

Radio-frequency connectors —

**Part 31: RF coaxial connectors with inner
diameter of outer conductor 1,0 mm
(0,039in) with screw coupling —
Characteristic impedance
50 ohms(type 1,0)**

The European Standard EN 61169-31:1999 has the status of a
British Standard

ICS 33.120.30

National foreword

This British Standard is the English language version of EN 61169-31:1999. It is identical with IEC 61169-31:1999. This standard is a harmonized specification within the IEC quality assessment system for electronic components (IECQ). In the IECQ system, this specification is numbered QC 223100.

The UK participation in its preparation was entrusted by Technical Committee EPL/46, Cables, wires, waveguides, RF connectors and accessories for communication and signalling, to Subcommittee EPL/46/2, RF connectors and waveguides, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this Subcommittee can be obtained on request to its secretary.

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Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 24, an inside back cover and a back cover.

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Amendments issued since publication

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English version

Radio-frequency connectors — Part 31: RF coaxial connectors with inner diameter of outer conductor 1,0 mm (0,039 in) with screw coupling — Characteristic impedance — 50 ohms (type 1,0) (IEC 61169-31:1999)

Connecteurs pour fréquences radioélectriques
Partie 31: Connecteurs coaxiaux pour fréquences radioélectriques avec diamètre intérieur du conducteur extérieur de 1,0 mm (0,039 in) à verrouillage à vis — Impédance caractéristique 50 ohms (type 1,0)
(CEI 61169-31:1999)

Hochfrequenz-Steckverbinder Teil 31:
HF-Steckverbinder mit 1,0 mm (0,039 in) Innendurchmesser des Außenleiters mit Schraubverbindung Wellenwiderstand 50 Ohms (Typ 1,0)
(IEC 61169-31:1999)

This European Standard was approved by CENELEC on 1999-10-01. 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 standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

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

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

Foreword

The text of document 46D/323/FDIS, future edition 1 of IEC 61169-31, prepared by SC 46D, RF connectors, of IEC TC 46, Cables, wires, waveguides, R.F. connectors, and accessories for communication and signalling, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61169-31 on 1999-10-01.

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) 2000-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2002-10-01

Annexes designated “normative” are part of the body of the standard. In this standard, annex ZA is normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61169-31:1999 was approved by CENELEC as a European Standard without any modification.

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RADIO-FREQUENCY CONNECTORS –

**Part 31: RF coaxial connectors with inner diameter of outer conductor 1,0 mm (0,039 in) with screw coupling –
Characteristic impedance 50 ohms (type 1,0)**

1 General

1.1 Scope

This part of IEC 61169 standardizes the interface and ratings of the type 1,0 r.f. connectors of 50 Ω impedance and having a screw coupling mechanism.

These connectors are recommended for use with semi-rigid and flexible cable and in microwave applications requiring high performance.

These connectors have an operating frequency range of up to 110 GHz.

1.2 Normative reference

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61169. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61169 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

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

2 Interface dimensions

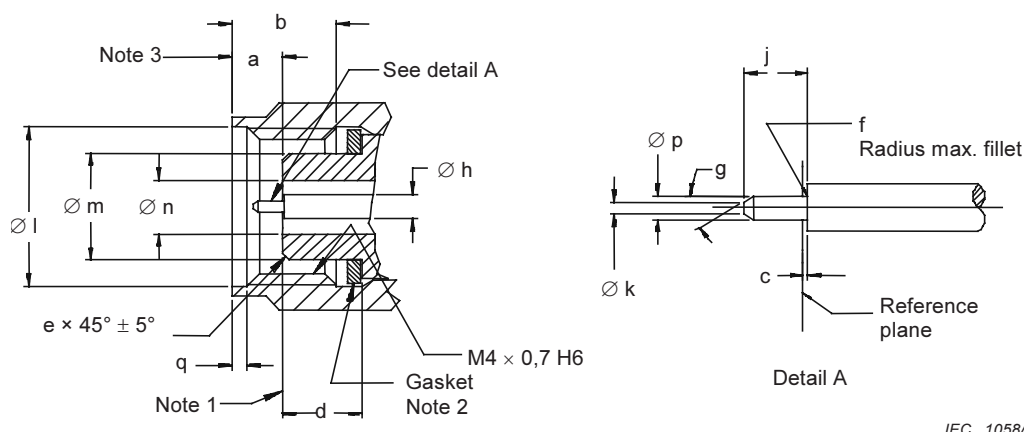
2.1 Mating face

2.1.1 Dimensions – Grade 1 connectors

Millimetres are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

2.1.1.1 Connector with pin centre contact

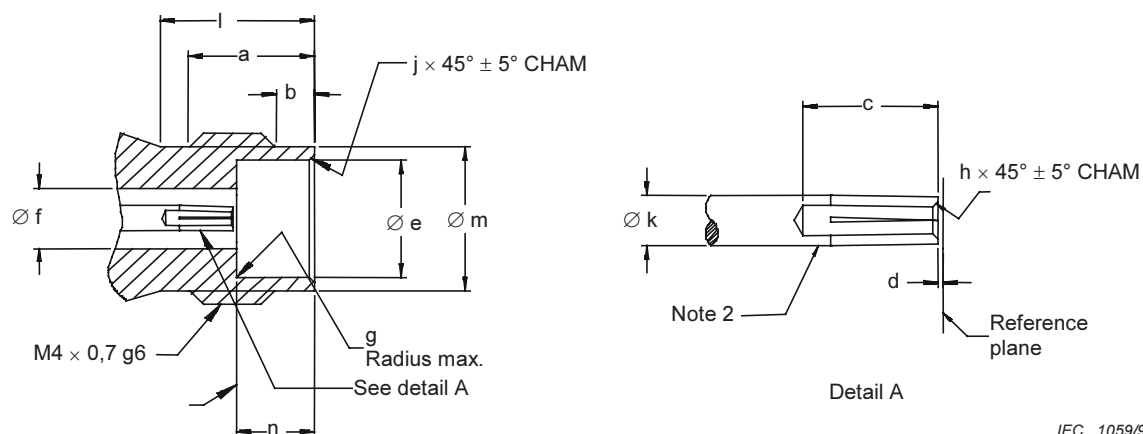


Reference	mm		in	
	Min.	Max.	Min.	Max.
a	1,26	1,86	0,050	0,073
b	2,840	3,04	0,112	0,120
c	—	0,050	—	0,002
d	1,800	1,900	0,071	0,075
e	0,150	0,250	0,006	0,010
f	—	0,025	—	0,001
g	28°	32°	28°	32°
h	0,4315	0,4365	0,01699	0,01719
j	0,700	0,800	0,028	0,032
k	0,100	0,125	0,004	0,005
l	4,150	4,250	0,1634	0,1673
m	2,348	2,368	0,0924	0,0932
n	0,995	1,005	0,03917	0,03957
p	0,245	0,255	0,0096	0,0100
q	0,300	0,500	0,012	0,020

- NOTE 1 Mechanical and electrical reference plane.
 NOTE 2 Gasket required on grade 1 connectors.
 NOTE 3 With coupling nut biased in the forward direction.

Figure 1 – Connector with pin centre contact

2.1.1.2 Connector with socket centre contact



Reference	mm		in	
	Min.	Max.	Min.	Max.
a	2,700	2,900	0,106	0,114
b	0,450	0,550	0,018	0,022
c	1,300	—	0,051	—
d	0,000	0,050	0,000	0,002
e	2,380	2,400	0,094	0,095
f	0,9950	1,0050	0,03917	0,03957
g	—	0,013	—	0,0005
h	0,025	0,076	0,001	0,003
j	0,070	0,150	0,0028	0,0059
k	0,4315	0,4365	0,01699	0,01719
l	3,750	—	0,148	—
m	2,950	3,050	0,116	0,120
n	1,600	1,700	0,063	0,067

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Socket contact configuration optional. Dimension to meet reflection factor requirement, mating characteristics and connector durability when mated with a 0,250 mm ± 0,005 mm (0,0098 in ± 0,0002 in) diameter pin.

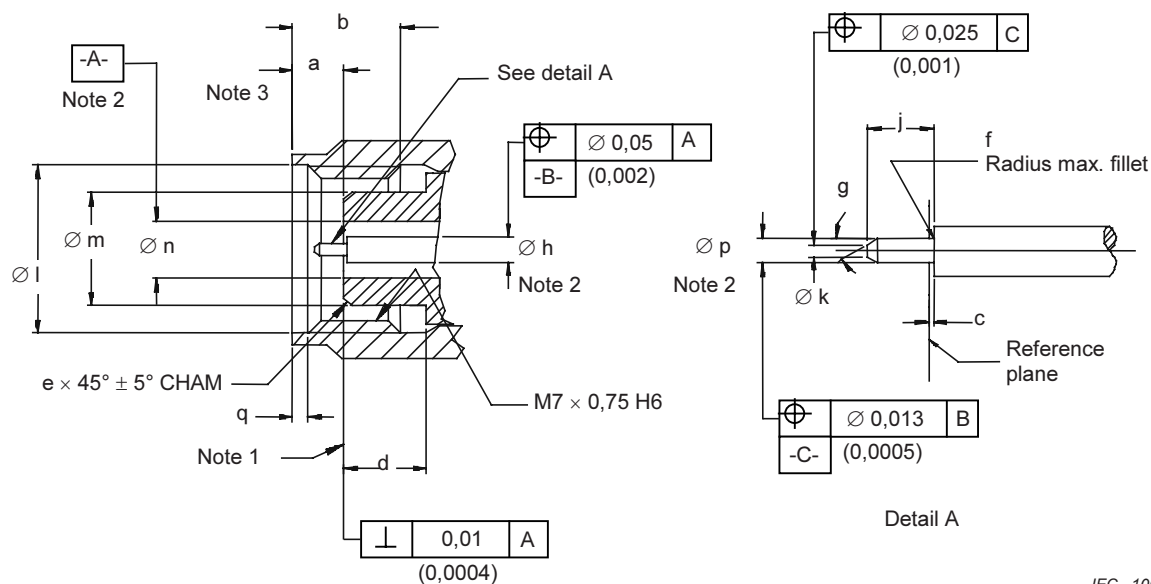
Figure 2 – Connector with socket centre contact

2.1.2 Dimensions – Grade 0 connectors

Millimetres are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

2.1.2.1 Connector with pin centre contact



IEC 1060/99

Reference	mm		in	
	Min.	Max.	Min.	Max.
a	1,26	1,86	0,050	0,073
b	2,840	3,04	0,112	0,120
c	0,000	0,013	0,000	0,0005
d	1,800	1,900	0,071	0,075
e	0,150	0,250	0,006	0,010
f	—	0,025	—	0,001
g	28°	32°	28°	32°
h	0,4320	0,4360	0,01701	0,01717
j	0,700	0,800	0,028	0,032
k	0,100	0,125	0,004	0,005
l	4,150	4,250	0,1634	0,1673
m	2,348	2,368	0,0924	0,0932
n	0,9975	1,0025	0,03927	0,03947
p	0,245	0,255	0,0096	0,0100
q	0,300	0,500	0,012	0,020

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Surface finish: 0,4 μm (16 μin) max.

NOTE 3 With coupling nut biased in the forward direction.

Figure 3 – Connector with pin centre contact