
**Konektorji za elektronsko opremo - 4-115. del: Konektorji za tiskane plošče -
Konektorji za hrbtnne plošče za opremo InfiniBand (IEC 61076-4-115:2003)**

Connectors for electronic equipment - Part 4-115: Printed board connectors -
Backplane connectors for InfiniBand equipment (IEC 61076-4-115:2003)

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English version

Connectors for electronic equipment
Part 4-115: Printed board connectors –
Backplane connector for InfiniBand equipment
(IEC 61076-4-115:2003)

Connecteurs pour équipements
électroniques
Partie 4-115: Connecteurs pour cartes
imprimées –
Connecteur de fond de panier pour
équipement InfiniBand
(CEI 61076-4-115:2003)

Steckverbinder für elektronische
Einrichtungen
Teil 4-115: Steckverbinder für gedruckte
Schaltungen –
Rückplatten-Steckverbinder für
InfiniBand-Geräte
(IEC 61076-4-115:2003)

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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

Foreword

The text of document 48B/1288/FDIS, future edition 1 of IEC 61076-4-115, 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 61076-4-115 on 2003-05-01.

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) 2004-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-05-01

The International Electrotechnical Commission (IEC) and CENELEC draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning

- a) an electrical connector assembly for establishing electrical contact with contacting devices of external terminals, e.g. with solder points of a circuit board;
- b) an electrical connector assembly for establishing electrical contact with external terminals having contacting devices with contact faces, e.g. with solder points of a circuit board;
- c) an electrical connector assembly with an electrical connector having a connecting position and contacting devices for establishing electrical contact between a first and a second printed circuit board.

The IEC and CENELEC take no position concerning the evidence, validity and scope of this patent right.

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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

The text of the International Standard IEC 61076-4-115:2003 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 60068-1	1988	Environmental testing Part 1: General and guidance	EN 60068-1 ¹⁾	1994
IEC 60352-5	2001	Solderless connections Part 5: Press-in connections - General requirements, test methods and practical guidance	EN 60352-5	2001
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements Part 1: General	EN 60512	Series
IEC 60512-1-100	2001	Connectors for electronic equipment - Tests and measurements Part 1-100: General - Applicable publications	EN 60512-1-100	2001
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	EN 60917-2-2	1996
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	EN 61076-1	1995
IEC 61076-4	1995	Part 4: Sectional specification - Printed board connectors	EN 61076-4	1996

¹⁾ EN 60068-1 includes corrigendum October 1998 + A1:1992 to IEC 60068-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61076-4-001	1996	Part 4: Printed board connectors -- Section 001: Blank detail specification	EN 61076-4-001	1996
ISO 1302	2002	Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation	EN ISO 1302	2002

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NORME
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61076-4-115

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First edition
2003-02

Connecteurs pour équipements électroniques –

Partie 4-115:

Connecteurs pour cartes imprimées –

Connecteur de fond de panier

pour équipement InfiniBand

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Connectors for electronic equipment –

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Part 4-115:

Printed board connectors –

Backplane connector

for InfiniBand equipment

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International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT –

**Part 4-115: Printed board connectors –
Backplane connector
for InfiniBand equipment**

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.
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- 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.
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- 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.

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International Standard IEC 61076-4-115 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This standard cancels and replaces IEC/PAS 61076-4-115 published in 2001. This first edition constitutes a technical revision.

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

FDIS	Report on voting
48B/1288/FDIS	48B/1308/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.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated when a new edition is prepared.

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

The committee has decided that the contents of this publication will remain unchanged until 2007. At this date, the publication will be

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

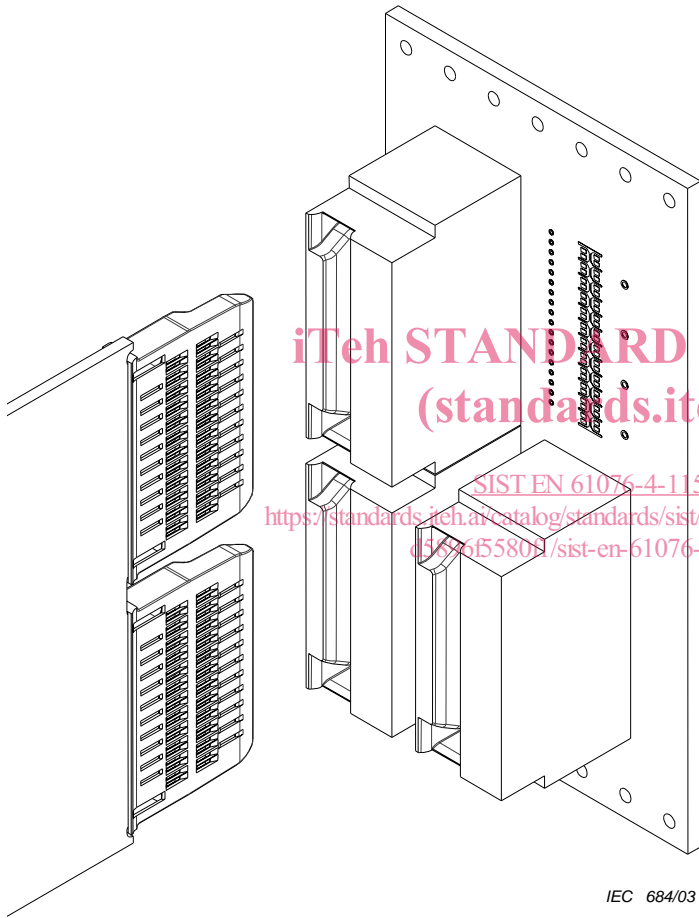
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CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 4-115: Printed board connectors – Backplane connector for InfiniBand equipment

IEC SC 48B – Connectors	
Electronic components of assessed quality in accordance with IEC 61076-1:1995	Blank detail specification: IEC 61076-4-001:1996
 <p style="text-align: right;">IEC 684/03</p>	<p>Single-part hybrid connector, with a section for high-speed on a 3 mm grid and a low-speed section with power and ground connections on a 2 mm grid, for printed boards and backplanes in accordance with IEC 60917-2-2.</p> <p>Hybrid connector having one section containing 2 rows of 12 contact pairs for differential pair transmission on a 3 mm pitch and one section with 1 row of 18 contacts for low-speed and power connections on a 2 mm pitch.</p> <p>The fixed connectors are 50 mm high, pressed-in or surface mount soldered onto the backplane.</p> <p>The plug-in card interface is protected by a paddle-guard.</p> <p>Performance levels (PL): 1</p>

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

1 General data

1.1 Recommended method of mounting

Three methods of mounting to the backplane may be adopted.

a) Press-in/compression connections

The fixed connector is pressed-in onto the backplane, using 18 press-in low-speed connections and four press-in pins.

The high-speed contacts to the backplane use compression connections. See Figure 1.

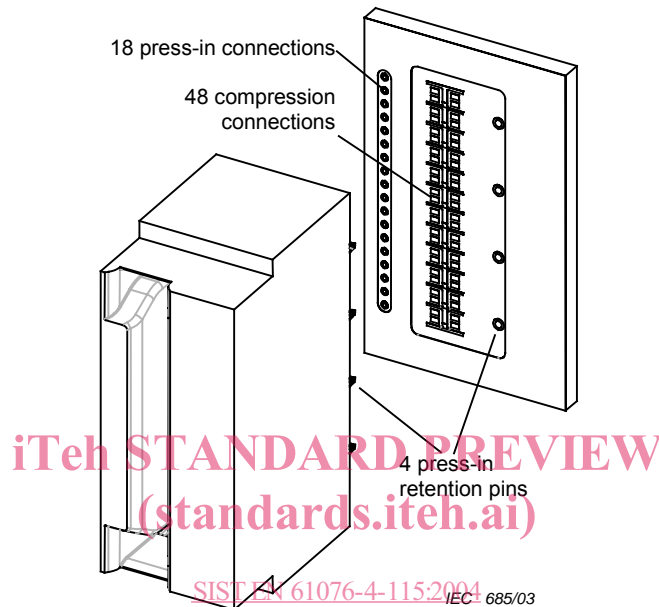


Figure 1 – Press-in/compression method of mounting

b) Press-in connections only

Under consideration.

c) Surface mount soldered connections

Under consideration.

The plug-in card has an extension in the form of a paddle, with contact pads for compression connections. The paddle shall be protected by a paddle-guard, which may be removable or permanently mounted.

Number of contacts and contact cavities**Table 1 – Number of contacts for fixed connector**

Styles	Number of I/O channels	Differential pairs	Low-speed contacts
A	4 x I/O channels	4 + 4	18
C	12 x I/O channels	12 + 12	18

Table 2 – Number of cavities for paddle guard

Styles	Cavities for differential pair entries	Cavities for low-speed entries
I	12 + 12	18

1.2 Ratings and characteristics**High-speed section**

Compression connections	bifurcated contacts with independently operating beams
Creepage and clearance	0,3 mm min. between contacts mutually and ground
Rated voltage	within same pair 100 V r.m.s. pair to ground 100 V r.m.s.
Current rating	0,25 A per contact pair at 70 °C (all contacts loaded)
Insulation resistance	1 GΩ min.
Differential impedance	100 Ω ± 10 Ω at 100 ps risetime in the connector

Low-speed section

Compression connections	bifurcated contacts with independently operating beams
Creepage and clearance	0,8 mm min. between contacts mutually and ground
Rated voltage	contact/contact 500 V r.m.s. contact to ground 500 V r.m.s.
Current rating	2,5 A per contact at 70 °C (all contacts loaded)
Insulation resistance	5 GΩ min.
Printed board	thickness range for use with same fixed connector = 1,44 mm to 2,64 mm thickness range for a given paddle-guard = ± 10 % of nominal thickness
Backplane	1,6 mm min. plated-through press-in hole for low-speed connections = Ø 0,6 mm ± 0,05 mm press-in hole diameter for fixed connector retention pins = Ø 1 mm +0,09/–0,06 mm