

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 22 201-808**

1988

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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)

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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 22 201-808 Issue 1

[1]

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of 9

[2]

CECC 22 201 - 808 ..



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: Fixed socket, 4-hole mounting, solder bucket

Special Features &amp; Markings:

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

: outer conductor - solder/clamp/crimp\*

Mass: 13 g (Max.) \*Delete as appropriate

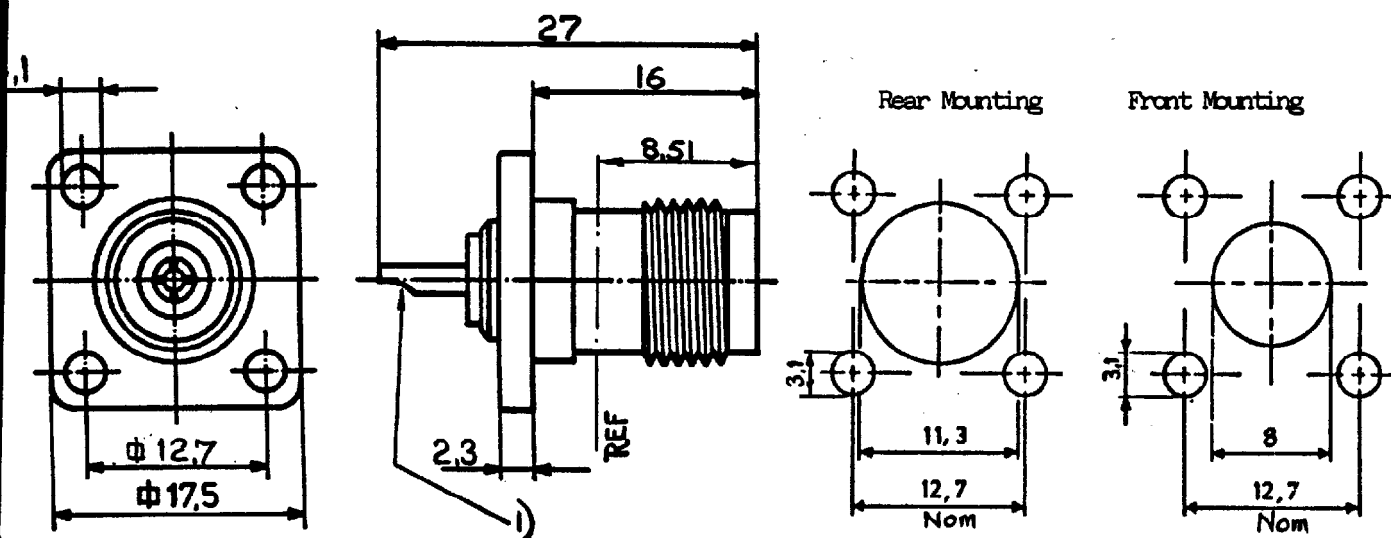
[6] Assessment level ...H... Characteristic impedance 50  $\Omega$  Climatic category ...55.../155.../21...

[7] Outline and maximum dimensions

Panel piercing and mounting details



NOTE: 1. Solder bucket to accommodate 1,5 mm max. conductor. Orientation optional.



For mating interface dimensions and position of reference plane see CECC 22 200

Maximum panel thickness: for front mounting ..... mm, for rear mounting ...<sup>3,1</sup>..... mm

The outline dimensions meet the requirements of .....

[8] Variants \*\*

| Variant No.                                     | Description of Variant | Relevant Cables |    |                 |
|-------------------------------------------------|------------------------|-----------------|----|-----------------|
|                                                 |                        | IEC 96          | RG | National Cables |
| Ag                                              | Non-tarnish Alloy      |                 |    |                 |
| -01                                             | -02                    |                 |    |                 |
|                                                 |                        |                 |    |                 |
|                                                 |                        |                 |    |                 |
|                                                 |                        |                 |    |                 |
| ** 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<br>CLAUSE | VALUE                                                                                  | REMARKS                                                                                                         |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| ELECTRICAL                           |                                                                                                                  |                       |                                                                                        |                                                                                                                 |
| Reflection factor                    | Variant No./<br>Designation<br>-01 & -02<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... | 4.4.1                 | na<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....             | Measurement freq.<br>range<br>Unmatched<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... |
| Centre contact resistance            |                                                                                                                  | 4.4.2                 | < ..... <sup>2,5</sup> mΩ<br>..... <sub>5,0</sub> mΩ                                   | Initial<br>After conditioning                                                                                   |
| Outer conductor continuity           |                                                                                                                  | 4.4.3                 | < ..... <sup>1,0</sup> mΩ<br>..... <sub>2,0</sub> mΩ                                   | Initial<br>After conditioning                                                                                   |
| Insulation resistance                |                                                                                                                  | 4.4.4                 | > ..... <sup>5</sup> GΩ<br>..... <sub>500</sub> MΩ                                     | Initial<br>After conditioning                                                                                   |
| + Proof voltage<br>at sea level      | -01 & -02<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....                                | 4.4.5                 | ..... <sup>1,5</sup> kV<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... | 86 to 106 kPa                                                                                                   |
| + Proof voltage<br>at 20 km altitude | -01 & -02<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....                                | 4.6.5                 | ..... <sup>375</sup> V<br>.....<br>.....<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 22 200<br>CLAUSE | VALUE                                                                                                          | REMARKS            |
|----------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------|--------------------|
| ELECTRICAL                             |                                                                                                     |                       |                                                                                                                |                    |
| + Working voltage<br>at sea level      | Variant No./<br>Designation                                                                         |                       |                                                                                                                |                    |
|                                        | -01 & -02<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... |                       | 500 V<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....                | 86 to 106 kPa      |
| + Working voltage<br>at 20 km altitude | -01 & -02<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... |                       | 125 V<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....                | 4,4 kPa            |
| Screening effectiveness                | .....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....              | 4.4.8                 | $Z_t < \dots \Omega$<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>..... | Providing > dB     |
| Discharge test (corona)                | .....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....              | 4.4.9                 | na..... V<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....<br>.....                     | 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<br>CLAUSE | VALUE                                                                   | REMARKS                        |
|-----------------------------------------------------------------------------------|-----------------------------|-----------------------|-------------------------------------------------------------------------|--------------------------------|
| MECHANICAL                                                                        |                             |                       |                                                                         |                                |
| Contact captivation<br>- axial force<br>- torque                                  |                             | 4.5.2                 | ..... <sup>20</sup> ..... N<br>..... <sup>0,03</sup> ..... Nm           |                                |
|                                                                                   |                             |                       |                                                                         |                                |
| Static load (for fixed<br>connectors only)                                        |                             | 4.5.3                 | ..... <sup>100</sup> ..... N<br>10 mm from<br>mounting plane            | Parallel to<br>mounting plane  |
| Engagement and separation<br>- torque<br>- axial force (insertion and withdrawal) |                             | 4.5.4                 | ..... <sup>0,25</sup> ..... Nm max.<br>..... <sup>22</sup> ..... N max. | To overcome<br>friction        |
| Coupling torque<br>- normal<br>- proof                                            |                             |                       | na..... Nm<br>na..... Nm                                                |                                |
| Effectiveness of<br>clamping device against<br>cable pulling                      | Variant No./<br>Designation |                       |                                                                         |                                |
|                                                                                   | .....                       | 4.5.5                 | ..... <sup>na</sup> ..... N                                             |                                |
|                                                                                   | .....                       | (1)                   | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
| Effectiveness of<br>clamping device against<br>cable torsion                      | .....                       | 4.5.5                 | ..... <sup>na</sup> ..... Nm                                            |                                |
|                                                                                   | .....                       | (2)                   | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
|                                                                                   | .....                       |                       | .....                                                                   |                                |
| Tensile strength of<br>coupling mechanism                                         |                             | 4.5.6                 | ..... <sup>na</sup> ..... N                                             |                                |
| Bending moment                                                                    |                             | 4.5.9                 | ..... <sup>na</sup> ..... Nm                                            | Relative to reference<br>plane |
| ADDITIONAL MECHANICAL CHARACTERISTICS                                             |                             |                       |                                                                         |                                |

| RATINGS AND CHARACTERISTICS                      | CECC 22 200<br>CLAUSE | VALUE                                                 | REMARKS                                 |
|--------------------------------------------------|-----------------------|-------------------------------------------------------|-----------------------------------------|
| ENVIRONMENTAL                                    |                       |                                                       |                                         |
| Vibration                                        | 4.6.3                 | .....98..... m/s <sup>2</sup><br>10.....to.....500 Hz | (10g acceleration)                      |
| Climatic category                                | 4.6.5                 | .55./155./21..                                        |                                         |
| Sealing (panel and barrier<br>sealed connectors) | 4.6.8                 | .....na.....                                          | 100 to 110 kPa<br>pressure differential |
| Sealing (hermetically sealed<br>connectors)      | 4.6.9                 | .....na.....                                          | 100 to 110 kPa<br>pressure differential |
| ADDITIONAL ENVIRONMENTAL CHARACTERISTICS         |                       |                                                       |                                         |
| ENDURANCE                                        |                       |                                                       |                                         |
| Mechanical                                       | 4.7.1                 | 500 operations                                        |                                         |
| High temperature                                 | 4.7.2                 | .....1000..... h<br>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./<br>Designation | Identification |
|------------------------------------------|-----------------------------|----------------|
|                                          | -01                         | 22 201-808-01  |
|                                          | .....-02.....               | 22 201-808-02  |
|                                          | .....                       | .....          |
|                                          | .....                       | .....          |
|                                          | .....                       | .....          |
|                                          | .....                       | .....          |
|                                          | .....                       | .....          |
|                                          | .....                       | .....          |
| (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  $50\Omega$ .....
    - (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-<sup>808</sup>.../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<br>22 200<br>Clause | Level H          |    |      |                  |
|--------------------------|------------------|----|------|------------------|
|                          | Test<br>Required | IL | AQL  | Period           |
| 4.2                      | a                | S3 | 1,5% | Lot<br>by<br>Lot |
| 4.3.1                    | a                | S3 | 4%   | Lot<br>by<br>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<br>22 200<br>Clause | Test<br>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<br>22 200<br>Clause | Test<br>Required | Specimens<br>(may be<br>from C1)            | Permitted<br>Failures<br>per group† | Period  |
|----------------------------------------------|--------------------------|------------------|---------------------------------------------|-------------------------------------|---------|
| GROUP D1(d)                                  |                          |                  |                                             |                                     |         |
| Mechanical tests on cable<br>clamping device | 4.5.5                    | na               | 3 mated<br>pairs or<br>sets min.            | 1                                   | 3 Years |
| Static load                                  | 4.5.3                    | a                |                                             |                                     |         |
| Tensile strength of coupling<br>mechanism    | 4.5.6                    | na               |                                             |                                     |         |
| GROUP D2(d)                                  |                          |                  |                                             |                                     |         |
| Contact resistance                           | 4.4.2                    | a                | 3 mated<br>pairs or<br>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<br>(piece parts)*   | 4.3.2                    | a                | 1 set of<br>piece<br>parts<br>each<br>style | 1                                   | 3 Years |
| Mass                                         | 4.3.1                    | a                |                                             |                                     |         |
| GROUP D4(d)                                  |                          |                  |                                             |                                     |         |
| Mechanical endurance                         | 4.7.1                    | a                | 3 mated<br>pairs or<br>sets min.            | 1                                   | 3 Years |
| High temperature endurance                   | 4.7.2                    | a                |                                             |                                     |         |
| GROUP D5(d)                                  |                          |                  |                                             |                                     |         |
| Reflection factor                            | 4.4.1                    | na               |                                             |                                     |         |
| Screening effectiveness                      | 4.4.8                    | na               |                                             |                                     |         |

For notes relating to symbols: See page 9.