

# Connectors for use in d.c., low-frequency analogue and digital high-speed data applications —

**Part 3-001: Rectangular connectors with  
assessed quality — Blank detail  
specification**

The European Standard EN 61076-3-001:2000 has the status of a  
British Standard

ICS 31.220.10

# National foreword

This British Standard is the official English language version of EN 61076-3-001:2000. It is identical with IEC 61076-3-001:1999.

The UK participation in its preparation was entrusted by Technical Committee EPL/48, Electromechanical components for electronic equipment, to Subcommittee EPL/48/2, Connectors for electronic equipment, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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## Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 63 and a back cover.

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**Connectors for use in d.c., low-frequency analogue and  
digital high-speed data applications  
Part 3-001: Rectangular connectors with assessed quality  
Blank detail specification  
(IEC 61076-3-001:1999)**

Connecteurs pour applications  
analogiques en courant continu et  
basse fréquence et pour applications  
numériques utilisant des débits élevés  
pour le transfert des données  
Partie 3-001: Connecteurs  
rectangulaires sous assurance de  
la qualité  
Spécification particulière cadre  
(CEI 61076-3-001:1999)

Steckverbinder für Gleichspannungs-  
und Niederfrequenzanwendungen sowie  
digitale Anwendungen mit hoher  
Übertragungsrate  
Teil 3-001: Rechteckige Steckverbinder  
mit bewerteter Qualität  
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

### Foreword

The text of document 48B/791/FDIS, future edition 1 of IEC 61076-3-001, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61076-3-001 on 2000-01-01.

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with the EN have to be withdrawn (dow) 2003-01-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annexes A and ZA are normative.  
Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 61076-3-001:1999 was approved by CENELEC as a European Standard without any modification.

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## INTRODUCTION

In prior years, IEC subcommittee 48B had prepared detail specifications as part of a two-level document system. When the IECQ system was introduced, SC 48B was urged to consider changing to the four-level specification system as described in IEC Guide 102. This blank detail specification is part of that four-level document system.

This blank detail specification is a supplementary document to the sectional specification IEC 61076-3 and contains requirements for style, lay-out and minimum content of detail specifications. It is to be used in conjunction with the following publications: IEC 61076-1 and IEC 61076-3.

For the scope and definition of this blank detail specification, see 1.2.2 of IEC 61076-1 and 1.1 of IEC 61076-3.

Detail specifications not complying with these requirements shall not be considered as being in accordance with the IECQ system, nor shall they be so described.

The complete requirements for the rectangular connectors described herein should correspond to this blank detail specification and the current issues of IEC 61076-1 and IEC 61076-3.

In the preparation of detail specifications, the contents of 1.2.3 of IEC 61076-1 should be taken into account.

## Guidance notes

The following pages give a recommended layout of a detail specification. The contents of this page give guidance on the information which should, wherever possible, be given on the front page of a detail specification (see IEC Guide 102).

For the scope and definition of a detail specification, see 1.2.3 of IEC 61076-1.

The numbers between brackets on the front page of the detail specification correspond to the following information.

**Identification of the detail specification**

- [1] The International Electrotechnical Commission or the national standards organization under whose authority the detail specification is drafted. It shall also be stated where the detail specification may be obtained.
- [2] The IECQ/IEC number of the detail specification and date of issue.
- [3] The IECQ/IEC number and issue number of the generic and the sectional specifications.
- [4] The national number of the detail specification, if it differs from the IECQ/IEC number.

**Identification of the connector**

- [5] A short description of the type of connector.
- [6] Information on the typical construction of the connector, for example, it should be stated whether the connector is suitable for mounting on printed boards.
- [7] Outline drawing, preferably of isometric or similar projection, from which the connector may be clearly identified.
- [8] Information on performance level(s) and assessment level(s) specified in the document.
- [9] Reference data on the most important properties, to allow comparison between the various connector types.

NOTE It may be convenient to give some of this information in tabular form.

|                                                                                                                                   |                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| [1]                                                                                                                               | IECQ/IEC<br>Detail specification<br>number<br>[2]                                                                             |
| Generic specification number<br>Electronic components of assessed quality in accordance with:<br>[3]                              | National number of detail<br>specification<br>(it is not necessary to use this if the<br>IECQ/IEC number is identical)<br>[4] |
| Outline drawing<br>[7]                                                                                                            | Product description<br>[5]                                                                                                    |
|                                                                                                                                   | [6]                                                                                                                           |
|                                                                                                                                   | [8]<br>Performance level(s):<br>Assessment level(s):<br>Combination of<br>performance levels<br>and assessment<br>levels:     |
|                                                                                                                                   | Reference data<br>[9]                                                                                                         |
| Information on the availability of components qualified to this detail specification is given<br>in the qualified products lists. |                                                                                                                               |

## 1 General information

### 1.1 Recommended method of mounting

For guidance on the application of these connectors in mechanical structures, see annex A of IEC 60917.

#### 1.1.1 Number of contacts or contact cavities

### 1.2 Ratings and characteristics

|                       |                         |
|-----------------------|-------------------------|
| Rated voltage         | Current rating at 70 °C |
| Insulation resistance | Climatic category       |
| Contact spacing       |                         |

### 1.3 Reference documents

It may be necessary to refer to other documents in addition to those stated, in which case the list of related documents shall be extended beyond those referenced.

If standards are referenced which are already listed in IEC 61076-1 and IEC 61076-3, their reference shall not be repeated in 1.5 of the detail specification.

### 1.4 Marking

The marking of the connector and the package shall be in accordance with 2.6 of IEC 61076-3.

### 1.3 Reference documents

IEC 60068-2-60:1995, *Environmental testing – Part 2: Tests – Test Ke: Flowing mixed gas corrosion test*

IEC 61076-3:1999, *Connectors for use in d.c., low-frequency analogue and digital high speed data applications – Part 3: Rectangular connectors with assessed quality – Sectional specification*

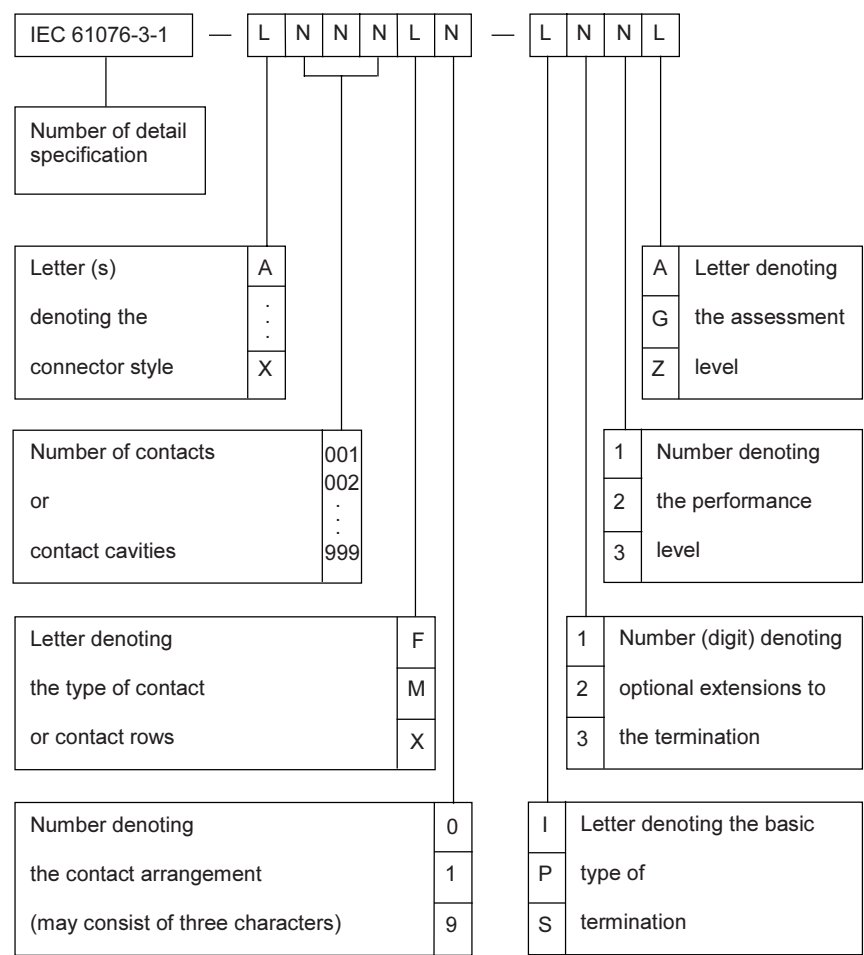
### 1.4 Marking

Guidance notes

1.5 IEC type designation

The designation shall be derived from 2.5 of IEC 61076-3.

Example:



1.6 Ordering information

For ordering connectors according to this detail specification, the type designation described in 1.6 shall be used.

## 1.5 IEC type designation

## 1.6 Ordering information

## 2 Technical information

The detail specification shall contain information which contributes to a proper application of the connectors. It will also provide specificities for a better understanding of the detail specification.

### 2.1 Definitions

In addition to the terminology used in, and applicable to, the detail specification, as stated in 2.1 of IEC 61076-3, it is recommended that those definitions which are unique to the connectors specified be listed in the detail specification.

### 2.2 Survey of styles and variants

Should the detail specification be applicable to a range of styles and/or variants, a survey of the range covered shall be included in the form of a table in the detail specification. Table 1 may be amended to include additional and/or alternative details, if this is applicable, to describe the styles and variants.

NOTE Tables used in detail specifications are to be numbered in sequence. The numbering in this standard has been used as an example, and therefore numbered as "x".

### 2.3 Information on application

If required, rules and recommendations for the use of the connectors specified in the detail specification shall, unless sufficiently covered by dimensional information in clause 3, be listed for

#### 2.3.1 Complete connectors (pairs)

#### 2.3.2 Fixed connectors

#### 2.3.3 Free connectors

NOTE The category of free connectors includes free coupler connectors. These connectors have coupling or latching hardware as an integral part of the connector. Information about the coupling hardware should be included, as necessary, in clauses 2, 3, and 5.

2 Technical information

2.1 Definitions

2.2 Survey of styles and variants

Table 1 – Styles and variants

| Connector style<br>and<br>number of contacts | Style reference letter |  |  |  |  |
|----------------------------------------------|------------------------|--|--|--|--|
|                                              |                        |  |  |  |  |

2.3 Information on application

2.3.1 Complete connectors (pairs)

2.3.2 Fixed connectors

2.3.3 Free connectors

## Guidance notes

**2.3.4 Accessories**

When accessories provide an essential support to the application of the connectors, the features and use shall be outlined in the detail specification, where applicable.

**2.3.4.1 Special contacts**

In case special contacts are used in conjunction with the contacts specified in the detail specification, information on these contacts shall be presented for information only, given the fact that no detail specification of such contacts has been published. Special contacts are defined as usually removable contacts for high-current, high-voltage, RF, filter or FO applications.

**2.3.4.2 Coding devices**

When coding devices, which are not an integral part of the connector, are used, separate information shall be given in the detail specification.

**2.3.4.3 Mounting devices**

When mounting devices, which do not form an integral part of the connector, are recommended, information on these devices shall be presented in the detail specification for reference only.

**2.3.5 Shielding/grounding**

When shielding and/or grounding features, which cannot be considered as an integral part of the connector or an accessory, are offered, information shall be given in the detail specification.

**2.3.6 Basic type of terminations**

When different types of terminations are possible, information on use shall be presented in the detail specification in tabular form.

More detailed dimensional information may be provided by those parts of the detail specification which describe the dimensions of fixed and free board connectors.

If no significant differences occur between terminations of fixed and free connectors, the information may be included in this clause instead.

**2.4 Contact arrangements**

When different mechanical contact loading per connector insert is possible and influences the intended application of the connector, information shall be given in the detail specification, preferably in the form of drawings or tables.

These arrangements shall be specified by the appropriate combination of the IEC type designation specified in 1.7 of the detail specification.

## **2.3.4 Accessories**

### **2.3.4.1 Special contacts**

### **2.3.4.2 Coding devices**

### **2.3.4.3 Mounting devices**

## **2.3.5 Shielding/grounding**

## **2.3.6 Basic type of terminations**

## **2.4 Contact arrangements**

### 3 Dimensional information

In order to facilitate comparison of various specifications, a uniform presentation of drawing information is recommended in accordance with 2.7.1 of IEC 61076-1.

Drawings and dimensions shall cover

- a) isometric view showing the basic design including common characteristics of related connectors;
- b) fixed connectors;
- c) free connectors and/or board-edge of printed boards;
- d) mating information;
- e) accessories;
- f) mounting information for fixed connectors;
- g) mounting information for free connectors, if applicable;
- h) mounting information for connectors with accessories;
- i) testing gauges, probes and test panels.

#### 3.1 General

It shall be stated in the detail specification if original dimensions are millimetres or inches.

It shall be stated in the detail specification if drawings are shown in first-angle or in third-angle projection.

The system of lettering shall be as described by 2.7.1.1 of IEC 61076-1.

The following statement shall be included in the detail specification:

**The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.**

Wherever practical, the same dimension letters shall be used for corresponding dimensions of fixed and free connectors.

#### 3.2 Isometric view and common features

An isometric view shall be included and shall show the main characteristics of the design including common features, if applicable.

It is convenient to show the dimension reference, the dimension and the feature description in the form of a table (see table 2).

3 Dimensional information

3.1 General

The shape of the connectors may deviate from those given in the following drawings as long as the specified dimensions are not influenced.

3.2 Isometric view and common features

Table 2 – Isometric view and common features

| Reference | Dimension | Feature description |
|-----------|-----------|---------------------|
|           |           |                     |

## Guidance notes

**3.2.1 Common features**

A description of all the common features relating to the style of connectors covered by the detail specification shall be included.

Data which could be specified includes

- a) datum point or datum line with reference to the datum;
- b) position of the mounting hole(s) of the fixed connector;
- c) position of the terminations of the fixed connector;
- d) position of the free or edge-socket connector;
- e) position of the mounting holes of the free connector or the terminations of an edge-socket connector;
- f) position of the printed board;
- g) position of the grid of the printed board.

**3.2.2 Reference system**

The detail specification shall state the coordination dimensions to allow for (modular) arrangement of the connector parts. When such reference system is based on guidelines for mechanical structures, it is recommended to refer to such information.

**3.2.3 Height dimensions**

When multiple connectors or connector modules are mounted onto a printed board, the height dimension to the backplane and the datum line of a subrack shall be stated in the detail specification.

**3.2.4 Width dimensions**

To show the width positioning of individual printed boards in relation to the datum line of the backplane, which is part of a mechanical structure, such dimensions shall be stated in the detail specification.

**3.2.5 Depth dimensions**

To provide essential information about the position of the edge of a printed board or the fixed connector versus the free connector, depth dimensions shall be stated in the detail specification.