

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

CECC

Système Harmonisé d'Assurance de la Qualité
des Composants Electroniques

SPECIFICATION PARTICULIERE:

**CONNECTEURS COAXIAUX
POUR FREQUENCE
RADIOELECTRIQUE
Série TNC**

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

**RADIO FREQUENCY
COAXIAL CONNECTORS
Series TNC**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

**HOCHFREQUENZ-
KOAXIAL-STECKVERBINDER
Serie TNC**



1

Edition
Issue
Ausgabe

CECC 22 201-803

1988

Information about the System may be obtained from:



FEN Secretariat
and
CECC General Secretariat
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Telefax (0 69) 6308273 (Gr. 2/3)

or from the National Authorized Institutions
of the participating countries listed
who can supply copies of:

- 1 The Internal Regulations of the FEN e.V.
- 2 CECC Specifications of the FEN and National Specifications for the System
- 3 CECC 00 200: Qualified Products List (QPL) (biannual issues January and July, with three-monthly amendments)
- 4 CECC 00 300: CECC Publications and their related national documents (biannual issues June and December, with three-monthly amendments)

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PREFACE

This detail specification (DS) was prepared by CECC Working Group 22: 'RF Connectors'.

It relates to Series TNC connectors covered by sectional specification CECC 22 200 and by blank detail specification CECC 22 201. These in turn are related to the generic specification CECC 22 000.

The text of this DS was circulated amongst members of CECC WG22 and was approved for publication under the accelerated procedure for the acceptance of detail specifications in accordance with Decision 10 of the minutes of the CECC CD in document CECC(Secretariat)1838.

Document**Approval Date**

CECC(Secretariat) 1869

March 1986

[1]	page 1 of 9..	[2] CECC 22 201 - 803.. ..	
ELECTRONIC COMPONENT OF ASSESSED [3] QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION CECC 22 000 SECTIONAL SPECIFICATION CECC 22 200	[4]	Issue	
		1	

[5] DETAIL SPECIFICATION for

RADIO FREQUENCY COAXIAL CONNECTOR OF ASSESSED QUALITY:

SERIES

TNC

Style: Right angle plug for flexible cable

Special Features & Markings:

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

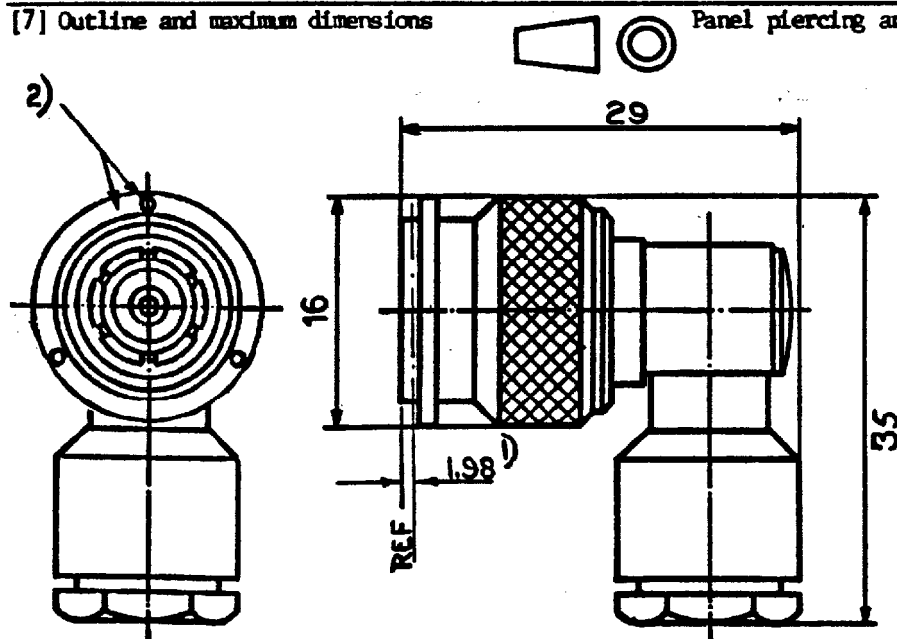
: outer conductor - solder/clamp/clamp*

Mass: 35 g.....(Max.) *Delete as appropriate

[6] Assessment level ...H... Characteristic impedance 50 Ω Climatic category ...55../155../21...

[7] Outline and maximum dimensions

Panel piercing and mounting details



NOTES:

1. With nut fully forward.
2. Optional flange to accommodate three equi-spaced wire-locking holes 0,69 mm diameter min. when required - see 8) below.

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			
Non wire-locking		Wire-locking		IEC 96	RG	National Cables	
Body Finish		Body Finish					
Ag	Non-tarnish Alloy	Ag	Non-tarnish Alloy			F	UK
-01	-02	-11	-12	50-3-1,-3,-4,-6,-7	58C/u	KX15	URM43, 76
-03	-04	-13	-14	50-3-5	223/u, 142B/u	KX23	-
-05	-06	-15	-16	75-4-1,-3,-4,-5,-7	59B/u, 140/u		URM90, 117
-07	-08	-17	-18	75-4-6	302/u		URM104, 108
-09	-10	-19	-20	75-4-2	-		-
** NOTE: All centre contacts to be gold plated							

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 to -04 & -11 to -14	4.4.1	$\leq 0,15$	≤ 11 GHz
	-05 to -10 & -15 to -20 (unmatched variants)		$\leq 0,15$	≤ 500 MHz
Centre contact resistance		4.4.2	$< 2,5$ m Ω $< 5,0$ m Ω	Initial After conditioning
Outer conductor continuity		4.4.3	$< 1,0$ m Ω $< 2,0$ m Ω	Initial After conditioning
Insulation resistance		4.4.4	> 5 G Ω > 500 M Ω	Initial After conditioning
+ Proof voltage at sea level	-01 to -20	4.4.5	1,5 kV	86 to 106 kPa
+ Proof voltage at 20 km altitude	-01 to -20	4.6.5	375 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 to -20		500 V	86 to 106 kPa
+ Working voltage at 20 km altitude	-01 to -20		125 V	4,4 kPa
Screening effectiveness -01 to -04 & -05 to -10 &	-11 to -14	4.4.8	$Z_t < 1 \text{ m}^2$	Providing $>100 \text{ dB}$
	-01 to -20	4.4.9	> 500 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		4.5.2	20	
- axial force			 N	
- torque			0,03 Nm	
Static load (for fixed connectors only)		4.5.3	na N 10 mm from mounting plane	Parallel to mounting plane
Engagement and separation		4.5.4		
- torque			0,25. Nm max.	To overcome friction
- axial force (insertion and withdrawal)			..22.. N max.	
Coupling torque				
- normal			0,46 to 0,69 Nm	
- proof			1,7 Nm	
Variant No./ Designation				
Effectiveness of clamping device against cable pulling	-01 to -20	4.5.5 (1)	100	
			 N	
				
				
				
				
				
				
Effectiveness of clamping device against cable torsion	-01 to -20	4.5.5 (2)	0,2	
			 Nm	
				
				
				
				
				
				
Tensile strength of coupling mechanism		4.5.6	450	
Bending moment		4.5.9	na	Relative to reference plane
ADDITIONAL MECHANICAL CHARACTERISTICS				

RATINGS AND CHARACTERISTICS	CECC 22 200 CLAUSE	VALUE	REMARKS
ENVIRONMENTAL			
Vibration	4.6.3	 ⁹⁸ 10.....m/s ² to.....Hz	(10g acceleration)
Climatic category	4.6.5	55/155/21.....	
Sealing (panel and barrier sealed connectors)	4.6.8	na.....	100 to 110 kPa pressure differential
Sealing (hermetically sealed connectors)	4.6.9	na.....	100 to 110 kPa pressure differential
ADDITIONAL ENVIRONMENTAL CHARACTERISTICS			
ENDURANCE			
Mechanical	4.7.1	500 operations	
High temperature	4.7.2	1000 h at.....155 °C	with appropriate cable
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	Identification
	-01	22 201-803-01
	-02.....	22 201-803-02.....
	-03.....	22 201-803-03.....
	-04.....	22 201-803-04.....
	↓.....	↓.....
	-20.....	22 201-803-20.....
(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 50Ω
 - (3) Assessment level code letter H
 - (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 22 201-803/Variant code
 - (2) Assessment level code letter H
 - (3) Body finish (if more than one listed) $see [8]$
 - (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 H			
	Test Required	IL	AQL	Period
4.2	a	S3	1,5%	Lot by Lot
4.3.1	a	S3	4%	Lot by Lot
4.5.7	a	S3	1,5%	
4.5.4	a	S3	1,5%	
4.5.1	a	S3	1,5%	
4.6.8	na			
4.6.9	na			
4.4.5	a	S3	4%	

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	a	S3	4%	1 Year
4.4.4	a	S3	4%	

For notes relating to symbols: See page 9

	CECC 22 200 Clause	Test Required	Specimens (may be from Cl)	Permitted Failures per group†	Period
GROUP D1(d)					
Mechanical tests on cable clamping device	4.5.5	a	3 mated pairs or sets min.	1	3 Years
Static load	4.5.3	na			
Tensile strength of coupling mechanism	4.5.6	a			
GROUP D2(d)					
Contact resistance	4.4.2	a	3 mated pairs or sets min.	1	3 Years
Outer conductor continuity	4.4.3	a			
Vibration	4.6.3	a			
Shock	4.6.4	na			
Damp heat, steady state	4.6.6	a			
Salt mist	4.6.10	na			
GROUP D3					
Dimensions and materials (piece parts)*	4.3.2	a	1 set of piece- parts each style	1	3 Years
Mass	4.3.1	a			
GROUP D4(d)					
Mechanical endurance	4.7.1	a	3 mated pairs or sets min.	1	3 Years
High temperature endurance	4.7.2	a			
GROUP D5(d)					
Reflection factor	4.4.1	a	3 mated pairs or sets min.	1	3 Years
Screening effectiveness	4.4.8	a			

For notes relating to symbols: See page 9

GROUP D6(d)

CECC 22 200 Clause	Test Required	Specimens (may be from Cl)	Permitted Failures per group†	Period
Contact captivation	a			
Discharge test (corona)	a			
Rapid change of temperature	a	3 mated pairs or sets min.	1	3 Years
Climatic sequence	a			

PROCEDURES

Quality Conformance Inspection

This shall consist of Test Groups A1 and B1 on a lot-by-lot basis and C1 on an annual basis.

Qualification Approval and its Maintenance

This shall consist of three consecutive lots passing Test Groups A1 and B1 followed by selection of specimens from lots as appropriate. These specimens shall successfully pass the specified periodic C1 and D tests.

NOTES:

a = applicable

IL = Inspection Level

AQL = Acceptable Quality Level

* = Unless using common piece-parts

† = For Qualification Approval (QA) a total of 2 failures only permitted

(d) = destructive test - specimens shall not be returned to stock.