

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 SMC**

Harmonized System of Quality Assessment for  
Electronic Components

DETAIL SPECIFICATION:

**RADIO FREQUENCY  
COAXIAL CONNECTORS  
Series SMC**

Harmonisiertes Gütebestätigungssystem für  
Bauelemente der Elektronik

BAUARTSPEZIFIKATION:

**HOCHFREQUENZ-  
KOAXIAL-STECKVERBINDER  
Serie SMC**

**1**

Edition  
Issue  
Ausgabe

**CECC 22 141-810**

1988

Cette page bleue doit être insérée après la page de garde de la CECC 22 141-810 Edition 1 (1988)

#### AMENDEMENT 1 A LA CECC 22 141-810, (Edition 1)

##### SPECIFICATION PARTICULIERE:

#### CONNECTEURS COAXIAUX POUR FREQUENCE RADIOELECTRIQUE SERIE SMC

La modification suivante doit être effectuée:

Il est autorisé d'utiliser une rondelle frein à denture intérieure à la place d'une rondelle ondulée, dans la mesure où leur diamètre extérieur indiqué est conservé.

On distinguera dans les commandes et le stockage les variantes de la manière suivante: codes -01, -02, -03 etc. pour les rondelles ondulées, codes -11, -12, -13 etc. pour les rondelles frein à denture intérieure.

Enregistrer les modifications sur la feuille jaune 'Enregistrement de modifications'.

Cette proposition a été communiquée aux membres du GT22 sous la référence GT22(Secrétariat)655.

CECC 22 141-810 Edition 1 Amendement 1 1991

This blue page shall be inserted after the title page of CECC 22 141-810 Issue 1 (1988)

#### AMENDMENT 1 TO CECC 22 141-810, (Issue 1)

##### DETAIL SPECIFICATION:

#### RADIO FREQUENCY COAXIAL CONNECTORS SERIES SMC

The following amendment shall be made:

The use of an internal toothed lockwasher is permitted as an alternative to the crinkle washer indicated provided it does not exceed the outside diameter shown.

To allow discrimination in ordering and stocking, the Variant Codes -01, -02, -03 etc. will continue to be used for connectors fitted with crinkle washers. The corresponding connectors with toothed lockwashers will use Variant Codes -11, -12, -13 etc.

Enter this amendment on the yellow 'Record of Amendments' sheet.

This proposal was circulated to WG22 members under WG22(Secretariat)655.

CECC 22 141-810 Issue 1 Amendment 1 1991

Dieses blaue Blatt ist nach dem Titelblatt der CECC 22 141-810 Ausgabe 1 (1988) einzusetzen

#### ÄNDERUNG 1 ZU CECC 22 141-810, (Ausgabe 1)

##### BAUARTSPEZIFIKATION:

#### HOCHFREQUENZ-KOAXIAL-STECKVERBINDER SERIE SMC

Die folgende Änderung ist vorzunehmen:

Der Gebrauch einer innen gezahnten Sicherungsscheibe ist als Alternative zur Federscheibe zulässig, wenn diese den angegebenen Außendurchmesser nicht überschreitet.

Zur Unterscheidung bei der Bestellung und der Lagerung wird für Steckverbinder, die mit Federscheiben eingesetzt werden, der Variantencode -01, -02, -03 etc. weiterverwendet. Für die entsprechenden Steckverbinder mit gezahnten Sicherungsscheiben lauten die Variantencodes -11, -12, -13 etc.

Die Änderung ist in das gelbe Blatt der Änderungsliste einzutragen.

Dieser Vorschlag wurde mit dem Schreiben WG22(Sekretariat)655 den WG22-Mitgliedern zur Kenntnis gebracht.

CECC 22 141-810 Ausgabe 1 Änderung 1 1991

Information about the System may be obtained from:



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Telefax Int.+ (49) 69 6 30 82 83 (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)
- 4 CECC 00 300: CECC Publications and their related national documents

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PREFACE

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

It relates to Series SMC connectors covered by sectional specification CECC 22 140 and by blank detail specification CECC 22 141. These in turn are related to the generic specification CECC 22 000.

It is based, wherever possible, on the Publications of the International Electro-technical Commission, and in particular on IEC 169-9 (1978) Part 9: R.F. coaxial connectors with inner diameter of outer conductor 3 mm (0,12 in) with screw coupling - Characteristic impedance 50 ohms (Type SMC).

The text of this detail specification was circulated to the members of CECC WG 22 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 (Secretariat)1838.

Document

(As SMB CECC 22 131-810 /  
Doc. WG22(Sec)371)

Approval Date

January 1986

CECC 22 141-810 Issue 1

|                                                                                                                                      |                |                          |                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------|-------------------------------------------------------------------------------------|
| [1]                                                                                                                                  | page 1<br>of 9 | [2]<br>CECC 22 141 - 810 |  |
| ELECTRONIC COMPONENT OF ASSESSED [3]<br>QUALITY IN ACCORDANCE WITH<br>GENERIC SPECIFICATION 22 000<br>SECTIONAL SPECIFICATION 22 140 | [4]            | Issue 1                  |                                                                                     |

[5] DETAIL SPECIFICATION for

RADIO FREQUENCY COAXIAL CONNECTOR OF ASSESSED QUALITY:

SERIES

**SMC**Style: Socket, single hole rear mounting (or free less  
nut and washer), cable outlet, male centre contact

Special Features &amp; Markings:

Method of cable/~~wire~~\* attachment: centre conductor - solder/~~crimp~~\*  
: outer conductor - ~~solder~~/clamp/~~crimp~~\*

Mass: 3,1g (Max.)

\*Delete as appropriate

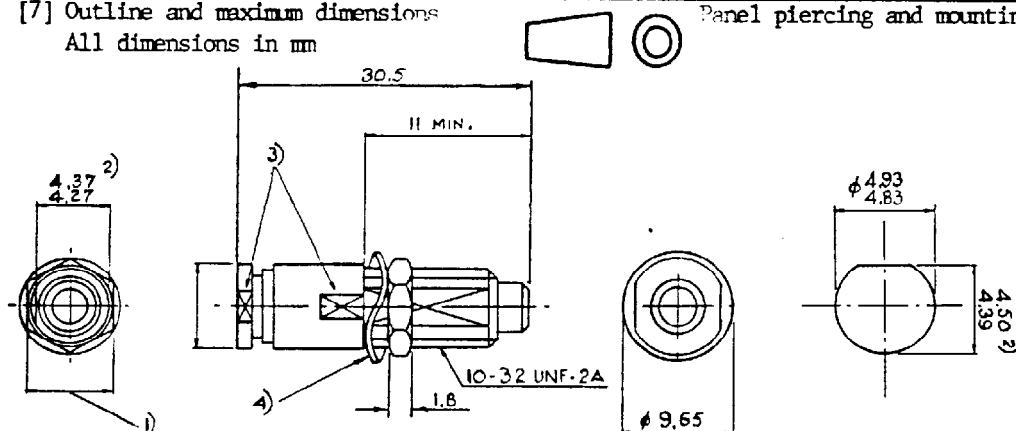
[6] Assessment level : H

Characteristic Impedance 50  $\Omega$  Climatic category 55/155 $^{\circ}$ /21

[7] Outline and maximum dimensions

All dimensions in mm

Panel piercing and mounting details



- NOTES : 1 Width across flats 6,35 (6 permissible)  
2 to 'D' flat  
3 Width across flats to suit standard wrench  
4 Crinkle washer  
5 Contours within dimensional envelope

For mating interface dimensions and position of reference plane see CECC 22 140

Maximum panel thickness: ~~for front mounting~~ ..... mm, for rear mounting ....2,40.... mm~~The outline dimensions meet the requirements of .....~~

## [8] Variants

| Variant No.       |                            | Description<br>of Variant    | Relevant Cables               |                |               |               |
|-------------------|----------------------------|------------------------------|-------------------------------|----------------|---------------|---------------|
| Body Shell Finish |                            | Max. dia. over<br>dielectric | IEC 96                        | MIL-C-17<br>RG | GB<br>URM     | FR<br>NF      |
| Au                | Non-<br>tarnish<br>Plating |                              |                               |                |               |               |
| -01               | -05                        | 0,94                         | 50-1-1,1-2,1-3                | 178B/U,404/U   | 110           | KX21          |
| -02               | -06                        | 1,60                         | 50-2-1,2-2,2-3<br>2-4,2-5,2-6 | 174A/U,316/U   | 95,109<br>116 | KX3A<br>KX22A |
| -03               | -07                        | 1,70                         |                               | 405/U          |               | KS1           |
| -04               | -08                        | 3,00                         |                               | 402/U          |               | KS2           |

† Note : With variants using semi-rigid cable the upper temperature limit should be reduced to 115 $^{\circ}$ C.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 22 140<br>CLAUSE | VALUE                                                                                                             | REMARKS                                                                                                              |
|--------------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| ELECTRICAL                           |                                                                                                       |                       |                                                                                                                   |                                                                                                                      |
|                                      | Variant No./<br>Designation                                                                           |                       |                                                                                                                   | Measurement freq.<br>range                                                                                           |
| Reflection factor                    | -01...to...-08                                                                                        | 4.4.1                 | ... < 0,1....<br>... < 0,15....<br>... < 0,25....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....           | ..... < 1 GHz.....<br>..... < 3 GHz.....<br>..... < 6 GHz.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... |
| Centre contact resistance            |                                                                                                       | 4.4.2                 | < ....5.... mΩ<br>< ...15.... mΩ                                                                                  | Initial<br>After conditioning                                                                                        |
| Outer conductor continuity           |                                                                                                       | 4.4.3                 | < ...2,5... mΩ<br>< ...7,5... mΩ                                                                                  | Initial<br>After conditioning                                                                                        |
| Insulation resistance                |                                                                                                       | 4.4.4                 | > ....1.... GΩ<br>> ...500... MΩ                                                                                  | Initial<br>After conditioning                                                                                        |
| + Proof voltage<br>at sea level      | -01.....-05<br>-02.....-06<br>-03.....-07<br>-04.....-08<br>.....<br>.....<br>.....<br>.....<br>..... | 4.4.5                 | .....0,5... kV<br>.....0,75.. kV<br>.....0,75.. kV<br>.....1.... kV<br>.....<br>.....<br>.....<br>.....<br>.....  | 86 to 106 kPa                                                                                                        |
| + Proof voltage<br>at 20 km altitude | -01.....-05<br>-02.....-06<br>-03.....-07<br>-04.....-08<br>.....<br>.....<br>.....<br>.....<br>..... | 4.6.5                 | .....100.... V<br>.....150.... V<br>.....150.... V<br>.....200.... V<br>.....<br>.....<br>.....<br>.....<br>..... | 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 22 140<br>CLAUSE | VALUE                             | REMARKS                                 |
|----------------------------------------|-----------------------------|-----------------------|-----------------------------------|-----------------------------------------|
| ELECTRICAL                             |                             |                       |                                   |                                         |
|                                        | Variant No./<br>Designation |                       |                                   |                                         |
| + Working voltage<br>at sea level      | -01.....-05                 |                       | .....170.... V                    | 86 to 106 kPa                           |
|                                        | -02.....-06                 |                       | .....335.... V                    |                                         |
|                                        | -03.....-07                 |                       | .....250.... V                    |                                         |
|                                        | -04.....-08                 |                       | .....335.... V                    |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
| + Working voltage<br>at 20 km altitude | -01.....-05                 |                       | .....45.... V                     | 4,4 kPa                                 |
|                                        | -02.....-06                 |                       | .....85.... V                     |                                         |
|                                        | -03.....-07                 |                       | .....65.... V                     |                                         |
|                                        | -04.....-08                 |                       | .....85.... V                     |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
| Screening effectiveness                | -01...to...-08              | 4.4.8                 | $Z_t \leq \text{..NA... } \Omega$ | Providing $\geq$ dB                     |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
|                                        | .....                       |                       | .....                             |                                         |
| ADDITIONAL ELECTRICAL CHARACTERISTICS  |                             |                       |                                   |                                         |
| MECHANICAL                             |                             |                       |                                   |                                         |
| Contact captivation:                   |                             | 4.5.2                 |                                   | CECC 22 000 method (or<br>as specified) |
| - axial force                          |                             |                       | .....4..... 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 22 140<br>CLAUSE | VALUE           | REMARKS                                |
|--------------------------------------------------------|-----------------------------|-----------------------|-----------------|----------------------------------------|
| MECHANICAL                                             |                             |                       |                 |                                        |
| Engagement and separation torque                       |                             | 4.5.4                 | ..NA.. Nm max.  | (to overcome friction of coupling nut) |
|                                                        | Variant No./<br>Designation |                       |                 |                                        |
| Effectiveness of clamping device against cable pulling | -01.....-05                 | 4.5.5<br>(1)          | .....50.... N   |                                        |
|                                                        | -02.....-06                 |                       | .....50.... N   |                                        |
|                                                        | -03.....-07                 |                       | .....50.... N   |                                        |
|                                                        | -04.....-08                 |                       | .....100.... N  |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
| Effectiveness of clamping device against cable torsion | -01.....-05                 | 4.5.5<br>(2)          | ...0,039... Nm  |                                        |
|                                                        | -02.....-06                 |                       | ...0,039... Nm  |                                        |
|                                                        | -03.....-07                 |                       | .....NA.... Nm  |                                        |
|                                                        | -04.....-08                 |                       | .....NA.... Nm  |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
|                                                        | .....                       |                       | .....           |                                        |
| Tensile strength of coupling mechanism                 |                             | 4.5.6                 | .....NA..... N  |                                        |
| Coupling torque                                        |                             |                       | 0,25 to 0,35 Nm |                                        |
| - normal                                               |                             |                       | ....0,71... Nm  |                                        |
| - proof                                                |                             |                       |                 |                                        |
| Bending moment                                         |                             | 4.5.9                 | ....0,8.... Nm  | Relative to reference plane            |
| ADDITIONAL MECHANICAL CHARACTERISTICS                  |                             |                       |                 |                                        |