

Connectors for electronic equipment —

**Part 4-114: Printed board connectors —
Detail specification for two-part
connector with integrated shielding
function having a grid of 1 mm x 1,5 mm**

The European Standard EN 61076-4-114: 2003 has the status of a
British Standard

ICS 31.220.10

National foreword

This British Standard is the official English language version of EN 61076-4-114: 2003. It is identical with IEC 61076-4-114: 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, 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.

Cross-references

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Summary of pages

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Connectors for electronic equipment
Part 4-114: Printed board connectors -
Detail specification for two-part connector with integrated shielding
function having a grid of 1 mm x 1,5 mm
(IEC 61076-4-114:2003)

Connecteurs pour équipements
électroniques
Partie 4-114: Connecteurs pour cartes
imprimées -
Spécification particulière pour connecteurs
en deux parties avec fonction de blindage
intégré ayant un pas de 1 mm x 1,5 mm
(CEI 61076-4-114:2003)

Steckverbinder für elektronische
Einrichtungen
Teil 4-114: Steckverbinder für gedruckte
Schaltungen -
Bauartspezifikation für indirekte
Steckverbinder mit integrierter Schirmung
im Raster 1 mm x 1,5 mm
(IEC 61076-4-114:2003)

This European Standard was approved by CENELEC on 2003-05-01. 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

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

Foreword

The text of document 48B/1287/FDIS, future edition 1 of IEC 61076-4-114, 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 61076-4-114 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) 2004-02-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2006-05-01

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 61076-4-114:2003 was approved by CENELEC as a European Standard without any modification.

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CONNECTORS FOR ELECTRONIC EQUIPMENT –

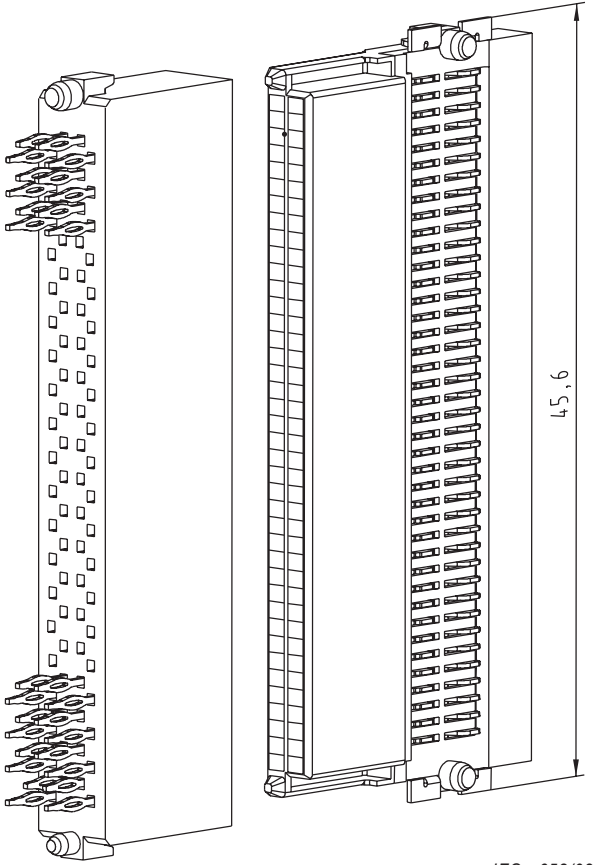
Part 4-114: Printed board connectors –

Detail specification for two-part connector with integrated

shielding function having a grid of 1 mm × 1,5 mm

IEC SC 48B: LF Connectors Specification available from: IEC Central Office or from the addresses shown on the inside cover. ELECTRONIC COMPONENTS OF ASSESSED QUALITY IN ACCORDANCE WITH: - GENERIC SPECIFICATION IEC 61076-1:1995	Draft IEC 61076-4-114	
	Blank detail specification number 61076-4-001	
	Two-part connector for printed boards and backplanes, grid of 1 mm × 1,5 mm in accordance with IEC 60917-1.	

See Clause 3 for dimensions



IEC 658/03

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

1 General data

This detailed specification contains modular two-part connectors with integrated shielded function having a grid of 1 mm × 1,5 mm in accordance with IEC 60917-1.

1.1 Recommended method of mounting

The free board connectors are provided with contacts for surface mounting technique. Guiding pivots support positioning of the free board connector. The terminations of the free board connectors shall fit on solder pads on printed boards having a grid of 1 mm × 4 mm.

The fixed board connectors are provided with contacts, either with press-in or surface mount terminations.

The connector is fixed by the press-in terminations or by surface mounted terminations. Provided holes in the printed board (diameter 1,4 mm and 1,8 mm) are used for correct positioning and polarisation and are not necessary for secure connector mounting.

1.2 Ratings and characteristics

Rated voltage: Contact/contact for fully loaded connector

Table 1 – Rated voltage

Material group	Pollution degree	Rated voltage V
I, II, IIIa/b	1	200
II, IIIa/b	2	20
NOTE Reference is made to Table 15: Minimum creepage and clearance distances, of this specification, and Table 4 of IEC 60664-1 listing the relation between creepage distances, pollution degree and material groups versus voltages r.m.s.		

Current rating: 1 A at 50 °C for fully loaded connector

Insulation resistance: 10⁴ MΩ min.

Climatic category: PL1: 55/125/56
PL2: 55/125/21

Printed board thickness: see Table 10

Contact spacing: 1 mm × 1,5 mm

1.3 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 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60352-5:2001, *Solderless connections – Part 5: Solderless press-in connections – General requirements, test methods and practical guidance*

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 60664-1:2002, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60917 (all parts), *Modular order for the development of mechanical structures for electronic equipment practices*

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

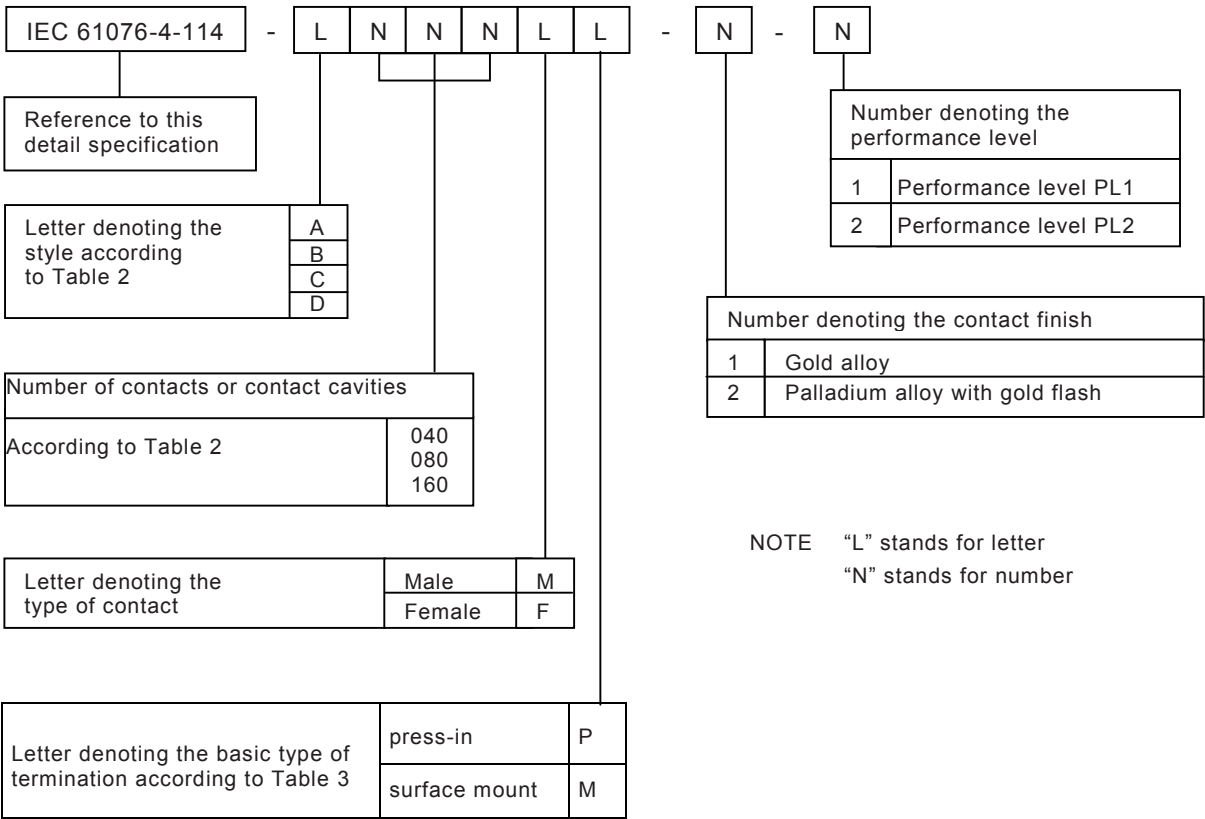
ISO 1302:2002, *Geometrical product specifications (GPS) – Indication of surface texture in technical product documentation*

1.4 Marking

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

1.5 IEC Type designation

Connectors, connector bodies and contacts according to this standard shall be designated by the following system:



NOTE

"L" stands for letter

"N" stands for number

EXAMPLE Connector style B, having 80 male contacts with press-in terminations, with gold alloy contact finish and with performance level 2:

IEC 61076 – 4 – 114 – B 080 MP – 1 – 2

1.6 Ordering information

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

2 Technical information

2.1 Abbreviations

SMT: Surface Mount Technology

FMLB contact: First Make Last Break contact

2.2 Survey of styles and variants

Fully loaded 2-row connectors and 4-row connectors are each available in two length (from 40 to 160 mated lines), for details see Table 2.

Table 2 – Contact arrangement and number of contacts

Style	A	B	C	D
Height of styles mm	27	47	27	47
Number of row	2	2	4	4
Number of contacts	40	80	80	160

Table 3 – Styles of termination

Identification letter for style of termination	Connector style	Free board connector	Fixed board connector
M	A, B	Termination for surface mounting to a printed and solder pads, according to 3.8	Termination for surface mounting on a fixed and solder pads, according to 3.7
M	C, D	Termination for surface mounting to a printed board with a thickness of 1,6 mm to 2,4 mm and solder pads, according to 3.8	
P	all styles		Termination for press-in with solid pin on fixed board connector to a printed board with a thickness of 1,6 mm min. and plated through holes diameter. 0,6 mm according to IEC 60352-5

2.3 Information on application

2.3.1 Complete connectors (pairs)

The arrangement of the free board connectors are normally the same as the arrangements of the fixed board connectors, other arrangements are possible.

Examples for arrangements of fixed and free board connectors.

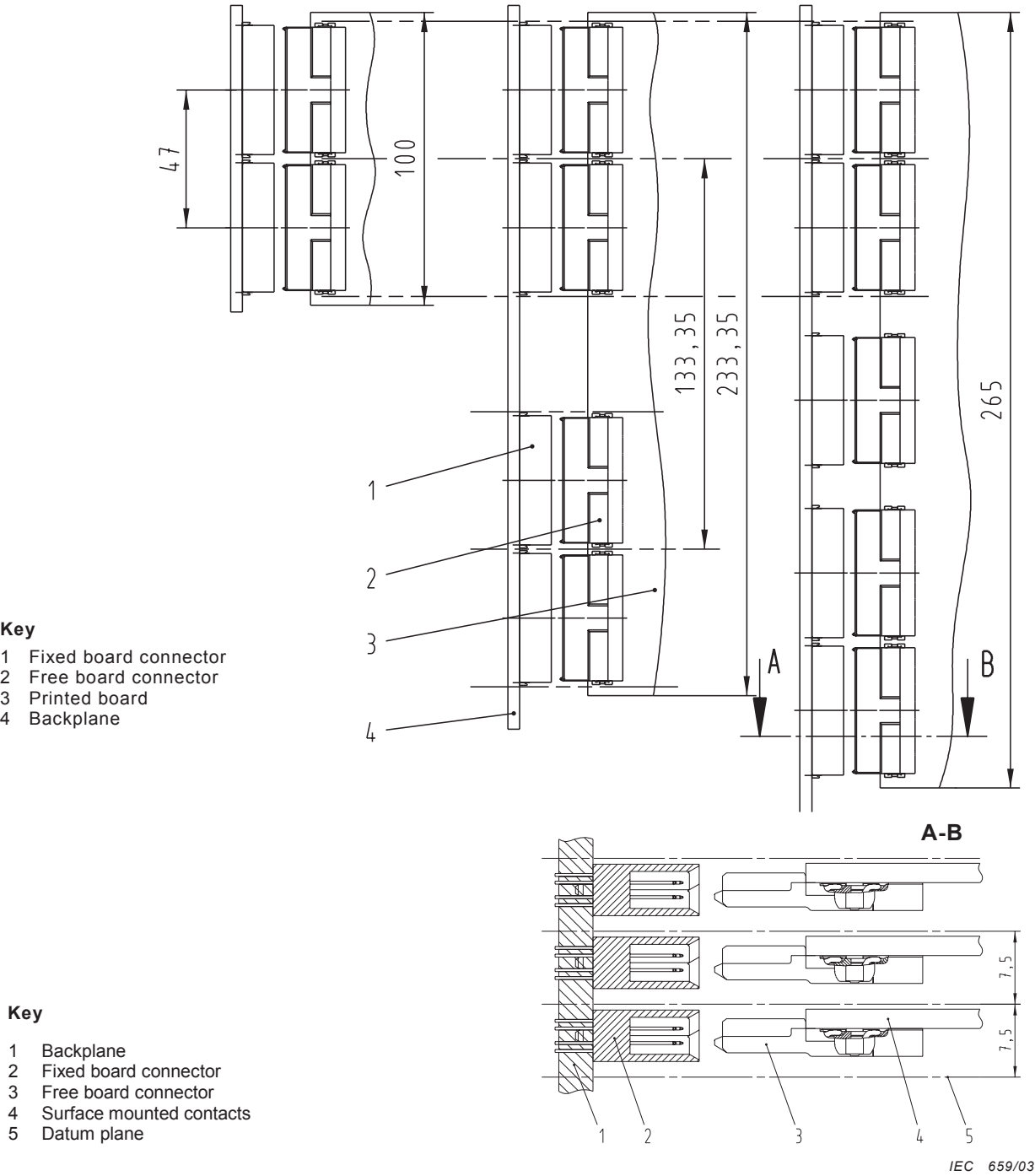


Figure 1 – Free and fixed board connectors for modular arrangement

Table 4 – Complete connectors

Card-height	100 mm	233,35 mm	265 mm
Number of connectors	2	4	5
Number of contacts	320	640	800

2.3.2 Fixed board connectors

To ensure contact safety the planarity of the connector before press-in or solder operation to backplane shall meet the requirements according to 3.4.1. After press-in or solder to backplane the connector shell meet the requirements according to 5.1.6.

2.3.3 Free board connectors

To ensure contact safety the planarity of the connector before solder operation to printed board shall meet the requirements according to 3.5.1. After solder to printed board the connector shell meet the requirements according to 5.1.6.

2.3.3.1 Accessories

Not applicable

2.3.4 Shielding/grounding

Under preparation

2.3.5 Basic type of termination

The fixed and free board connectors are provided with guiding pivots. This pivots are not used for connector fixing but they are necessary for guiding and alignment purposes under repair conditions.

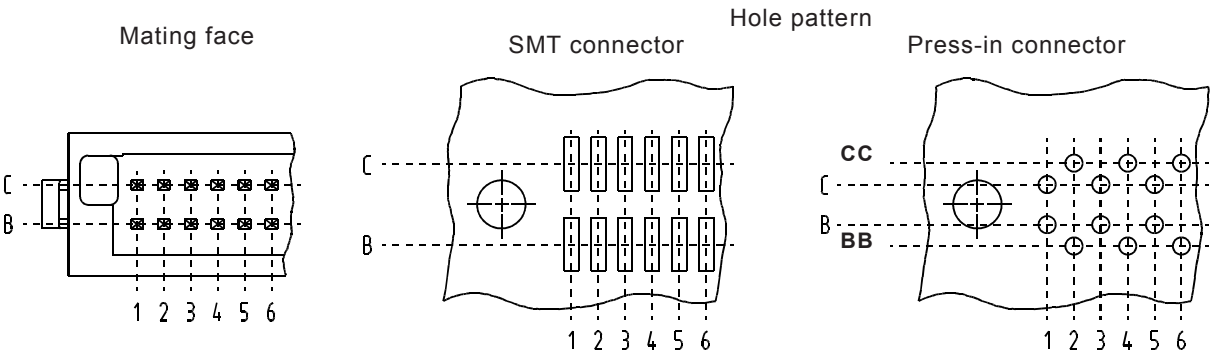
Furthermore they have a polarisation function.

2.4 Contact arrangements

Fixed and free board connectors are always fully loaded – contact arrangement 1.

2.4.1 Fixed board connectors

2-row fixed board connector



IEC 660/03

Figure 2 – Contact arrangements

NOTE For mounting information see 3.7.1 (hole pattern)

4-row fixed board connector under preparation

2.4.2 Free board connectors

2-row free-board connector

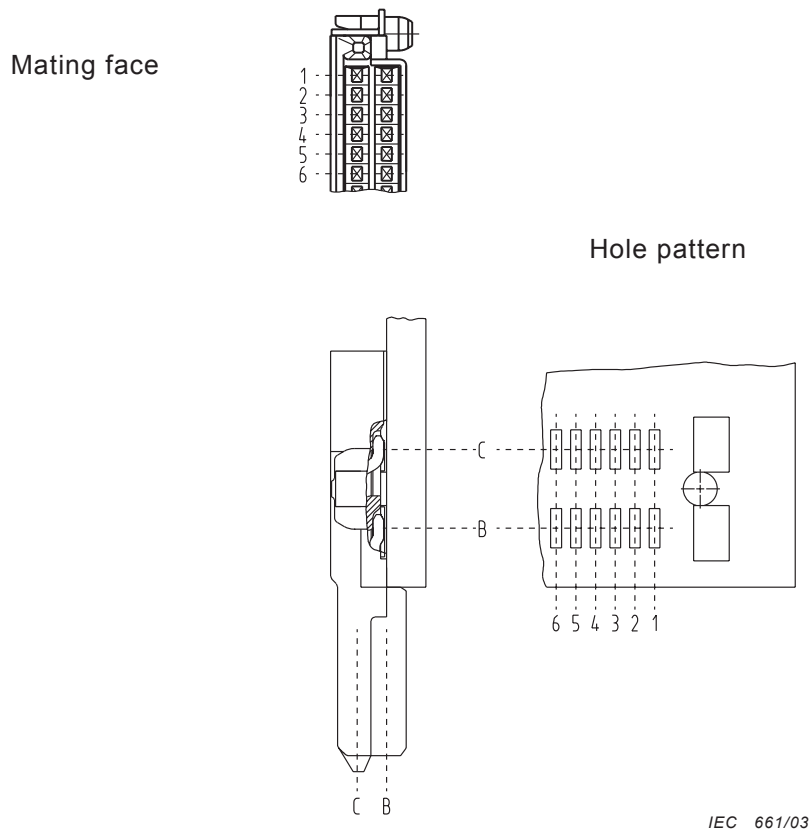


Figure 3 – Contact arrangements

NOTE For mounting information see 3.8.1 (hole pattern)

4-row free-board connector under preparation

3 Dimensional information

3.1 General

All dimensions in millimetres.

Drawings are shown in the first angle projection. The shape of the connectors may deviate from those given in the following figures as long as the specified dimensions are not influenced.

The information about the bending in 3.3.4 and 5.1.6 is valid for the condition of delivery. The permissible bending of the mounted connector is stated in 5.1.6.

Missing dimensions can be chosen according to the common characteristics and the intended use.

3.2 Isometric view and common features

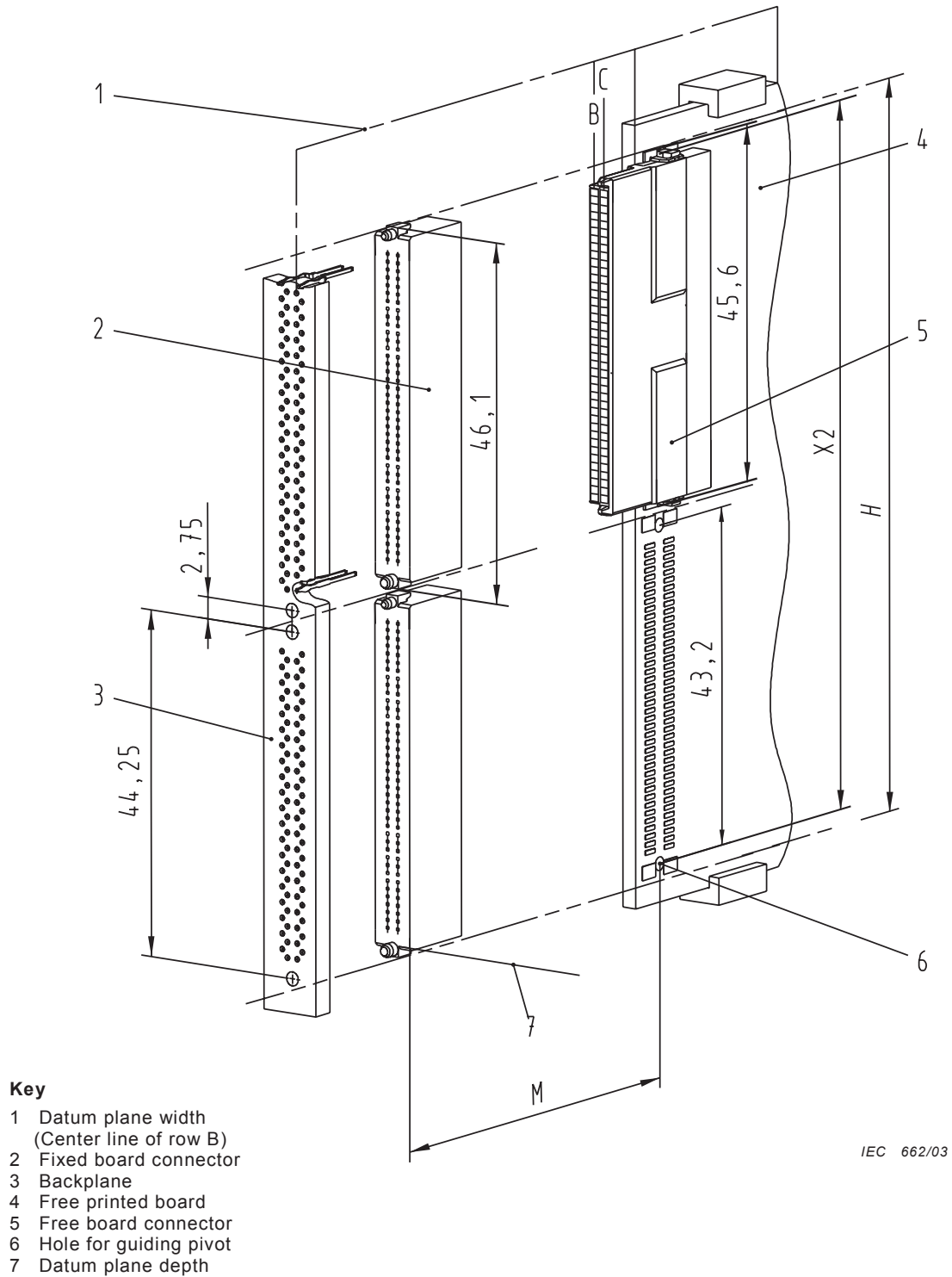


Figure 4 – Isometric view

Fixed board connectors are shown as press-in version.