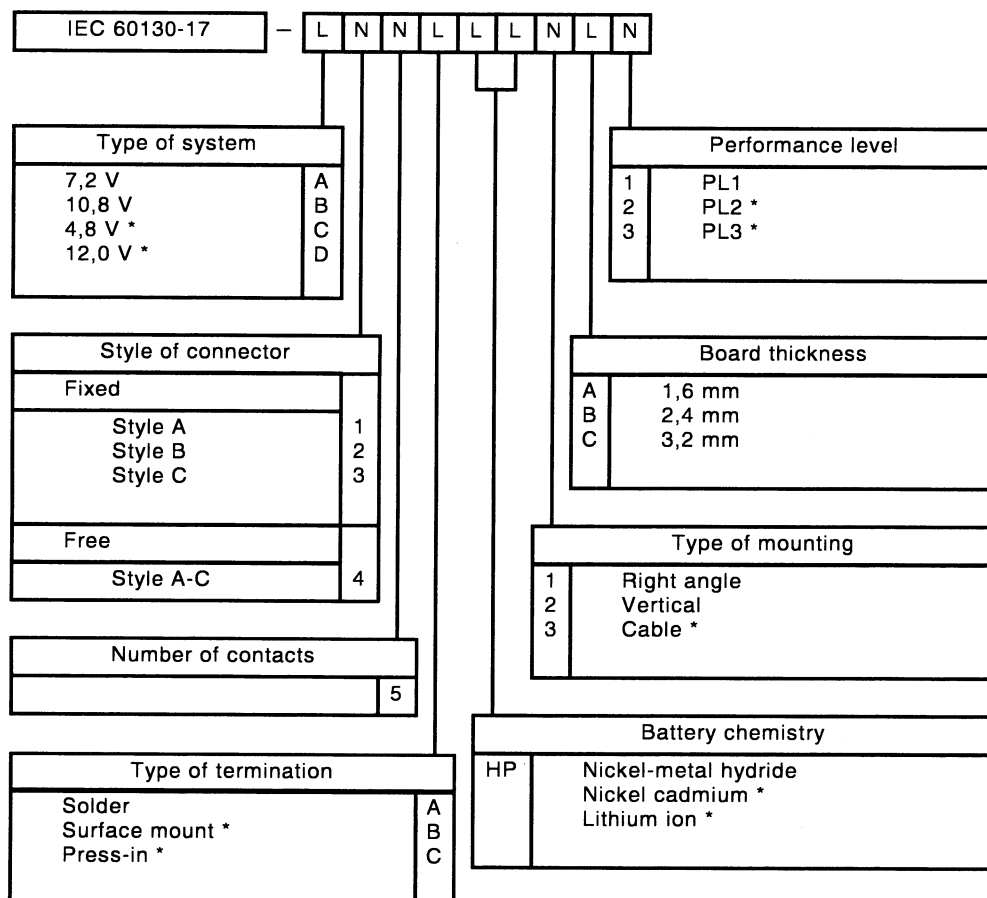
However, since the number of characters this requires may exceed the limitation imposed by computer processing systems, the manufacturer may use his own part number, providing that a cross-reference list is made available.

If space does not permit full marking, as much as possible of the information, in the order shown, shall be included.

1.4.2 On the package

The information specified in items a), b) and c) shall always be marked on the package.

2 IEC type designation



* Under consideration

Example: IEC 60130-17-A15AHP1A1

Five pole right-angle fixed connector with right-handed voltage key for through-hole solder termination to a 1,6 mm board, 7,2 V, nickel-metal hydride.

3 Dimensional information for 7,2 V battery interconnection system – Type A

3.1 General

Dimensions are metric. Drawings are shown in third angle projection. The shape of the connector may deviate from those given in the following drawings as long as the specified dimensions are maintained. All dimensions are given in millimetres.

3.2 Isometric view and common features

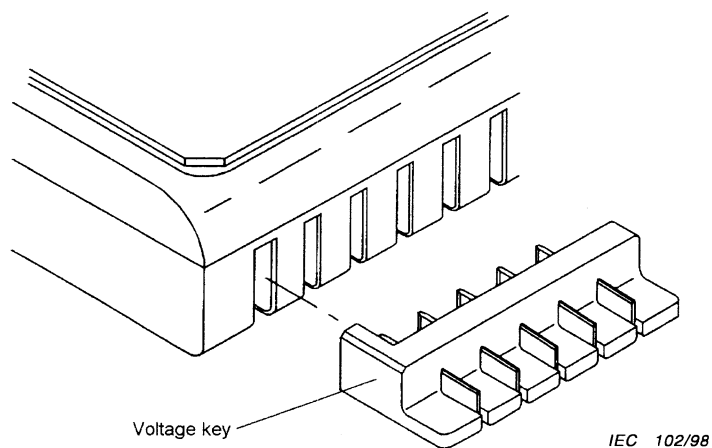


Figure 1 – Keying feature serving as guide during mating

3.3 Mating information

The design of the fixed connector with various keying features prevents mismating. The connectors are fully mated when there is a maximum space of 1,50 mm between the fixed and free connectors (see figure 2).

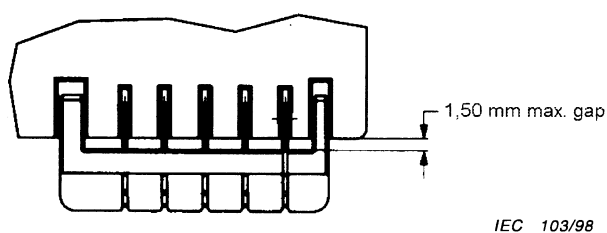
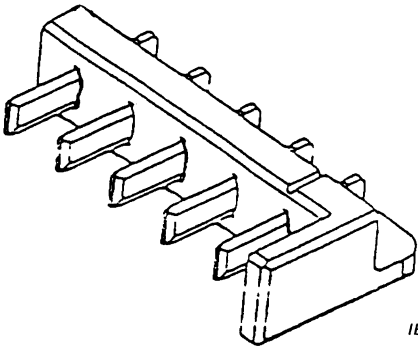
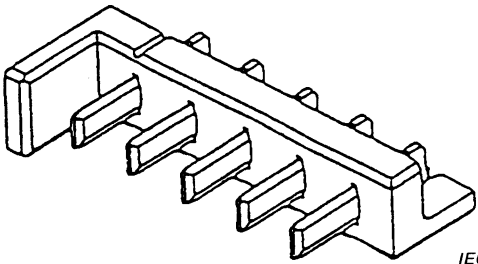
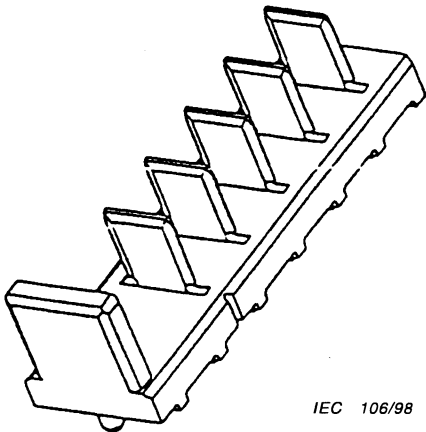


Figure 2 – Contact spacing

3.3.1 Keyed fixed connector styles

There are three styles:

Table 1 – Type A

Style	
A	Right-handed voltage key  IEC 104/98
B	Left-handed voltage key  IEC 105/98
C	Vertical mount  IEC 106/98

3.3.2 Mating direction – Right-angle fixed connector, styles A and B

The various methods of mating the free connector with the fixed connector are illustrated in figure 3.

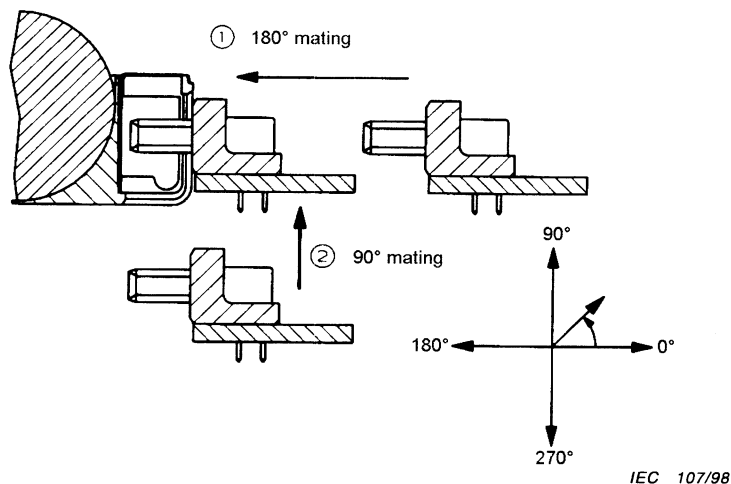


Figure 3 – Mating orientation – Right-angle fixed connector, styles A and B

3.3.3 Mating configurations – Right-angle fixed connector, styles A and B

The position of the free connector when mating with the fixed connector is illustrated in various inclinations ranging from 0° to 90°.

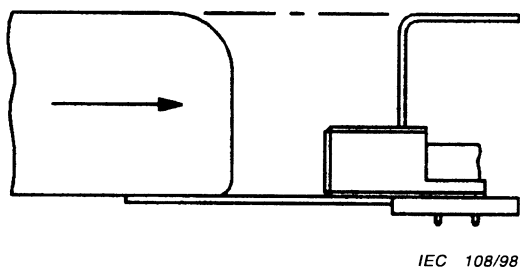


Figure 4a – Mate-in

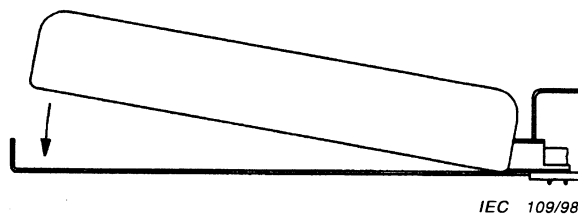


Figure 4c – Cam-in

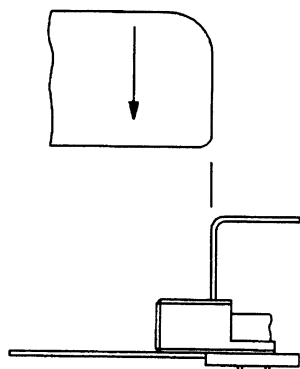


Figure 4b – Mate-down

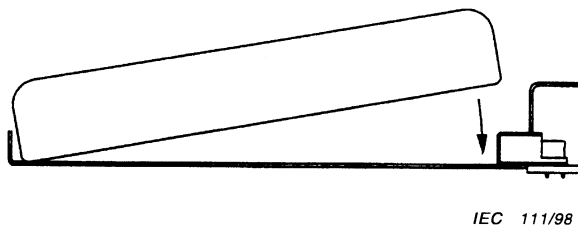


Figure 4d – Cam-down

Figure 4 – Mating configurations – Right-angle fixed connector, styles A and B