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Connectors for electrical and electronic equipment – Product requirements – Part 3-122: Detail specification for 8-way, shielded, free and fixed connectors for I/O and data transmission with frequencies up to 500 MHz and current-carrying capacity in industrial environments

Connecteurs pour équipements électriques et électroniques – Exigences de produit – Partie 3-122: Spécification particulière pour les fiches et les embases écrantées à 8 voies pour les entrées/sorties et la transmission des données à des fréquences jusqu'à 500 MHz, avec courant limite admissible dans des environnements industriels



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT –
PRODUCT REQUIREMENTS –****Part 3-122: Detail specification for 8-way, shielded, free and fixed
connectors for I/O and data transmission with frequencies up to
500 MHz and current-carrying capacity in industrial environments**

FOREWORD

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International Standard IEC 61076-3-122 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

This second edition cancels and replaces the first edition published in 2017. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Title modified.
- b) Introduction of two sets of requirements for connectors of "class A" and "class B" where class A matches the requirements defined in the previous edition.

- c) Definition of new performance requirements for frequencies up to 500 MHz in addition to the performance requirements up to 100 MHz provided with the previous edition.
- d) Re-structuring to reflect the commonalities of and differences between connector Type I and Type II.
- e) Revision of drawings to clarify some dimensions.
- e) The derating diagram has been corrected to align it with the upper limiting temperature in the climatic category, with no reduction of performance for the target applications.

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

FDIS	Report on voting
48B/2864/FDIS	48B/2877/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.

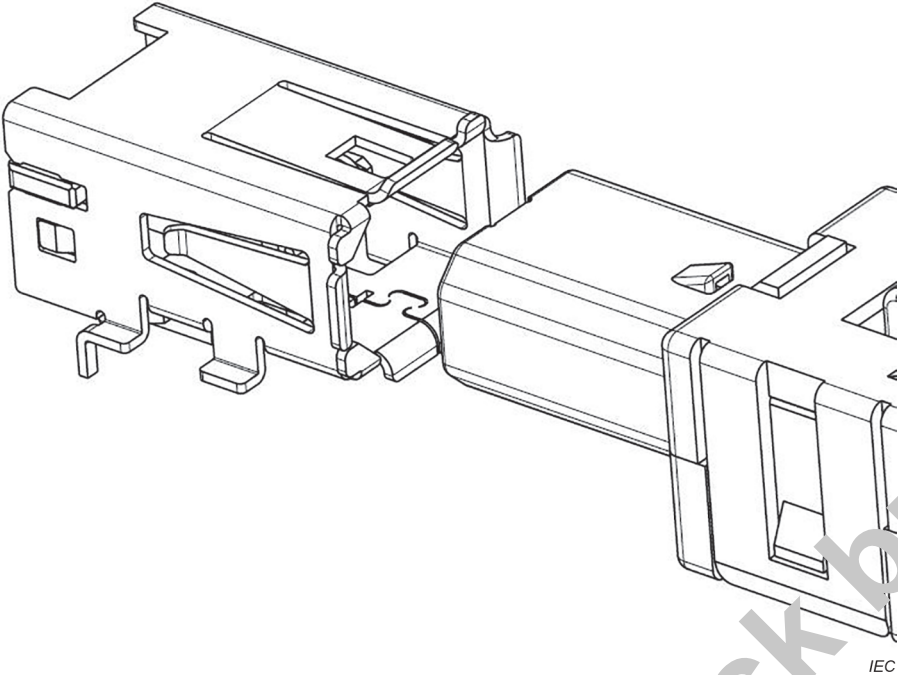
This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61076 series, published under the general title *Connectors for electrical and electronic equipment – Product requirements*, 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://www.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
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- amended.

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<p>Subcommittee 48B: Electrical connectors</p>	<p>IEC 61076-3-122 Ed. 2</p>
 <p style="text-align: center;">Figure 1 – Product overview</p>	<p>Detail specification for 8-way, shielded, free and fixed connectors for I/O and data transmission with frequencies up to 500 MHz and current-carrying capacity in industrial environments</p>
<p>NOTE Figure 1 shows a Type I connector pair, with coding edges on a short side; for Type II connectors the coding edges are located on a long side.</p>	<p>Fixed connectors are mounted on printed circuit board by means of soldering or press-in, the free connector is attached to wires by means of soldering, crimping, IDC or other termination technology.</p>

CONNECTORS FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – PRODUCT REQUIREMENTS –

Part 3-122: Detail specification for 8-way, shielded, free and fixed connectors for I/O and data transmission with frequencies up to 500 MHz and current-carrying capacity in industrial environments

1 Scope

This part of IEC 61076 covers 8-way, shielded, free and fixed rectangular connectors for I/O and data transmission with frequencies up to 500 MHz. It is intended to specify the common dimensions, mechanical, electrical and environmental characteristics and tests for this family of connectors.

Connectors complying with this document provide an ingress protection level of IP20; however, they are particularly suited for industrial environments with a high level of vibration.

NOTE 1 In terms of the MICE system as defined in ISO/IEC 11801-1, the connector matches the requirements of the M₃I₁C₃E₃ levels.

There are two classes of connectors defined in this document, indicated by "class A" and "class B" which are distinguished by some electrical and mechanical characteristics to meet the particular sets of requirements of some industrial applications.

NOTE 2 Class A meets the requirements defined in Ed.1 of this document.

NOTE 3 With the two classes A and B, the two codings Type I and II, and the two sets of transmission requirements according to the component categories Cat 5 and Cat 5A as defined in ISO/IEC 11801-1, this document specifies $2 \times 2 \times 2 = 8$ variants.

All connectors covered by this document feature a current-carrying capacity beyond the minimum requirement of 0,75 A per pin for an ambient temperature of 60° C as defined in ISO/IEC 11801-1.

NOTE 4 The current-carrying capacity is given by the current-temperature derating defined in this document and is dependent on the wire size of the cable attached to the connector.

NOTE 5 With a current-carrying capacity of 0,5 A per pin and with matching the requirement of withstanding the test current of 2 A for unloading under load as defined in IEC 60512-99-002, the connectors covered by this document support the highest Power over Ethernet level as defined by IEEE 802.3bt (100 W PoE++ Type 4).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitute 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) – Part 581: Electromechanical components for electronic equipment*

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

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