

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Radio-frequency connectors –  
Part 54: Sectional specification for coaxial connectors with 10 mm inner  
diameter of outer conductor, nominal characteristic impedance 50  $\Omega$ ,  
series 4,3-10**

[IEC 61169-54:2016](#)

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**Connecteurs pour fréquences radioélectriques –  
Partie 54: Spécification intermédiaire relative aux connecteurs coaxiaux avec  
diamètre intérieur du conducteur extérieur de 10 mm, impédance caractéristique  
nominale de 50  $\Omega$ , série 4,3-10**



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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## RADIO-FREQUENCY CONNECTORS –

**Part 54: Sectional specification for coaxial connectors  
with 10 mm inner diameter of outer conductor,  
nominal characteristic impedance 50 Ω, series 4,3-10**

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

FDIS	Report on voting
46F/348/FDIS	46F/354/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.

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## INTRODUCTION

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## RADIO-FREQUENCY CONNECTORS –

### Part 54: Sectional specification for coaxial connectors with 10 mm inner diameter of outer conductor, nominal characteristic impedance 50 $\Omega$ , series 4,3-10

#### 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 coaxial connectors with 10 mm inner diameter of outer conductor, characteristic impedance 50  $\Omega$ , series 4,3-10 with screw type, hand screw type or quick-lock type coupling, for an upper operating frequency limit of 6 GHz, for use in wireless telecommunication and wireless network applications in conjunction with appropriate transmission line types for these applications.

It also describes mating face dimensions for general purpose connectors, gauging information and tests selected from IEC 61169-1, applicable to all detail specifications relating to 4,3-10 series connectors.

This specification indicates the 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.

#### 2 Normative references

[IEC 61169-54:2016](#)

<https://standards.iteh.ai/catalog/standards/sist/a1d52b0a-ca3a-4600-b1b2-3e021a167a16/iec-61169-54-2016>

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

#### 3 Mating face and gauge information

##### 3.1 Dimensions – General connectors – Grade 2

##### 3.1.1 Connector with pin-centre contact (see Figure 1)

Metric dimensions are original dimensions. All un-dimensioned pictorial configurations are for reference purpose only.

Dimensions in millimetres

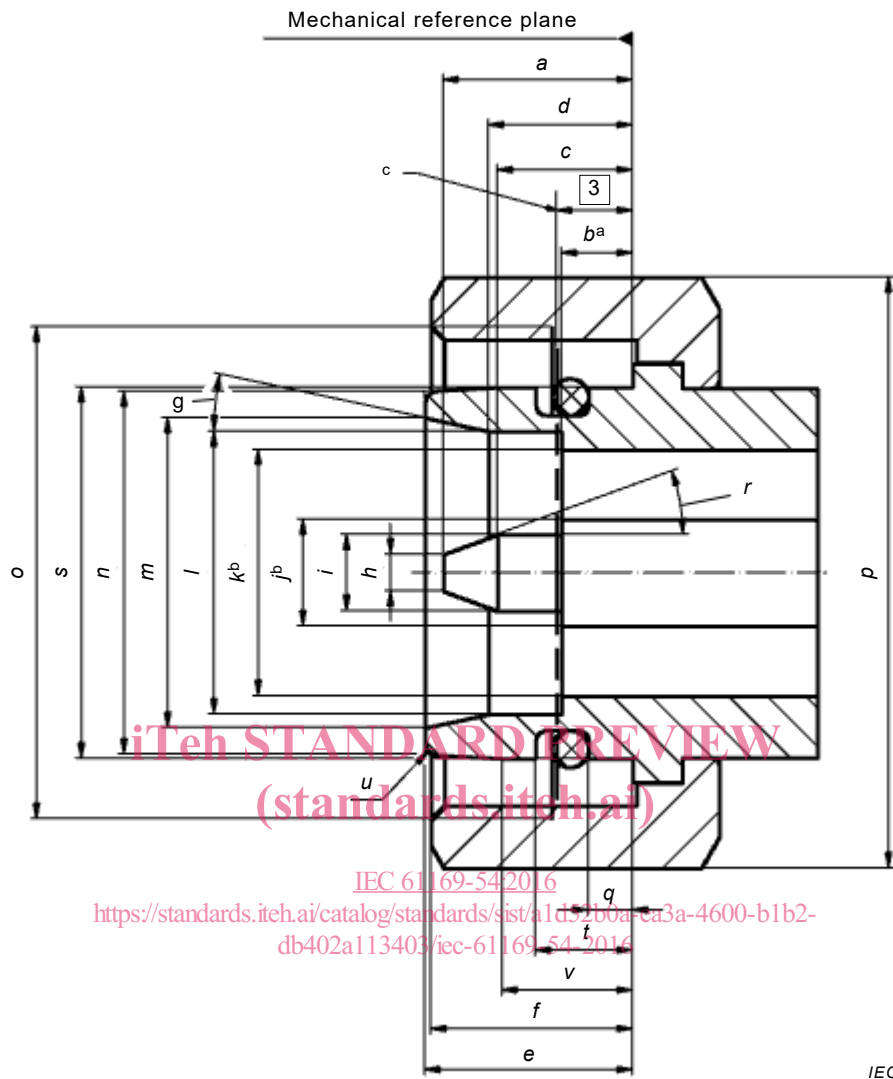


Figure 1 – Connector with pin-centre contact (for dimensions and key, see Table 1)

Table 1 – Dimensions of connector with pin-centre contact

Ref.	mm		Additional notes
	Min.	Max.	
<i>a</i>	–	8,0	
<i>b</i>	–	2,9	<sup>a</sup>
<i>c</i>	5,0	–	
<i>d</i>	4,4	–	
<i>e</i>	8,3	8,5	
<i>f</i>	8,0	8,5	
<i>g</i>	10°	14°	
<i>h</i>	–	2,3	diameter
<i>i</i>	3,07	3,13	diameter
<i>j</i>	4,35 nom.		diameter <sup>b</sup>
<i>k</i>	10,0 nom.		diameter <sup>b</sup>
<i>l</i>	11,47	11,53	diameter
<i>m</i>	12,5	–	diameter
<i>n</i>	14,7	14,8	diameter
<i>o</i>	M20 × 1 tolerance 6H		thread
<i>p</i>	22 nom.		wrench size
<i>q</i>	1,8		
<i>r</i>	20° nom.		
<i>s</i>	15,07	15,11	diameter
<i>t</i>	4,1		
<i>u</i>	0,5 nom.		radius
<i>v</i>	5,1	5,5	

<sup>a</sup> Applicable for inner and outer contact.

<sup>b</sup> For 50 Ω nominal impedance.

<sup>c</sup> Electrical reference plane.

3.1.2 Connector with socket-centre contact (see Figure 2)

Dimensions in millimetres

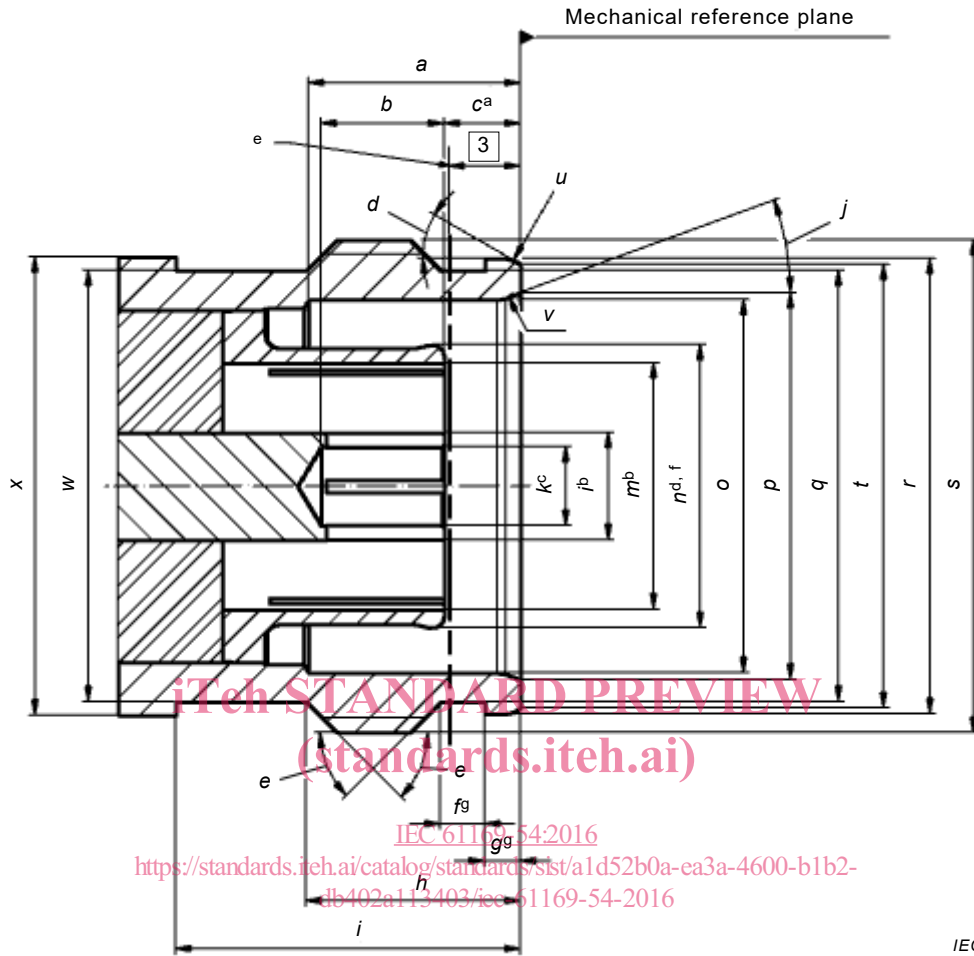


Figure 2 – Connector with socket-centre contact (for dimensions and key, see Table 2)

IEC

Table 2 – Dimensions of connector with socket-centre contact

Ref.	mm		Additional notes
	Min.	Max.	
a	8,5	–	
b	5,0	–	
c	3,1	3,5	a
d	30° nom.		
e	45° nom.		g
f	1,7	1,9	g
g	1,44	1,50	g
h	8,7	9,0	
i	13,9	14,1	
j	20° nom.		
k			c
l	4,35 nom.		diameter <sup>b</sup>
m	9,8	10,2	diameter <sup>b</sup>
n	–	12,3	d f
o	15,13	15,19	diameter
p	15,7	15,9	diameter
q	17,4	17,5	diameter <sup>g</sup>
r	18,44	18,5	diameter <sup>g</sup>
s	M20 × 1 tolerance 6g		thread
t	17,9	18,1	diameter
u	0,6 nom.		radius
v	1,0 nom.		radius
w	17,45	17,55	diameter
x	18,6	–	diameter

<sup>a</sup> Applicable for inner and outer contact.

<sup>b</sup> For 50 Ω nominal impedance.

<sup>c</sup> Resilient to meet the requirements with gauge pins for socket centre contact.

<sup>d</sup> Expand to meet the requirements with gauge rings for socket outer contact.

<sup>e</sup> Electrical reference plane.

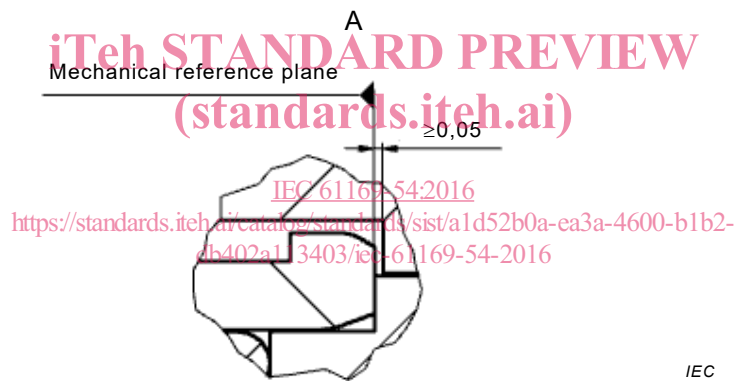
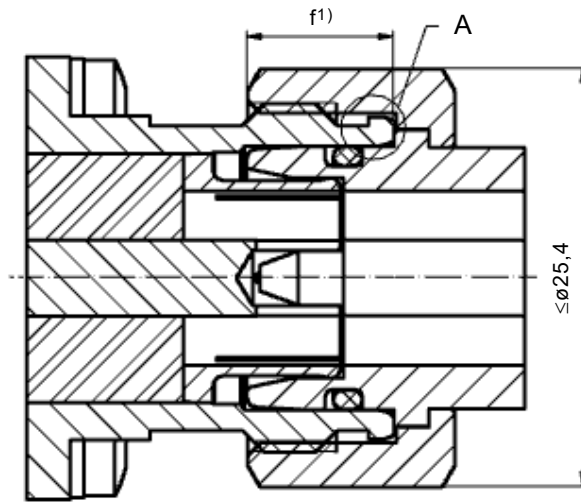
<sup>f</sup> In unmated condition.

<sup>g</sup> Rim and groove on socket front provided for quick lock attachment.

3.1.3 Presentation of possible coupling mechanisms

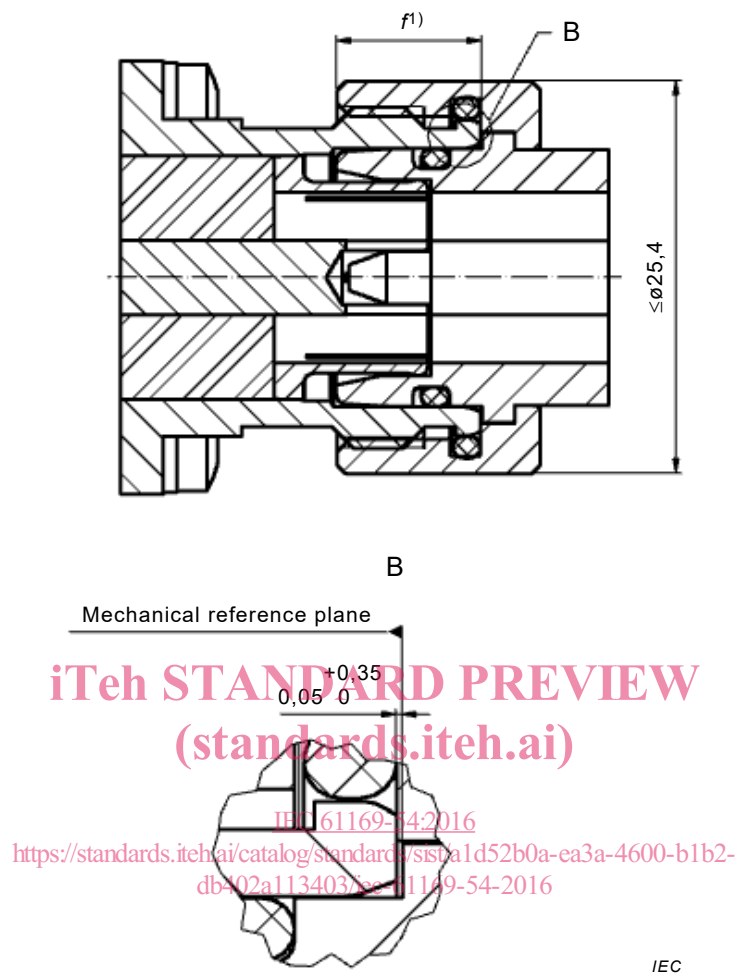
3.1.3.1 Screw type (see Figure 3)

Dimensions in millimetres



1) According to Table 1.

Figure 3 – Screw type

**3.1.3.2 Hand screw type (see Figure 4)***Dimensions in millimetres*

1) According to Table 1.

**Figure 4 – Hand screw type**