

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 MCX**

Harmonized System of Quality Assessment for
Electronic Components

DETAIL SPECIFICATION:

**RADIO FREQUENCY
COAXIAL CONNECTORS
Series MCX**

Harmonisiertes Gütebestätigungssystem für
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

**HOCHFREQUENZ-
KOAXIAL-STECKVERBINDER
Serie MCX**



1

Edition
Issue
Ausgabe

CECC 22 221-810

1986



Documents

Document Sharing Hub

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PREFACE

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

It relates to Series MCX connectors covered by sectional specification CECC 22 220 and by blank detail specification CECC 22 221. 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 document 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) 1741	June 1985	CECC (Secretariat) 1862

[1]	page 1 of ..9	[2] CECC 22 221 -810	
ELECTRONIC COMPONENT OF ASSESSED [3] QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION CECC 22.000 SECTIONAL SPECIFICATION CECC 22.220	[4]		

[5] DETAIL SPECIFICATION for

RADIO FREQUENCY COAXIAL CONNECTOR OF ASSESSED QUALITY:

SERIES

MCX

Style: ..Straight plug for flexible cable.....

Special Features & Markings:

Method of cable/wire attachment: centre conductor - crimp

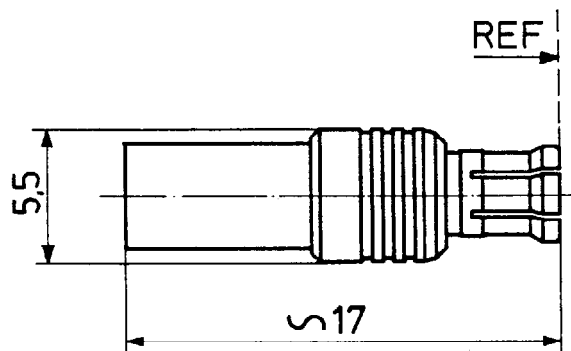
Var.-01 1,5 g (Max.) outer conductor - crimp

Mass: Var.-02,-03 1,4 g (Max.)

[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

For mating interface dimensions and position of reference plane see CECC 22 220

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..	Connector..gold plated	96.IEC.50-1-1...	MIL-C-17/93(RG178.B/U)	
.....-02..	Connector..gold plated	96.IEC.50-2-2...	MIL-C-17/113(RG316/U)	
.....-03..	Connector..gold plated	96.IEC.50-2-2....		
.....		double screened...		
.....				
.....				
.....				
.....				

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 22 220 CLAUSE	VALUE	REMARKS
ELECTRICAL				
Reflection Factor	Variant No./ Designation			Measurement freq. range
	-01	4.4.1	$\leq 0,1$	to 1 GHz
	-02		$\leq 0,1$	to 1 GHz
	-03		$\leq 0,1$	to 1 GHz
	-01		$\leq 0,15$	to 3 GHz
	-02		$\leq 0,15$	to 3 GHz
	-03		$\leq 0,15$	to 3 GHz
Centre contact resistance		4.4.2	$< 5,0$ m Ω $< 15,0$ m Ω	Initial After conditioning
Outer conductor continuity		4.4.3	$< 2,5$ m Ω $< 7,5$ m Ω	Initial After conditioning
Insulation resistance		4.4.4	> 1 G Ω > 500 M Ω	Initial After conditioning
+ Proof Voltage at sea level	-01-02-03	4.4.5	...0,5... kV ...0,75... ...0,75...	86 to 106 kPa (860 to 1060 mbar)
+ Proof Voltage at 20 km altitude	-01-02-03	4.6.5	100 100 100	4,4 kPa (44 mbar)

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

RATINGS AND CHARACTERISTICS		CECC 22 220 CLAUSE	VALUE	REMARKS
ELECTRICAL				
	Variant No./ Designation			
+ Working Voltage at sea level	-01		...170..... V	86 to 106 kPa (860 to 1060 mbar)
	-02		...335.....	
	-03		...335.....	
				
				
				
				
				
				
				
+ Working Voltage at 20 km altitude	-01		45..... V	4,4 kPa (44 mbar)
	-02		85.....	
	-03		85.....	
				
				
				
				
				
				
				
Screening effectiveness	-01	4.4.8	$Z_t \leq 50 \cdot 10^{-3}$	Providing ≥ 60 dB
	-02		$\leq 50 \cdot 10^{-3}$	
	-03		$\leq 50 \cdot 10^{-3}$	
				
				
				
				
				
				
				
ADDITIONAL ELECTRICAL CHARACTERISTICS				
MECHANICAL				
Contact captivation:		4.5.2		
- axial force			na..... N	
- torque			na..... Nm	

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

RATINGS AND CHARACTERISTICS	CECC 22 220 CLAUSE	VALUE	REMARKS
MECHANICAL			
Engagement and separation - axial force	4.5.4	$\left. \begin{array}{l} \dots 63 \dots \text{N max.} \\ \dots 8 \dots \text{N min.} \\ \dots 20 \dots \text{N max.} \end{array} \right\}$	
Variant No./ Designation			
Effectiveness of clamping device against cable pulling	4.5.5 (1)	$\left. \begin{array}{l} \dots 32 \dots \text{N} \\ \dots 53 \dots \\ \dots 107 \dots \end{array} \right\}$	Distance 5 x D Distance 5 x D Distance 5 x D
Effectiveness of clamping device against cable torsion	4.5.5 (2)	$\left. \begin{array}{l} \dots 0,005 \dots \text{Nm} \\ \dots 0,013 \dots \\ \dots 0,030 \dots \end{array} \right\}$	Distance 5 x D Distance 5 x D Distance 5 x D
Bending moment	4.5.9	$\dots 0,5 \dots \text{Nm}$	Relative to reference plane
ADDITIONAL MECHANICAL CHARACTERISTICS			
ENVIRONMENTAL			
Vibration	4.6.3	$\left. \begin{array}{l} \dots 98 \dots \text{m/s}^2 \\ \dots 10 \dots \text{to} \dots \text{Hz} \end{array} \right\}$	(10.g acceleration)
Climatic Category	4.6.5	$\dots 55 \dots / \dots 155 \dots / \dots 21 \dots$	
Sealing (panel and barrier sealed connectors)	4.6.8	$\dots na \dots$	100 to 110 kPa pressure differential (1000 to 1100 mbar)

RATINGS AND CHARACTERISTICS	CECC 22 220 CLAUSE	VALUE	REMARKS
ENVIRONMENTAL			
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 operations	
High temperature	4.7.2	1000..... h at..155... °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	Identification
	-01.	.22 221-810/01....
	-02.	.22 221-810/02....
	-03.	.22 221-810/03....
		
		
		
		
		
(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 characteristic 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 22 221-810/Variant code
- (2) Assessment level code letter^H
- (3) Body finish (if more than one listed) see variant numbers in [8]
- (4) Any additional information or special requirements

- related documents (if not included in CECC 22 000 or CECC 22 220):

- 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 MCX

Details of tests and quality assessment inspection requirements for Levels H and U are given in 5.1 of CECC 22 220.

ACCEPTANCE TESTS

GROUP A1

Visual examination

CECC 22 220 Clause	Level H			
	Test Required	IL	AQL	Period
4.2	a	S 3	1,5 %	
4.3.1	a	S 3	4 %	
4.5.7	a	S 3	1,5 %	
4.5.4	a	S 3	1,5 %	
4.5.1	a	S 3	1,5 %	lot by lot
4.6.8	na			
4.6.9	na			
4.4.5	a	S 3	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 22 220 Clause	Test Required	IL	AQL	Period
4.6.1	na			
4.4.4	a	S 3	4 %	1 yearly

For notes relating to symbols: See page 9.

	CECC 22 220 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 yearly
Bending moment	4.5.9	a			
GROUP D2(d)					
Contact resistance	4.4.2	a	3 mated pairs or sets min.	1	3 yearly
Outer conductor continuity	4.4.3	a			
Vibration	4.6.3	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			

For notes relating to symbols: See page 9.