
Connectors with assessed quality, for use in d.c., low frequency analogue and digital high-speed data applications - Part 4-104: Printed board with assessed quality - Detail specification for two-part modular connectors, basic grid of 2,0 mm, with terminations on a multiple grid of 0,5 mm (IEC 61076-4-104:1999)

Connectors for use in d.c. low-frequency analogue and digital high speed data applications -- Part 4-104: Printed board connectors with assessed quality - Detail specification for two-part modular connectors, basic grid of 2,0 mm, with terminations on a multiple grid of 0,5 mm

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Steckverbinder für Gleichspannungs- und Niederfrequenzanwendungen sowie digitale Anwendungen mit hoher Übertragungsrate -- Teil 4-104: Steckverbinder für gedruckte Schaltungen mit bewerteter Qualität -- Bauartspezifikation für indirekte, modulare Steckverbinder, Raster 2,0 mm, mit Anschlüssen für das Vielfache des Rasters 0,5 mm

Connecteurs pour applications analogiques en courant continu et à basse fréquence et pour applications numériques utilisant des débits élevés pour le transfert des données -- Partie 4-104: Connecteurs pour cartes imprimées sous assurance de la qualité - Spécification particulière pour modules de connecteurs en deux parties, au pas de base de 2,0 mm avec des connexions au pas multiple de 0,5 mm

Ta slovenski standard je istoveten z: EN 61076-4-104:1999

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 61076-4-104

April 1999

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English version

**Connectors for use in d.c. low-frequency analogue and
digital high speed data applications
Part 4-104: Printed board connectors with assessed quality
Detail specification for two-part modular connectors, basic grid of 2,0 mm,
with terminations on a multiple grid of 0,5 mm
(IEC 61076-4-104:1999)**

Connecteurs pour applications
analogiques en courant continu et à
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pour le transfert des données
Partie 4-104: Connecteurs pour cartes
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Spécification particulière pour modules
de connecteurs en deux parties, au pas
de base de 2,0 mm avec des
connexions au pas multiple de 0,5 mm
(CEI 61076-4-104:1999)

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Schaltungen mit bewerteter Qualität
Bauartspezifikation für indirekte,
modulare Steckverbinder, Raster
2,0 mm, mit Anschlüssen für das
Vielfache des Rasters 0,5 mm
(IEC 61076-4-104:1999)

This European Standard was approved by CENELEC on 1999-04-01. 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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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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/745/FDIS, future edition 1 of IEC 61076-4-104, 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 61076-4-104 on 1999-04-01.

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) 2000-01-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2002-04-01

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 61076-4-104:1999 was approved by CENELEC as a European Standard without any modification.

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SIST EN 61076-4-104:2002

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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	1995	Solderless connections Part 5: Solderless press-in connections General requirements, test methods and practical guidance	EN 60352-5	1995
IEC 60410	1973	Sampling plans and procedures for inspection by attributes	-	-
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 tests and voltage stress tests	-	-
IEC 60512-3	1976	Part 3: Current-carrying capacity tests	-	-
IEC 60512-4	1976	Part 4: Dynamic stress tests	-	-
IEC 60512-5	1992	Part 5: Impact tests (free components), static load tests (fixed components), endurance tests and overload tests	-	-
IEC 60512-6	1984	Part 6: Climatic tests and soldering tests	-	-
IEC 60512-7	1993	Part 7: Mechanical operating tests and sealing tests	-	-
IEC 60512-8	1993	Part 8: Connector tests (mechanical) and mechanical tests on contacts and terminations	-	-
IEC 60512-9	1992	Part 9: Miscellaneous tests	-	-

1) EN 60068-1 includes the corrigendum October 1988 and A1:1992 to IEC 60068-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60603-1	1991	Connectors for frequencies below 3 MHz for use with printed boards Part 1: Generic specification - General requirements and guide for the preparation of detail specifications, with assessed quality		
+ A1	1992		EN 60603-1	1998
IEC 60917	1988	Modular order for the development of mechanical structures for electronic equipment practices	EN 60917	1990
IEC 60917-2-2	1994	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 - Capability approval	EN 61076-1	1995
IEC 61076-4	1995	Part 4: Sectional specification - Printed board connectors	EN 61076-4	1996
IEC 61076-4-001	1996	Part 4: Printed board connectors Section 001: Blank detail specification	EN 61076-4-001	1996
ISO 468	1982	Surface roughness - Parameters, their values and general rules for specifying requirements	-	-

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**Connecteurs pour applications analogiques
en courant continu et à basse fréquence et pour
applications numériques utilisant des débits élevés
pour le transfert des données –**

Partie 4-104:

Connecteurs pour cartes imprimées

sous assurance de la qualité –

**Spécification particulière pour modules de connecteurs
en deux parties, au pas de base de 2,0 mm
avec des connexions au pas multiple de 0,5 mm**

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**Connectors for use in d.c., low frequency analogue
and digital high speed data applications –**

Part 4-104:

Printed board connectors with assessed quality –

**Detail specification for two-part modular connectors,
basic grid of 2,0 mm, with terminations
on a multiple grid of 0,5 mm**

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR USE IN DC, LOW FREQUENCY ANALOGUE
AND DIGITAL HIGH SPEED DATA APPLICATIONS –****Part 4-104: Printed board connectors with assessed quality –
Detail specification for two-part modular connectors, basic grid of 2,0 mm,
with terminations on a multiple grid of 0,5 mm**

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.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 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.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61076-4-104 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48B/745/FDIS	48B/759/RVD

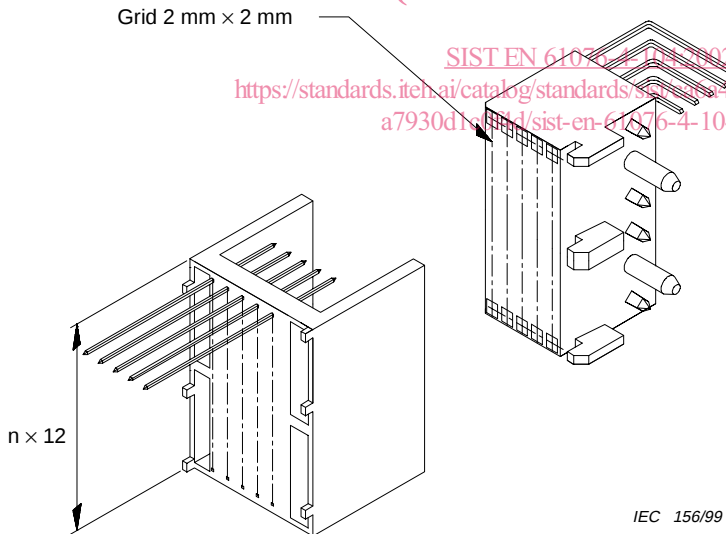
Full information for the approval of this standard can be found in the report on voting indicated in the above table.

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.

The QC number that appears on the front of cover of this publication is the specification number of the IEC Quality Assessment System for Electronic Components (IECQ).

CONNECTORS FOR USE IN DC, LOW FREQUENCY ANALOGUE AND DIGITAL HIGH SPEED DATA APPLICATIONS –

Part 4-104: Printed board connectors with assessed quality – Detail specification for two-part modular connectors, basic grid of 2,0 mm, with terminations on a multiple grid of 0,5 mm

IEC SC 48B: CONNECTORS Specification available from: IEC Central Office or from the addresses shown on the inside cover [Electronic components of assessed quality]	IEC 61076-4-104 QC 480301XX0005
DETAIL SPECIFICATION in accordance with IEC 61076-1:1995.	IEC 61076-4-001
See 3.2.1 for isometric view See 3.4, 3.5 and 3.6 for dimensions 	Two-part modular connectors, for printed boards and backplanes, basic grid 2,0 mm, with terminations on a multiple grid of 0,5 mm
	Stackable connector modules and multimodules with $n \times 12$ mm lengths and in four or more row configuration, with optional coding and special contacts Performance level(s): 1, 2 and 3 Assessment levels: A and G Combination of performance levels and assessment levels: 1G, 2A, 2G and 3A

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

1 General data

1.1 Recommended method of mounting

A complete connector consists of one or more connector modules or multimodules which are mounted stackable to each other, without the loss of contact positions.

Free board connector modules are mounted on the edge of the printed board and have female contacts with right-angle solder or press-in terminations.

Fixed connector modules are mounted on the backplane and have male contacts with straight solder or press-in terminations, with optional rear plug-up possibilities.

1.1.1 Minimum and maximum number of contact cavities

The connector modules and multimodules provide four or more rows, cavities for signal contacts that can be fully or partially loaded, cavities with power contacts that are always fully loaded.

The connector modules featuring cavities for special contacts are single-row, which can be individually loaded.

The possible number of contact cavities per connector module and multimodule are given in table 1.

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For contact arrangements, see 2.4.

Table 1 – Number of contact cavities

Description of cavities	Number of cavity rows	Number of contact cavities per module size				
		12 mm	24 mm	48 mm	96 mm	¹⁾
signal	4	24	48	96	192	
signal	5	30	60	120	240	
power	4	8				
power	5	10				
special	1	1	2			
under preparation						

¹⁾ Larger (monobloc) module sizes are under consideration.

1.2 Ratings and characteristics

Rated voltage: 500 V r.m.s

Current rating at 70 °C: 1 A (all signal contacts)
2,75 A (all power contacts)

Insulation resistance: 5×10^3 MΩ min., initial

Climatic categories: PL1: 55/125/56
PL2: 25/125/21
PL3: 25/085/00

Printed board thickness: 1,4 mm min.

Contact spacing: 2,0 mm, based upon a multiple mounting and reference grid of 0,5 mm, according to IEC 60917

1.3 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61076. 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 61076 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 60068-1:1988, *Environmental testing – Part 1: General and guidance*

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

IEC 60512-9:1992, *Electromechanical components for electronic equipment – Basic testing procedures and measuring methods – Part 9: Miscellaneous tests*

IEC 60603-1:1991, *Connectors for frequencies below 3 MHz for use with printed boards – Part 1: Generic specification - General requirements and guide for the preparation of detail specifications, with assessed quality*

Amendment 1:1992

IEC 60917:1988, *Modular order for the development of mechanical structures for electronic equipment practices*

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