BS EN 61076-1:2006+A1:2019

BSI Standards Publication

Connectors for electronic equipment – Product requirements

Part 1: Generic specification (IEC 61076-1:2006)

bsi.

National foreword

This British Standard is the UK implementation of EN 61076-1:2006+A1:2019. It is identical to IEC 61076-1:2006, incorporating amendment 1:2019. It supersedes BS EN 61076-1:2006, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee EPL/48, Electromechanical components and mechanical structures for electronic equipment.

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European Foreword

The text of document 48B/1621/FDIS, future edition 2 of IEC 61076-1, 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 61076-1 on 2006-05-01.

This European Standard supersedes EN 61076-1:1995 + A1:1996 + A2:2001.

This Standard is to be used in conjunction with EN 62197-1:2006.

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Annex ZA has been added by CENELEC.

Endorsement notice

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

European foreword to amendment A1

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.

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

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FOREWORD

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International Standard IEC 61076-1 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This second edition cancels and replaces the first edition issued in 1995, its amendment 1 (1996) and its amendment 2 (2001) and constitutes a technical revision. Modifications with respect to the previous edition are described in the introduction.

This standard is to be used in conjunction with IEC 62197-1:2006.

The text of this standard is based on the following documents:

FDIS	Report on voting
48B/1621/FDIS	48B/1671/RVD

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

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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

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

INTRODUCTION

The objective of this work is to update the quality assessment procedures of the connector specifications to the current state of the art industrial procedures.

At the time of publication, all the connector detail specifications dealt with by subcommittee 48B of the International Electrotechnical Commission were built as described in Figure 1 with 5 major chapters.

The most significant out of date procedures relate to the lot-by-lot tests with different inspection levels and acceptance quality level and to the periodic tests with permitted number of defectives.

It was felt necessary to introduce the capability and the technology approval together with the basic design parameters of statistical process control as a feed back system to have a continuous control of the quality during the various steps of manufacture.

It was also felt appropriate to split the current documentation structure into two separate structures of documents which, in the day to day use of specifications, satisfy most users, see Figure 2.

The documentation system will be split into two parts:

- Product requirements
- Quality assessment requirements

The structure for the Product Specification contains characteristics, dimensions, performance requirements and test schedules.

The structure for the quality assessment specification contains the requirements to obtain Qualification Approval (QA) for a given performance level (per environment category), Capability Approval (CA) per family of connectors or Technology Approval (TA) comprising all relevant technologies for connector production.

Capability Approval or Technology Approval combined with statistical process control parameters are intended to replace lot-by-lot and periodic tests.

To fully certify a product, a combination of the two structures will have to be selected by the user, keeping in mind that in the statistical process control, key characteristics shall be agreed between manufacturer and user.

A generic product specification with a 4 level structure consists of a generic, a sectional, a blank detail and a detail specification.

From this, it can be concluded that two generic specifications are being circulated, one document for the product aspects and a second one for the quality aspects.

The sectional specifications will be presented at the product level per family of connectors, for example printed board connectors, circular connectors, rectangular connectors, etc.

At the quality assessment level, Annex B of IEC 62197-1 deals with qualification approval in B.2, capability approval in B.3 and technology approval in B.4.

The objective of this 2nd Edition is to review and update the actual connector specifications containing product and quality assessment requirements.

Today, all the connector detail specifications dealt with by Subcommittee 48B of the International Electrotechnical Commission are prepared as described in figure 1 with 5 major chapters.

The most significant out of date procedures relate to the lot-by-lot tests with different inspection levels and acceptance quality level and to the periodic tests with permitted number of defectives.

To update the document to reflect modern practices it was necessary to introduce the capability and the technology approval together with the basic design parameters of statistical process control as a feed back system to have a continuous quality control during various steps of manufacture.

It was also felt appropriate to split the current documentation into two separate structures of documents which, in the day-to-day use of specifications, satisfy most users, see illustration in Figure 2.

This offers the user the option to acquire products with and without certification. It is obvious that the industry needs to get separate information on dimensions, performance requirements and basic design parameters.

The two separate documents are:

- Product requirements
- Quality assessment requirements

The Product Specification contains characteristics, dimensions, performance requirements and test schedules. The relevant document is:

IEC 61076-1 (Ed. 2)

Connectors for electronic equipment - Product requirements -

Part 1: Generic Specification.

The Quality Assessment Specification contains the requirements to obtain Qualification Approval (QA) for a given performance level (per environment category), Capability Approval (CA) per family of connectors or Technology Approval (TA) comprising all relevant technologies for connector production.

Capability Approval or Technology Approval combined with statistical process control parameters are intending to replace lot-by-lot and periodic tests. The relevant document is:

IEC 62197-1

Connectors for electronic equipment - Quality assessment requirements -

Part 1: Generic Specification

To specify a fully certified product, a combination of specifications from both structures shall be required.

The 4 level document structure adopted by SC48B consists of a Generic, a Sectional, a Blank Detail and Detail Specifications.

To maintain this 4 level structure, two Generic Specifications are being circulated, one document for the product aspects and a second one for the quality aspects.

The Sectional Specifications will be presented at the product level per family of connectors e.g. printed board connectors, circular connectors, rectangular connectors, etc.

At the quality assessment level Annex B of IEC 62197-1 is dealing with Qualification Approval B.2, Capability Approval B.3 and Technology Approval B.4.

Connectors for electronic equipment — Product requirements —

Part 1: Generic specification

1 General

1.1 Scope

This part of IEC 61076 establishes uniform specifications and technical information for connectors.

This part of IEC 61076 is applicable to a family of connectors for use in electronic and electrical equipment; connectors designed for use at radio frequencies are not covered.

1.2 General considerations relating to specifications

This part of IEC 61076 contains, or gives reference to, the terms, definitions, symbols, test schedules and information relating to connectors.

It shall be used in conjunction with IEC Guide 109 that advocates the need to minimise the impact of a product on the natural environment throughout the product life cycle.

It is understood that some materials permitted by this specification and in manufacturing and assembly processes may have a negative environmental impact. As technological advantages lead to acceptable alternatives for these materials, they shall be eliminated from this specification. Inappropriate manufacturing processes should be replaced by a product design that features easy maintainability and disassembly.

In the event of conflict between this part of IEC 61076 and the sectional product specification, the requirements of the sectional product specification prevail.

1.2.1 Sectional product specifications

All details appropriate to a particular subfamily of connectors are contained in the relevant sectional product specification, for example printed board, circular, rectangular connectors and other connecting devices.

It shall contain a choice of all test methods and sequences, severities and preferred values for dimensions and characteristics, which could be applicable to that subfamily.

The contents shall be derived from IEC 61076-1.

In the event of conflict between a Sectional Product Specification and the Detail Product Specification, the requirements of the Detail Product Specification shall prevail.

The following 2nd editions of sectional product specifications are under consideration:

IEC 61076-2: Circular connectors;

IEC 61076-3: Rectangular connectors;

IEC 61076-4: Printed board connectors;

IEC 61076-5: In-line socket devices;

IEC 61076-6: Loose-part contacts;