

Connectors for electronic equipment —

**Part 3-103: Rectangular connectors —
Detail specification for single row
connectors with non-removable ribbon
cable contacts on 1,25 mm pitch used for
high speed serial data (HSSDC)**

The European Standard EN 61076-3-103:2004 has the status of a
British Standard

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National foreword

This British Standard is the official English language version of EN 61076-3-103:2004. It is identical with IEC 61076-3-103:2003.

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;
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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 59 and a back cover.

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**Connectors for electronic equipment
Part 3-103: Rectangular connectors –
Detail specification for single row connectors
with non-removable ribbon cable contacts on 1,25 mm pitch
used for high speed serial data (HSSDC)
(IEC 61076-3-103:2003)**

Connecteurs pour équipements
électroniques
Partie 3-103: Connecteurs rectangulaires -
Spécification particulière pour
les connecteurs rectangulaires
avec des contacts de câbles à rubans non
amovibles sur une rangée simple
de pas 1,25 mm utilisés avec
des connecteurs de données série
à grande vitesse (HSSDC)
(CEI 61076-3-103:2003)

Steckverbinder für elektronische
Einrichtungen
Teil 3-103: Rechteckige Steckverbinder -
Bauartspezifikation für einreihige
Steckverbinder mit nicht auswechselbaren
Kontakten mit 1,25 mm Teilung für
den Anschluss von Flachleitungen und
Anwendungen in schnellen
Datenübermittlungen (HSSDC)
(IEC 61076-3-103:2003)

This European Standard was approved by CENELEC on 2004-02-01. 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

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

Foreword

The text of document 48B/1373/FDIS, future edition 1 of IEC 61076-3-103, 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 61076-3-103 on 2004-02-01.

The following dates were fixed:

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with the EN have to be withdrawn (dow) 2007-02-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61076-3-103:2003 was approved by CENELEC as a European Standard without any modification.

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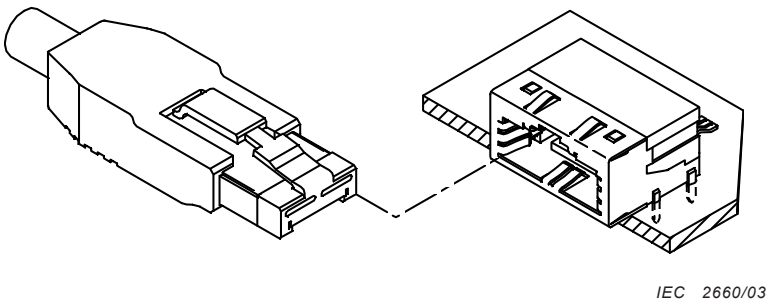
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CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 3-103: Rectangular connectors – Detail specification for single row connectors with non-removable ribbon cable contacts on 1,25 mm pitch used for high speed serial data (HSSDC)

Specification available from: IEC Central Office or from the address shown on the inside cover (electronic components of assessed quality)	IEC 61076-3-103
Electronic components of assessed quality DETAIL SPECIFICATION in accordance with IEC 61076-1:	
See 3.2, 3.3, 3.4 and 3.5 for dimensions	Two part modular connectors for printed boards and backplanes. This standard is applicable to HSSDC type connectors
	The connector fixed board connector (receptacle) is suitable for mounting on printed boards and the free cable connector (plug) is suitable for permanent attachment to cable.
	Performance level(s): 1
	Assessment levels: Combination of performance levels and assessment levels:
Information on the availability of components qualified to this standard is given in the qualified products list.	

1 General

1.1 Scope

This standard applies to a family of connectors having the following characteristics:

- shielded,
- rectangular-shaped mating interface,
- 1,25 mm pitch spacing of contacts on a single row,
- 8 positions,
- for wire-to-board applications.

All dimensions in this document apply to the unmated finished product after assembly to printed circuit boards or cables.

This standard establishes uniform specifications, testing requirements and quality assessment procedures. It is intended to be used in conjunction with sectional specification IEC 61076-3.

1.2 Recommended method of mounting

Fixed board connector is mounted on the printed circuit board with surface mount solder terminations having board lock or holding fixtures.

1.2.1 Number of contacts or contact cavities

There are 8 positions.

1.3 Ratings and characteristics

Rated voltage:	30 V DC
Current rating:	1 A per contact (positions 2 and 7 (first make – last break) contacts energized in parallel)
Insulation resistance:	100 M Ω minimum
Mechanical operation:	500 cycles
Contact resistance:	signal contacts 35 m Ω maximum initial shield contacts 42 m Ω maximum initial
Climatic category:	–55 °C to +100 °C
Characteristic impedance:	140 Ω – 160 Ω
Near end crosstalk:	30 dB maximum
Transfer impedance:	TBD
Printed board thickness:	1,60 mm $\pm$ 0,15 mm
Contact spacing:	1,25 mm

1.4 Reference documents

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 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 61076-3:1999, *Connectors for use in d.c., low-frequency analogue and digital high-speed data applications – Part 3: Rectangular connectors with assessed quality – Sectional specification*

IEC 61076-3-001:1999, *Connectors for use in d.c., low-frequency analogue and digital high-speed data applications – Part 3-001: Rectangular connectors with assessed quality – Blank detail specification*

ISO 1302:2002, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*

1.5 Marking

The marking of the connector and package shall be in accordance with 2.6 of IEC 61076-3.

1.6 IEC type designation

The designation shall be derived in accordance with 2.5 of IEC 61076-3.

IEC 61076-3-103	-	LL	LL	NN
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Number of this detail specification
--

Letters denoting the style of the connector	
EC	Free cable
XB	Fixed board

Letters denoting connector orientation	
SA	Straight (version 1)
SB	Straight (version 2)
SC	Straight (version 3)
RR	Right angle (version 1)
RE	Right angle (version 2) bulkhead mount
RP	Right angle (version 2) PCI bracket assembly
TA	Straddle mount (version 1)
TB	Straddle mount (version 2)

Mounting bracket type	
01	1 bay with forward boardlocks (version 1)
02	2 bay with forward boardlocks (version 1)
03	2 bay with rearward boardlocks (version 1)
05	1 bay for bulkhead mount
06	2 bay for bulkhead mount
07	3 bay for bulkhead mount
08	4 bay for bulkhead mount

“L” stands for letter.

“N” stands for number.

Example: IEC 61076-3-103 - XBRR02

Fixed board connector style, right angle (version 1) connector orientation, with 2 bay forward boardlock (version 1) mounting brackets.

1.7 Ordering information

For ordering connectors according to this detail specification, the type designation described in 1.6 shall be used.

2 Technical information

2.1 Terminology

2.1.1 Free connector (Plug connector)

A connector for attachment to the free end of the wire or cable. (Used to describe the gender of the mating side of the connector that penetrates its mate upon mating. This gender is frequently, but not always, associated with the common terminology “free”. Other terms commonly used are “male” and “pin connector.”)

2.1.2 Fixed connector (Receptacle connector)

A connector for attachment to a rigid surface. (Used to describe the gender of the mating side of the connector that accepts its mate upon mating. This gender is frequently, but not always, associated with the common terminology “fixed”. Other terms commonly used are “female” and “socket” connector.)

2.1.3 Ribbon cable

A copper conductor cable in which the copper conductors are aligned in a flat ribbon.

2.2 Survey of styles and variants for fixed board connectors (XB)

Table 1 – Styles and variants for fixed board connectors (XB)

Connector orientation	Figures
Right angle (version 1) (RR)	1 to 4
Right angle (version 2) bulkhead mount (RE)	5 to 8
Right angle (version 2) PCI bracket assembly (RP)	9 to 12
Straddle mount (version 1) (TA)	13 to 16
Straddle mount (version 2) (TB)	17 to 20
NOTE For applicable printed circuit board layout, see Table 4.	

2.3 Survey of styles and variants for free cable connectors (EC)

Table 2 – Styles and variants for free cable connectors (EC)

Connector orientation	Figure
Straight (version 1) (SA)	22
Straight (version 2) (SB)	23
Straight (version 3) (SC)	24

2.4 Information on fixed board connector application

Fixed board connectors fit only one way into the printed circuit board.

3 Dimensional information

3.1 General

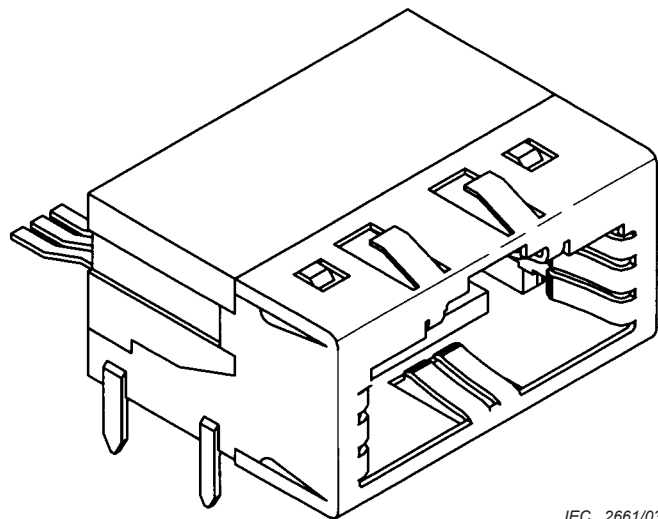
Original dimensions are millimeters.

Drawings are shown in third angle projection.

The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.

3.2 Isometric view and common features for fixed board connector (XB)

3.2.1 Fixed board connector (XB) right angle (version 1) (RR)



IEC 2661/03

**Figure 1 – Isometric view fixed board connector (XB)
right angle (version 1) (RR)**

3.2.1.1 Height dimensions

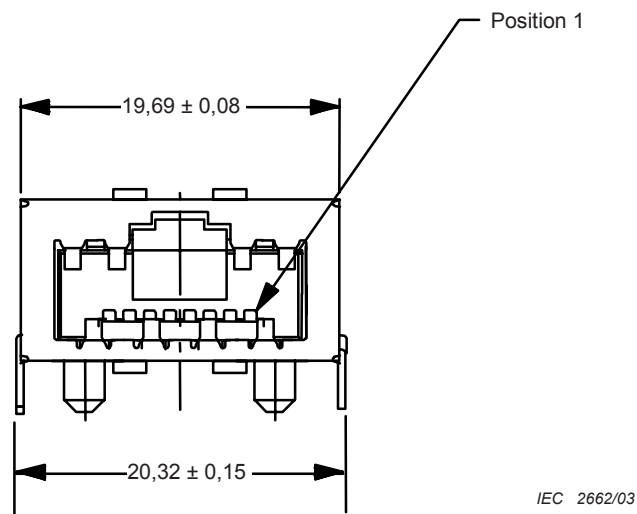


Figure 2 – Front view fixed board connector (XB)
right angle (version 1) (RR)

3.2.1.2 Width dimensions

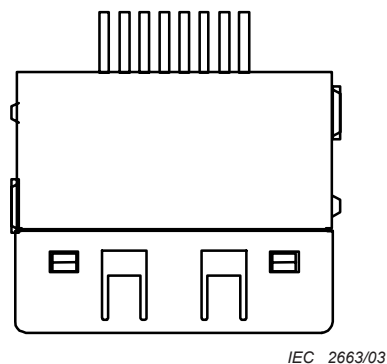


Figure 3 – Top view fixed board connector (XB)
right angle (version 1) (RR)

3.2.1.3 Depth dimensions

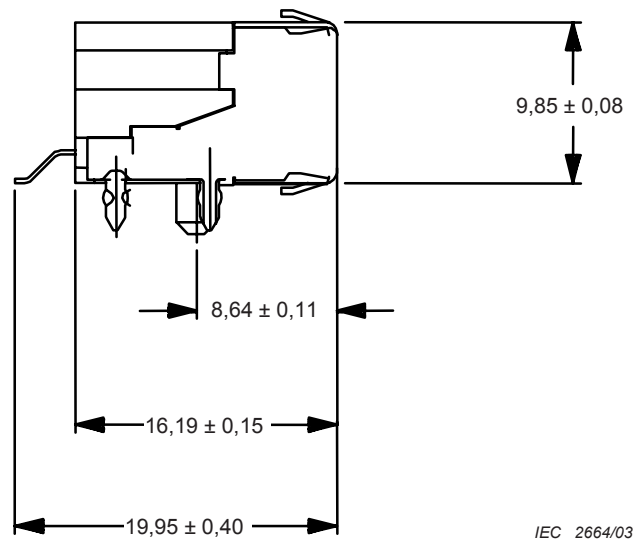


Figure 4 – Side view fixed board connector (XB)
right angle (version 1) (RR)

3.2.2 Fixed board connector (XB) right angle (version 2) bulkhead mount (RE)

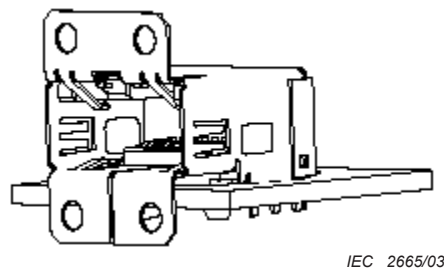


Figure 5 – Isometric view fixed board connector (XB) right angle (version 2)
bulkhead mount (RE)

3.2.2.1 Height dimensions

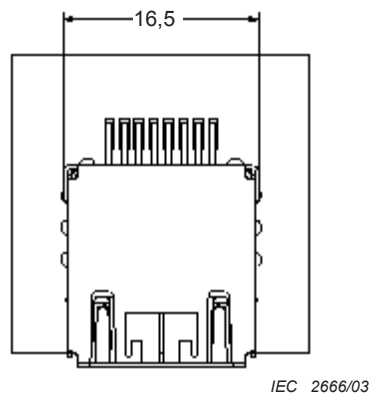


Figure 6 – Front view fixed board connector (XB) right angle (version 2)
bulkhead mount (RE)

3.2.2.2 Width dimensions

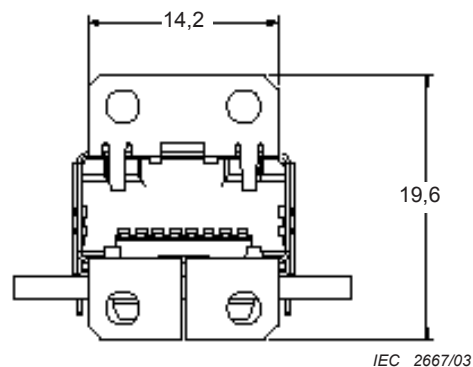


Figure 7 – Top view fixed board connector (XB) right angle (version 2)
bulkhead mount (RE)

3.2.2.3 Depth dimensions

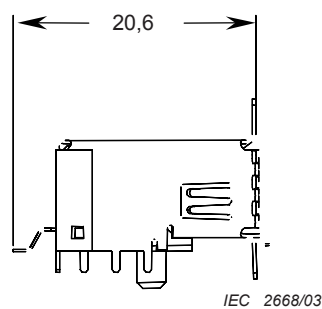


Figure 8 – Side view fixed board connector (XB) right angle (version 2)
bulkhead mount (RE)

3.2.3 Fixed board connector (XB) right angle (version 2) PCI bracket assembly (RP)

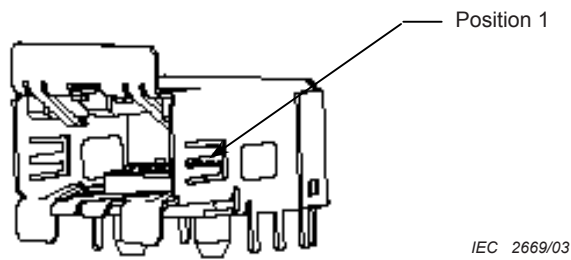


Figure 9 – Isometric view fixed board connector (XB) right angle (version 2)
PCI bracket assembly (RP)

3.2.3.1 Height dimensions

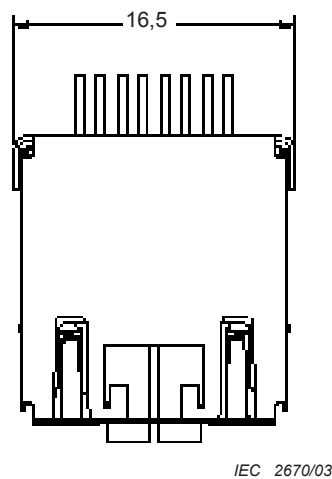


Figure 10 – Front view fixed board connector (XB) right angle (version 2)
PCI bracket assembly (RP)

3.2.3.2 Width dimensions

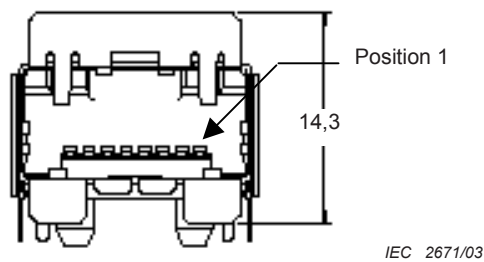


Figure 11 – Top view fixed board connector (XB) right angle (version 2)
PCI bracket assembly (RP)

3.2.3.3 Depth dimensions

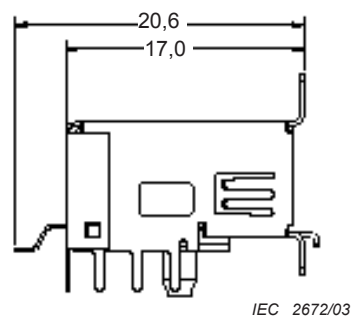


Figure 12 – Side view fixed board connector (XB) right angle (version 2)
PCI bracket assembly (RP)

3.2.4 Fixed board connector (XB) straddle mount (version 1) (TA)

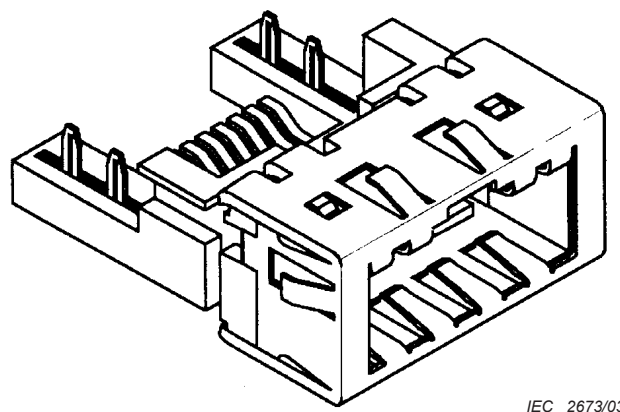


Figure 13 – Isometric view fixed board connector (XB)
straddle mount (version 1) (TA)

3.2.4.1 Height dimensions

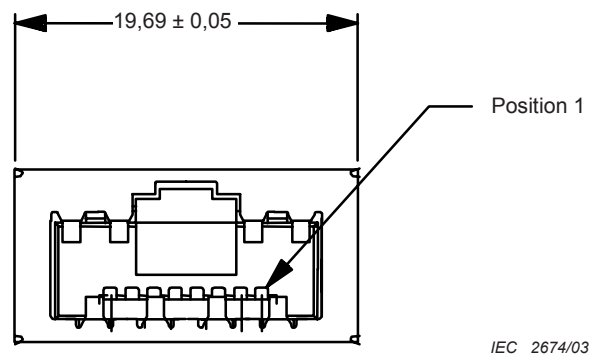


Figure 14 – Front view fixed board connector (XB)
straddle mount (version 1) (TA)

3.2.4.2 Width dimensions

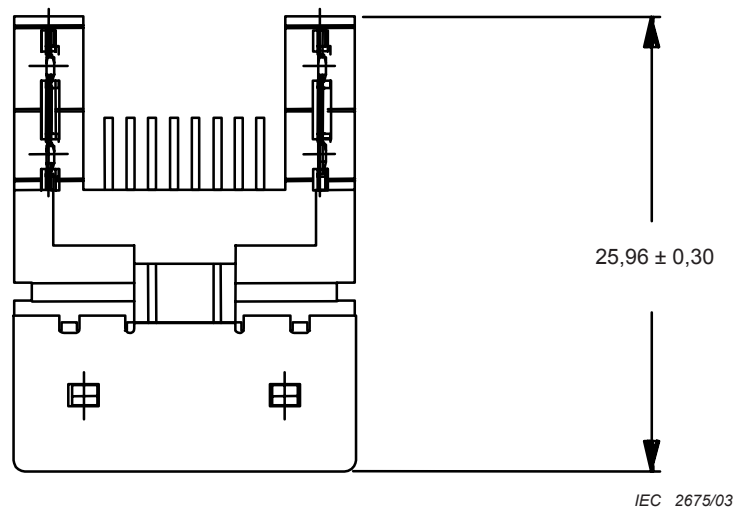


Figure 15 – Top view fixed board connector (XB)
straddle mount (version 1) (TA)

3.2.4.3 Depth dimensions

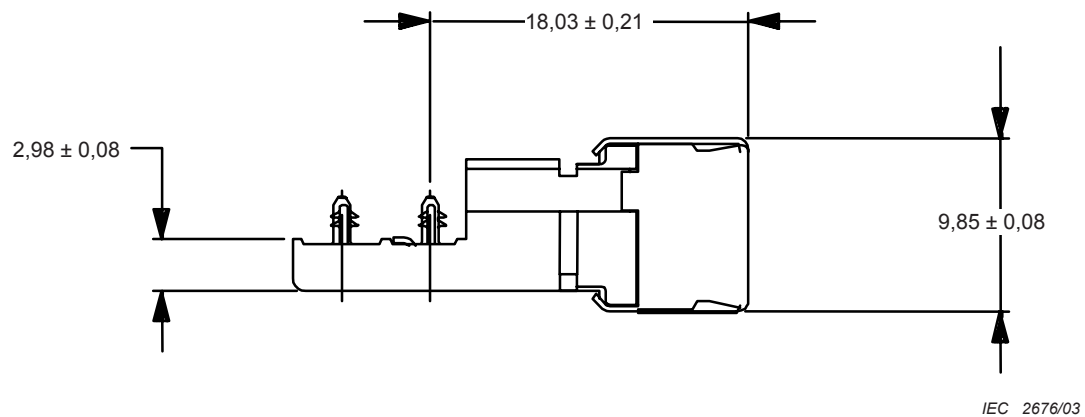


Figure 16 – Side view fixed board connector (XB)
straddle mount (version 1) (TA)