

**Radio-frequency connectors -- Part 16:
Sectional specification - RF coaxial
connectors with inner diameter of outer
conductor 7 mm (0,276 in) with screw
coupling - Characteristic impedance 50
ohms (75 ohms) (type N)**

Radio-frequency connectors -- Part 16: Sectional
specification - RF coaxial connectors with inner
diameter of outer conductor 7 mm (0,276 in) with
screw coupling - Characteristic impedance 50 ohms
(75 ohms) (type N)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61169-16:2007 sisaldab Euroopa standardi EN 61169-16:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 28.05.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61169-16:2007 consists of the English text of the European standard EN 61169-16:2007.</p> <p>This document is endorsed on 28.05.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: 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 MILC-39012 may preferably be used with R.F. cable 60096 IEC 50-7 up to about 12 GHz maximum frequency.</p>	<p>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 MILC-39012 may preferably be used with R.F. cable 60096 IEC 50-7 up to about 12 GHz maximum frequency.</p>
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ICS 33.120.30

Võtmesõnad:

**Radio-frequency connectors -
Part 16: Sectional specification -
RF coaxial connectors with inner diameter
of outer conductor 7 mm (0,276 in) with screw coupling -
Characteristic impedance 50 ohms (75 ohms) (type N)
(IEC 61169-16:2006)**

Connecteurs pour fréquences
radioélectriques -
Partie 16: Spécification intermédiaire -
Connecteurs coaxiaux pour fréquences
radioélectriques avec diamètre intérieur
du conducteur extérieur de 7 mm
(0,276 in) à verrouillage à vis -
Impédance caractéristique
de 50 ohms (75 ohms) (Type N)
(CEI 61169-16:2006)

Hochfrequenz-Steckverbinder -
Teil 16: Rahmenspezifikation -
Koaxiale Hochfrequenzsteckverbinder
mit 7 mm (0,276 in) Innendurchmesser
des Außenleiters
und Schraubverbindung -
Wellenwiderstand 50 Ohm (75 Ohm)
(Typ N)
(IEC 61169-16:2006)

This European Standard was approved by CENELEC on 2007-03-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 46F/54/FDIS, future edition 1 of IEC 61169-16, prepared by SC 46F, R.F. and microwave passive components, of IEC TC 46, Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61169-16 on 2007-03-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2007-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2010-03-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61169-16:2006 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60457 NOTE Harmonized in HD 351 series (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing - Part 1: General and guidance	EN 60068-1	1994
IEC 60096-2	1988	Radio-frequency cables - Part 2: Relevant cable specifications	-	-
IEC 61169-1 A1 A2	1992 1996 1997	Radio-frequency connectors - Part 1: Generic specification - General requirements and measuring methods	EN 61169-1 A1 A2	1994 1996 1997
ISO 263	1973	ISO inch screw threads - General plan and selection for screws, bolts and nuts - Diameter range 0.06 to 6 in	-	-

INTERNATIONAL STANDARD

IEC
61169-16

QC 222400

First edition
2006-12

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)



Reference number
IEC 61169-16:2006(E)

Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

Further information on IEC publications

The technical content of IEC publications is kept under constant review by the IEC, thus ensuring that the content reflects current technology. Information relating to this publication, including its validity, is available in the IEC Catalogue of publications (see below) in addition to new editions, amendments and corrigenda. Information on the subjects under consideration and work in progress undertaken by the technical committee which has prepared this publication, as well as the list of publications issued, is also available from the following:

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International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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)**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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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*

3 IEC type designation

Connectors conforming to this specification shall be designated by:

- a) the reference to this specification: 61169-16 IEC;
- b) characteristic impedance 50 Ω (75 Ω);
- c) number of the grade :
 - grade 0 = standard test connector = G 0;
 - grade 1 = high performance connector = G 1;
 - grade 2 = general purpose connector
 - if grade 2 is required, no grade designation is necessary;
- d) a group of figures specifying the climatic category (see 7.2.5).

Example:

61169-16 IEC-50-G 0 denotes a standard test connector, type N, 50 Ω .

4 Interface dimensions

4.1 Dimensions – General purpose connectors – Grade 2

4.1.1 General

Inch dimensions are original dimensions.

NOTE The values for dimensions in millimetres derived from those in inches are not necessarily exact (according to ISO 3701¹), but they should be considered as acceptable alternatives to the original values.

All undimensioned pictorial configurations are for reference purposes only.

¹ This document has been withdrawn.