IEC 62946-02

Edition 1.0 2017-01

INTERNATIONAL STANDARD

colour inside

Connectors for electronic equipment – Part 02: Detail specification for 8-way, unshielded, free and fixed high density connectors for data transmission with frequencies up to 250 MHz and with current carrying capacity up to 1 A

IEC 62946-02:2017-01(en)

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CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 02: Detail specification for 8-way, unshielded, free and fixed high density connectors for data transmission with frequencies up to 250 MHz and with current carrying capacity up to 1 A

FOREWORD

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International Standard IEC 62946-02 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
48B/2537/FDIS	48B/2546/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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

A list of all parts in the IEC 62946 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 document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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- withdrawn,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

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

The contents of the corrigendum of March 2020 have been included in this copy.

INTRODUCTION

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 this specification.

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 grant licenses with applicants throughout the world on a non-discriminatory basis and on reasonable terms and conditions. In this respect, the statement of the holder of this patent is registered with the IEC.

Information may be obtained from:

TE Connectivity Ltd.,
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Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights other than those identified above. IEC shall not be held responsible for identifying any or all such patent rights.

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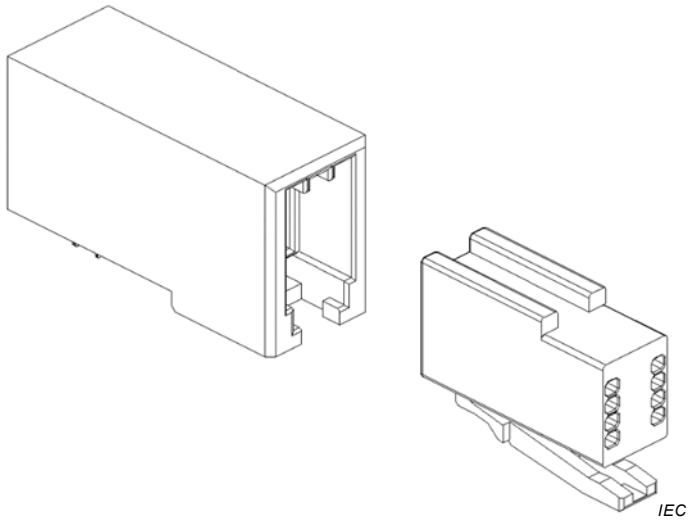
	IEC 62946-02, Ed. 1 (date of issue)
Subcommittee 48B: Electrical connectors	
 IEC	8-way, unshielded, free and fixed high density connectors for data transmission up to 250 MHz and with current carrying capacity up to 1 A.
	Fixed connectors are mounted on printed circuit board, the free connector is attached to wires.

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –

Part 02: Detail specification for 8-way, unshielded, free and fixed high density connectors for data transmission with frequencies up to 250 MHz and with current carrying capacity up to 1 A

1 Scope

This part of IEC 62946 covers 8-way, unshielded free and fixed high density connectors for data transmission with frequencies up to 250 MHz and with extra low voltage current carrying capabilities up to 1 A, and is intended to specify the common dimensions, mechanical, electrical, signal integrity and environmental characteristics and tests for these connectors.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 60512 (all parts), *Connectors for electronic equipment – Tests and measurements*

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

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

IEC 60512-11-7, *Connectors for electronic equipment – Tests and measurements – Part 11-7: Climatic tests – Test 11g: Flowing mixed gas corrosion test*

IEC 60512-26-100, *Connectors for electronic equipment – Tests and measurements – Part 26-100: Measurement setup, test and reference arrangements and measurements for connectors according to IEC 60603-7 – Tests 26a to 26g*

IEC 61984, *Connectors – Safety requirements and tests*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-581,

IEC 60512-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
interoperability
interoperability of connectors to this standard from different sources is ensured by compliance with the specified interface dimensions

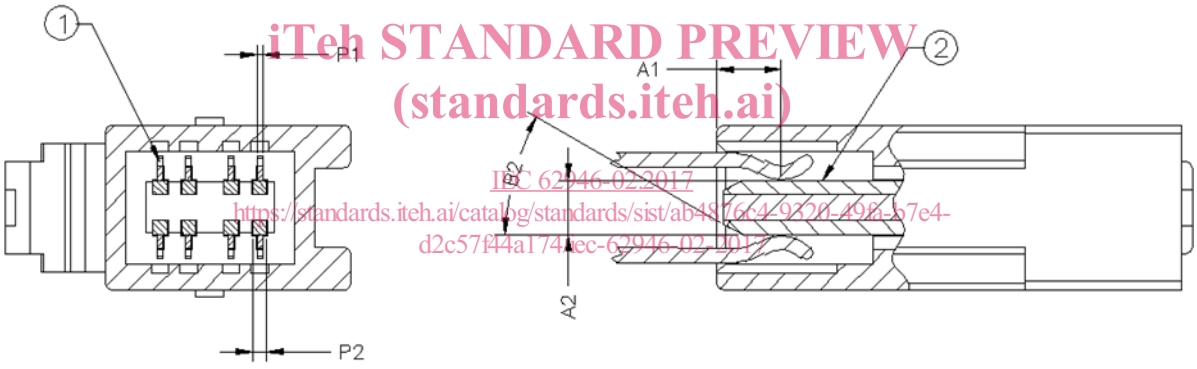
4 Common features and typical connector pair

4.1 Mating information

4.1.1 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 and Tables 1 to 3 as long as the dimensions specified are not changed.

4.1.2 Contacts – mating conditions



Letter	Minimum	Nominal (ref.)	Maximum
	mm	°	mm
A1	2,00		2,50
A2	1,82		1,98
B2		30°	
P1	0,19		0,21
P2	0,38		0,51

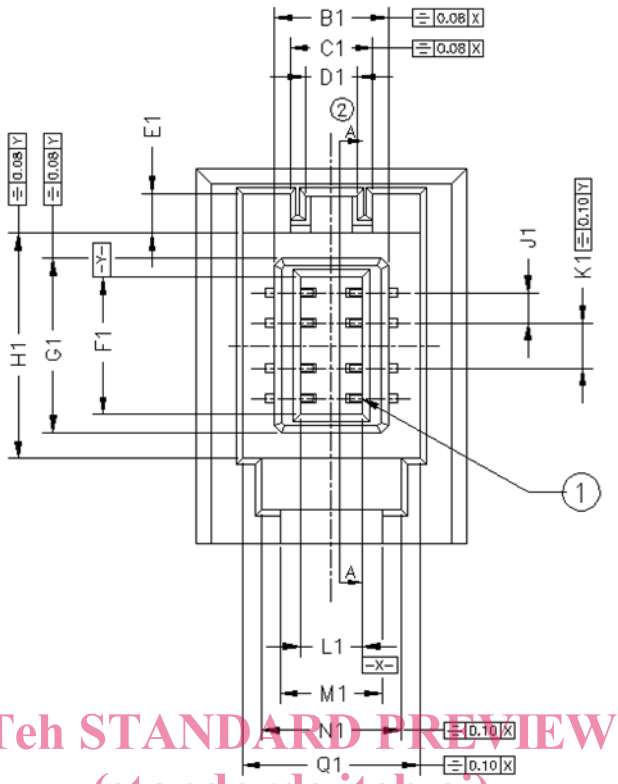
Key

1 Female contact of fixed connector. The mating information shown can only be achieved when a free connector is mated with a fixed connector, see the cross-section on the right, taken at the center of two opposite contacts.

2 Burrs shall not project above the top of the contact in this area, since it may be a contact area.

Figure 1 – Contact interface dimensions with terminated free connector

4.1.3 Fixed connector



Letter	Minimum	Nominal (ref.)	Maximum
	mm	mm or °	mm
B1	3,75		3,85
C1	2,72		2,78
D1	1,72		1,78
E1	1,25		1,35
F1	4,55		4,61
G1	5,77		5,83
H1	7,45		7,50
J1		1	
K1	1,45		1,55
L1	2,00		2,10
M1	3,35		3,45
Q1	5,85		5,95

Key

1 Contact zone. Contacts shall be completely within their individual contact zone in the area indicated.

2 Section A-A: see Figure 3.

Figure 2 – View of contact zone