
British Standard

**Harmonized system of quality assessment
for electronic components:
Sectional specification: Circular connectors**

**Système harmonisé d'assurance de la qualité des composants électroniques
Spécification intermédiaire: Connecteurs cylindriques**

**Harmonisiertes Gütebestätigungssystem für Bauelemente der Elektronik
Rahmenspezifikation: Rundsteckverbinden**

National foreword

This British Standard has been prepared under the direction of the Electronic Components Standards Committee. It is identical with CENELEC Electronic Components Committee (CECC) 75200 : 1985 'Harmonized system of quality assessment for electronic components: Sectional specification: Circular connectors'.

This standard is a harmonized specification within the CECC system.

Terminology and conventions. The text of the CECC specification has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards. Attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-references. The British Standard which implements CECC 00100 is BS 9000 'General requirements for a system for electronic components of assessed quality' Part 2 : 1983 'Specification for national implementation of CECC basic rules and rules of procedure'.

International standards	Corresponding British Standards
ISO 1000 : 1981 *	BS 5555 : 1981 Specification for SI units and recommendations for the use of their multiples and of certain other units (Identical)
	BS 2011 Basic environmental testing procedures
IEC 68-1 : 1982	BS 2011 : Part 1.1 : 1983 General and guidance (Identical)
IEC 410 : 1973	BS 6001 : 1972 Sampling procedures and tables for inspection by attributes (Technically equivalent)
	BS 5772 Specification for electromechanical components for electronic equipment: basic testing procedures and measuring methods
IEC 512-1 : 1984	Part 1 : 1985 General (Identical)
IEC 512-2 : 1976	Part 2 : 1979 General examination, electrical continuity and contact resistance tests, insulation tests and voltage stress tests (Identical)
IEC 512-2A : 1980	Part 2 : Supplement 1 : 1981 Test 4c (Identical)
IEC 512-3 : 1976	Part 3 : 1979 Current carrying capacity tests (Identical)
IEC 512-4 : 1976	Part 4 : 1979 Dynamic stress tests (Identical)
IEC 512-6 : 1984	Part 6 : 1984 Climatic tests and soldering tests (Identical)
IEC 512-7 : 1978	Part 7 : 1981 Mechanical operating tests and sealing tests (Identical)
IEC 512-8 : 1984	Part 8 : 1985 Connector tests (mechanical) and mechanical tests on contacts and terminations (Identical)
IEC 512-9 : 1977	Part 9 : 1979 Cable clamping tests, explosion hazard tests, chemical resistance tests, fire hazard tests, r.f. resistance tests, capacitance tests, shielding and filtering tests and magnetic interference tests (Identical)

Compliance with a British Standard does not of itself confer immunity from legal obligations

* Referred to in the text as ISO/R 1000 prior to revision as an international standard.

**Amendment No. 1
published and effective from 15 January 1993
to BS CECC 75200 : 1986**

**Harmonized system of quality assessment for
electronic components: Sectional specification:
Circular connectors**

NOTE. The CENELEC Electronic Components Committee (CECC) has accepted CECC 75 200 : 1985 together with its Amendment 1 as a European Standard designated as EN 175 200 : 1991. This amendment implements EN 175 200 : 1991 as a British Standard.

Revised text

**AMD 7483
January 1993**

BS number

In the top right-hand corner of the front cover, on the inside front cover, and twice on the back cover, delete 'BS CECC 75200 : 1986' and substitute 'BS EN 175200 : 1992.'

**AMD 7483
January 1993**

Front cover

At the foot of the front cover insert the following.

'The European Standard EN 175 200 : 1991 has the status of a British Standard'

**AMD 7483
January 1993**

National foreword

At the end of paragraph 2 insert the following new paragraph.

'In 1991 the CENELEC Electronic Components Committee (CECC) accepted CECC 75 200 : 1985 together with its Amendment 1 as European Standard EN 175 200 : 1991. BS 9522 : 1990 is now declared obsolescent.'

**AMD 7483
January 1993**

New EN title page

Immediately after the national foreword, insert the attached new EN title page.

**AMD 7483
January 1993**

New pages 39 and 40

Delete the existing pages 39 and 40 and substitute the attached new pages.

UDC

Descriptors: Quality, electronic components, connectors

English version

Sectional Specification: Circular connectors

Spécification Intermédiaire:
Connecteurs cylindriques

Rahmenspezifikation:
Rundsteckverbinder

This European Standard was approved by the CENELEC Electronic Components Committee (CECC) on 4 June 1991. The text of this standard consists of the text of CECC 75 200 Issue 1 1935 with A.1 of the corresponding CECC Specification. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the General Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CECC General Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. The membership of the CECC is identical, with the exception of the national electrotechnical committees of Greece, Iceland and Luxembourg.

CECC

CENELEC Electronic Components Committee
Comité des Composants Electroniques du CENELEC
CENELEC Komitee für Bauelemente der Elektronik

Central Secretariat: Gartenstr. 179, D-6000 Frankfurt/Main 70

© 1991 Copyright reserved to CENELEC members

Ref. No. EN 175 200 : 1991 E

 **Documents**
Document Sharing Hub

5.9.2 Contd.....

(1) Lot-by-Lot Tests (Contd.)

Subgroup B3 This is a spare subgroup for additional Group B tests that may be necessary for verifying characteristics of the connectors. Subgroup B3 and all necessary details will be specified by the DS.

RCE Information Results from subgroups B1 and B2 are to be included in the test record of the released lot.

(2) Periodic Tests

All periodic tests of Group C and Group D inspection shall be carried out on specimens taken from lots that have already satisfied the lot by lot tests. Periodic tests of Group D inspection and those of Group C inspection containing complete test groups as specified in 3.3.2 (for example BP1 to BP12, CP1 to CP10) shall be carried out on specimens that have successfully passed tests P1 ... P6, also.

The periods chosen for the different lists or test sequences are given for basic guidance and may be reduced according to the assessment levels contained in the DS, if necessary.

In the event of failure at Group C inspection the procedure as defined in § 15 of RP7 Part I shall be followed.

Group C Inspection

This group covers periodic tests for quality conformance inspection.

5.9.2 Contd.....

(2) Periodic Tests (Contd.)

Group C Inspection is divided into subgroups as follows:

- | | |
|-----------------|--|
| Subgroup C1 | This subgroup comprises tests carried out at intervals of 1 month. |
| Subgroup C2 | This subgroup comprises tests carried out at intervals of 3 months. |
| Subgroup C3 | This subgroup comprises tests carried out at intervals of 6 months. |
| Subgroup C4 | This subgroup comprises tests carried out at intervals of 12 months. |
| Subgroup C5 | This is a spare subgroup for additional Group C tests which may be necessary for verifying characteristics of the connectors. Subgroup C5 and all necessary details will be specified by the DS. |
| RCE information | Results from Subgroups C1, C2, C3, C4 are to be included in the test record. |

Group D Inspection

This group covers all tests which may be necessary in addition to the tests of Inspection Groups A, B and C to complete an entire qualification approval test programme, that is to complete the assessment of the qualification and/or to complete the re-assessment for the maintenance of the qualification approval. The tests are carried out at intervals as specified in the DS, usually 36 months. The group may be subdivided. The details of the subdivision if any shall be given in the DS. Following initial qualification approval, Group D tests may be carried out progressively within the period specified in the DS.

English version

Harmonized System of Quality Assessment for
Electronic Components

SECTIONAL SPECIFICATION:

CIRCULAR CONNECTORS

Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION INTERMEDIAIRE:

CONNECTEURS CYLINDRIQUES

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

RAHMENSPEZIFIKATION:

RUNDSTECKVERBINDER



1 Edition
Issue
Ausgabe

CECC 75 200

C O N T E N T S

Clause	Page
FOREWORD	3
PREFACE	3
1 - SCOPE	4
2 - GENERAL	
2.1 Related Documents	5
2.2 Terminology	6
2.3 Classification into Climatic Categories	7
2.4 Creepage and Clearance Distances	8
2.5 Current	9
2.6 Marking	9
2.7 Type Designation	9
3 - GENERAL REQUIREMENTS TEST AND TEST SCHEDULES	
3.1 Workmanship	12
3.2 Testing	12
3.2.1 General Aspects	12
3.2.2 Pre-Conditioning	12
3.2.3 Preparation of Specimens	13
3.2.4 Mounting of Specimens	13
3.2.5 Recovery	13
3.3 Test Schedule	13
3.3.1 Basic Test Schedule	14
3.3.2 Full Test Schedule	15

Clause	Page
4 - PREPARATION OF DETAIL SPECIFICATIONS	
4.1 Titles of Detail Specifications (DS)	24
4.2 Drawing Information	24
4.3 System of Lettering	26
4.4 Contents of Detail Specifications	26
5 - QUALITY ASSESSMENT PROCEDURES	
5.1 Primary Stage of Manufacture	31
5.2. Structurally Similar Components	31
5.3 System of Levels	31
5.4 Grouping of Tests	33
5.5 Qualification Approval Procedure	35
5.6 Maintenance of Qualification Approval	36
5.7 Withdrawal or Suspension of Qualification Approval	36
5.8 Significant Changes	37
5.9 Quality Conformance Inspection	37
5.10 Certified Test Records (RCE)	41
5.11 Delivery of Tested Connectors	41
5.12 Release for deliveries before the completion of Group B tests	41
5.13 Delayed Delivery	42
5.14 In-Process Testing	42
6 - PREPARATION OF DETAIL SPECIFICATIONS	43
APPENDICES	
Appendix A System of lettering	52

FOREWORD

The CENELEC Electronic Components Committee (CECC) is composed of those member countries of the European Committee for Electrotechnical Standardisation (CENELEC) who wish to take part in a harmonised System for electronic components of assessed quality.

The object of the System is to facilitate international trade by the harmonisation of the specifications and quality assessment procedures for electronic components, and by the grant of an internationally recognised Mark, or Certificate, of Conformity. The components produced under the System are thereby accepted by all member countries without further testing.

This specification has been formally approved by the CECC, and has been prepared for those countries taking part in the System who wish to issue national harmonised specifications for CIRCULAR CONNECTORS. It should be read in conjunction with the relevant Rules of Procedure of the CECC.

At the date of printing of this document the member countries of the CECC are Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom, and copies of it can be obtained from the addresses shown on the blue fly sheet.

PREFACE

This sectional specification (SS) was prepared by CECC WG 25 'LOW frequency connectors'.

It is based, wherever possible, on the Publications of the International Electrotechnical Commission and in particular on IEC 512: Electromechanical Components for Electronic Equipment; Basic Testing Procedures and Measuring Methods.

The text of this SS was circulated to the CECC for voting in the documents listed below and was ratified by the President of the CECC for printing as a CECC specification.

<u>Document</u>	<u>Date of Voting</u>	<u>Report on the Voting</u>
CECC (Secretariat) 1443	March 1984	CECC (Secretariat) 1562

NOTE: This specification does not comply completely with the requirements of CECC 00 400.

1 - SCOPE

This Sectional Specification (SS) is applicable to circular connectors for use in telecommunication, electronic and electrical equipment. It shall be used in conjunction with the basic specification, IEC 512 : Electromechanical components for electronic equipment, basic testing procedures and measuring methods, and the relevant Detail Specification (DS).

Connectors essentially designed for use at frequencies exceeding 3 MHz are not covered.

The object of this SS is to establish uniform specification, method and type test requirements for circular connectors and to establish rules for the preparation of DS.

In the event of conflict between this SS and the DS, the requirements of the DS, shall prevail.

2 - GENERAL

2.1 Related documents

ISO/R/1000	Rules for the use of the units of the International system of units and selection of the decimal multiples and submultiples of the SI units.
IEC 27	Letter symbols to be used in electrotechnology.
IEC 50 (581)	International electrotechnical vocabulary (Electromechanical components for electronic equipment).
IEC 68	Basic environmental testing procedures.
IEC 410	Sampling procedures and tables for inspection by attributes for electronic components for assessed quality. (See CECC 00 007).
IEC 512	Electromechanical components for electronic equipment; basic testing procedures and measuring methods. (See CECC 00 009).
CECC 00 007	Harmonisation document for IEC 410 : Sampling procedures and tables for inspection by attributes for electronic components of assessed quality.
CECC 00 009	Harmonisation document for IEC 512 : Basic testing procedure and measuring methods for Electromechanical Components.

2.2 Terminology

The terminology used in and applicable to this specification is included in IEC 50, (581). IEC 512 also contains applicable terms.

For the purpose of this specification, the following additional terms and definitions shall apply:

2.2.1 Group of Related Connectors

A group of connectors within a sub-family having common features.

Typical examples are :

- Same mounting features but different kinds and numbers of contacts, or,
- Same coupling features but different inserts and types of contacts.

A group of related connectors is covered by a single DS.

2.2.2 Type

Connectors within a particular sub-family such as multi-contact connector with threaded coupling.

2.2.3 Range

The housing (shell) sizes and contact arrangements within a type.

2.2.4 Style

A particular external configuration of a connector within a range such as fixed, free, coupler or adaptor, connectors mounting features etc.

2.2.5 **Variant**

Variations within a type and style or within a group of related connectors.

2.2.6 **Examples**

Family : **Connector.**

Sub-family : **Circular connectors.**

Type : **Circular multi-contact connector with threaded coupling.**

Range : **Shell size 1 with 2 contacts to Shell size 3 with 62 contacts.**

Variant : **Shell size 1 with 2 contacts - insert in position 5, termination, etc.**

2.3 **Classification into climatic categories**

The connectors are classified into climatic categories in accordance with IEC 68-1.

2.3 Contd.....

The following preferred temperature ranges and severities of the damp heat steady state tests have been selected.

Climatic category	Temperature range	Damp heat steady state	Identification code 1)
65/260/56	-65°C to +260°C	56 days	
65/200/56	-65°C to +200°C	56 days	
65/175/56	-65°C to +175°C	56 days	
65/155/56	-65°C to +155°C	56 days	
55/155/56	-55°C to +155°C	56 days	
55/125/56	-55°C to +125°C	56 days	
55/125/21	-55°C to +125°C	21 days	
40/100/21	-40°C to +100°C	21 days	
40/100/10	-40°C to +100°C	10 days	
25/085/21	-25°C to +85°C	21 days	
25/070/10	-25°C to +70°C	10 days	
10/070/04	-10°C to +70°C	4 days	

1) NOTE: Identification code still under consideration.

2.4 Creepage and Clearance Distances

Permissible operating voltages depend on the application and on the applicable or specified safety requirements. Therefore, creepage and clearance distances as well as proof voltages under specified air pressure shall be specified in the DS.

2.5 Current

For each connector, the current carrying capacity shall be specified in the DS, preferably by the derating curve evaluated in accordance with Test 5b of IEC 512-3 or by at least one value of current and the associated temperature on the derating curve as well as the maximum operating temperature.

2.6 Marking

2.6.1 On the connector

Each connector shall have the following information marked upon it. Identification of the contact position as prescribed in the DS. If space does not permit full marking, as much as possible of the following in the order shown shall be included:

- (1) Type designation.
- (2) Mark of origin (manufacturer's name or trade mark).
- (3) Date code, if prescribed by the DS.

2.6.2 On the package

The information in (1), (2) and (3) of 2.6.1 shall also be marked on the package.

2.7 Type designation

Circular connectors to which these recommendations apply shall be designated by the following indications and in the order given :

- (1) the reference number of the DS.
- (2) the letters "CECC" (alternatively ONH reference may be used).
- (3) a letter denoting the style of the connector. (The system shall be prescribed in the DS.)

2.7 Contd.....

- * (4) a number denoting a housing (shell) or body size.
- * (5) a number denoting the contact arrangement. (Not necessarily the number of contacts.)
- (6) a letter denoting the type of contact. The following letters shall be used.

- M = male contact
- F = female contact
- H = hermaphroditic contact

- (7) a letter denoting the basic type of the terminations. The following letter shall be used :

- S = solder termination
- C = crimp termination
- W = wrap termination

- (8) a letter or digit denoting polarisation or orientation by a particular arrangement of keys and keyways on housing (shells) or bodies, or position of insert in housing such as N, A, B, C, D, W, X, Y, Z or 0, 1, 2, etc., where N and 0 are the neutral** position.

* Housing (shell) size and contact arrangement are normally described jointly.

** Neutral position is the normal or standard position.

2.7 Contd.....

- (9) a digit to denote variations permitted by the DS. For example: plating, performance, colour, etc.
- (10) If prescribed in the DS, the type designation may optionally be extended to include an additional block to cover further information such as climatic category, termination information etc. (See CECC 75201.)
- (11) Where the DS provides for a variation of performance and assessment levels, a single letter and a digit shall be used to denote Performance Level (PL) and Assessment Level (AL) respectively. The letter and digit shall be prescribed in the DS and shall be included as the final cyphers of the type designation.