

SLOVENSKI STANDARD
SIST EN 61076-3-104:2008
01-februar-2008

BUXca Yý U.
SIST EN 61076-3-104:2004

Konektorji za elektronsko opremo - Zahteve za izdelek - 3-104. del: Podrobna specifikacija za 8-redne, zaslonjene proste in pritrjene konektorje za prenos podatkov s frekvencami do 1000 MHz (IEC 61076-3-104:2006)

Connectors for electronic equipment - Product requirements - Part 3-104: Detail specification for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1 000 MHz (IEC 61076-3-104:2006)

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Steckverbinder für elektronische Einrichtungen - Produktanforderungen - Teil 3-104: Bauartspezifikation für geschirmte freie und feste Steckverbinder, 8 polig, für Datenübertragungen bis 1000 MHz (IEC 61076-3-104:2006)

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Connecteurs pour équipements électroniques - Exigences de produit - Partie 3-104: Spécification particulière pour connecteurs blindés a 8 voies, socle et fiche, pour transmissions de données, pour fréquences jusqu'a 1000 MHz (IEC 61076-3-104:2006)

Ta slovenski standard je istoveten z: EN 61076-3-104:2006

ICS:

31.220.10

SIST EN 61076-3-104:2008

en,de

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English version

**Connectors for electronic equipment -
Product requirements
Part 3-104: Detail specification for 8-way, shielded free
and fixed connectors for data transmissions
with frequencies up to 1 000 MHz
(IEC 61076-3-104:2006)**

Connecteurs pour équipements
électroniques -
Exigences de produit
Partie 3-104: Spécification particulière
pour connecteurs blindés à 8 voies,
socle et fiche, pour transmissions
de données, pour fréquences
jusqu'à 1000 MHz
(CEI 61076-3-104:2006)

Steckverbinder für elektronische
Einrichtungen -
Produktanforderungen
Teil 3-104: Bauartspezifikation
für geschirmte freie und
feste Steckverbinder, 8polig,
für Datenübertragungen
bis 1000 MHz
(IEC 61076-3-104:2006)

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This European Standard was approved by CENELEC on 2006-10-01. 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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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/1678/FDIS, future edition 2 of IEC 61076-3-104, 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 61076-3-104 on 2006-10-01.

This European Standard supersedes EN 61076-3-104:2003.

Changes from EN 61076-3-104:2003 include editorial changes throughout the standard and:

- an increase of upper frequency from 600 MHz to 1 000 MHz;
- changes to the characteristics clause (Clause 6) and test schedules clause (Clause 7) to align the document with test schedules of EN 60603-7 series documents.

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) 2007-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2009-10-01

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 connectors given in 3.2.2 and 3.2.4.

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

The holder of this patent right has assured the IEC that he is willing to give free licences to applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the IEC.

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Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. IEC and CENELEC shall not be held responsible for identifying any or all such patent rights.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61076-3-104:2006 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

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 60050-581	- ¹⁾	International Electrotechnical Vocabulary (IEV) Chapter 581: Electromechanical components for electronic equipment	-	-
IEC 60068-1	- ¹⁾	Environmental testing Part 1: General and guidance	EN 60068-1	1994 ²⁾
IEC 60068-2-6	- ¹⁾	Environmental testing Part 2: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	1995 ²⁾
IEC 60169-16	- ¹⁾	Radio-frequency connectors Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling - Characteristic impedance 50 ohms (75 ohms) (Type N)	-	-
IEC 60352	Series	Solderless connections	EN 60352	Series
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements	EN 60512	Series
IEC 60512-1-100	- ¹⁾	Connectors for electronic equipment - Tests and measurements Part 1-100: General - Applicable publications	EN 60512-1-100	2006 ²⁾
IEC 60603-7	- ¹⁾	Connectors for frequencies below 3 MHz for use with printed boards Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality	EN 60603-7	1997 ²⁾
IEC 61076-1	2006	Connectors for electronic equipment - Product requirements Part 1: Generic specification	EN 61076-1	2006
IEC 61156-2	- ¹⁾	Multicore and symmetrical pair/quad cables for digital communications Part 2: Horizontal floor wiring - Sectional specification	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61156-3	- ¹⁾	Multicore and symmetrical pair/quad cables for digital communications Part 3: Work area wiring - Sectional specification	-	-
IEC 61156-4	- ¹⁾	Multicore and symmetrical pair/quad cables for digital communications Part 4: Riser cables - Sectional specification	-	-
IEC 61156-5	- ¹⁾	Multicore and symmetrical pair/quad cables for digital communications Part 5: Symmetrical pair/quad cables with transmission characteristics up to 600 MHz - Horizontal floor wiring - Sectional specification	-	-
IEC 61196	Series	Coaxial communication cables	-	-
ISO/IEC 11801	- ¹⁾	Information technology - Generic cabling for customer premises	-	-
-	-	Communication cables - Specifications for test methods Part 1-14: Electrical test methods - Coupling attenuation or screening attenuation of connecting hardware	EN 50289-1-14	- ¹⁾
ISO 1302	- ¹⁾	Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation	EN ISO 1302	2002 ²⁾
ITU-T G.117	- ¹⁾	Transmission aspects of unbalance about earth	-	-
ITU-T O.9	- ¹⁾	Measuring arrangements to assess the degree of unbalance about earth	-	-

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INTERNATIONAL STANDARD

IEC 61076-3-104

Second edition
2006-07

Connectors for electronic equipment – Product requirements –

Part 3-104: Detail specification for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1 000 MHz

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PRICE CODE **XC**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –****Part 3-104: Detail specification for 8-way, shielded free and fixed
connectors for data transmissions with frequencies up to 1 000 MHz**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. 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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- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning connectors given in 3.2.2 and 3.2.4.

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

The holder of this patent right has assured the IEC that he is willing to give free licences with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with the IEC

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International Standard IEC 61076-3-104 has been prepared by sub-committee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This second edition of IEC 61076-3-104 cancels and replaces the first edition, published in 2003, and constitutes a technical revision.

Changes from the first edition of this standard (2003) include editorial changes throughout the standard and:

- 1) an increase of upper frequency from 600 MHz to 1 000 MHz;
- 2) changes to the characteristics clause (Clause 6) and test schedules clause (Clause 7) to align the document with test schedules of IEC 60603-7 series documents.

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

FDIS	Report on voting
48B/1678/FDIS	48B/1702/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.

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

A list of all parts of the IEC 61076 series, under the general title *Connectors for electronic equipment – Product requirements*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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A bilingual version of this publication may be issued at a later date.

CONNECTORS FOR ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 3-104: Detail specification for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1000 MHz

1 General

1.1 Scope

This part of IEC 61076 establishes uniform specifications, type testing requirements and quality assessment procedures for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1 000 MHz, and intended to be used within cabling for information and communications technology, home entertainment and multimedia. It contains a choice of all test methods and sequences, severity and preferred values for dimensions and characteristics.

1.2 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 60050-581, *International Electrotechnical Vocabulary. Electromechanical components for electronic equipment*

[SIST EN 61076-3-104:2008](https://standards.iteh.ai/catalog/standards/sist/02a38dff-f82d-4e9e-98b7-1c8317a2c974/sist-01076-3-104-2006)

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

IEC 60068-2-6, *Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60169-16, *Radio-frequency connectors. Part 16: R.F. coaxial connectors with inner diameter of outer conductor 7 mm (0.276 in) with screw coupling – Characteristic impedance 50 ohms (75 ohms) (Type N)*

IEC 60352 (all parts), *Solderless connections*

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

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

IEC 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality*

IEC 61076-1:2006, *Connectors for electronic equipment – Product requirements – Part 1: Generic specifications*

IEC 61156-2, *Multicore and symmetrical pair/quad cables for digital communications – Part 2: Horizontal floor wiring – Sectional specification*

IEC 61156-3, *Multicore and symmetrical pair/quad cables for digital communications – Part 3: Work area wiring – Sectional specification*

IEC 61156-4, *Multicore and symmetrical pair/quad cables for digital communications – Part 4: Riser cables – Sectional specification*

IEC 61156-5, *Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 600 MHz – Horizontal floor wiring – Sectional specification*

IEC 61196, *Coaxial communication cables*

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

EN 50289-1-14, *Communication cables – Specifications for test methods – Part 1-14: Electrical test methods – Coupling attenuation or screening attenuation of connecting hardware*

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

ITU-T G.117, *Transmission aspects of unbalance about earth*

ITU-T O.9, *Measuring arrangements to assess the degree of unbalance about earth*

2 Technical information

This detail specification covers connectors intended for use in cabling for information and communications technology, home entertainment and multimedia.

2.1 Terminology

2.1.1 General

The terminology used in and applicable to this specification is stated in 2.1 of IEC 61076-1. Some applicable terms are also covered in IEC 60512-1. (For definitions of terms used, refer to IEC 60050-581.)

2.1.2 Transmission performance categories

In this IEC standard, the term “category”, when used in reference to transmission performance, refers to those categories defined by ISO/IEC 11801:2002.

2.1.3 Interchangeability level

2.1.3.1 General

These connectors interchangeably insofar as the intermateability and interoperability requirements herein are ensured for mated connectors when individual connector halves are from different sources.

2.1.3.2 Intermateability

Intermateability is ensured by applying the “Go” and “No-Go” gauge requirements herein, and adherence to dimensional requirements herein.

2.1.3.3 Interoperability

Interoperability of different IEC 61076-3-104 connectors is assured by compliance with all transmission requirements when the connector is mated with the respective “test” connector as described in Annex C.

2.2 Groups of related connectors

Groups of connectors within a subfamily having common features. Typical examples are same type and range but different style. A group of related connectors is covered by a single detail specification.

Type: Connectors within a particular subfamily such as a multicontact connector with one, two or four pairs.

Range: The housing (shell) sizes and contacts arrangements within a type. For example, a housing containing one, two or four pairs.

Style: A particular connector within a type, for example fixed panel, PCB or free connector.

Variant: Variations within a type, style or range.

2.3 Interchangeability level

These connectors shall be fully interchangeable and intermateable. The mechanical and electrical characteristics shall be met whatever the source of the connector is. Elements of connecting hardware, e.g. plugs, sockets that terminate more than one cable are permitted.

The plug/socket interface may be constructed so as to permit the use of multiple modules e.g. 2×2 pairs or 4×1 pair plugs mated directly with a single 4 pairs socket.

2.4 IEC type designation

Connectors, connector bodies and connectors with pre-inserted contacts according to this detail specification shall be designated by the following system.

Connectors conforming to this standard shall be identified by the following indications and in the order given:

The letters "IEC".

The number denoting this detail specification.

The number of the detail specification (without dashes), being nine characters (e.g. IEC 610763104-B08S-C101-2 Shielded connector, fixed version B, having 8 female contacts, solder termination, solid wire, gold, cable outlet, 250 operations)).