

INTERNATIONAL STANDARD



**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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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**

FOREWORD

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This redline version of the official IEC Standard allows the user to identify the changes made to the previous edition IEC 61169-54:2016. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.

IEC 61169-54 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.

This second edition cancels and replaces the first edition published in 2016. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) updated patent statement,
- b) Table 8: some values changed.

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

FDIS	Report on voting
46F/574/FDIS	46F/577/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.

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- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent ~~concerning the design of these connectors given in 3.1.2~~. IEC takes no position concerning the evidence, validity, and scope of this patent right.

The holder of this patent right has assured IEC that s/he is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with IEC. ~~More detailed information may be obtained from:~~

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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 Ω , 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 Ω , 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

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.

4 Mating face and gauge information

4.1 Dimensions – General connectors – Grade 2

4.1.1 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

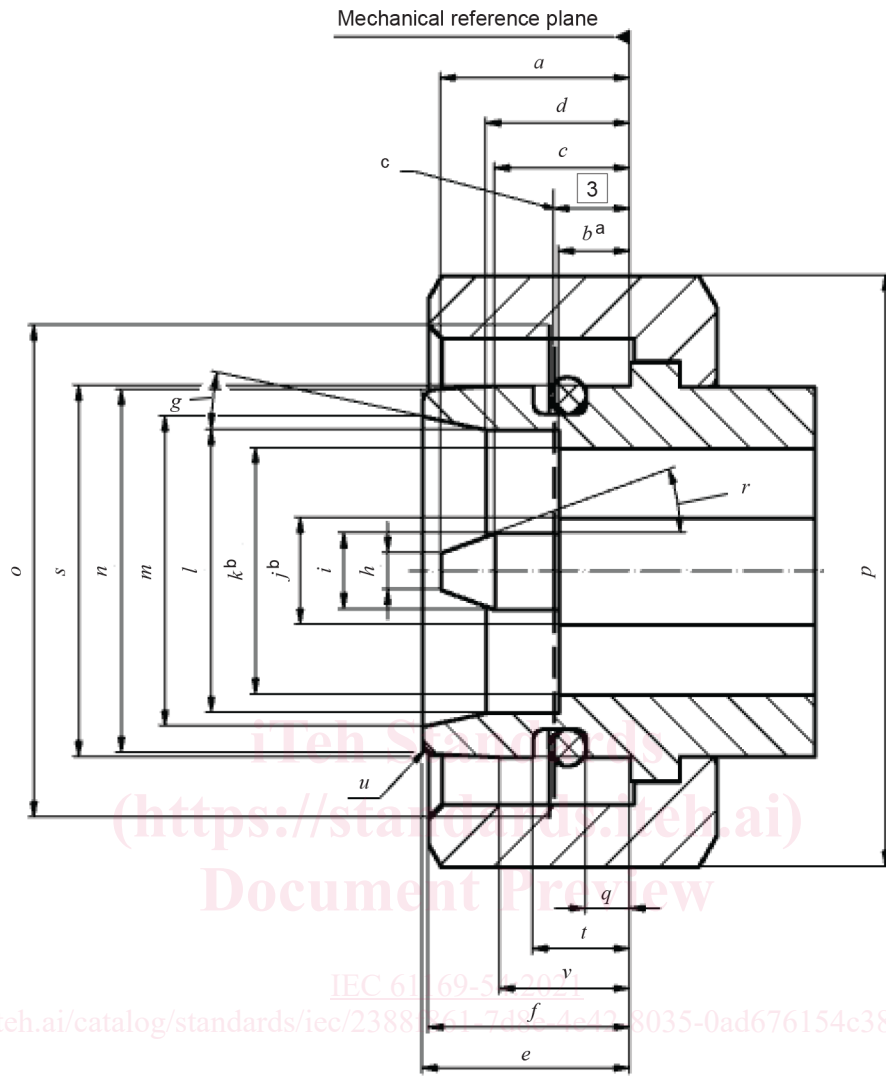


Figure 1 – Connector with pin-centre contact
(for dimensions and key, see Table 1)

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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	a
<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 ^b
<i>k</i>	10,0 nom.		diameter ^b
<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	
^a Applicable for inner and outer contact. ^b For 50 Ω nominal impedance. ^c Electrical reference plane.			

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

Dimensions in millimetres

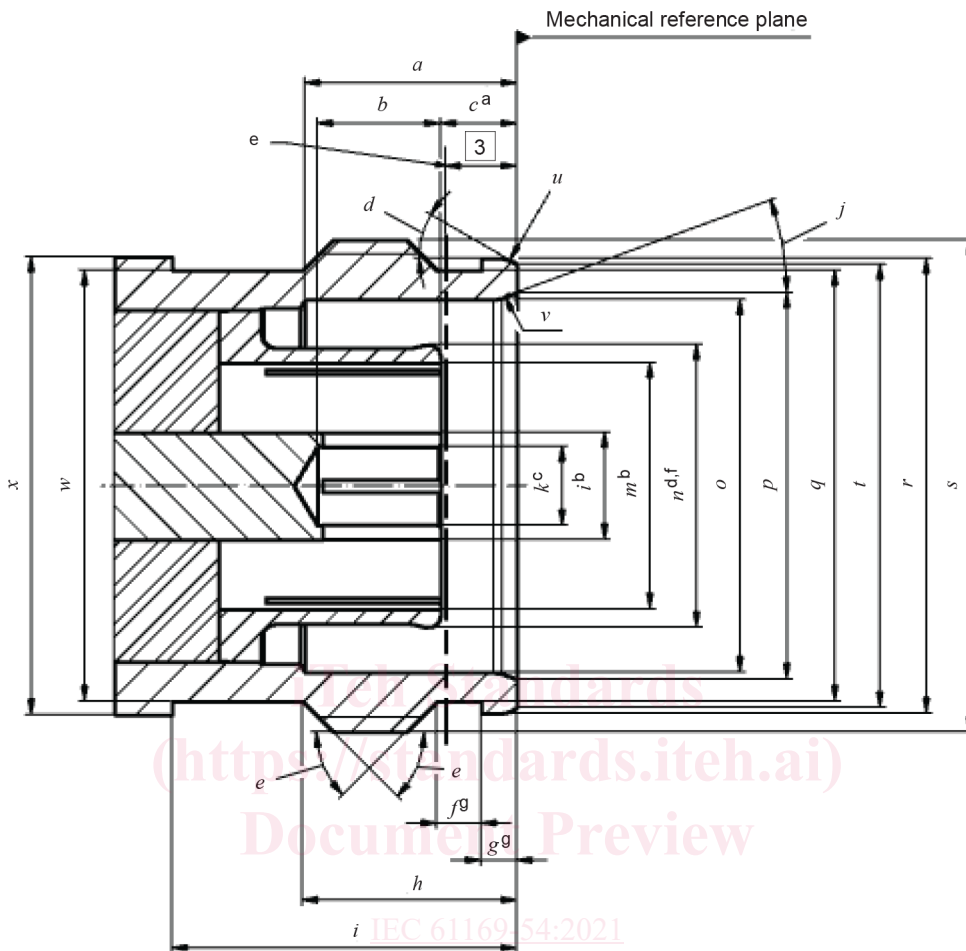


Figure 2 – Connector with socket-centre contact (for dimensions and key, see Table 2)

Table 2 – Dimensions of connector with socket-centre contact

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

^a Applicable for inner and outer contact.

^b For 50 Ω nominal impedance.

^c Resilient to meet the requirements with gauge pins for socket centre contact.

^d Expand to meet the requirements with gauge rings for socket outer contact.

^e Electrical reference plane.

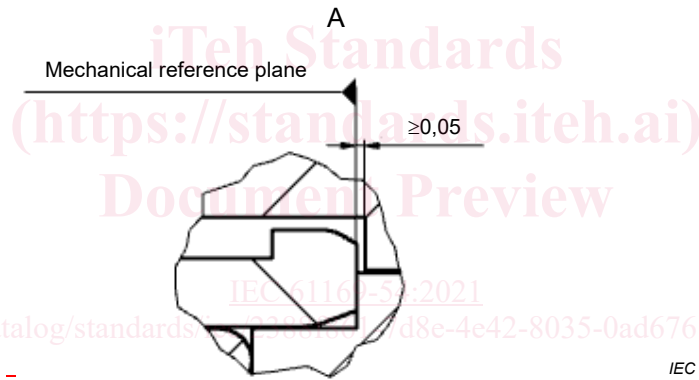
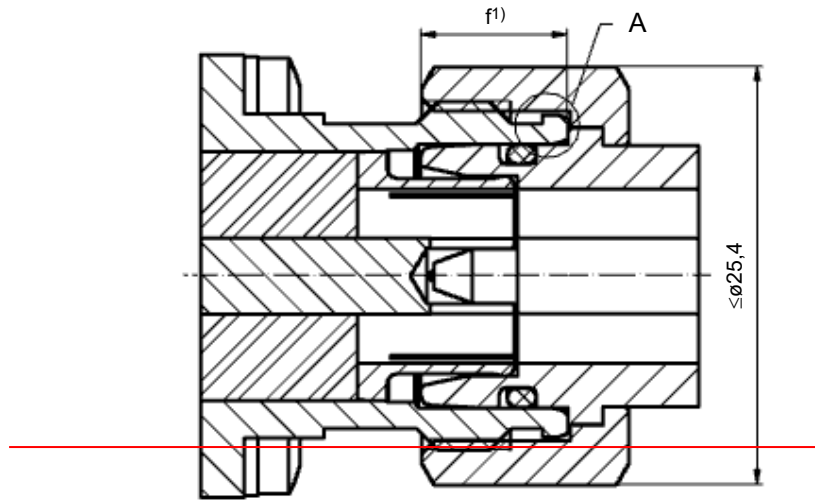
^f In unmated condition.

^g Rim and groove on socket front provided for quick lock attachment.

4.1.3 Presentation of possible coupling mechanisms

4.1.3.1 Screw type (see Figure 3)

Dimensions in millimetres



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4) According to Table 1.