



SLOVENSKI STANDARD
SIST EN 61076-1:2006/A1:2019
01-maj-2019

**Konektorji za elektronsko opremo - Zahteve za izdelek - 1. del: Splošna
specifikacija - Dopnilo A1 (IEC 61076-1:2006/A1:2019)**

Connectors for electronic equipment - Product requirements - Part 1: Generic
specification (IEC 61076-1:2006/A1:2019)

Steckverbinder für elektronische Einrichtungen - Produkthanforderungen - Teil 1:
Fachgrundspezifikation (IEC 61076-1:2006/A1:2019)

Connecteurs pour équipements électroniques - Exigences de produit - Partie 1:
Spécification générique (IEC 61076-1:2006/A1:2019)

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EUROPEAN STANDARD

EN 61076-1:2006/A1

NORME EUROPÉENNE

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March 2019

ICS 31.220.10

English Version

**Connectors for electronic equipment - Product requirements -
Part 1: Generic specification
(IEC 61076-1:2006/A1:2019)**

Connecteurs pour équipements électroniques - Exigences
de produit -Partie 1: Spécification générique
(IEC 61076-1:2006/A1:2019)

Steckverbinder für elektronische Einrichtungen -
Produktanforderungen - Teil 1: Fachgrundspezifikation
(IEC 61076-1:2006/A1:2019)

This amendment A1 modifies the European Standard EN 61076-1:2006; it was approved by CENELEC on 2019-02-15. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 61076-1:2006/A1:2019 (E)**European foreword**

The text of document 48B/2678/FDIS, future IEC 61076-1/A1, prepared by SC 48B "Electrical connectors" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61076-1:2006/A1:2019.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-11-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-02-15

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SIST EN 61076-1:2006/A1:2019

The text of the International Standard IEC 61076-1:2006/A1:2019 was approved by CENELEC as a European Standard without any modification.



IEC 61076-1

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

**Connectors for electronic equipment – Product requirements –
Part 1: Generic specification**

**Connecteurs pour équipements électroniques – Exigences de produit –
Partie 1: Spécification générique**

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FOREWORD

This amendment 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 amendment is based on the following documents:

FDIS	Report on voting
48B/2678/FDIS	48B/2691/RVD

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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.

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1.4.5 Compatibility

Replace the first paragraph with the following new text:

Compatibility comprises specification of intermountability, intermateability and/or interchangeability, as well as of interoperability and backward compatibility, where applicable, as detailed in 2.2.3 and in Annex B (normative) to guarantee compliance with requirements of mated connector pairs, of which the individual connectors are supplied by different sources.

2.1 Terms and definitions

Add the following new terms and definitions:

2.1.6

interoperability

interoperability of different IEC 61076-1 connectors and of IEC 61076-1 connectors with connectors of other families (e.g. IEC 60603-7 series) is ensured by compliance with the specified interface dimensions, when they have the same number of contacts, the same electrical wiring-related dimensions and when the lowest electrical, mechanical and climatic performance (performance level) among the two connectors is suitable for the intended application

SEE: Clause B.5.

2.1.7**number of contacts**

number of contacts (or ways) that a connector owns, including the protective and/or functional earth contact(s), if any

Note 1 to entry: A connector for removable contacts is characterized by its number of contact positions (seats): its number of contacts (ways) may be lower than the number of contact positions (seats).

Note 2 to entry: The same number of contacts does not grant the same electrical interface: the geometry of said contacts may be different while their number is the same.

2.1.8**overall dimensions**

dimensions providing the overall space occupied by a connector

Note 1 to entry: Two connectors of the same gender may have the same overall dimensions but different mounting dimensions and/or different interface dimensions

2.1.9**interface dimensions**

set of dimensions required to fully describe the connector's mating interface, belonging to both the connector insert and to the relevant electric contacts

Note 1 to entry: Interface dimensions enable the proper functioning of a mated set of connectors according to the relevant product detail specification or manufacturer's detail specification.

Note 2 to entry: Two connectors with same interface dimensions have the same number of contact seats (or positions), whereas they may not show the same number of contacts (ways).

2.1.10**mounting dimensions**

dimensions enabling the mounting of a connector

Note 1 to entry: Examples of mounting dimensions are panel cutout size, size and interaxes of fixing holes or threads.

Note 2 to entry: The geometry of the mounting interface of Printed Circuit Board connectors to the PCB belongs to the mounting dimensions: two Printed Circuit Board connectors of the same gender with the same mounting dimensions share the same pattern and pitch of their contacts.

Note 3 to entry: Two connectors not of the Printed Circuit Board type of the same gender with the same mounting dimensions may have different interface dimensions.

Note 4 to entry: Two connectors of the same gender with the same mounting dimensions may have different overall dimensions.

2.1.11**electrical wiring-related dimensions**

dimensions related to the wiring of the connector, i.e. to its number and type of contacts (ways)

Note 1 to entry: Two connectors of the same gender with the same electrical wiring-related dimensions have the same number of contacts (ways) or contact positions (seats), the same dimensions of these contacts or contact positions, the same overall dimensions, the same interface dimensions, and if they are Printed Circuit Board connectors, the same mounting dimensions.

2.1.12**electrical, mechanical and climatic performances**

levels of electrical, mechanical and climatic performance assigned to a connector in the relevant product detail specification or manufacturer's detail specification, therein verified through dedicated groups of tests

Note 1 to entry: The electrical performance includes signal integrity.

Add the following new Annex B:

Annex B (normative)

Levels of compatibility

B.1 General

In applications where products according an IEC 61076-1 and any of the related IEC 61076-3-1xx product detail specifications are used, a mixture of connectors from different sources may be available. No problems should occur if all of these products fully comply with the same standard (product detail specification) and have the same ratings. In cases where these products were given a different rating by the manufacturer, and also when dimensional details are deviating, it is important to know and consider the right level of compatibility.

The levels of compatibility are intended to compare connectors of the same gender on their capability to be mated with a complementary connector of the different gender. The levels indicate the functional differences (if any) between connector products of the same gender but from different sources.

A product detail specification under this standard may declare a certain level of compatibility – e.g. in terms of backward compatibility – with other product detail specification(s) within the same family of standards (e.g. this IEC 61076-1 and the related IEC 61076-3-1xx family) or with a cross reference to a connector covered by a product detail specification belonging to a different IEC family.

In fact, for historical reasons some recent additions have been assigned to the IEC 61076-3 family of standards, while other new connectors have been assigned to the IEC 60603-7 family of rectangular connectors. For this reason a similar Annex has been included in the generic specification IEC 60603-7 in order to align the terminology used in both families in regard to levels of compatibility.

The levels of compatibility between connectors from different sources are characterized – as a function of the standardization degree – by 4 levels. These levels are already defined in 2.2.3.2 to 2.2.3.5 of this document and shall, when appropriate, be indicated in the relevant detail product specification of connectors.

In Table B.1, for each level of compatibility the required parameters are indicated by “x” in a graphical way.

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Table B.1 – Levels of compatibility ^{b) c)} and required parameters ^{b)}

	Level of compatibility of IEC 61076-1	Number of contacts	Overall dimensions	Interface dimensions	Mounting dimensions	Electrical wiring-related dimensions	Electrical, mechanical and climatic performance
Intermountable ^{a)}	Level 1		x		x		
Intermateable ^{a)}	Level 2			x		x	
Intermountable ^{a)} and intermateable ^{a)}	Level 3		x	x	x	x	
Interoperable ^{a)}		x		x		x	x ^{d)}
Interchangeable ^{a)}	Level 4	x	x	x	x	x	x
Backward compatible ^{e)}		x		x		x	x ^{e)}

a) The prefix “*inter*” in the terms “intermountable”, “intermateable”, “interoperable”, and “interchangeable” has the meaning of “interchangeably” (adv), i.e. intermountable = interchangeably mountable, and so on. Thus the prefix “inter” has not the meaning “among them”, i.e. intermountable does not mean “mountable among them”, intermateable does not mean “mateable among them”. In other words, two intermateable connectors are not a male and a female connector mateable among them.

b) Levels of compatibility and relevant required parameters include also the influence of features for latching, locking and keying.

c) Special attention is required for safety: all levels of compatibility may pose a certain risk for safety, especially when voltages higher than SELV levels (50 V AC / 120 V DC) and/or high currents are applied.

d) Two interoperable connectors shall grant electrical, mechanical and climatic performance suitable for the application. In other words their performance level is not necessarily the same, but none of them owns a performance level unsuitable for the application.

e) IEC 60050-581:2008, 581-24-08: “feature of connectors which ensures at least the lower requirements in case of mating connectors with higher and lower requirements”. The backward compatibility requirement ensures that a free or fixed connector in compliance with this standard, when mated with a fixed or free connector in compliance with any lower frequency IEC 61076-3 series connector standard or IEC 60603-7 series connector standard, fully complies with the requirements of the lower frequency IEC 61076-3 series connector standard or IEC 60603-7 series connector standard.

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B.2 Intermountability

The term intermountable (adj) and consequently intermountability (noun) is defined in IEC 60050-581:2008, 581-24-04: “pertaining to each of two connectors when their overall dimensions, dimensions on printed board or panel cut-out, and cable termination are identical”.

This level is defined as level 1 – Intermountable in 2.2.3.2 of this document. This level standardizes only overall dimensions and mounting dimensions on printed board or panel cut-out and cable termination assembly; mating face dimensions are not relevant to standardize intermountability.

This means that each of two intermountable connectors will fit in a given location (e.g. a position/footprint on a PCB, and/or in a panel cut-out, and/or at the end of a cable). The electrical (e.g. different current rating) or mechanical performance (one connector may be a free or fixed connector with male contacts, the other one with female contacts) may be different. This IEC 60050-581 description even allows two connectors with two completely different types of interface.

Intermountability – once declared for a connector by its manufacturer with respect to certain dimensions common to other products or product families – shall be declared by referencing an unambiguous set of dimensions. This may also be achieved by reference to a set of dimensions as given by a published standard.