

Connectors for electronic equipment — Quality assessment requirements —

Part 1: Generic specification

The European Standard EN 62197-1:2006 has the status of a British Standard

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee EPL/48, Electromechanical components and mechanical structures for electronic equipment, which has the responsibility to:

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**Connectors for electronic equipment —
Quality assessment requirements
Part 1: Generic specification
(IEC 62197-1:2006)**

Connecteurs pour équipements
électroniques —
Exigences d'assurance de la qualité
Partie 1: Spécification générique
(CEI 62197-1:2006)

Steckverbinder für elektronische
Einrichtungen —
Qualitätsbewertungsanforderungen
Teil 1: Fachgrundspezifikation
(IEC 62197-1:2006)

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CENELEC

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

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Foreword

The text of document 48B/1622/FDIS, future edition 1 of IEC 62197-1, 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 62197-1 on 2006-05-01.

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- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2009-05-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62197-1:2006 was approved by CENELEC as a European Standard without any modification.

CONTENTS

INTRODUCTION.....	4
1 General.....	9
1.1 Scope.....	9
1.2 General considerations relating to specifications	9
1.3 Normative references	10
1.4 Performance characteristics.....	10
2 Technical information	11
2.1 Terms and definitions	11
2.2 System of levels	12
2.3 Statistical process control	12
2.4 Assessment of outgoing non conforming values in ppm	12
2.5 Process capability	13
2.6 Definition of C_P and C_{PK}	14
2.7 Relation between C_{PK} and number of non conforming (defective) parts	15
2.8 Typical minimum values for C_P and C_{PK}	15
2.9 Implementation of statistical process control	16
3 Quality assessment procedures	16
3.1 Quality assessment definitions.....	16
3.2 Qualification Approval (QA).....	17
3.3 Capability Approval (CA).....	17
3.4 Technology Approval (TA).....	18
4 Test and test schedules.....	18
4.1 General aspects	18
4.2 Test schedules	19
Annex A (informative) Further information and practical figures concerning process measures indices.....	20
Annex B (normative) Quality assessment procedures	22
Annex ZA (normative) Normative references to international publications with their corresponding European publications	30
Figure 1 – Actual detail specification structure.....	5
Figure 2 – New documentation structure for specifications drafted in SC 48B – Separation of product and quality assessment requirement.....	6
Table 1 – Typical values for non-conformance levels	13
Table 2 – Process capability cases.....	14
Table 3 – C_{PK} -values as function of good/defective parts.....	15
Table 4 – Typical minimum values.....	15

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 IEC 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 intending to replace lot-by-lot and periodic tests.

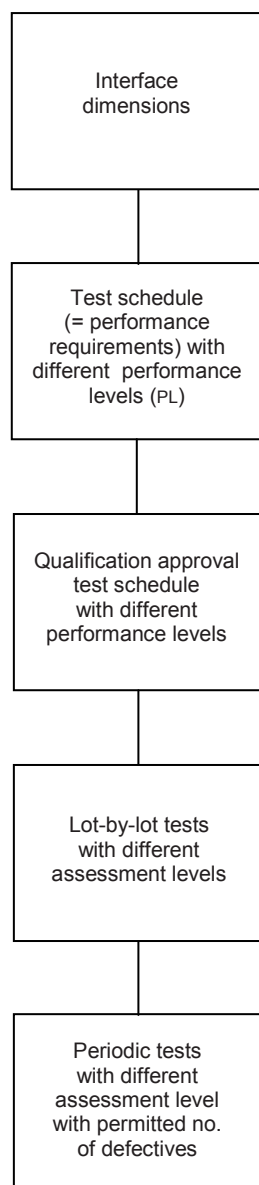
To fully certify a product, a combination of the two structures will have to be selected by the user, keeping in mind that in the statistical process control, key characteristics shall be agreed between manufacturer and user.

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.

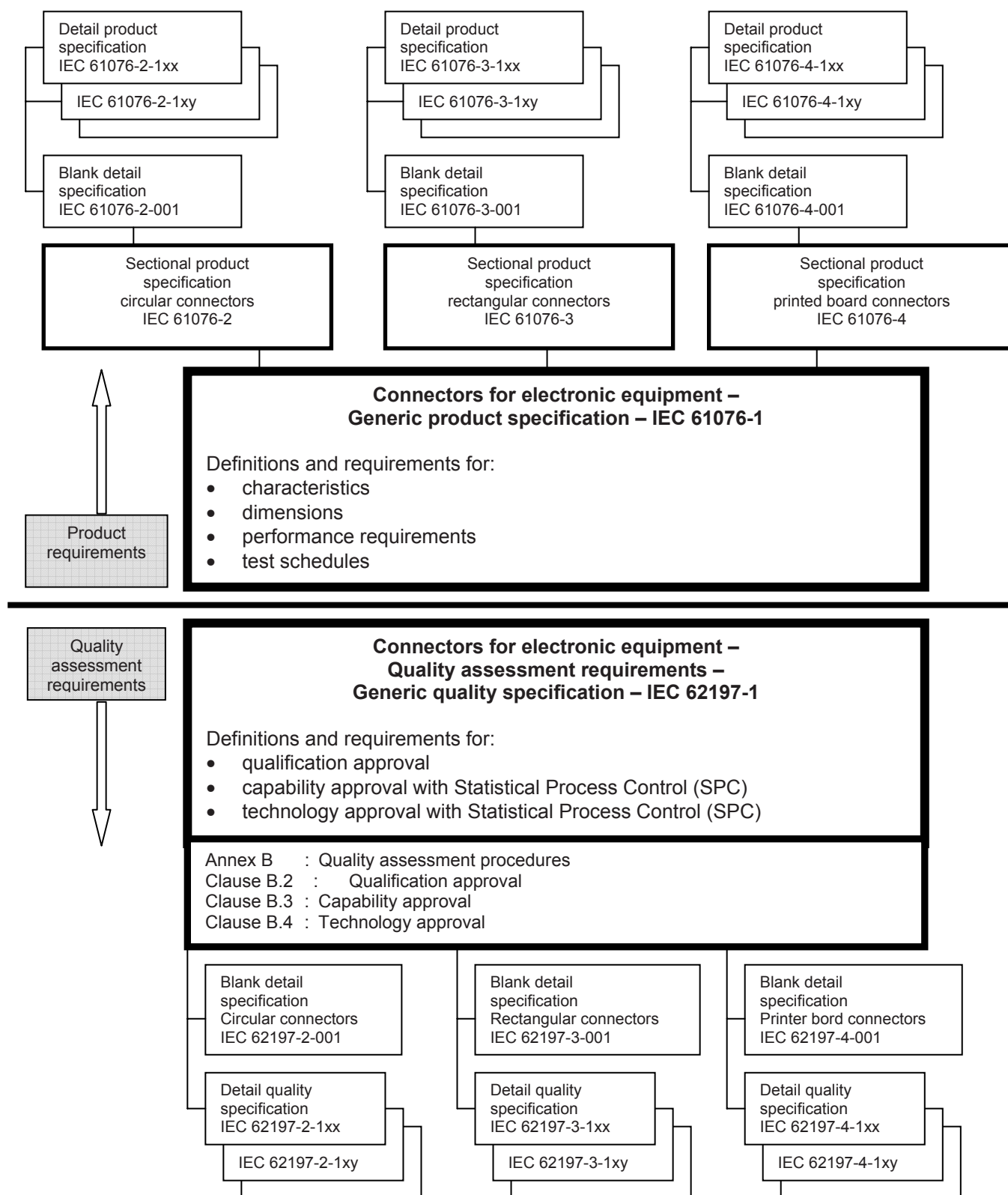
The sectional specifications will be presented at the product level per family of connectors, for example printed board connectors, circular connectors, rectangular connectors, etc.

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



IEC 481/06

Figure 1 – Actual detail specification structure



IEC 482/06

NOTE Detail and blank detail specifications for the same connector will have publication numbers with identical terminations in the 61076 and 62197 series; for instance IEC 61076-4-100 and IEC 62197-4-100 are associated with the same connector.

Figure 2 – New documentation structure for specifications drafted in SC 48B – Separation of product and quality assessment requirement

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– QUALITY ASSESSMENT REQUIREMENTS –

Part 1: Generic specification

1 General

1.1 Scope

This part of IEC 62197 establishes uniform testing requirements to support quality assessment procedures for connectors.

This part of IEC 62197 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 generic quality specification contains, or gives reference to, the terms, definitions, symbols, test methods and information relating to the inspection particular to connectors.

It shall be used in conjunction with relevant levels of specifications, with reference to IEC Guide 102, if applicable.

In the event of conflict, the requirements of the Detail Quality Specification prevail.

1.2.1 Detail Quality Specifications

Quality sectional specifications are not existent and appropriate for this document structure. In place of sectional specifications, the Quality assessment procedures as described in Clauses B.2, B.3 and B.4 are applied.

If applicable, it shall contain a list of all test methods and sequences, severities and preferred values for characteristics, which could be applicable to that subfamily.

The contents shall be derived from IEC 62197-1 and the detail product specification, if appropriate.

In the event of conflict, the requirements of the detail quality specification prevail.

1.2.2 Blank detail quality specification (if applicable)

Guidance to prepare the appropriate detail quality specifications shall be given in a blank detail quality specification, prescribing the layout to be adopted and the information to be given, thus ensuring a uniform presentation.

Its content shall be derived from IEC 62197-1 and shall list parameters of the subject connector subfamily and a selection of the technical criteria necessary and sufficient to assess quality of the connector type and considered to be complete and sufficient for control purposes