

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Connectors for electronic equipment –  
Part 7: Detail specification for 8-way, unshielded, free and fixed connectors**

**Connecteurs pour équipements électroniques –  
Partie 7: Spécification particulière pour les fiches et les embases non écrantées  
à 8 voies**

IEC 60603-7:2008

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INTERNATIONAL  
ELECTROTECHNICAL  
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COMMISSION  
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**CONNECTORS FOR ELECTRONIC EQUIPMENT –****Part 7: Detail specification for 8-way, unshielded,  
free and fixed connectors**

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**This consolidated version of IEC 60603-7 consists of the third edition (2008) [documents 48B/1883A/FDIS and 48B/1917/RVD] and its amendment 1 (2011) [documents 48B/2145/CDV and 48B/2205/RVC]. It bears the edition number 3.1.**

**The technical content is therefore identical to the base edition and its amendment and has been prepared for user convenience. A vertical line in the margin shows where the base publication has been modified by amendment 1. Additions and deletions are displayed in red, with deletions being struck through.**

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

This third edition cancels and replaces the second edition published in 1996 and constitutes a technical revision. This edition includes the following significant technical change with respect to the previous edition:

- Drawings and test schedules were updated based on the work done developing IEC 60603-7-4.
- A corrected figure (Figure 10) illustrating a connector de-rating curve has been prepared and inserted in the text.
- Annex D contains the dimensions that define the panel mounting features on the connector and panel that were referenced as the Type A, variant 03 connector in the previous edition.

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

A list of all parts of 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 the base publication and its amendments will remain unchanged until the stability 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

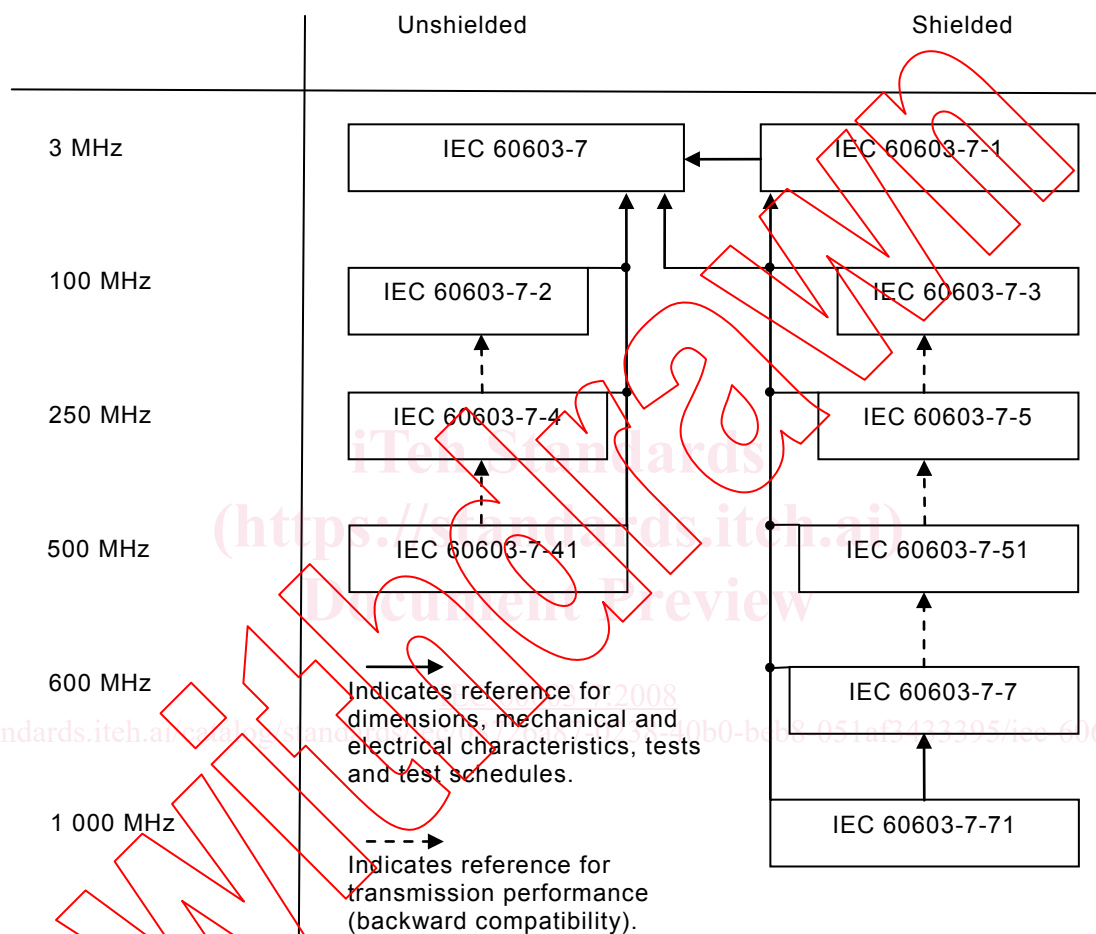
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## INTRODUCTION

IEC 60603-7 is the base specification of the whole series. Subsequent specifications do not duplicate information given in the base document, but list only additional requirements. For complete specification regarding a component of a higher number document all lower numbered documents must be considered as well. The following diagram shows the interrelation of the documents:



It should be noted that during the preparation of the third edition of IEC 60603-7, the subcommittee 48B Cat 6&7 project team members determined the current de-rating curve in the standard was not correct. Several experts researched the current rating-temperature rise measurements for 60603-7 style connectors and verified that the de-rating curve in the published standard has been incorrect for many years. A corrected figure (Figure 10) has been prepared and inserted in this edition.

## CONNECTORS FOR ELECTRONIC EQUIPMENT –

### Part 7: Detail specification for 8-way, unshielded, free and fixed connectors

## 1 General

### 1.1 Scope

This part of IEC 60603-7 covers 8-way unshielded free and fixed connectors, it is intended to specify the common dimensions, mechanical, electrical and environmental characteristics and tests for the family of IEC 60603-7-x connectors.

These connectors are intermateable (according to IEC 61076-1 level 2) and interoperable with other IEC 60603-7 series connectors.

### 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: Electromechanical components for electronic equipment*

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

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

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

IEC 60352-2, *Solderless connections – Part 2: 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 for electronic equipment – Product Requirements – 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*

IEC 61156-6, *Multicore and symmetrical pair/quad cables for digital communications – Part 6: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Work area wiring – Sectional specification*

IEC 61156-7, *Multicore and symmetrical pair/quad cables for digital communications – Part 7: Symmetrical pair cables with transmission characteristics up to 1 200 MHz – Sectional specification for digital and analog communication cables*

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

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

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

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

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<sup>1</sup> This document has been replaced by a new edition (2003), but for the purposes of this standard, the 2000 edition is cited.

<sup>2</sup> This document has been replaced by a new edition (2003), but for the purposes of this standard, the 2000 edition is cited.

## 2 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581, IEC 61076-1, IEC 60512-1, and the following apply.

### 2.1

#### **intermateability**

intermateability (level 2 of IEC 61076-1:2006 (Ed 2.0)) is ensured by application of the “Go” and “No-Go” gauge requirements in the standards that may be referenced, and adherence to the dimensional requirements within

### 2.2

#### **interoperability**

interoperability of different IEC 60603-7 connectors is assured by compliance with the specified interface dimensions

### 2.3

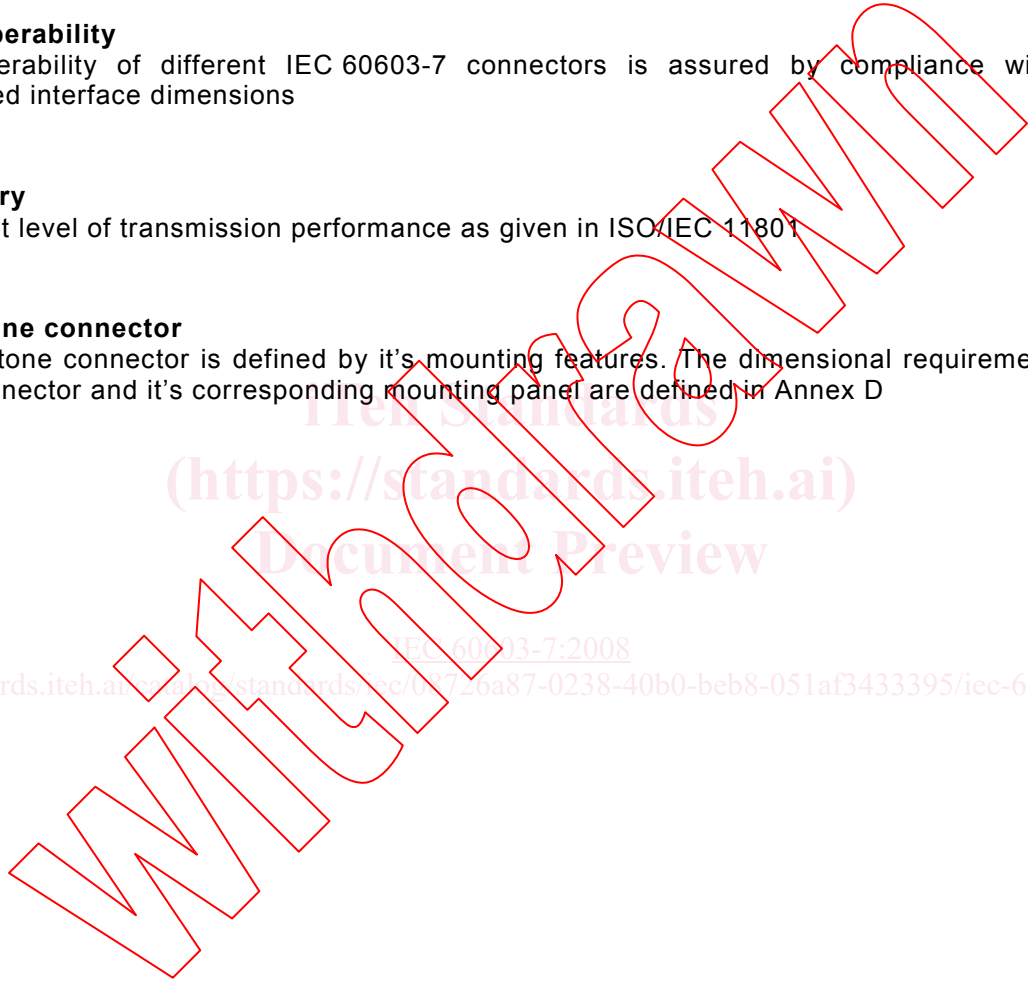
#### **category**

relevant level of transmission performance as given in ISO/IEC 11801

### 2.4

#### **Keystone connector**

a Keystone connector is defined by its mounting features. The dimensional requirements for the connector and its corresponding mounting panel are defined in Annex D



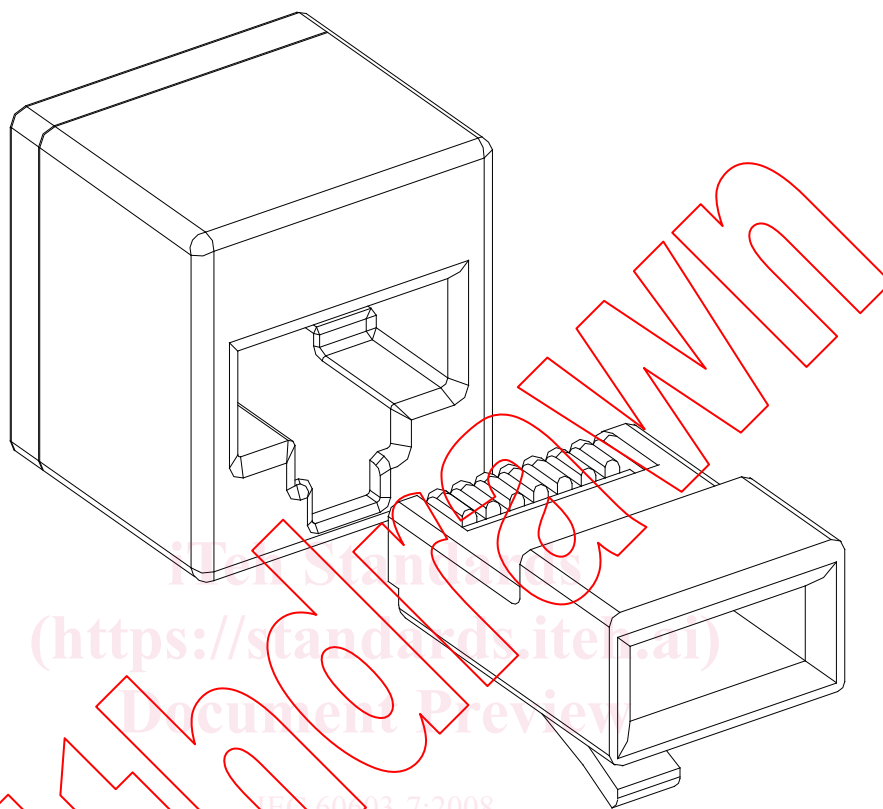
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### 3 Common features and typical connector pair

#### 3.1 View showing typical fixed and free connectors



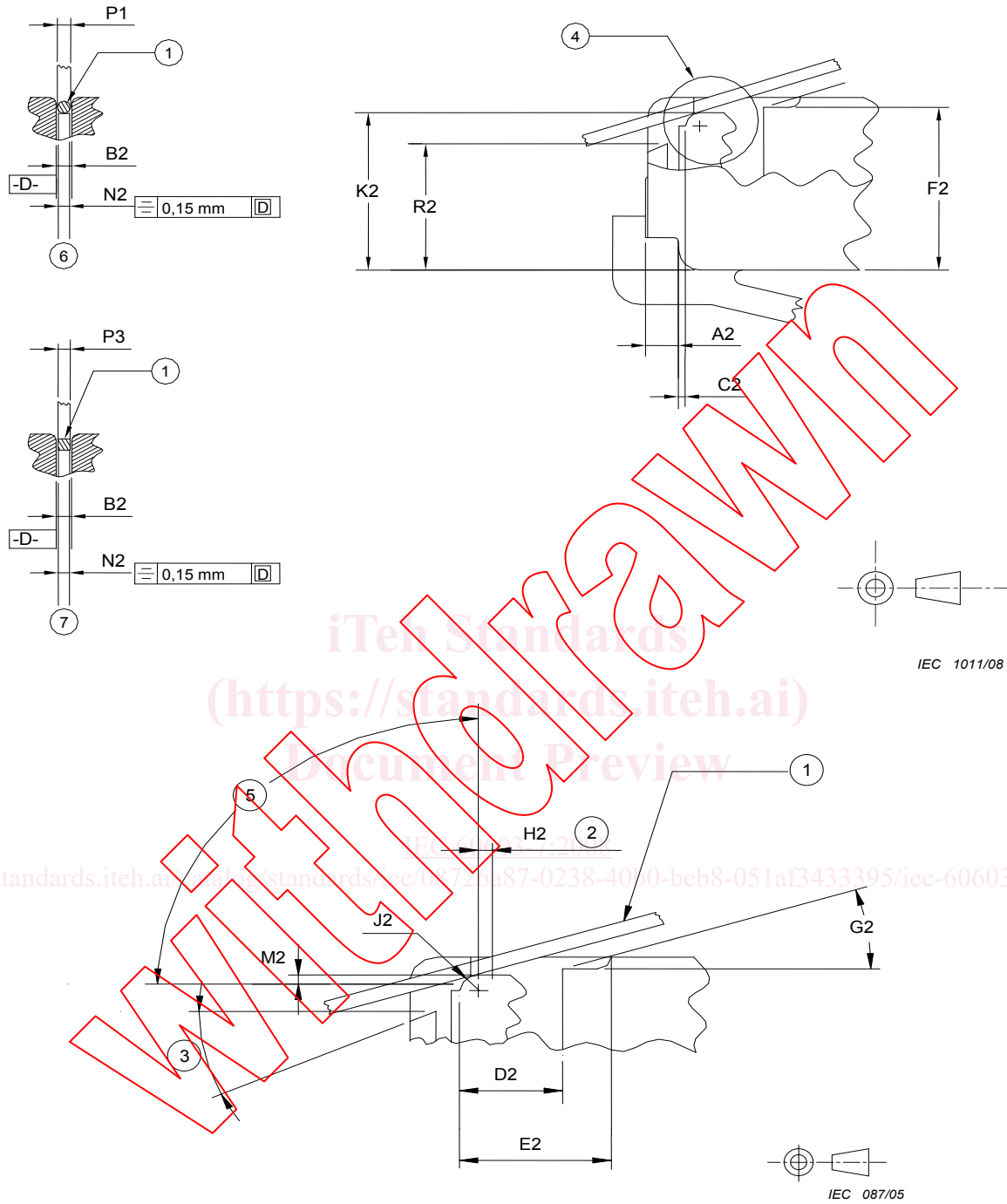
**Figure 1 – View showing typical fixed and free connectors**

#### 3.2 Mating information

##### 3.2.1 General

Dimensions are given in millimetres. Drawings are shown in third-angle projection. The shape of connectors may deviate from those given in Figures 1 to 4 as long as the dimensions specified are not changed.

3.2.2 Contacts – mating conditions



Key

- 1 Female contact of fixed connector The mating information shown can only be achieved with a free connector with a cable attached.
- 2 Burrs shall not project above the top of the contact in this area, since it may be a contact area.
- 3 Optional angle.
- 4 Preferred contact interface detail.
- 5 Minimum preferred contact configuration.
- 6 Configuration with round contact profile.
- 7 Configuration with rectangular contact profile.

Figure 2 – Contact interface dimensions with terminated free connector