

INTERNATIONAL STANDARD



**Radio-frequency connectors –
Part 11: Sectional specification for RF coaxial connectors with inner diameter of
outer conductor 9,5 mm with threaded coupling – Characteristic impedance 50 Ω
(type 4,1-9,5)**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –**Part 11: Sectional specification for RF coaxial connectors with inner diameter of outer conductor 9,5 mm with threaded coupling – Characteristic impedance 50 Ω (type 4,1-9,5)**

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International Standard IEC 61169-11 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.

The text of this International Standard is based on the following documents:

CDV	Report on voting
46F/322A/CDV	46F/336/RVC

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

This document 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
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RADIO-FREQUENCY CONNECTORS –

Part 11: Sectional specification for RF coaxial connectors with inner diameter of outer conductor 9,5 mm with threaded coupling – Characteristic impedance 50 Ω (type 4,1-9,5)

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 with threaded coupling, typically for use in 50 Ω cable networks (type 4,1-9,5).

This document prescribes mating face dimensions for general purpose connectors – grade 2, dimensional details of standard test connectors-grade 0, gauging information and tests selected from IEC 61169-1, applicable to all detail specifications relating to series 4,1-9,5 RF 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 4,1-9,5 types RF coaxial connectors with nominal impedance 50 Ω are threaded coupling units which are used with all kinds of RF cables and microstrips in microwave transmission systems. And the working frequency is up to 14 GHz.

NOTE Metric dimension are original dimensions. All undimensioned pictorial configurations are for reference purpose only.

2 Normative references

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

IEC 61169-1:2013, *Radio frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

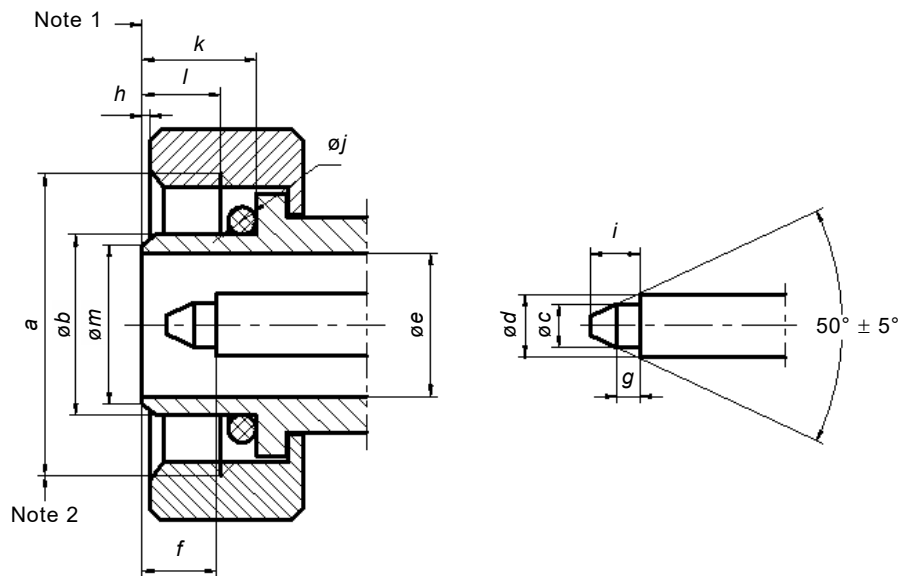
IEC 62037-3, *Passive RF and microwave devices, intermodulation level measurement – Part 3: Measurement of passive intermodulation in coaxial connectors*

3 Mating face and gauge information

3.1 Dimensions – General connectors – Grade 2

3.1.1 Connector with pin centre contact

The mating face of connector with pin centre contact is shown in Figure 1 and its dimensions are shown in Table 1.



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NOTE 1 Mechanical and electrical reference plane.

NOTE 2 "M20×1" indicates metric screw thread with nominal diameter 20 mm and screw-pitch of 1 mm.

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

Table 1 – Dimensions of connector with pin centre contact

Ref.	mm	
	Min.	Max.
<i>a</i>	M20×1	
<i>b</i>	11,84	12,02
<i>c</i>	2,855	2,945
<i>d</i> ^a	4,13 (nominal)	
<i>e</i>	9,45	9,55
<i>f</i>	5,05	5,35
<i>g</i>	1,4	1,6
<i>h</i>	0	1,0
<i>i</i>	3,0	4,0
<i>j</i> ^b	–	–
<i>k</i> ^c	–	–
<i>l</i>	6,2	–
<i>m</i>	10,8	–

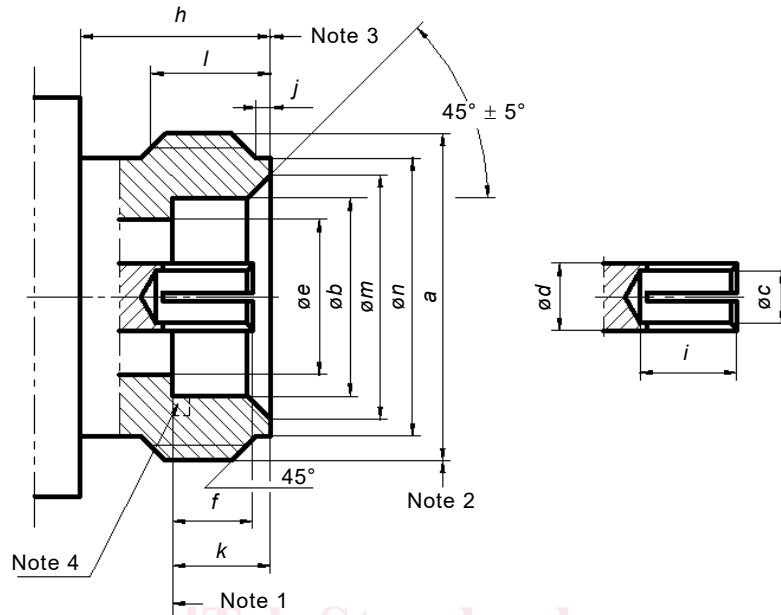
^a This dimension tolerance is determined by the tolerance of characteristic impedance.

^b Sealing gasket to meet climatic and environmental requirements.

^c The dimension given assumes no sealing gasket fitted. If sealing is required, dimension *k* (Figure 1) should be arranged so that with the gasket chosen adequate pressure is applied to the front face (dimensions *m* and *b*) of the socket connector (Figure 2) to ensure adequate sealing.

3.1.2 Connector with socket centre contact

The mating face of connector with socket centre contact is shown in Figure 2 and its dimensions are shown in Table 2.



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NOTE 1 Mechanical and electrical reference plane.

NOTE 2 "M20×1" indicates metric screw thread with nominal diameter 20 mm and screw-pitch of 1 mm.

NOTE 3 Minimum distance from installation flanges or accessories.

NOTE 4 Design for undercut to be allowed.

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