

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 22 201-804

1988



Documents

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Information about the System may be obtained from:



FEN Secretariat
and
CECC General Secretariat
Stresemannallee 15

D-6000 Frankfurt/Main 70

Telefon: (069) 6308283

Telex 4-12871 vdetz d

Telefax (069) 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)

Austria

Österreichischer Verband
für Elektrotechnik
1, Eschenbachgasse 9
A-1010 Vienna

Belgium

Comité Electrotechnique Belge
Galerie Ravenstein 3
Boîte 11
B-1000 Brussels

Denmark

Dansk Elektroteknisk Komite
Strandgade 36
DK-1401 Copenhagen K

Finland

Finnish Electrotechnical
Standards Association
P.O. Box 134
SF-00211 Helsinki 21

France

Union Technique de l'Electricité
Participation française au CECC
12, Place des Etats-Unis
F-75783 Paris Cedex 16

Germany

Deutsche Elektrotechnische
Kommission im DIN und VDE
Stresemannallee 15
D-6000 Frankfurt/Main 70

Ireland

Institute for Industrial Research
and Standards
Ballymun Road
IRL-Dublin 9

Italy

Comitato Elettrotecnico Italiano
Viale Monza 259
I-20126 Milan

Netherlands

Nederlands Elektrotechnisch Comité
Kalfjeslaan 2
Postbus 5059
NL-2600 GB Delft

Norway

Norsk Elektroteknisk Komite
Postboks 7099
Homansbyen
N-0306 Oslo 3

Portugal

Instituto Português da Qualidade
Rua José Estêvão, 83A
P-1199 Lisbon Codex

Spain

Asociación Electrotécnica y Electrónica Española
Comité Español del CECC
Avda. de Brasil, 7
E-28020 Madrid 20

Sweden

Svenska Elektriska Kommissionen
Box 1284
S-163 14 Spånga-Stockholm

Switzerland

Schweizerischer Elektrotechnischer
Verein
Postfach
CH-8034 Zürich

United Kingdom

British Electrotechnical Committee
British Standards Institution
2 Park Street
GB-London W1A 2BS



Documents

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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

CECC 22 201-804 Issue 1

[1]	page 1 of 9..	[2] CECC 22 201 - .804..	
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:

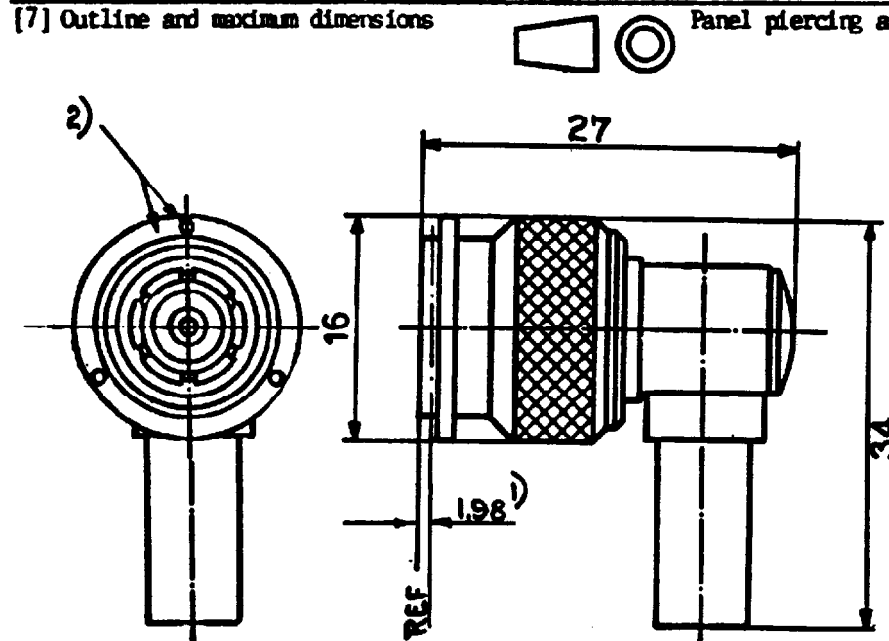
Method of cable/wire* attachment: centre conductor - solder/crimp*

: outer conductor - solder/clamp/crimp*

Mass: ³²g.....(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



Crimp dies and cable stripping dimensions to conform with the instructions supplied by the manufacturer.

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^{na}..... mm, for rear mounting^{na}..... 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, 106
-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				
Reflection factor	Variant No./ Designation			Measurement freq. range
-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	$< \dots 2,5 \dots \text{m}\Omega$ $< \dots 5,0 \dots \text{m}\Omega$	Initial After conditioning	
Outer conductor continuity	4.4.3	$< \dots 1,0 \dots \text{m}\Omega$ $< \dots 2,0 \dots \text{m}\Omega$	Initial After conditioning	
Insulation resistance	4.4.4	$> \dots 5 \dots \text{G}\Omega$ $> \dots 500 \dots \text{M}\Omega$	Initial After conditioning	
+ Proof voltage at sea level	-01 to -20 4.4.5	1,5 kV	86 to 106 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				
	Variant No./ Designation			
+ Working voltage at sea level	-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 & -11 to -14 -05 to -10 & -15 to -20	4.4.8	$Z_t < \dots \mu\Omega$	Providing >100 dB
Discharge test (corona)	-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 - axial force - torque		4.5.2	20 N 0,03 Nm	
Static load (for fixed connectors only)		4.5.3	na 10 mm from mounting plane	Parallel to mounting plane
Engagement and separation - torque - axial force (insertion and withdrawal)		4.5.4	0,25 Nm max. ..22.. N max.	To overcome friction
Coupling torque - normal - proof			0,46 to 0,69 Nm 1,7 Nm	
Effectiveness of clamping device against cable pulling	Variant No./ Designation -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 N	
Bending moment		4.5.9	na.... Nm	Relative to reference plane
ADDITIONAL MECHANICAL CHARACTERISTICS				

RATINGS AND CHARACTERISTICS	CECC 22 200 CLAUSE	VALUE	REMARKS
ENVIRONMENTAL			
Vibration	4.6.3	 ⁹⁸ m/s ² 10.....to 500 Hz	(¹⁰ g 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	22 201-804-01
	-02.....	22 201-804-02.....
	-03.....	22 201-804-03.....
	-04.....	22 201-804-04.....
	↓.....	↓.....
	-20.....	22 201-804-20.....
(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 .50.Ω.....
 - (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 22 201-804/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 C1)	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	4.5.2	a		
Discharge test (corona)	4.4.9	a		
Rapid change of temperature	4.6.7	a	1	3 Years
Climatic sequence	4.6.5	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.