IEC 60603-7-3

Edition 1.0 2008-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Connectors for electronic equipment –
Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz

Connecteurs pour équipements électroniques –
Partie 7-3: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 100 MHz

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz

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International Standard IEC 60603-7-3 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This standard cancels and replaces IEC/PAS 60603-7-3 published in 2004. This first edition constitutes a technical revision.

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

FDIS	Report on voting
48B/1816/FDIS	48B/1835/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 60603-7 series, under the general title *Connectors for electronic equipment*, 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- withdrawn;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.

INTRODUCTION

Applications have emerged which require the use of the interface described in IEC 60603-7: 1996, with certain performance specifications at higher frequencies. The parameters for this performance include insertion loss, near end crosstalk (NEXT), far end crosstalk (FEXT), and return loss. Based on application requirements, the specifications for these parameters always apply to a mated connection of a free (plug) and fixed (outlet) connector. Details for testing of connectors and test plugs are given in Annex C.

CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz

1 General

1.1 Scope

This part of IEC 60603 covers 8-way shielded free and fixed connectors and specifies mechanical and environmental requirements and electrical transmission requirements for frequencies up to 100 MHz. These connectors are typically used as category 5 connectors in class D cabling systems specified in ISO/IEC 11801:2002.

These connectors are intermateable, interoperable, and backward compatible with other IEC 60603-7 series connectors. While the definition of interoperable is being discussed within the IEC, "interoperable" in this standard means the following: the fixed and the free connector are capable of interconnecting with any IEC 60603-7 series connector, and when it is interconnected, it fully meets all requirements of the lower frequency IEC 60603-7 series standard.

NOTE Transmission performance categories: in this IEC standard, the term "category", when used in reference to transmission performance, refers to those categories defined in ISO/IEC 11801:2002.

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 (IEV) – Chapter 581: Electro-mechanical components for electronic equipment*

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

IEC 60068-2-38, *Environmental testing – Part 2: Tests – Test Z/AD: Composite temperature/ humidity cyclic test*

IEC 60169-16, *Radio-frequency connectors – Part 16: RF 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 60352-2, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-3, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 60352-4, *Solderless connections – Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance*

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

IEC 60352-6, *Solderless connections – Part 6: Insulation piercing connections – General requirements, test methods and practical guidance*

IEC 60352-7, *Solderless connections – Part 7: Spring clamp connections – General requirements, test methods and practical guidance*

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 (all parts), *Connectors for electronic equipment*

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

IEC 61076-1:2006, *Connectors with assessed quality, for use in d.c., low-frequency analogue and in digital high speed data applications – Part 1: Generic specification*

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61156-1, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*

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*

ISO/IEC 11801:2002, *Information technology – Generic cabling for customer premises*

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

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

ITU-T Recommendation K.20:2000[1], *Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents*

ITU-T Recommendation K.44:2000[2], *Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation*

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

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

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[1] This has been replaced by a new edition (2003), but for the purposes of this part of IEC 60603-7, the 2000 edition is cited.

[2] This has been replaced by a new edition (2003), but for the purposes of this part of IEC 60603-7, the 2000 edition is cited.

2 IEC type designation

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

IEC 60603-7-3 | L | N | L | L | – | L | N | N | – | N

Reference to this standard

Letters denoting connector type	
Fixed version	A
Free version	C

Number of contacts
8

Letter denoting type of contact	
Female	F
Male	M

Letter denoting type of termination	
Screw terminal	A
Spring clamp	B
Crimp	C
Accessible insulation displacement (IDC)	M
Non-accessible insulation displacement (IDC)	N
Insulation piercing	P
Solder	S
Press in connection	T

Letter denoting type of conductor accommodation, or cable	
A	Tinsel wire
B	Stranded wire
C	Solid wire
D	Tinsel or stranded wire
E	Stranded or solid wire
F	Tinsel, stranded, or solid wire
G	Board mounted
X	Customer specific requirements for cables

Number denoting variant	
1	Variant 1

Number denoting contact finish	
1	Gold, gold-alloy
2	Palladium/nickel

Number denoting performance level (PL)	
1	750 operations
2	2 500 operations

"L" stands for letter

"N" stands for number

EXAMPLE:

IEC 60603-7-3 A8FM-E11-1: Fixed connector having 8 female contacts with IDC termination for stranded and solid wire, gold plated, meeting performance level 1.

2.1 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 60050(581), IEC 61076-1, IEC 60512-1, as well as the following, apply.

2.1.1
interchangeability level
Level at which these connectors are intermateable, interoperable and backward compatible with IEC 60603-7 series connectors

2.1.2
intermateability
Intermateability is ensured by application of the “GO” and “NO-GO” gauge requirements herein, and adherence to the dimensional requirements within

2.1.3
backward compatibility
Plug or jack which is in compliance with this detail specification, mated with a jack or plug in compliance with any lower frequency IEC 60603-7 series standard, fully complying with the requirements of the lower frequency IEC 60603-7 series standard

2.1.4
interoperability
Interoperability of different IEC 60603-7-3 connectors is assured by compliance with all transmission requirements for the different IEC 60603-7-3 connectors when the fixed connector is mated with a full range of “test” free connectors, or “test plugs”, as described herein

3 Common features and isometric view

3.1 Isometric view

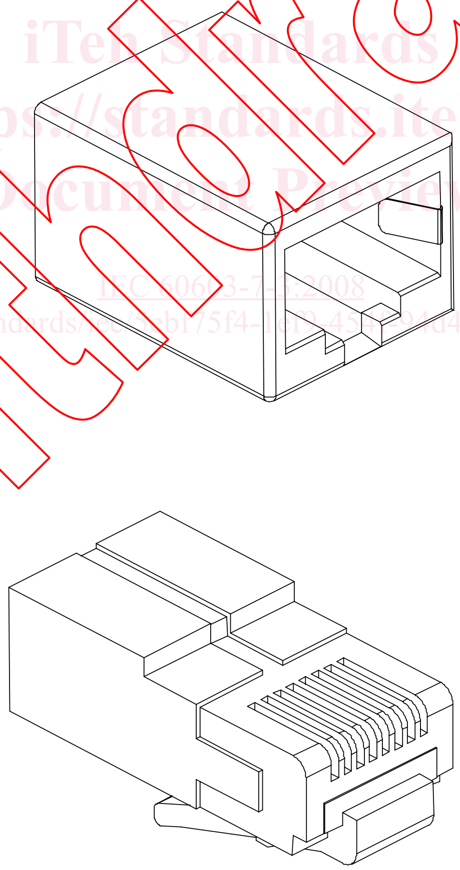

Figure 1 – Isometric view