

Förderverein für Elektrotechnische Normung (FEN) e. V.
Cenelec Electronic Components Committee

CECC

Systeme Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE CADRE:

**CONNECTEURS COAXIAUX
POUR FREQUENCE
RADIOELECTRIQUE
Série TNC**

Harmonized System of Quality Assessment for
Electronic Components

BLANK DETAIL SPECIFICATION:

**RADIO FREQUENCY
COAXIAL CONNECTORS
Series TNC**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

VORDRUCK
FÜR BAUARTSPEZIFIKATION:

**HOCHFREQUENZ-
KOAXIAL-STECKVERBINDER
Serie TNC**



1

Edition
Issue
Ausgabe

CECC 22201

1985

FOREWORD

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

The object of the System is to facilitate international trade by the harmonization of the specifications and quality assessment procedures for electronic components and by the grant of an internationally recognized 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 harmonized specifications for RADIO FREQUENCY COAXIAL CONNECTORS AND ACCESSORIES SERIES TNC. It should be read in conjunction with the current regulations for the CECC System.

At the date of printing of this specification 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 flysheet.

PREFACE

This blank detail specification (BDS) was prepared by CECC Working Group 22: R.F. Connectors.

It is based wherever possible, on the Publications of the International Electrotechnical Commission and in particular on IEC 169-17: Radio-frequency connectors, Part 17: R.F. coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with screw coupling-Characteristic impedance 50 Ω (Type TNC).

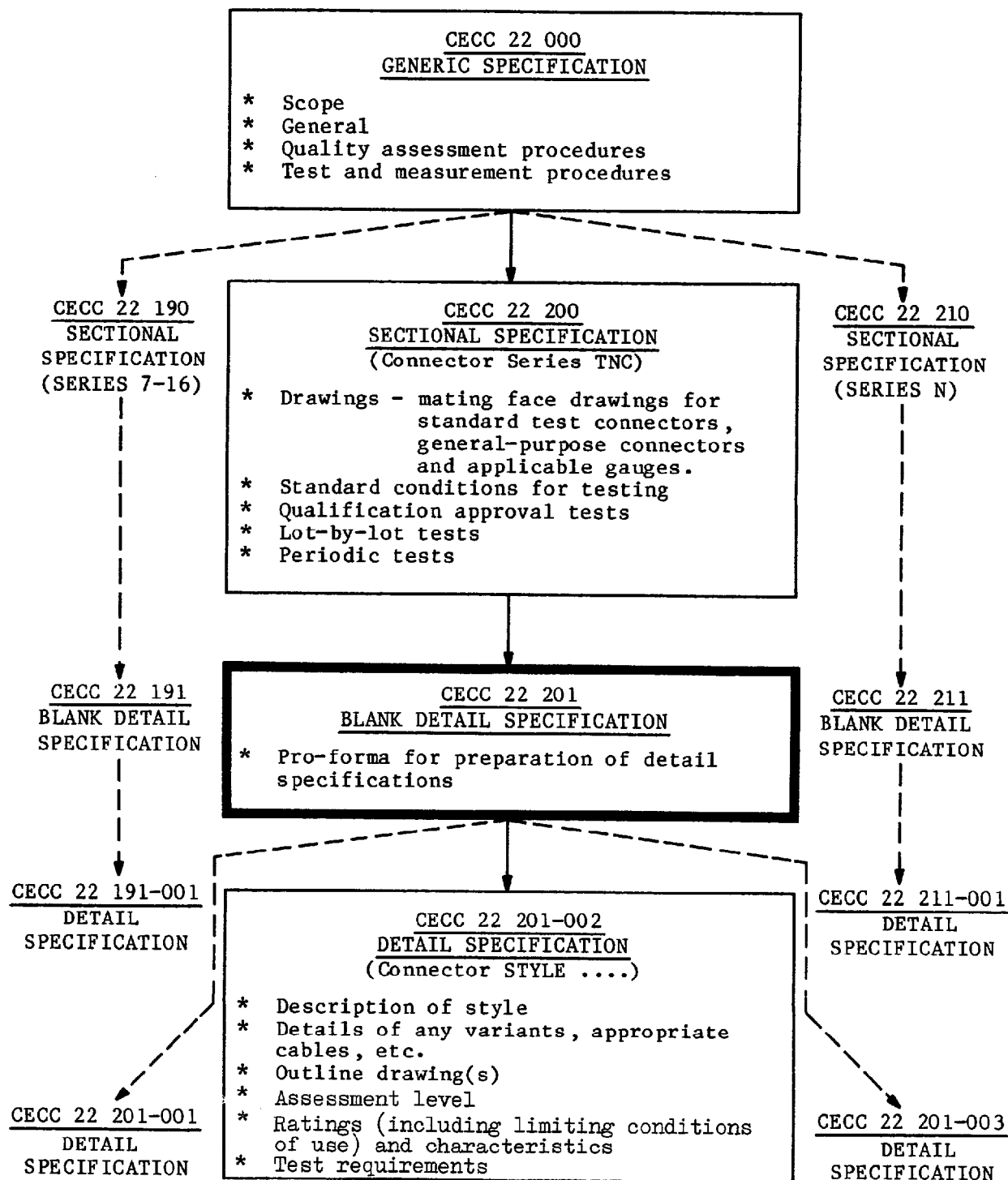
This BDS and its associated sectional specification (SS) are specific to Series TNC radio frequency connectors and their related accessories; they should be read in conjunction with document CECC 22 000, Generic Specification: Radio Frequency Coaxial Connectors.

The text of this BDS was circulated to the CECC for voting in the document listed below and was ratified by the President of the CECC for printing as a CECC specification:

<u>Document</u>	<u>Voting Date</u>	<u>Report on the Voting</u>
CECC (Secretariat) 1532	July 1984	CECC (Secretariat) 1666

Document numbering for r.f. connector specifications follows 2.2(1) of CECC 00 400: Part III, in order to permit the issue of more than nine sectional specifications. The approved numbering system applicable to r.f. connector specifications is illustrated in the diagram below.

CECC SPECIFICATION SYSTEM
FOR R.F. CONNECTORS



NOTE: A detail specification is a 'completed' blank detail specification.

INSTRUCTIONS FOR PREPARATION OF DETAIL SPECIFICATIONS

The numbers between square brackets on pages 1 and 2 correspond to the following indications which shall be given:

Identification of the detail specification (DS)

- [1] The name of the National Standards Institution under whose authority the DS is published and, if applicable, the organization from whom the DS is available.
- [2] The CECC symbol and the number allotted to the DS by the CECC General Secretariat.
- [3] The number and issue number of the CECC generic or sectional specification as relevant; also national reference if different.
- [4] If different from the CECC number, the national number of the DS, date of issue and any further information required by the national system, together with any amendment numbers.

Identification of the component

- [5] Enter the following details:

Style: The style designation or model number of the connector.

The method of cable/wire attachment to the centre and outer conductor:
By deletion of inapplicable options given.

Special features and markings: Example: 'Fitted with both panel and barrier seals'.

Mass: The maximum mass in grams, rounded upwards to the nearest whole number. If several variants (having differing mass) are included, list the maximum mass of each variant separately.

- [6] Enter details of assessment level, characteristic impedance and climatic category.

- [7] A reproduction of the outline drawing and panel piercing details shall be provided. It shall provide maximum envelope dimensions of the relevant body style and in the case of a fixed connector the position of the mounting plane(s) relative to the front face of the connector. Conformance of the interface and/or outline dimensions with other specifications such as CECC 22 200 and IEC 169-17, shall be stated.

Any maximum panel thickness limitations for fixed connectors shall be stated.

[3] Particulars of all variants covered by the DS. Where appropriate, the information shall include:

- cable types (or sizes) applicable to each variant
- alternative plated or protective finishes
- details of alternative mounting flanges having either tapped or plain mounting holes
- details of alternative solder spills or solder buckets for microwave component-mounting styles.

[9] Performance data listing the most important characteristics of the connector in accordance with the requirements of 3.1 of CECC 22 200. Deviations from the minimum requirements listed shall be clearly indicated. Non-applicable parameters shall be marked 'na'.

For [5] and [6] the text to be given in the DS should be suitable for an entry in CECC 00 200 (QPL) or CECC 00 300.

[1]	page 1 of ...	[2] CECC 22 201 -	
ELECTRONIC COMPONENT OF ASSESSED [3] QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION SECTIONAL SPECIFICATION	[4]	Issue	

[5] DETAIL SPECIFICATION for

RADIO FREQUENCY COAXIAL CONNECTOR OF ASSESSED QUALITY:

SERIES

TNC

Style: Special Features & Markings:

Method of cable/wire* attachment: centre conductor - solder/crimp*

: outer conductor - solder/clamp/crimp*

Mass:(Max.) *Delete as appropriate

[6] Assessment level Characteristic impedance 50 Ω Climatic category/...../.....

[7] Outline and maximum dimensions



Panel piercing and mounting details

For mating interface dimensions and position of reference plane see CECC 22 200

Maximum panel thickness: for front mounting mm, for rear mounting mm

The outline dimensions meet the requirements of

[8] Variants

Variant No.	Description of Variant	Relevant Cables		
		IEC 96	RG	National Cables
.....-01				
.....				
.....				
.....				
.....				
.....				
.....				
.....				

Information about manufacturers who have components qualified to this detail specification is available in the current CECC 00 200: Qualified Products List.

[9] PERFORMANCE (including limiting conditions of use)

RATINGS AND CHARACTERISTICS		CECC 22 200 CLAUSE	VALUE	REMARKS
ELECTRICAL				
	Variant No./ Designation			Measurement freq. range
Reflection Factor	-01	4.4.1		
				
				
				
				
				
				
				
Centre contact resistance		4.4.2	< m Ω < m Ω	Initial After conditioning
Outer conductor continuity		4.4.3	< m Ω < m Ω	Initial After conditioning
Insulation resistance		4.4.4	> G Ω > M Ω	Initial After conditioning
+ Proof Voltage at sea level	-01	4.4.5	 kV	86 to 106 kPa
				
				
				
				
				
				
				
				
+ Proof Voltage at 20 km altitude	-01	4.6.5	 V	4,4 kPa
				
				
				
				
				
				
				
				

+ Voltage values are r.m.s. values of a.c. at 50 to 60 Hz unless otherwise stated.

RATINGS AND CHARACTERISTICS		CECC 22 200 CLAUSE	VALUE	REMARKS
ELECTRICAL				
+ Working Voltage at sea level	Variant No./ Designation			
	-01		 V	86 to 106 kPa
+ Working Voltage at 20 km altitude	-01		 V	4,4 kPa
	-01		 V	4,4 kPa
Screening effectiveness	-01	4.4.8	$Z_t < \dots\dots\dots^2$	Providing > dB
Discharge test (corona)	-01	4.4.9	 V	Extinction voltage
ADDITIONAL ELECTRICAL CHARACTERISTICS				

+ Voltage values are r.m.s. values of a.c. at 50 to 60 Hz unless otherwise stated.

RATINGS AND CHARACTERISTICS	CECC 22 200 CLAUSE	VALUE	REMARKS
MECHANICAL			
Contact captivation - axial force - torque	4.5.2	 N Nm	CECC 22 000 method (or as specified)
Static load (for fixed connectors only)	4.5.3	 N 10 mm from mounting plane	Parallel to mounting plane.
Engagement and separation - torque - axial force (insertion and withdrawal)	4.5.4	 Nm max. N max.	To overcome friction.
Coupling torque - normal - proof		to..... Nm Nm	
Effectiveness of clamping device against cable pulling	Variant No./ Designation -01	4.5.5 (1) N	
Effectiveness of clamping device against cable torsion	-01	4.5.5 (2) Nm	
Tensile strength of coupling mechanism	4.5.6	 N	
Bending moment	4.5.9	 Nm	Relative to reference plane
ADDITIONAL MECHANICAL CHARACTERISTICS			

RATINGS AND CHARACTERISTICS	CECC 22 200 CLAUSE	VALUE	REMARKS
ENVIRONMENTAL			
Vibration	4.6.3	 m/s ² to.... Hz	(...g acceleration)
Climatic Category	4.6.5	 / /	
Sealing (panel and barrier sealed connectors)	4.6.8		100 to 110 kPa pressure differential
Sealing (hermetically sealed connectors)	4.6.9		100 to 110 kPa pressure differential
ADDITIONAL ENVIRONMENTAL CHARACTERISTICS			
ENDURANCE			
Mechanical	4.7.1	...operations	
High temperature	4.7.2	 h at..... °C	
ADDITIONAL ENDURANCE CHARACTERISTICS			

10 SUPPLEMENTARY INFORMATION

- marking of the component: in accordance with 2.4 of CECC 22 000,
in the following order of precedence:

- | | | |
|--|------------------------------------|----------------|
| (1) Component identification | Variant No./
Designation
-01 | Identification |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| (2) Identification of manufacturer: | | |
| (3) Manufacturing date, code; year/week. | | |

- marking and contents of package: in accordance with 2.5 and 2.5.1 of CECC 22 000 as follows:
 - (1) Information prescribed in 2.4 of CECC 22 000 detailed above
 - (2) Nominal characteristics impedance $.50\Omega$
 - (3) Assessment level code letter
 - (4) Any additional marking required
 - ordering information: in accordance with 2.6 of CECC 22 000 as follows:
 - (1) Number of the detail specification CECC 22 201-.../Variant code
 - (2) Assessment level code letter
 - (3) Body finish (if more than one listed)
 - (4) Any additional information or special requirements
 - related documents (if not included in CECC 22 000 or CECC 22 200):

 - certified test records (RCE): in accordance with 3.7 of CECC 22 000
 (when applicable) (requirements to be included later)
 - structural similarity: in accordance with 3.2 and 3.4 of CECC 22 000.
- NOTE: Relevant information on a basic style should be entered as Variant 01.

[11] TEST SCHEDULES AND INSPECTION REQUIREMENTS - SERIES TNC

ACCEPTANCE TESTS

GROUP A1

Visual examination

CECC 22 200 Clause	Level			
	Test Required	IL	AQL	Period
4.2				
4.3.1				
4.5.7				
4.5.4				
4.5.1				
4.6.8				
4.6.9				
4.4.5				

GROUP B1

Outline dimensions

Compatibility mechanical

Engagement and
separationGauge retention force
(resilient contacts)

Sealing (panel and barrier)

Sealing (hermetic)

Voltage proof

PERIODIC TESTS

GROUP C1(d)

Soldering

Insulation resistance

CECC 22 200 Clause	Test Required	IL	AQL	Period
4.6.1				
4.4.4				

For notes relating to symbols: See page 9.

	CECC 22 200 Clause	Test Required	Specimens (may be from C1)	Permitted Failures per group†	Period
GROUP D1(d)					
Mechanical tests on cable clamping device	4.5.5				
Static load	4.5.3				
Tensile strength of coupling mechanism	4.5.6				
GROUP D2(d)					
Contact resistance	4.4.2				
Outer conductor continuity	4.4.3				
Vibration	4.6.3				
Shock	4.6.4				
Damp heat, steady state	4.6.6				
Salt mist	4.6.10				
GROUP D3					
Dimensions and materials (piece parts)*	4.3.2				
Mass	4.3.1				
GROUP D4(d)					
Mechanical endurance	4.7.1				
High temperature endurance	4.7.2				
GROUP D5(d)					
Reflection factor	4.4.1				
Screening effectiveness	4.4.8				

For notes relating to symbols: See page 9.