

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**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**

**Connecteurs pour équipements électroniques – Exigences de produit –  
Partie 3-104: Spécification particulière pour les fiches et les embases écrantées  
à 8 voies pour la transmission de données à des fréquences jusqu'à 1 000 MHz**

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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**

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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.

This bilingual version (2013-06) corresponds to the monolingual English version, published in 2006-07.

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.

The French version of this standard has not been voted upon.

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- withdrawn;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.



## 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

## 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*

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.  $2 \times 2$  pairs or  $4 \times 1$  pair plugs mated directly with a single 4 pairs socket.

## 2.4 IEC type designation

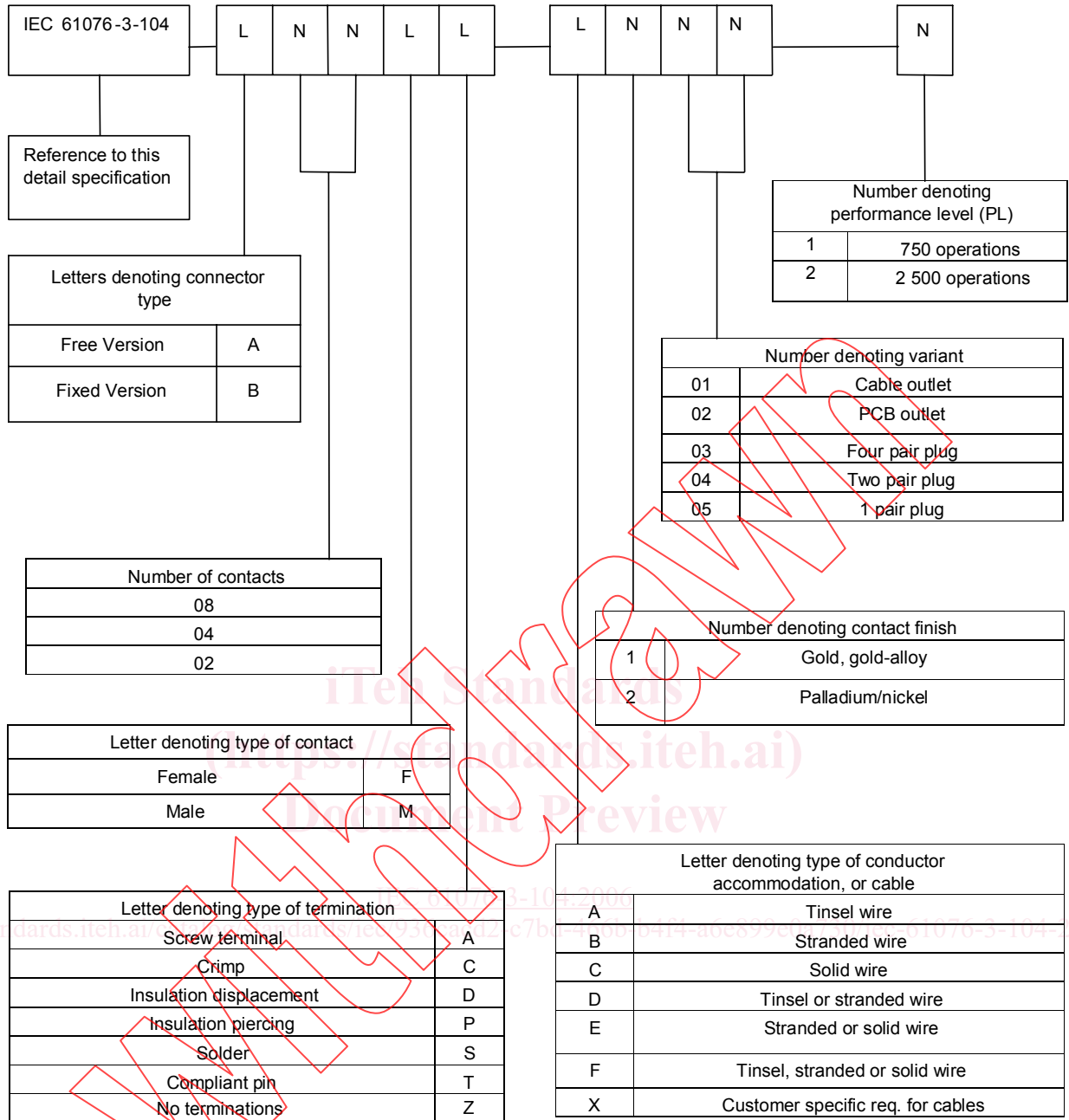
Connectors, connector bodies and connectors with pre-inserted contacts according to this detail specification shall be designated by the following system.

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)).



Note: "L" stands for letter  
 "N" stands for number

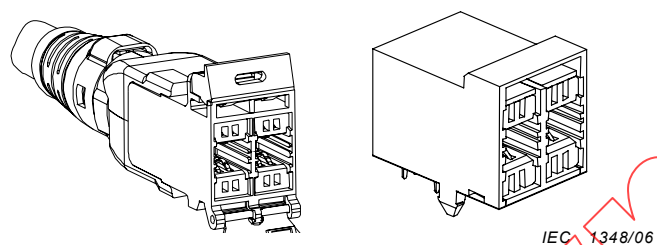
### 3 Isometric views and common features

#### 3.1 General

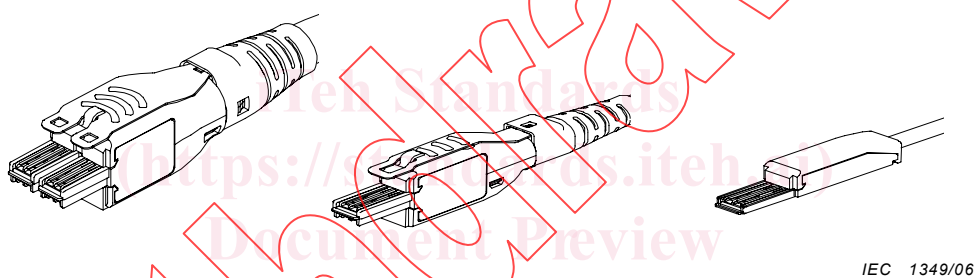
Original dimensions are in millimetres except where noted.

### 3.2 Isometric views

#### 3.2.1 General



**Figure 1 – Isometric view of cable and PCB fixed connectors**



**Figure 2 – Isometric view of 4, 2 and 1 pair free connectors**

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### 3.2.2 Fixed connector variant 01 (cable outlet) drawings

Third angle projection

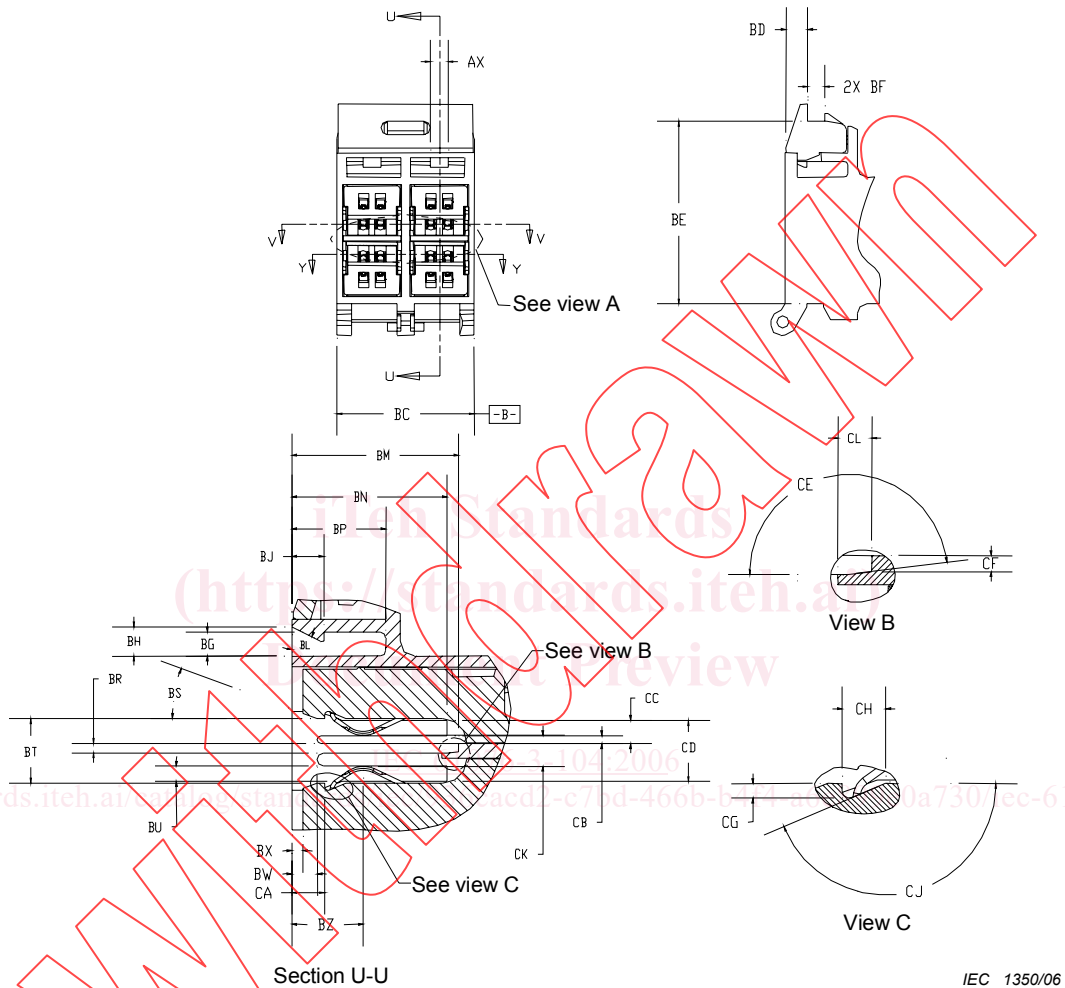


Figure 3 – Variant 01 drawing 1