IEC 61169-35

Edition 1.0 2011-07

INTERNATIONAL STANDARD

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Radio-frequency connectors –
Part 35: Sectional specification for 2,92 series RF connectors

IEC 61169-35:2011(E)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE T

ICS 33.120.30

ISBN 978-2-88912-559-3

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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International Standard IEC 61169-35 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This first edition cancels and replaces IEC/PAS 61169-35, published in 2009, of which it constitutes a minor revision. The only change is that the PAS has been changed into and International Standard.

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

FDIS	Report on voting
46F/191/FDIS	46F/196/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, 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 stability 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- withdrawn,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 standard may be issued at a later date.

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RADIO-FREQUENCY CONNECTORS –

Part 35: Sectional specification for 2,92 series RF connectors

1 Scope

This sectional specification provides information and rules for preparation of detail specification of 2,92 series RF coaxial connectors together with the pro-forma blank detail specification.

It also prescribes mating face dimensions for high performance connectors - grade 1, dimensional detail of standard test connectors - Grade 0, gauging information and tests selected from IEC 61169-1 applicable to all detail specifications relating to 2,92 series RF coaxial connectors.

This specification indicates recommended performance characteristics to be considered when writing a detail specification and it covers test schedules and inspection requirements for assessment levels M and H.

The 2,92 series coaxial connectors with characteristic impedance 50 Ω , 2,92 mm inner diameter of outer conductor and screw coupling, are used for millimeter wave applications, connecting with RF cables or microstrips. The operating frequency limit is up to 40 GHz.

Mating interface standards of the 2,92 series connectors are similar to IEEE std 287-2007 (2,92 mm) and MIL-std-348A (SMK). The 2,92 connectors can be inter-mated with SMA, and 3,5 mm connectors as per following standards. SMA: IEC 61169-35, MIL-PRF-39012D and MIL-STD-348A. 3,5 mm: IEC 60169-23, IEEE std 287-2007.

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 61169-1:1992, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*[1]
Amendment 1 (1996)
Amendment 2 (1997)

3 Mating face and gauge information

3.1 Dimensions – High performance connectors – Grade 1

3.1.1 Connector with pin-centre contact

Inch dimensions are original dimensions.

All undimensioned pictorial configurations are for reference purpose only.

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[1] There exists a consolidated edition 1.2 (1998) that comprises IEC 61169-1:1992, its Amendment 1:1996 and its Amendment 2:1997.

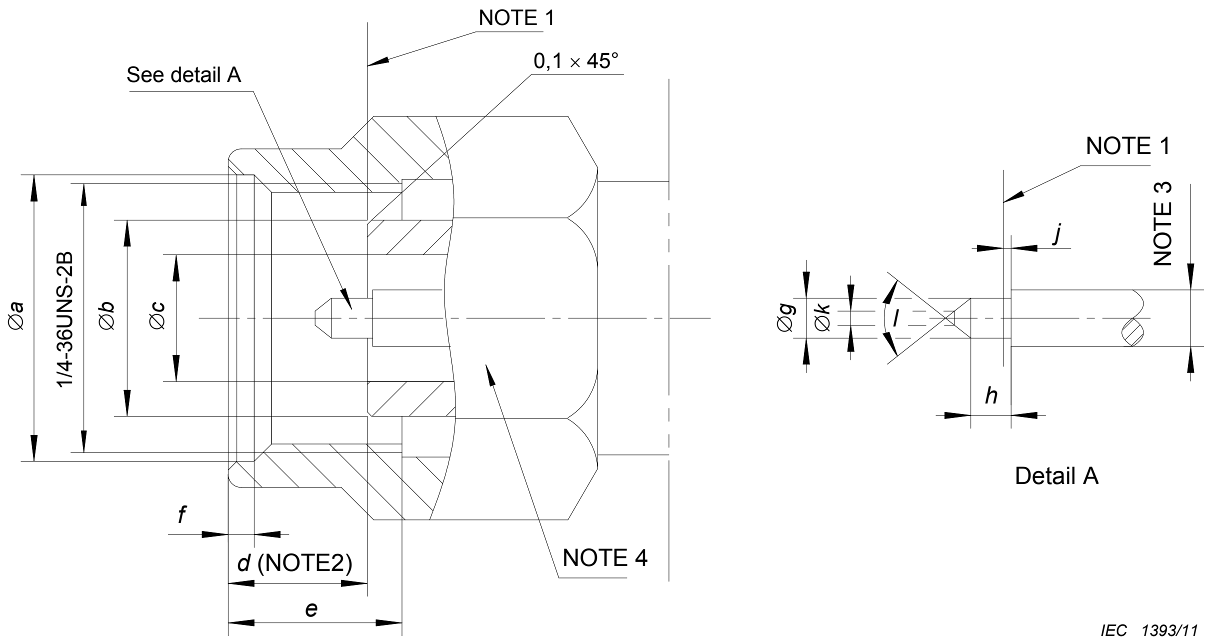

Figure 1 – Connector with pin-centre contact (for dimensions and notes, see Table 1)

Table 1 – Dimensions of connector with pin-centre contact

Ref.	mm		in	
	Min.	Max.	Min.	Max.
a	6,48	6,73	0,255	0,256
b	4,521	4,592	0,1780	0,1808
c	2,90	2,95	0,114	0,116
d	2,36	3,56	0,0929	0,1401
e	3,43	4,01	0,1351	0,1579
f	0,38	1,14	0,015	0,045
g	0,906	0,922	0,0357	0,0363
h	1,02	1,12	0,040	0,044
j	0,02	0,13	0,0008	0,0051
k	0,20	0,30	0,008	0,012
l	56°	64°	56°	64°

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Nut fully forward.

NOTE 3 Diameter is chosen to obtain a normal impedance of 50 Ω.

NOTE 4 Hexagon, width across two sides is 7,85 mm to 8,00 mm (0,309 in to 0,315 in), length of the plane is 3,18 mm (0,125 in) min.

3.1.2 Connector with socket-centre contact

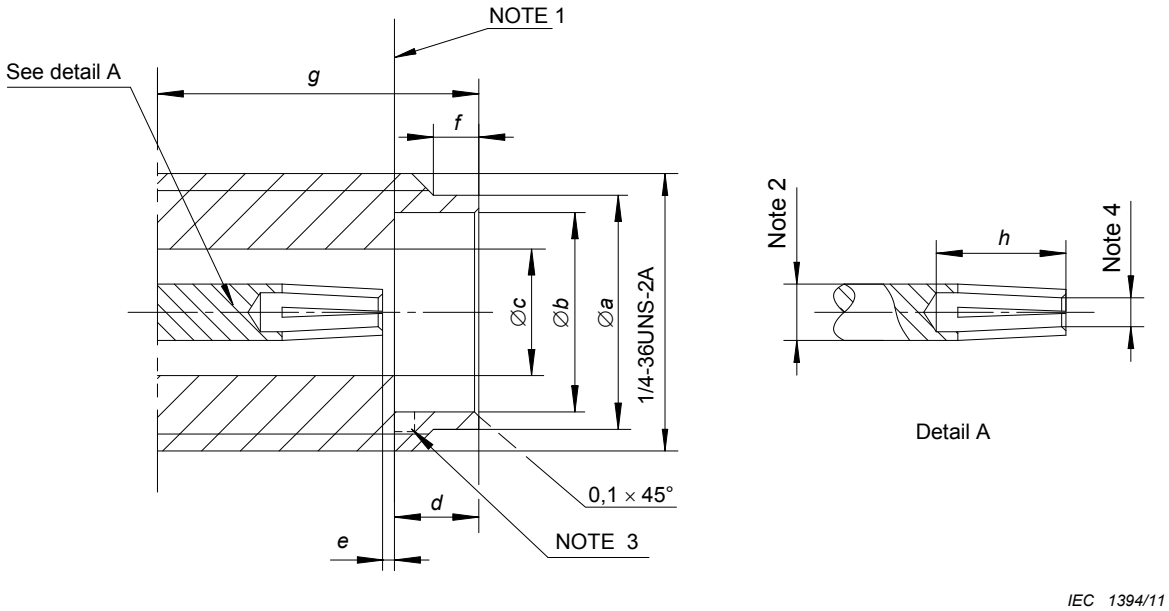

Figure 2 – Connector with socket-centre contact (for dimensions and notes, see Table 2)

Table 2 – Dimensions of connector with socket-centre contact

Ref.	mm		in	
	Min.	Max.	Min.	Max.
a	5,28	5,46	0,208	0,215
b	4,60	4,65	0,181	0,183
c	2,90	2,95	0,114	0,116
d	1,88	1,98	0,074	0,078
e	0,02	0,13	0,0008	0,0051
f	0,38	1,14	0,015	0,045
g	5,54	—	0,218	—
h	2,65	—	0,104	—

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Diameter is chosen to obtain a normal impedance of 50 Ω.

NOTE 3 Design for root cut to be allowed. Chamfer not to be allowed.

NOTE 4 Design of centre contact is optional, but should meet electrical and mechanical performance requirements when mating with Ø 0,906 mm to Ø 0,922 mm (Ø 0,0357 in ~ Ø 0,0363 in) gauge pin.