

INTERNATIONAL STANDARD

NORME INTERNATIONALE

**Radio-frequency connectors –
Part 66: Sectional specification for RF coaxial connectors with 5 mm inner
diameter of outer conductor, with quick-lock- or screw-coupling, characteristic
impedance 50 Ω (series 2,2-5)**

IEC 61169-66:2021

<https://standards.iteh.ai/catalog/standards/sist/adcec84a-d7d0-4fd7-aa7d-88210c822021>

**Connecteurs pour fréquences radioélectriques –
Partie 66: Spécification intermédiaire relative aux connecteurs coaxiaux pour
fréquences radioélectriques avec diamètre intérieur du conducteur extérieur de
5 mm à couplage à verrouillage rapide ou à vis, impédance caractéristique de
50 Ω (série 2,2-5)**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL STANDARD

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Radio-frequency connectors –

Part 66: Sectional specification for RF coaxial connectors with 5 mm inner diameter of outer conductor, with quick-lock- or screw-coupling, characteristic impedance 50 Ω (series 2,2-5)

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Connecteurs pour fréquences radioélectriques –

Partie 66: Spécification intermédiaire relative aux connecteurs coaxiaux pour fréquences radioélectriques avec diamètre intérieur du conducteur extérieur de 5 mm à couplage à verrouillage rapide ou à vis, impédance caractéristique de 50 Ω (série 2,2-5)

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
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INTERNATIONALE

ICS 33.120.30

ISBN 978-2-8322-9468-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –

Part 66: Sectional specification for RF coaxial connectors with 5 mm inner diameter of outer conductor, with quick-lock- or screw-coupling, characteristic impedance 50 Ω (series 2,2-5)

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IEC 61169-66 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. It is an International Standard.

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

FDIS	Report on voting
46F/543/FDIS	46F/552/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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

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INTRODUCTION

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RADIO-FREQUENCY CONNECTORS –

Part 66: Sectional specification for RF coaxial connectors with 5 mm inner diameter of outer conductor, with quick-lock- or screw-coupling, characteristic impedance 50 Ω (series 2,2-5)

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 series 2,2-5 RF coaxial connectors with quick-lock- or screw coupling, characteristic impedance 50 Ω , for operating frequencies up to 6 GHz. Typical use is in wireless telecommunication systems.

It describes mating face dimensions for general purpose connectors – grade 2, gauging information and tests selected from IEC 61169-1, applicable to all detail specifications relating to series 2,2-5 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.

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

2 Normative references

[IEC 61169-66:2021](https://standards.iteh.ai/catalog/standards/sist/adcec84a-d7d0-4fd7-aa7d-681854298674/iec-61169-66-2021)

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The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 61169-1:2013, *Radio frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

IEC 62037-1:2012, *Passive RF and microwave devices, intermodulation level measurement – Part 1: General requirements and measuring methods*

3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

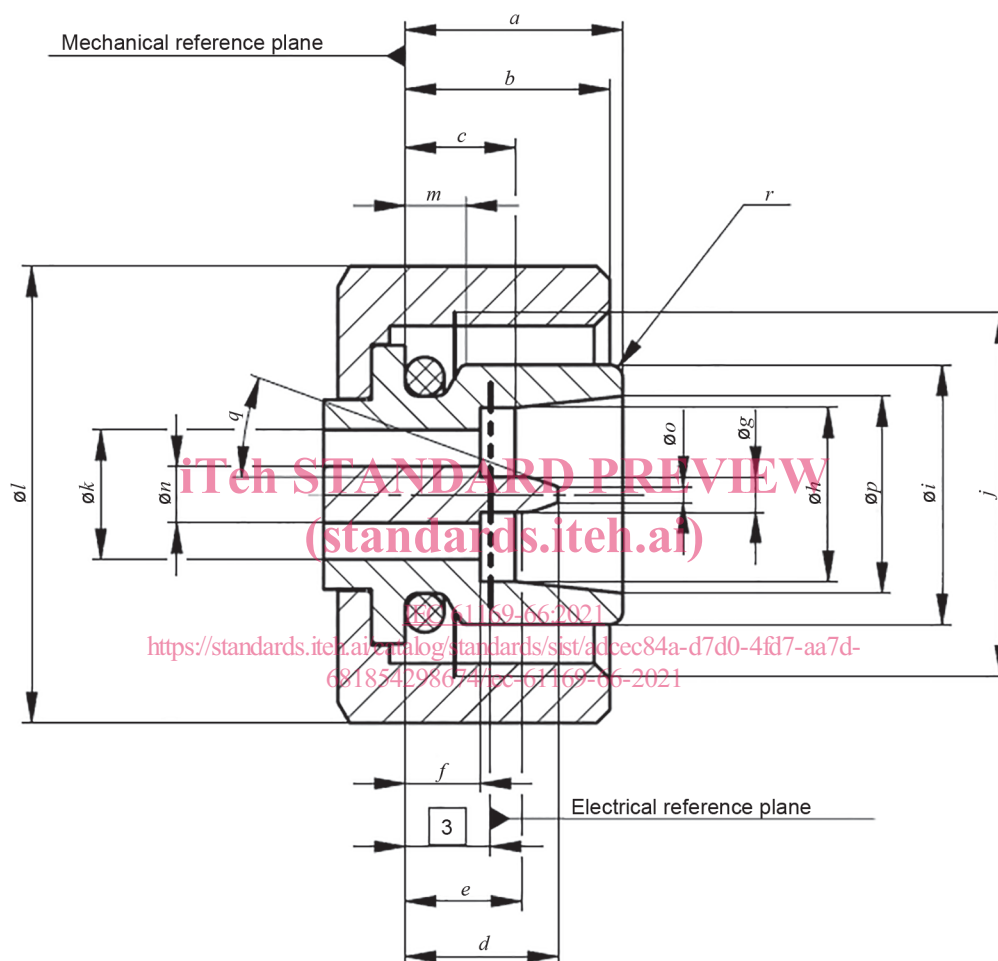
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- ISO Online browsing platform: available at <http://www.iso.org/obp>

4 Mating face and gauge information

4.1 Dimensions – General purpose connectors – Grade 2

4.1.1 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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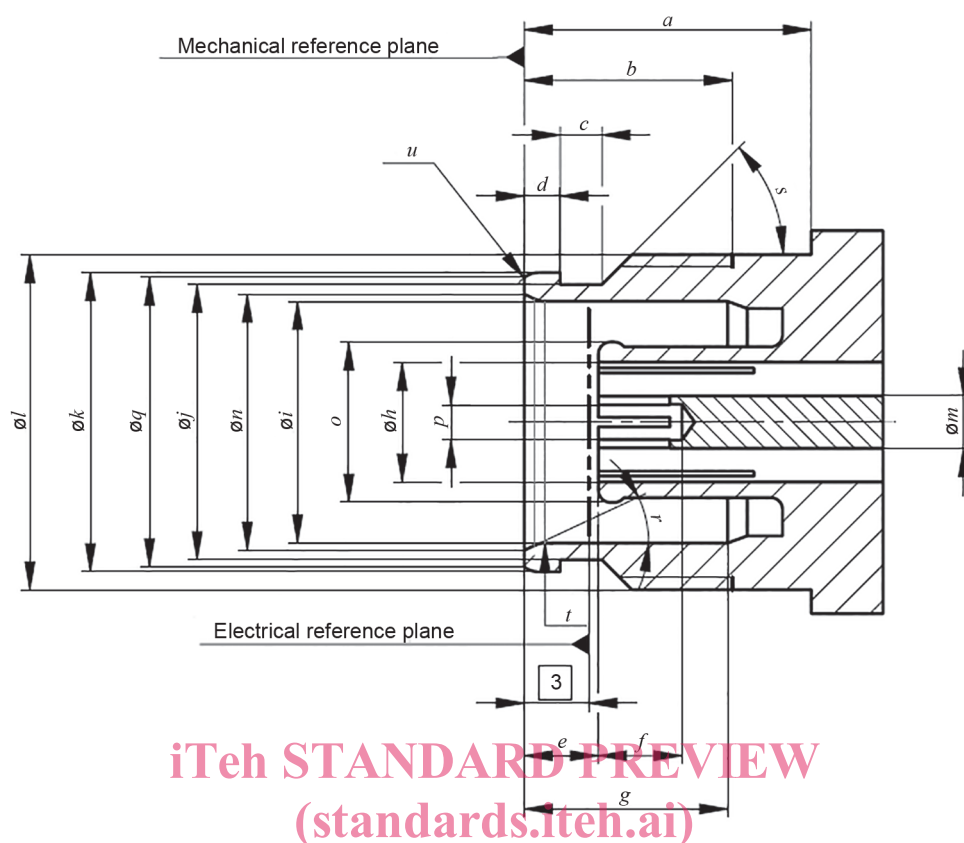
Figure 1 – Connector with pin centre contact

Table 1 – Dimensions of connector with pin centre contact – Grade 2

Ref.	mm		Remarks
	Min.	Max.	
<i>a</i>	8,30	8,50	
<i>b</i>	7,50	8,00	See Note 1
<i>c</i>	4,00	5,00	
<i>d</i>	--	6,20	
<i>e</i>	4,40	--	
<i>f</i>	--	2,90	See Note 2
<i>g</i>	1,32	1,37	
<i>h</i>	6,67	6,72	
<i>i</i>	9,98	10,02	
<i>j</i>	M14x1 – tolerance 6H		thread
<i>k</i>	5,0 nominal		for $Z = 50 \Omega$
<i>l</i>	--	19,50	
<i>m</i>	--	2,50	
<i>n</i>	2,2 nominal	--	for $Z = 50 \Omega$
<i>o</i>	--	0,70	
<i>p</i>	7,50	8,00	
<i>q</i>	20° nominal		
<i>r</i>	0,50 nominal		radius
NOTE 1 Minimum dimension only for screw coupling types.			
NOTE 2 Applicable for inner and outer contact.			

4.1.2 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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Figure 2 – Connector with socket centre contact
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Table 2 – Dimensions of connector with socket centre contact – Grade 2

Ref.	mm		Remarks
	Min.	Max.	
a	9,00	--	
b	8,50	--	
c	1,70	1,90	
d	1,44	1,50	
e	3,10	3,35	See Note 1
f	3,50	--	
g	8,50	--	
h	5,0 nominal		for $Z = 50 \Omega$
i	10,05	10,10	
j	11,45	11,55	
k	12,45	12,55	
l	M14x1 tolerance 6g		thread
m	2,2 nominal		for $Z = 50 \Omega$
n	10,65	10,75	
o	--	7,5	See Notes 2 and 3
p			See Note 3
q	12,05	12,15	
r	25° nominal		

Ref.	mm		Remarks
	Min.	Max.	
<i>s</i>	45° nominal		
<i>t</i>	1,0 nominal		radius
<i>u</i>	1,0 nominal		radius
NOTE 1 Applicable for inner and outer contact.			
NOTE 2 In unmated condition.			
NOTE 3 Resilient to meet gauging requirements.			

4.2 Presentation of possible coupling mechanisms

4.2.1 Screw type (see Figure 3)

Dimensions in millimetres

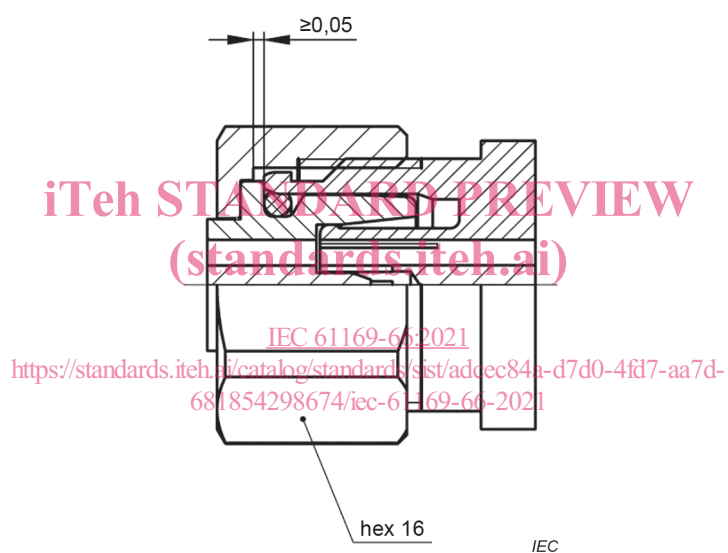


Figure 3 – Screw type connector

4.2.2 Hand screw type (see Figure 4)

Dimensions in millimetres

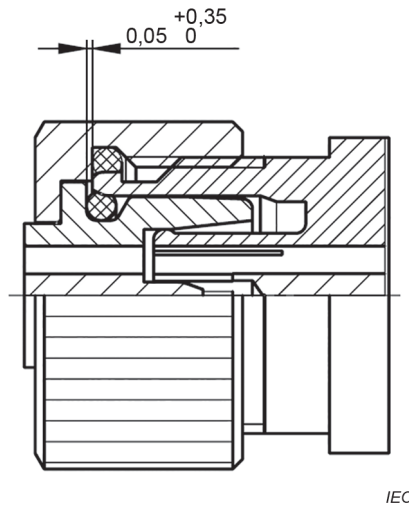


Figure 4 – Hand-screw type connector

4.2.3 Quick lock type (see Figure 5)

Dimensions in millimetres

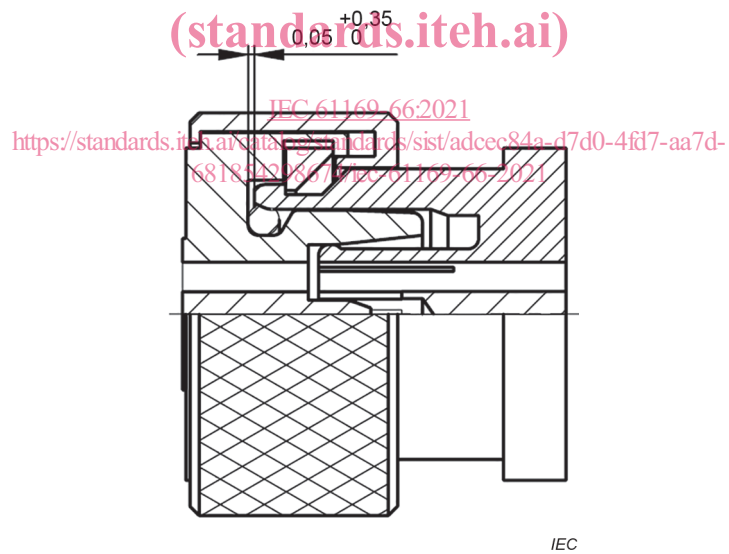
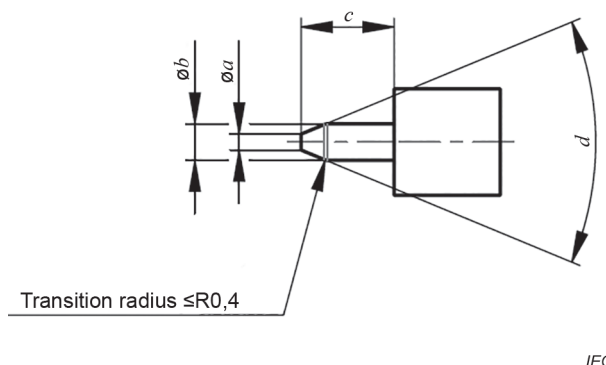


Figure 5 – Quick lock type connector

4.3 Gauges

4.3.1 Gauge pins for socket-centre contact (see Figure 6)

Dimensions in millimetres



**Figure 6 – Gauge pins for socket-centre contact
(for dimensions, see Table 3)**

Table 3 – Dimensions of gauge pins for socket-centre contact

Ref	Gauge A mm		Gauge B mm	
	Min.	Max.	Min.	Max.
<i>a</i>	0,67	0,73	0,67	0,73
<i>b</i>	1,370	1,377	1,313	1,320
<i>c</i>	3,3	3,5	3,3	3,5
<i>d</i>	44°	46°	36°	44°
Material: steel, polished, surface roughness: Ra = 0,4 µm maximum.				

Test procedure:

The gauge A shall be completely inserted three times into the socket centre contact. This is a sizing operation.

After sizing, gauge A shall be inserted into socket centre contact. The insertion force shall not exceed 10 N.

Separation force is measured with gauge B and shall require a minimum force of 0,8 N.