

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 SMA**

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

**RADIO FREQUENCY
COAXIAL CONNECTORS
Series SMA**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

**HOCHFREQUENZ-
KOAXIAL-STECKVERBINDER
Serie SMA**

1

Edition
Issue
Ausgabe

CECC 22111-804

1984



Documents

Document Sharing Hub

Cette page bleue doit être insérée après la page de garde de la CECC 22 111-804 Edition 1 (1984)

MODIFICATION 1 DE LA CECC 22 111-804 (Edition 1):
SPECIFICATION PARTICULIERE:
CONNECTEURS COAXIAUX POUR FREQUENCE RADIO-ELECTRIQUE Série SMA

La modification suivante doit être effectuée à la main:

Page 4: [10] Information supplémentaire
sous
information pour la commande i):

Supprimer le numéro CECC 22 111-004-xx
et insérer CECC 22 111-804-xx.

This blue page should be inserted after the title page of CECC 22 111-804 Issue 1 (1984)

AMENDMENT 1 TO CECC 22 111-804 (Issue 1):
DETAIL SPECIFICATION:
RADIO FREQUENCY COAXIAL CONNECTORS Series SMA

The following amendment shall be made in manuscript:

Page 4: [10] Supplementary Information
under
i) of ordering information:

Amend CECC 22 111-004-xx to read
CECC 22 111-804-xx.

Dieses blaue Blatt ist nach dem Titelblatt CECC 22 111-804 Ausgabe 1 (1984) einzusetzen

ÄNDERUNG 1 ZU CECC 22 111-804 (Ausgabe 1):
BAUARTSPEZIFIKATION:
HOCHFREQUENZ-KOAXIAL-STECKVERBINDER Serie SMA

Die folgende Änderung ist handschriftlich vorzunehmen:

Seite 4: [10] Zusatzangaben
unter
i) der Bestellangaben:

CECC 22 111-004-xx ist durch
CECC 22 111-804-xx zu ersetzen.

CECC 22 111-804 Edition 1 Modification 1 1985

CECC 22 111-804 Issue 1 Amendment 1 1985

CECC 22 111-804 Ausgabe 1 Änderung 1 1985

ERRATUM

Cette page bleue doit être insérée après la page de garde de la CECC 22 111-804 Edition 1 (1984)

This blue sheet shall be inserted after the title page of CECC 22 111-804 Issue 1 (1984)

Dieses blaue Blatt ist nach dem Titelblatt der CECC 22 111-804 Ausgabe 1 (1984) einzufügen

La modification suivante doit être effectuée à la main à l'Edition 1 (1984) de la CECC 22 111-804:

Page 2 [9] ELECTRIQUES, colonne 2

- Tension de tenue à 20 km d'altitude:
Modifier 4.4.5 pour lire 4.6.5

The following amendment to Issue 1 (1984) of CECC 22 111-804 should be made in manuscript:

Page 2 [9] ELECTRICAL, column 2

- Proof voltage at 20 km altitude:
Amend 4.4.5 to read 4.6.5

In Ausgabe 1 (1984) der CECC 22 111-804 ist folgende Änderung handschriftlich vorzunehmen:

Seite 2 [9] ELEKTRISCH, Spalte 2

- Spannungsfestigkeit in 20 km Höhe:
4.4.5 ist durch 4.6.5 zu ersetzen

CECC 22 111-804 Edition 1
 Issue 1 ERRATUM
 Ausgabe 1



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PREFACE

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

It relates to Series SMA connectors covered by sectional specification CECC 22 110 and by blank detail specification CECC 22 111. These in turn are related to the generic specification CECC 22 000.

The text of this DS was circulated to the CECC for voting in the documents detailed 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)1292	May 1983	CECC(Secretariat)1419

CECC 22 111-804 Issue 1

[1]	Page 1 of 6	[2] CECC 22 111 - 804	
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION 22 000 SECTIONAL SPECIFICATION 22 110	[3]	[4]	..... .....

[5] DETAIL SPECIFICATION for
RADIO FREQUENCY COAXIAL CONNECTOR OF ASSESSED QUALITY :

SERIES

SMA

Style: Straight, socket for semi-rigid cable.....

Special Features + Markings:

Method of cable/wire attachment:

centre conductor - solder/~~crimp~~

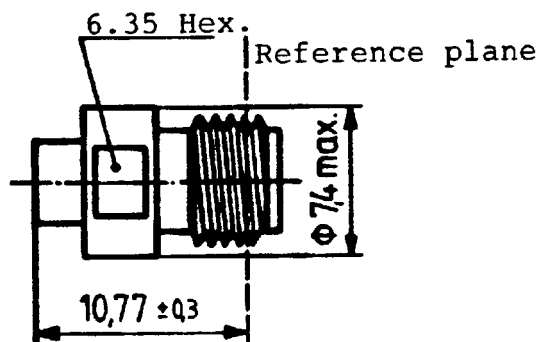
outer conductor - solder/~~crimp~~

Mass: 2.9..... (Max.)

[6] Assessment level .. H .. Characteristic impedance 50 Ω Climatic category: 55 / 115 / 21

[7] Outline and maximum dimensions

Panel piercing and mounting details



For mating interface and position of reference plane see CECC 22 110

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	IEC 96-2	Relevant Cables RG	National Cables
.....-01.....	Connector, Gold	.....	RG 402/U	(F) ... KS 2
.....(3).....-02.....	Connector, Passivated Stainless Steel	.....	RG 402/U	 KS 2
.....-03.....	Connector, Gold	.....	RG 405/U	 KS 1
.....(3).....-04.....	Connector, Passivated Stainless Steel	.....	RG 405/U	 KS 1
.....				
.....				

Note: (3) The surface to be soldered shall be prepared in a suitable manner so as to accept the solder correctly.

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 + CHARACTERISTICS		CECC 22 110 Clause	VALUE	REMARKS
ELECTRICAL				
	Variant No./ Designation			Measurement freq. range
*Reflection factor	-01	4.4.1	.....	.....
	-02	)	.....	.....
	-03	)	$\leq 0,034 \pm 0,004 f$	2-18 GHz
	-04	)	.....	VSWR $\leq 1,07 \pm 0,009 f$
				
				
				
Centre contact	.....	4.4.2	$\leq \dots 3.0 \dots m\Omega$	Initial
resistance	.....		$\leq \dots 8.0 \dots m\Omega$	After conditioning
Outer conductor	.....	4.4.3	$\leq \dots 2.5 \dots m\Omega$	Initial
continuity	.....		$\leq \dots 7.5 \dots m\Omega$	After conditioning
Insulation resistance	.....	4.4.4	$\geq \dots 5 \dots G\Omega$	Initial
	.....		$\geq \dots 200 \dots M\Omega$	After conditioning
+Proof Voltage	-01	4.4.5	1.....kV	860 to 1060 mbar
at sea level	-02		1.....	(86 to 106 kPa)
	-03		0.750.....	
	-04		0.750.....	
				
				
				
				
+Proof voltage	-01	4.6.5	200.....V	44 mbar
at 20 km altitude	-02		200.....	(4,4 kPa)
	-03		150.....	
	-04		150.....	
				
				
				
				
+Working voltage	-01		335.....V	860 to 1060 mbar
at sea level	-02		335.....	(86 to 106 kPa)
	-03		250.....	
	-04		250.....	
				
				
				
				
+Working Voltage	-01		85.....V	44 mbar
at 20 km altitude	-02		85.....	(4,4 kPa)
	-03		65.....	
	-04		65.....	
				
				
				
				
Screening effec-	-01	4.4.8	$Z_t \leq 1,6 \times 10^{-3} \Omega$	Equivalent to .90. dB
tiveness	-02	)	.....	
	-03	)	.....	
	-04	)	.....	
				
				
				
				
ADDITIONAL ELECTRICAL CHARACTERISTICS				

* f = Frequency in GHz

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

RATINGS + CHARACTERISTICS	CECC 22 110 Clause	VALUE	REMARKS
MECHANICAL			
Contact captivation - axial force - torque	4.5.2	na.....N na.....Nm	CECC 22 000 method (or as specified)
Engagement + separation - torque	4.5.4	...0,25....Nm max.	
Effectiveness of clamping device against cable pulling	Variant No./ Designation		
.....-01	4.5.5	500.....N	(to overcome friction of coupling nut)
.....-02	(1)	500.....	
.....-03		200.....	
.....-04		200.....	
.....			
.....			
.....			
.....			
Effectiveness of clamping device against cable torsion	-01	na.....Nm	
.....-02	4.5.5	na.....	
.....-03	(2)	na.....	
.....-04		na.....	
.....			
.....			
Tensile strength of coupling mechanism	4.5.6	na.....N	
Coupling torque - normal - proof		na.....Nm na.....Nm	
Bending moment	4.5.9	na.....Nm	Relative to reference plane
ADDITIONAL MECHANICAL CHARACTERISTICS			
ENVIRONMENTAL			
Bump	4.6.2	390...m/s ² 4000...bumps	(.40.g acceleration)
Vibration	4.6.3	98...m/s ² 10 to 2000 Hz	(.10.g acceleration)
Shock	4.6.4	490...m/s ² 1/2 sine 11 ms	(.50.g acceleration)
Climatic Category	4.6.5	55./115/21.	
Sealing (panel + barrier sealed connectors)	4.6.8	na.....	100 to 110 kPa pressure differential (1000 to 1100 mbar)
Sealing (hermetically sealed connectors)	4.6.9	na.....	100 to 110 kPa pressure differential (1000 to 1100 mbar)
ADDITIONAL ENVIRONMENTAL CHARACTERISTICS			
ENDURANCE			
Mechanical	4.7.1	..500...operat.	
High temperature	4.7.2	..1000...h at ..115....°C	
ADDITIONAL ENDURANCE CHARACTERISTICS			

[10] Supplementary Information

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

i) Component identification	Variant No./ Designation	Identification
	-01	.22-111-804-01..
	-02	-02..
	-03	-03..
	-04	-04..
		
		
		
		
ii) Identity of manufacturer	.....	.....
iii) 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 :

- i) Information prescribed in 2.4 of CECC 22 000 detailed above
- ii) Nominal characteristic impedance 50 Ω
- iii) Assessment level code letter B.....
- iv) Any additional marking required

- ordering information : in accordance with 2.6 of CECC 22 000 as follows :



- i) Number of the detail specification CECC 22 111- 804-xx (No. of variant)
- ii) Assessment level code letter B.....
- iii) Body finish (if more than one listed) see variant numbers in [8]
- iv) Any additional information or special requirements

- related documents :

CECC 22 000	Generic Specification for radio frequency connectors of assessed quality (and related documents, see 2.1 of CECC 22 000)
CECC 22 110	Sectional Specification for r.f. connectors Series SMA

- 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.

111) TEST SCHEDULE AND INSPECTION REQUIREMENTS - SERIES SMA

Details of tests and quality assessment inspection requirements for levels H and U are given in 5.1 of CECC 22 110.

ACCEPTANCE TESTS

		LEVEL H			
CECC 22 110 Clause		Test Requir.	I.L.	AQL	Period
GROUP A1					
Visual examination	4.2	a	S 3	1,5 %	Lot by Lot
GROUP B1					
Outline dimensions	4.3.1	a	S 3	4 %	
Compatibilty mechanical	4.5.7	a	S 3	1,5 %	
Engagement + separation	4.5.4	a	S 3	1,5 %	
Gauge retention force (resilient contacts)	4.5.1	a	S 3	1,5 %	
Sealing (panel + barrier seal)	4.6.8	na			
Sealing (hermetic)	4.6.9	na			
Voltage proof	4.4.5	a	S 3	4 %	

PERIODIC TESTS

CECC 22 110 Clause		Test	I.L.	AQL	Period
GROUP C1 (d)					
Soldering	4.6.1	a			
Insulation resistance	4.4.4	a	S 3	4 %	1 yearly
CECC 22 110 Clause		Test Requir.	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 yearly
Bending moment	4.5.9	na			
Tensile strength of coupling mechanism	4.5.6	na			
GROUP D2 (d)					
Contact resistance	4.4.2	a			
Outer conductor continuity	4.4.3	a			
Bump	4.6.2	a	3 mated pairs or sets min.	1	3 yearly
Vibration	4.6.3	a			
Shock	4.6.4	a			
Damp heat, steady state	4.6.6	a			
Salt mist	4.6.10	a			
GROUP D3					
Dimensions and materials (piece parts)	4.3.2	a	1 set of piece parts each style	1	3 yearly
Mass	4.3.1	a			
GROUP D4 (d)					
Mechanical endurance	4.7.1	a	3 mated pairs or sets min.	1	3 yearly
High temperature endurance	4.7.2	a			
GROUP D5 (d)					
Reflection factor	4.4.1	a	3 mated pairs or sets min.	1	3 yearly
Screening effectiveness	4.4.8	a			
GROUP D6 (d)					
Contact captivation	4.5.2	na	3 mated pairs or sets min.	1	3 yearly
Rapid change of temperature	4.6.7	a			
Climatic sequence	4.6.5	a			