

# INTERNATIONAL STANDARD

**IEC**  
**61169-8**

QC 222400

First edition  
2007-02

---

---

## Radio-frequency connectors –

### Part 8:

#### Sectional specification –

**RF coaxial connectors with inner diameter of outer  
conductor 6,5 mm (0,256 in.) with bayonet lock –  
Characteristic impedance 50  $\Omega$  (type BNC)**

© IEC 2007 — Copyright - all rights reserved

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: [inmail@iec.ch](mailto:inmail@iec.ch) Web: [www.iec.ch](http://www.iec.ch)



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

PRICE CODE

V

*For price, see current catalogue*

## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 IEC type designation .....	6
4 Interface dimensions .....	7
4.1 Dimensions – General purpose connectors.....	7
5 Mechanical gauges and standard test connectors.....	11
5.1 Mechanical gauges.....	11
5.2 Standard test connectors.....	14
6 Outline dimensions.....	19
7 Quality assessment procedures.....	19
7.1 General.....	19
7.2 Ratings and characteristics .....	19
7.3 Test schedule and inspection requirements.....	21
7.4 Procedures.....	23
8 Instructions for preparation of detail specifications .....	23
8.1 General.....	23
8.2 Identification of the Detail specification .....	24
8.3 Identification of the component.....	24
8.4 Performance.....	24
8.5 Marking, ordering information and related matters.....	24
8.6 Selection of tests, test conditions and severities.....	24
8.7 Blank detail specification pro-forma for type BNC connector.....	26
Annex A (normative) Information for interface dimensions of 75 Ω characteristic impedance connector with unspecified reflection factor.....	31
Bibliography.....	35
Figure 1 – Connector with pin-centre contact (for dimensions, see Table 1).....	7
Figure 2 – Details of bayonet lock.....	8
Figures 3 and 4 – Details of alternative coupling grooves .....	8
Figure 5 – Details of pin-centre contact.....	8
Figure 6 – Connector with socket-centre contact (for dimensions, see Table 2) .....	10
Figure 7 – Details of socket-centre contact .....	10
Figure 8 – Gauge for outer contact of pin connector.....	11
Figure 9 – Gauge pin for socket-centre contact.....	12
Figure 10 – Dimensions of gauge for performance test (see Table 5).....	13
Figure 11 – Dimensions of connector (see Table 6) .....	15
Figure 12 – Dimensions of centre contact (see Table 6).....	15
Figure 13 – Dimensions of connector (see Table 7) .....	17
Figure 14 – Dimensions of centre contact (see Table 7).....	17
Figure A.1 – Connector with pin centre contact and Figure A.2 – Details of bayonet lock .....	31

Figure A.3 – Details of alternative coupling grooves.....	31
Figure A.4 – Details of pin centre contact .....	31
Figure A.5 – Connector with socket centre contact.....	33
Figure A.6 – Position of coupling studs .....	33
Figure A.7 – Details of socket centre contact .....	33
Table 1 – Dimensions for connector with pin-centre contact.....	9
Table 2 – Dimensions for connector with socket-centre contact .....	11
Table 3 – Dimensions for gauges for outer contact of pin connector.....	12
Table 4 – Dimensions for gauge pin for socket-centre contact.....	12
Table 5 – Dimensions of gauge for performance test .....	14
Table 6 – Dimensions of centre contact .....	16
Table 7 – Dimensions for standard test connector.....	18
Table 8 – Preferred climatic categories (see IEC 60068-1):.....	19
Table 9 – Ratings and characteristics .....	20
Table 10 – Acceptance tests .....	21
Table 11 – Periodic tests .....	22
Table A.1 – Dimensions for pin connector.....	32
Table A.2 – Dimensions for socket connector .....	34

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## RADIO-FREQUENCY CONNECTORS –

**Part 8: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock – Characteristic impedance 50  $\Omega$  (type BNC)**

## 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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61169-8 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

This first edition of IEC 61169-8 cancels and replaces IEC 60169-8 published in 1978 as well as its Amendment 1 (1996) and Amendment 2 (1997). This edition constitutes a technical revision.

This first edition of IEC 61169-8 differs from IEC 60169-8 primarily in that it contains a new Clause 7: Quality assessment procedures and a new Clause 8: Instructions for preparation of detail specifications. Furthermore this IEC 61169-8 refers to IEC 61169-1 whereas IEC 60169-8 referred to IEC 60169-1.

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

FDIS	Report on voting
46F/57/FDIS	46F/67/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.

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

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

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

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 edition of this document may be issued at a later date.

## RADIO-FREQUENCY CONNECTORS –

### **Part 8: Sectional specification – RF coaxial connectors with inner diameter of outer conductor 6,5 mm (0,256 in) with bayonet lock – Characteristic impedance 50 $\Omega$ (type BNC)**

#### **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 RF coaxial connectors which may preferably be used with RF cables 60096 IEC 50-3 or IEC 60096-2. These connector patterns are for low power, quick connect/disconnect applications using a bayonet type coupling mechanism and are commonly known as type "BNC".

It describes the interface dimensions for general purpose connectors, dimensional details for standard test connectors together with gauging information and the mandatory tests selected from IEC 61169-1, applicable to all DS relating to type BNC connectors.

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

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