

Connectors for electronic equipment —

**Part 4-111: Printed board connectors
with assessed quality — Detail
specification for two-part power
connector modules, for printed boards
and backplanes having early mating
features, and having a basic grid of
2,5 mm in accordance with IEC 60917-1**

The European Standard EN 61076-4-111:2002 has the status of a
British Standard

ICS 31.220.10

National foreword

This British Standard is the official English language version of EN 61076-4-111:2002. It is identical with IEC 61076-4-111:2002.

The UK participation in its preparation was entrusted by Technical Committee EPL/48, Electromechanical components and mechanical structures 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

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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 16 August 2002

Summary of pages

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Part 4-111: Printed board connectors with assessed quality -
Detail specification for two-part power connector modules,
for printed boards and backplanes having early mating features,
and having a basic grid of 2,5 mm in accordance with IEC 60917-1
(IEC 61076-4-111:2002)

Connecteurs pour équipements électroniques
Partie 4-111: Connecteurs pour cartes imprimées sous assurance de la qualité -
Spécification particulière pour modules de connecteur de puissance à deux parties, pour cartes imprimées et panneaux arrière ayant les premières caractéristiques de couplage et une grille au pas de 2,5 mm conformément à la CEI 60917-1
(CEI 61076-4-111:2002)

Steckverbinder für elektronische Einrichtungen
Teil 4-111: Steckverbinder für gedruckte Schaltungen mit bewerteter Qualität -
Bauartspezifikation für indirekte Hochstromsteckverbindermodule mit Voreilung für gedruckte Schaltungen und Rückplatten im Raster 2,5 mm nach IEC 60917
(IEC 61076-4-111:2002)

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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

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

Foreword

The text of document 48B/1123FDIS, future edition 1 of IEC 61076-4-111, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61076-4-111 on 2002-03-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

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

Endorsement notice

The text of the International Standard IEC 61076-4-111:2002 was approved by CENELEC as a European Standard without any modification.

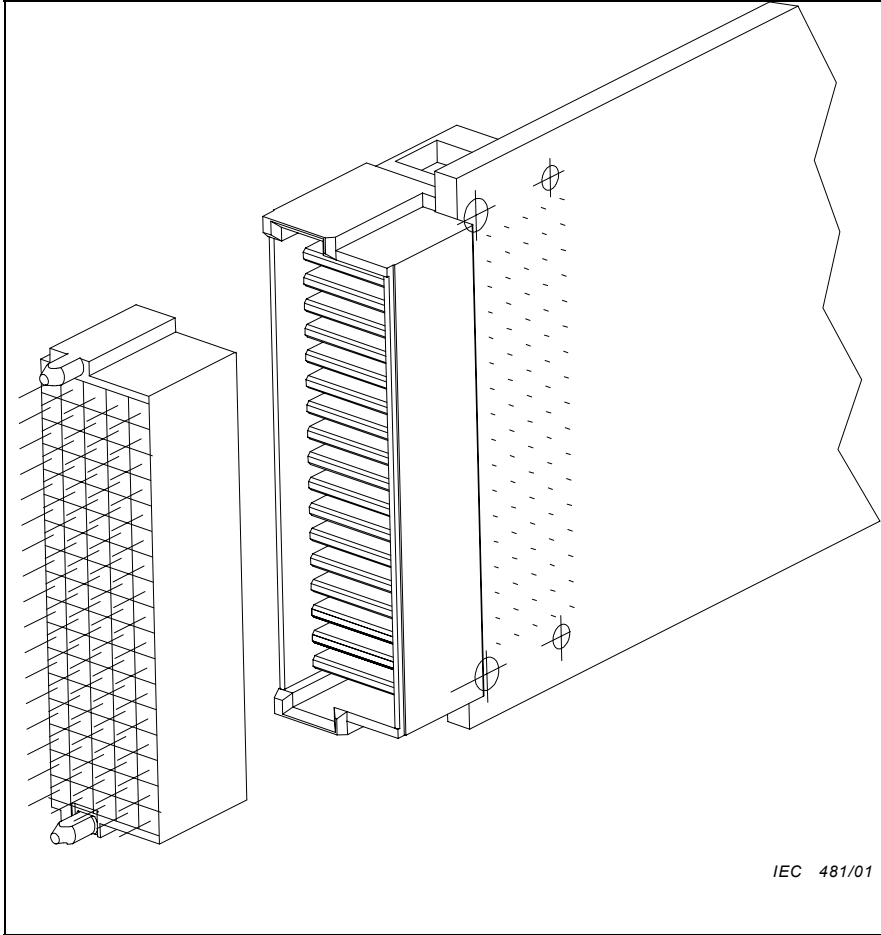
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CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 4-111: Printed board connectors with assessed quality –
Detail specification for two-part power connector modules,
for printed boards and backplanes having early mating features,
and having a basic grid of 2,5 mm in accordance with IEC 60917-1

IEC SC 48B – Connectors Specification available from: IEC Central Office or from the addresses shown on the inside cover.	IEC 61076-4-111 QC 480301XX0012
ELECTRONIC COMPONENTS OF ASSESSED QUALITY DETAIL SPECIFICATION in accordance with IEC 61076-1:1995.	Blank detail specification number 61076-4-001
	Modular two-part power connector for printed boards and backplanes having a basic grid of 2,5 mm in accordance with IEC 60917-1. Modular two part power connector having 15 mm mounting pitch and height multiple modules of n x 25 mm with n = 1 and 2. Female press-in connector on the backplane. Male press-in connector on the daughterboard. Performance levels (PL): 1, 2 Assessment level: B, G

Information on the availability of components qualified to this detail specification is given in the qualified products list.

1 General data

This specification contains modular two-part power connectors having a grid of 2,5 mm for printed boards and backplanes. The described modules are $n \times 25$ mm with $n = 1$ and $n = 2$. The required board mounting spacing is 15 mm or more. The standard power contact has a first make / last break function in respect to the first make / last break signal power contact described in IEC 61076-4-100. The connector is not intended for mating and unmating under heavy load (non-signal).

Throughout this specification, all dimensions are in millimetres.

1.1 Recommended method of mounting

The free board connector is provided with compliant press-in terminations. The mounting of the free board connector is achieved by press-in pivots; the terminations of the free board connector fit into holes in the printed board according to IEC 60352-5 located on a grid of 2,5 mm. Each contact has five press-in sections.

The fixed board connector is provided with compliant press-in terminations. The mounting of the fixed board connector is achieved by press-in pivots, the terminations of the fixed board connector fit into holes in the printed board according to IEC 60352-5 located on a grid of 2,5 mm. Each contact has five press-in sections. Care must be taken that the five terminations are connected to each other by traces adequate to bear the required current on the backplane, for it might be that, on multispring designs, there are no internal connections within the connector.

For the press-in operation, the tooling recommended by the connector supplier should be used.

See annex A for guidance on the application of these connectors in mechanical structures according to IEC 60917-1.

1.1.1 Number of contacts

Style	A	B
Number of contacts	7	17

1.2 Ratings and characteristics

Rated voltage:	500 V r.m.s. for pollution degree 1 (according to IEC 60664-1, table 4) 100 V r.m.s. for pollution degree 2 (according to IEC 60664-1, table 4)
Impulse withstand voltage:	2 kV for pollution degrees 1 and 2 (according to IEC 60664-1, table 2)
Current rating:	15 A at 70 °C
Insulation resistance:	10^4 M Ω
Climatic category:	PL1: 55/125/56 PL2: 55/125/21
Printed board:	Hole diameter: plated-through hole 0,94 mm to 1,09 mm according to IEC 60352-5. Board thickness: 1,4 mm min.
Backplane:	Hole diameter: plated-through hole 0,94 mm to 1,09 mm according to IEC 60352-5. Board thickness: 1,4 mm min.
Contact spacing:	2,5 mm

1.3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61076. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61076 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60326-3:1991, *Printed boards – Part 3: Design and use of printed boards*

IEC 60352-5:1995, *Solderless connections – Part 5: Solderless press-in connections – General requirements, test methods and practical guidance*

IEC 60410:1973, *Sampling plans and procedures for inspection by attributes*

IEC 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

IEC 60512-1-100:2001, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General – Applicable publications*

IEC 60664-1:1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60917-1:1998, *Modular order for the development of mechanical structures for electronic equipment practices – Part 2: Generic standard*

IEC 60917-2-2:1994, *Modular order for the development of mechanical structures for electronic equipment practices – Part 2: Sectional specification – Interface co-ordination dimensions for the 25 mm equipment practice – Section 2: Detail specification – Dimensions for subracks, chassis, backplanes, front panels and plug-in units*

IEC 61076-1:1995, *Connectors with assessed quality for use in d.c., low frequency analogue and in digital high speed data applications – Part 1: Generic specification*

IEC 61076-4:1995, *Connectors with assessed quality for use in d.c., low frequency analogue and in digital high speed data applications – Part 4: Sectional specification – Printed board connectors*

IEC 61076-4-001:1996, *Connectors with assessed quality, for use in d.c., low-frequency analogue and in digital high-speed data application – Part 4: Printed board connectors – Section 001: Blank detail specification.*

IEC 61076-4-100:2001, *Connectors for electronic equipment – Part 4-100: Printed board connectors with assessed quality – Detail specification for two-part connector modules having a grid of 2,5 mm, for printed boards and backplanes.*

IEC 61076-4-102:1997, *Connectors with assessed quality for use in d.c., low frequency analogue and in digital high speed data applications – Part 4: Printed board connectors – Section 102: Detail specification for two-part single-pole connectors, for multiple uses on plug-in units, with pre-centring, coding and early mating features, having a metric grid in accordance with IEC 60917*

ISO 1302:1992, *Technical drawings – Method of indicating surface texture*

1.4 Marking

The marking of the connector and the package shall be in accordance with 2.6 of IEC 61076-4.

1.5 IEC type designation

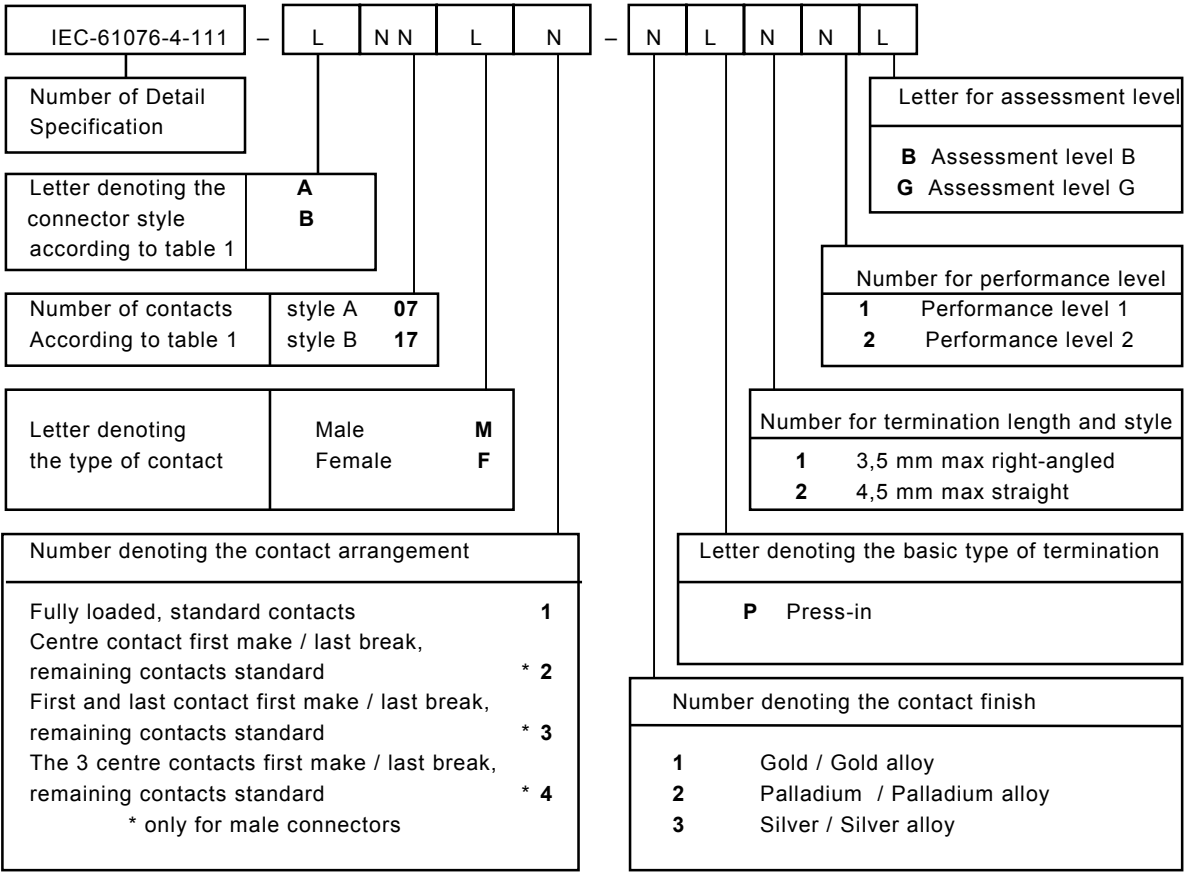
See 2.1 for definitions and 2.2 for designation of styles and variants.

L stands for letter, N stands for number.

Connectors shall be designated by the following system.

Example for connector:

A style A male connector, right-angled 3,5 mm press-in terminations, fully loaded, with first make / last break contacts in the first and last position, having silver or silver alloy plating meeting performance level 2, assessment level B is designated as follows: IEC-61076-4-111-A07M3-3P12B.



1.6 Ordering information

For ordering connectors according to this detail specification, the IEC type designation described in 1.5 shall be used.

2 Technical information

2.1 Definitions

For the purpose of this part of IEC 61076, the following definitions apply.

contact range

the minimum to maximum distance between the reference planes of the fixed and free board connectors, within which the specified contact resistance is met

contact level

group of contacts which engages/separates simultaneously, within the limits required by a secure engaging sequence

first reliable contact point

point on the female contact, from where the specified contact resistance with the incoming male contact is met

first make / last break contact

contact or group of contacts which engage prior and separate later than standard contacts.

2.2 Survey of styles and variants

Table 1 – Styles

Style reference letter	A	B
Height of styles	25 mm	50 mm
Number of contacts	7	17

2.3 Information on application

2.3.1 Complete connectors (pairs)

Based on the multi-module of 25 mm, the connector may be used in any combination with connectors according to IEC 61076-4-100. The arrangement of the free board connectors is the same as the arrangement of the fixed board connectors.

2.3.2 Fixed board connectors

The fixed board connector shall be pressed into the backplane, the contacts have compliant press-in terminations, the housing has two plastic pivots to ensure the proper positioning and mechanical fixation.

2.3.3 Free board connectors

The free board connector shall be pressed into the printed board. The contacts have compliant press-in terminations, the housing has four plastic pivots to ensure the proper positioning and mechanical fixation.

2.4 Contact arrangements

Contact arrangements according to 1.5.

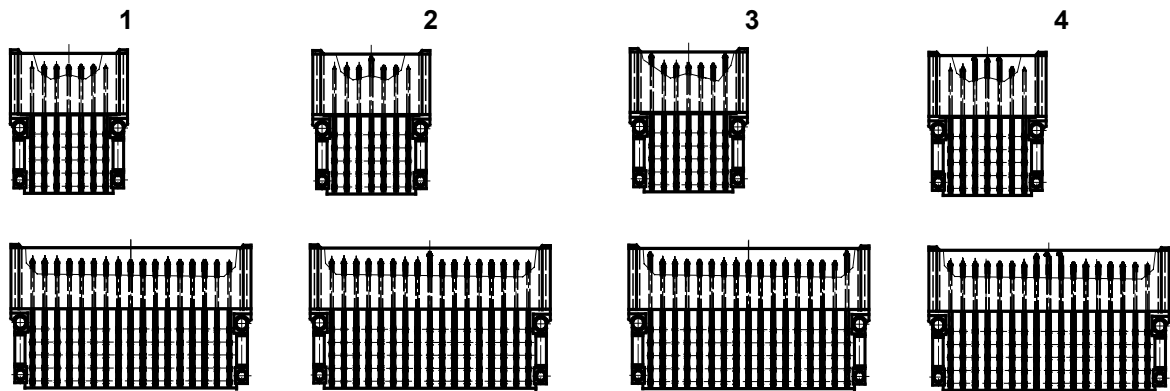


Figure 1 – Contact arrangements

IEC 482/01

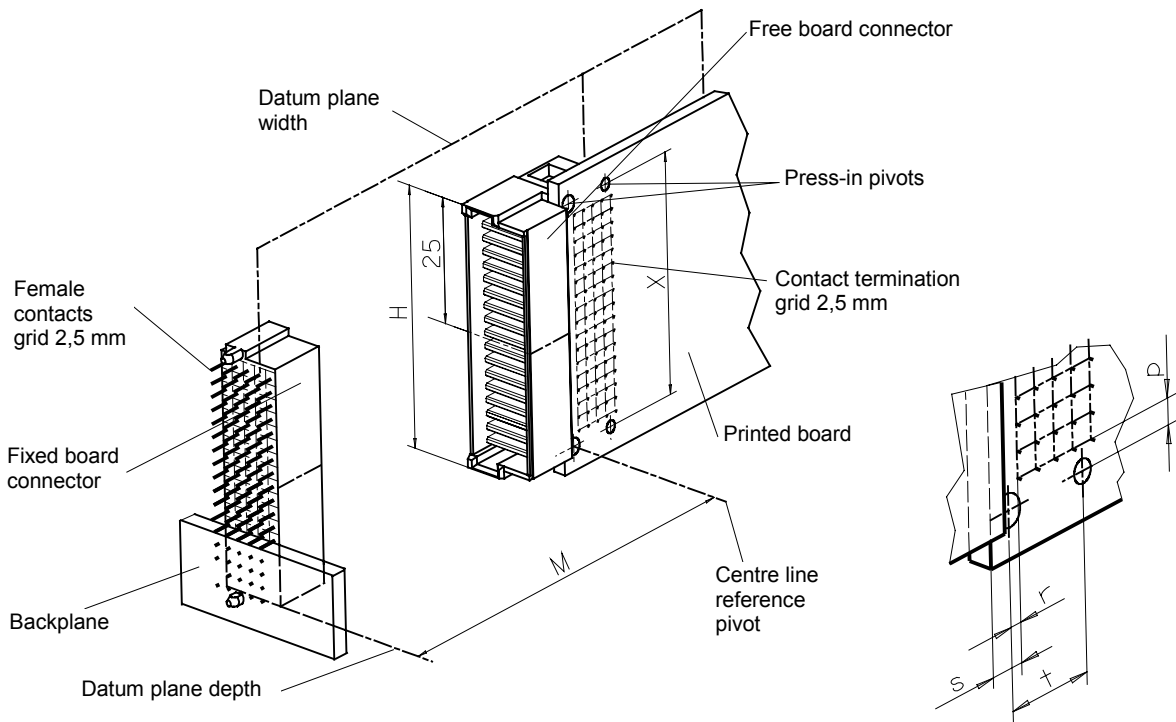
3 Drawings and dimensions

3.1 General

All drawings are shown in first angle projection. The shape of the connectors may deviate from that given in the following drawings, as long as the specified dimensions and function are not influenced.

Dimensions not specified may be chosen according to common characteristics and intended use.

3.2 Isometric view and common features



IEC 483/01

Figure 2 – Isometric view