INTERNATIONAL STANDARD

IEC 60603-7-7

First edition
2002-04

Connectors for electronic equipment –

Part 7-7:
Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 600 MHz (category 7, shielded)

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CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 600 MHz (category 7, shielded)

FOREWORD

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International Standard IEC 60603-7-7 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/1166, 1166A/FDIS	48B/1214/RVD

Full information 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 3.

Annexes A, B, C, D, E, F, G, H, I, J, K, L, M and N form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2002. At this date, the publication will be

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- withdrawn;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

CONNECTORS FOR ELECTRONIC EQUIPMENT –

Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 600 MHz (category 7, shielded)

1 General

1.1 Scope

This part of IEC 60603 covers 8 way connectors, up to 4 pairs, to be used up to 600 MHz, when used with an appropriate cable. These cables are specified in the IEC 61156 series and used in cabling systems specified in ISO/IEC 11801[1].

The connectors are backward compatible with the already defined IEC 60603-7-X connectors.[2]

The connectors are interoperable with the already defined IEC 60603-7-X connectors.[3]

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

IEC 60068-2-14, *Basic environmental testing procedures – Part 2: Tests – Test N: Change of temperature*

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

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 60352-2:1990, *Solderless connections – Part 2: Solderless crimped connections – General requirements, test methods and practical guidance*

IEC 60352-3:1993, *Solderless connections – Part 3: Solderless accessible insulation displacement connections – General requirements, test methods and practical guidance*

IEC 60352-4:1994, *Solderless connections – Part 4: Solderless non-accessible insulation displacement connections – General requirements, test methods and practical guidance*

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

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1 ISO/IEC 11801 contains various 'category' designations corresponding to various frequency ranges.

2 Backward compatibility definition and requirements are given in 2.4.2.

3 Interoperability definition and requirements are given in 2.4.3.

IEC 60352-6:1994, *Solderless connections – Part 6: Insulation piercing 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, *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 60603-7-1, *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded free and fixed connectors with common mating features, with assessed quality*

IEC 60807-1, *Rectangular connectors for frequencies below 3 MHz – Part 1: Generic specification – General requirements and guide for the preparation of detail specifications for connectors with assessed quality*

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/PAS 61076-3-110:2002, *Connectors for electronic equipment – Part 3-110: Detail specification for 8 way connectors for frequencies up to 600 MHz*

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

IEC 61196 (all parts), *Radio-frequency cables*

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

ISO 1302, *Technical drawings – Method of indicating surface texture*

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

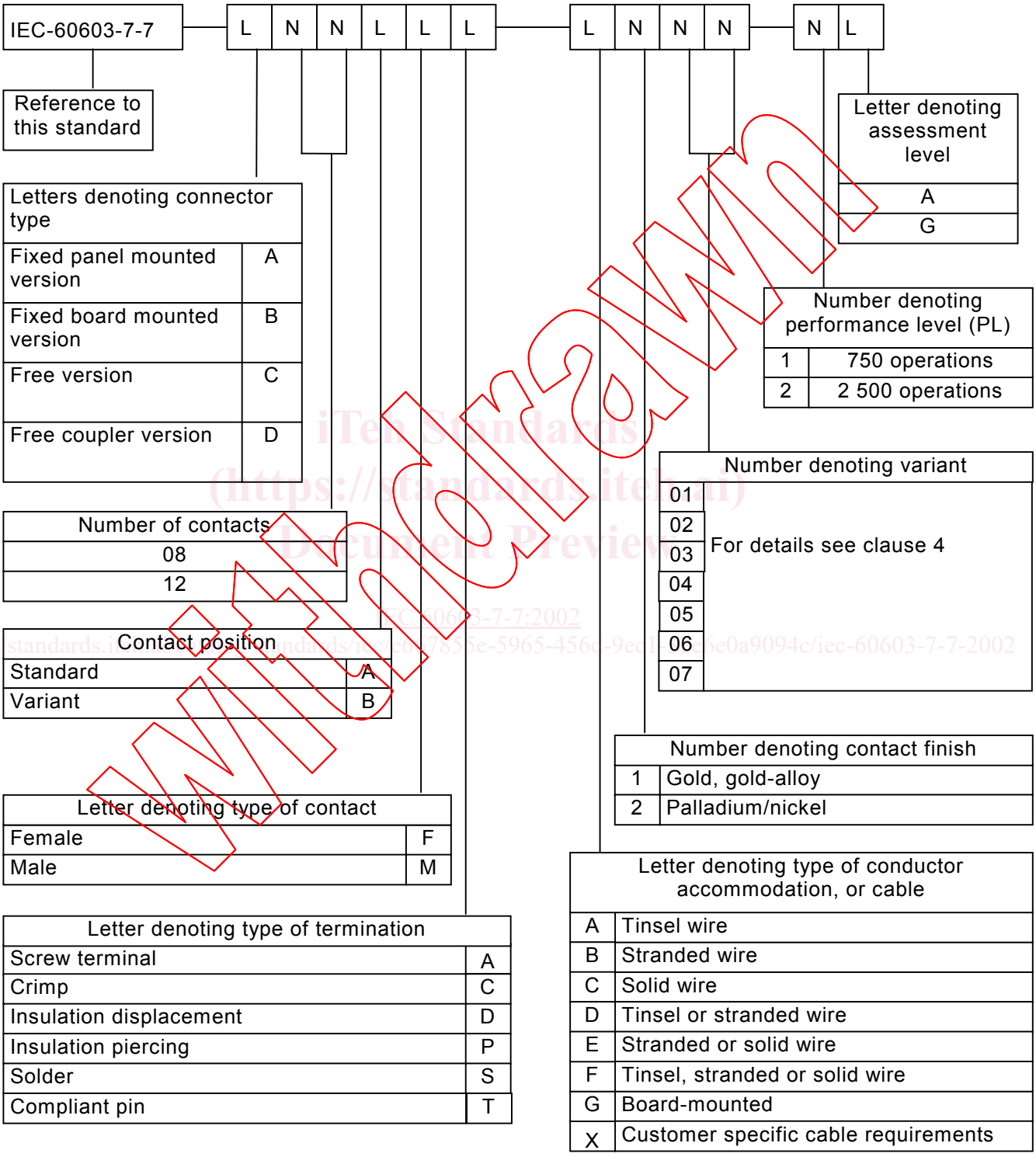
ITU-T K.20, *Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents*

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

CENELEC PREN 50289-1-6, *Communication Cables – Specifications for Test Methods – Part 1-6: Electrical Test Methods – Electromagnetic Performance*

2 IEC type designation

Connectors, connector bodies and connectors with pre-inserted contacts according to this standard shall be designated by the following system (see IEC 60603-7-1).



NOTE "L" stands for letter
"N" stands for number

Example:

IEC 60603-7-7 C08AFD-C101-2G: Free shielded connector, IDC-contact, having 8 female contacts in standard contact positions, gold plated to be used with solid wires, meeting performance level 2, assessment level G.

2.1 Terminology

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.

2.2 Marking

Each connector and/or its associated package shall be marked in accordance with the requirements specified in 2.6 of IEC 61076-1.

2.3 Main functions

These connectors are compatible with IEC 60603-7 series connectors insofar as described in 2.4.

The two most widely separated pairs of contacts of the 4 original pairs of contacts, normally used in IEC 60603-7 series connectors at and below 250 MHz, are used herein for applications above 250 MHz.

Two additional pairs of contacts located opposite the 4 original pairs of contacts are included to provide a total of 4 pairs for applications above 250 MHz. The remaining two of the 4 original pairs of contacts are available for use in applications at and below 250 MHz.

A switch is employed within the connectors to engage transmission paths between 4 pairs of terminations and the respective pairs of contacts operating above 250 MHz or below.

The fixed connector switch is actuated by a protrusion added onto the end of a standard shaped IEC 60603-7 series free connector (type C) (plug).

The free connector switch is actuated by two protrusions added onto each side of a standard shaped IEC 60603-7 series free connector (type C) (plug) (see figure 1).

A total of 12 contacts (6 pairs) and 8 terminations (4 pairs) are described herein for the connectors. At any one time, a maximum of 8 contacts (4 pairs) are engaged by the switch for transmission by connecting 8 contacts to the 8 terminations. The remaining 4 contacts (2 pairs) shall be disengaged or connected to a common termination (shield if present).

The wiring convention and the circuit arrangement of the basic switch is detailed in annex N.

2.4 Interchangeability

These connectors are intermateable, interoperable and backward compatible with all IEC 60603-7 series connectors.

In this standard, ‘lower level IEC 60603-7 series connector’ refers to a connector conforming to an IEC 60603-7 series specification for a lower application transmission frequency range than 600 MHz, such as 100 MHz or 250 MHz.

The original 4 pairs of contacts and the shield contacts specified for lower level IEC 60603-7 series connectors are given for reference and their specifications given in this standard conform to the specifications for IEC 60603-7 series connectors.