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Radio-frequency connectors –

Part 16:

Sectional specification –

RF coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristics impedance 50 Ω (75 Ω) (type N)

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CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 IEC type designation	7
4 Interface dimensions	7
4.1 Dimensions – General purpose connectors – Grade 2	7
5 Mechanical gauges and standard test connectors.....	12
5.1 Mechanical gauges.....	12
5.2 Standard test connectors – Grade 0	13
6 Overall dimensions	17
7 Quality assessment procedures	17
7.1 General.....	17
7.2 Ratings and characteristics	17
7.3 Test schedule and inspection requirements	20
7.4 Procedures.....	22
8 Instructions for preparation of detail specifications	22
8.1 General.....	22
8.2 Identification of the Detail specification	22
8.3 Identification of the component.....	23
8.4 Performance.....	23
8.5 Marking, ordering information and related matters	23
8.6 Selection of tests, test conditions and severities.....	23
8.7 Blank detail specification pro-forma for type N connector	24
Annex A (informative) Guidance information for interface dimensions of 75 Ω characteristic impedance general purpose connectors	29
Figure 1 – Connector with pin centre contact	8
Figure 2 – Details of pin centre contact	8
Figure 3 – Connector with socket centre contact	10
Figure 4 – Details of socket centre contact	10
Figure 5 – Gauge rings for outer contact of pin connector	12
Figure 6 – Gauge and test pins for socket centre contact	13
Figure 7 – Standard test connector with pin centre contact	14
Figure 8 – Details of pin centre contact	14
Figure 9 – Standard test connector with socket centre contact	16
Figure 10 – Details of socket centre contact	16
Figure A.1 – Details of pin centre contact.....	29
Table 1 – Dimensions for connector with pin centre contact.....	9
Table 2 – Dimensions for connector with socket centre contact.....	11
Table 3 – Dimensions for test pins for socket centre contact.....	13
Table 4 – Dimensions for standard test connector with pin centre contact.....	15

Table 5 – Dimensions for standard test connector with socket centre contact	17
Table 6 – Ratings and characteristics	18
Table 7 – Acceptance tests	20
Table 8 – Periodic tests	21

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 61169-16 has been prepared by subcommittee 46F: R.F. and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This part of IEC 61169 cancels and replaces IEC 60169-16 published in 1982 and Amendment 1 (1996). This edition constitutes a technical revision.

This edition included the following significant technical changes with respect to IEC 60169-16:

Clauses 7 and 8 have been totally re-written and Clause 9 has been removed. Clause 7 currently includes test schedules and Clause 8 gives indications to fill a Blank Detail Specification (BDS).

The text of this standard is based on the following documents:

FDIS	Report on voting
46F/54/FDIS	46F/59/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The QC numbers that appear on the front cover of this publication are the specification numbers in the IEC Quality Assessment System for Electronic Components (IECQ).

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 61169 series, under the general title *Radio frequency connectors*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

RADIO-FREQUENCY CONNECTORS –

Part 16: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling – Characteristics impedance 50 Ω (75 Ω) (type N)

1 Scope

This part of IEC 61169, which is a Sectional Specification (SS), provides information and rules for the preparation of Detail Specifications (DS) for pin and socket R.F. coaxial connectors, with screw coupling mechanism, for low to medium power applications. The connector is commonly known as the "type N".

Three versions of the 50 Ω characteristic impedance type N connector are included, each version being mateable with each of the others.

The general purpose connector (grade 2) derived from the specifications MIL-C17B and MIL-C-39012 may preferably be used with R.F. cable 60096 IEC 50-7 up to about 12 GHz maximum frequency.

The high performance connector (grade 1) is particularly suitable for microwave applications when lower reflection factors than are offered by the general purpose connector are required. The connectors may also be suitable for microwave components. The tolerances of the interface dimensions lie between those for grade 0 and grade 2, and are chosen to give the performance required. Some grade 1 connectors conforming to this specification may be used up to 18 GHz maximum frequency.

The standard test connector (grade 0) has a closely controlled interface to provide a reference for the measurement of connectors, cable assemblies, components and equipment with the above two interfaces. It may also be used as a microwave connector in situations when the most precise interface for use up to 18 GHz maximum frequency is required.

A 75 Ω characteristic impedance connector is given in Annex A even though the use of 75 Ω type N connectors is strongly deprecated.

Accidental cross-coupling of 75 Ω with 50 Ω connectors can destructively damage the 75 Ω version, but in view of the extensive use of a number of marginally different 75 Ω versions, the interface now given provides common design guidance. 75 Ω connectors should be clearly identified.

This specification indicates the recommended performance characteristics to be considered when writing a DS and covers test schedules and inspection requirements.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*
Amendment 1 (1992)

IEC 60096-2:1988, *Radio-frequency cables – Part 2: Relevant cable specifications*

IEC 61169-1:1992, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

Amendment 1 (1996)

Amendment 2 (1997)

ISO 263:1973, *ISO inch screw threads – General plan and selection for screws, bolts and nuts – Diameter range 0.06 to 6 in*