

INTERNATIONAL STANDARD

**Radio-frequency connectors –
Part 38: Sectional specification – Radio frequency coaxial connectors model,
slide-in (rack and panel applications) – Characteristic impedance 50 Ω (type
TMA) – 50 Ω applications**

IEC 61169-38:2008

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –

**Part 38: Sectional specification –
Radio frequency coaxial connectors model,
slide-in (rack and panel applications) –
Characteristic impedance 50 Ω (type TMA) –
50 Ω applications**

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International Standard IEC 61169-38 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 standard cancels and replaces IEC/PAS 61169-38 published in 2007.

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

CDV	Report on voting
46F/75/CDV	46F/90/RVC

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 maintenance result 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- withdrawn,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 publication may be issued at a later date.

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RADIO-FREQUENCY CONNECTORS –

Part 38: Sectional specification – Radio frequency coaxial connectors model, slide-in (rack and panel applications) – Characteristic impedance 50 Ω (type TMA) – 50 Ω applications

1 Scope

This part of 61169, which is a sectional specification, provides information and rules for the preparation of detail specifications for series TMA r.f. connectors together with the pro forma blank detail specification.

Series TMA connectors have a characteristic impedance of 50 Ω and are normally used with R.F. cables or with microstrip in microwave fields that has a blind-entry and middle low-power. The connectors are usable up to a frequency of at least 6 GHz.

This specification also prescribes mating face dimensions for general purpose connectors, dimensional details of standard test connectors grade 0, gauging information and tests selected from QC 220000 (IEC 61169-1), applicable to all detail specifications relating to series TMA 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 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*

IEC QC 001005, *Register of firms, products and services approved under the IECQ system, including ISO 9000*

3 Mating face and gauge information

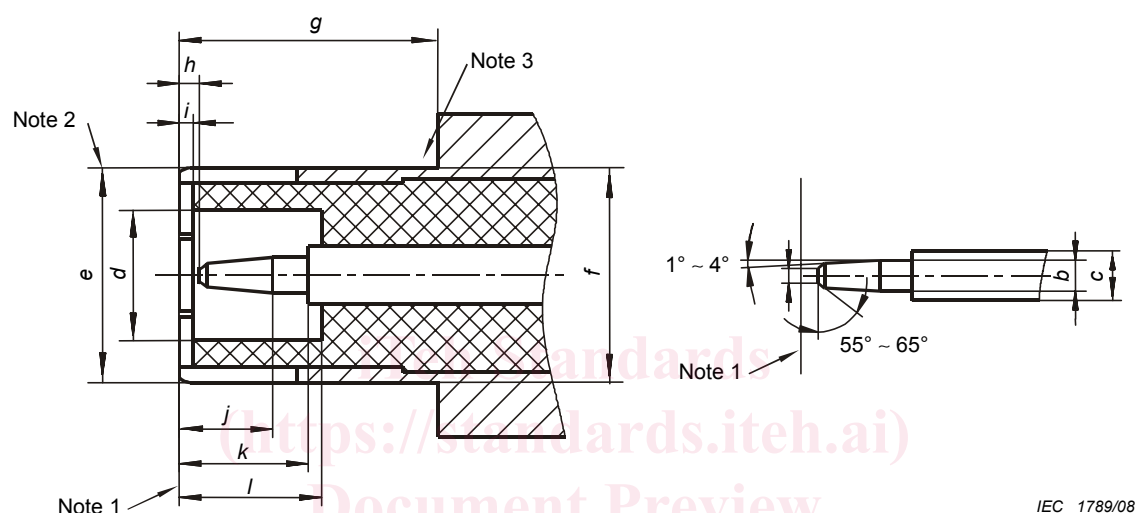
3.0 General

Metric dimensions are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

3.1 Dimensions – General connectors – Grade 2

3.1.1 Connector with pin centre contact (see Figure 1)



IEC 1789/08

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

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Table 1 – Dimensions of connector with pin-centre contact

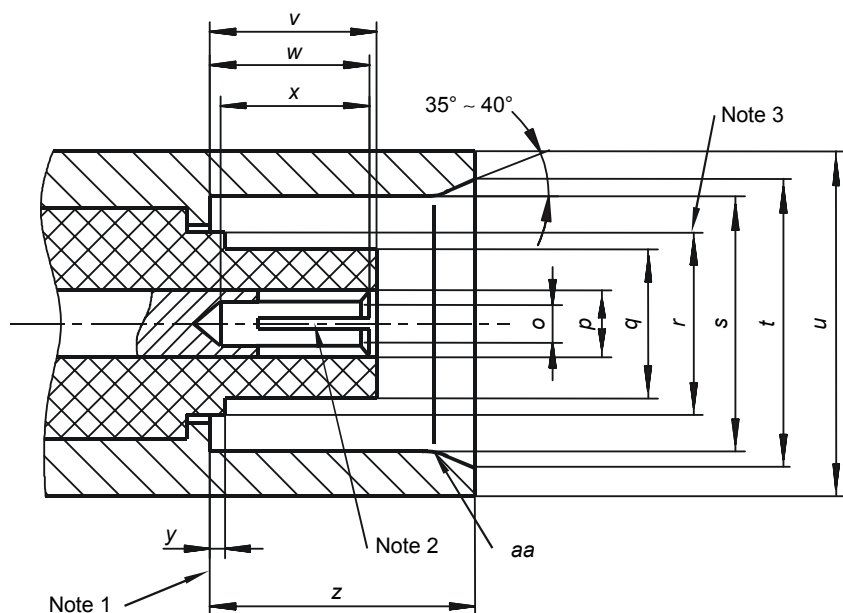
Ref.	mm		in		Notes
	min.	max.	min.	max.	
a	—	0,64	—	0,025	Diameter
b	1,32	1,37	0,052	0,054	Diameter
c	2,06	2,21	0,081	0,087	Diameter
d	4,83	—	0,190	—	Diameter
e	—	—	—	—	2/ Diameter
f	8,00	8,05	0,315	0,317	Diameter
g	8,60	—	0,339	—	
h	0,08	1,02	0,003	0,040	
i	0,15	—	0,006	—	
j	1,96	3,05	0,078	—	
k	5,33	5,84	0,210	0,230	
l	5,28	5,79	0,208	0,228	

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Mated and flared to meet electrical and mechanical requirements.

NOTE 3 MDesign and location of the sealing feature is optional but ensures the environmental performance requirements are met.

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



IEC 1790/08

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

Table 2 – Dimensions of connector with socket-centre contact

Ref.	mm		in		Notes
	min.	max.	min.	max.	
<i>o</i>	—	—	—	—	2/ Diameter
<i>p</i>	2,06	2,21	0,081	0,087	Diameter
<i>q</i>	—	4,72	—	0,186	Diameter
<i>r</i>	—	6,50	—	0,256	3/ Diameter
<i>s</i>	8,10	8,15	0,319	0,321	Diameter
<i>t</i>	10,00	10,15	0,394	0,400	Diameter
<i>u</i>	12,3	12,4	0,484	0,488	Diameter
<i>v</i>	4,78	5,28	0,188	0,208	
<i>w</i>	4,72	5,23	0,186	0,206	
<i>x</i>	4,95	—	0,195	—	
<i>y</i>	—	0,15	—	0,006	
<i>z</i>	8,31	8,51	0,327	0,335	
<i>aa</i>	—	—	—	—	4

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Slotted and closed to meet electrical and mechanical requirements.

NOTE 3 Applies only when dielectric extends beyond reference plane.

NOTE 4 Radius

3.2 Gauges

3.2.1 Connectors with pin-centre contact

3.2.1.1 Gauge for outer contact of pin connector (see Figure 3)

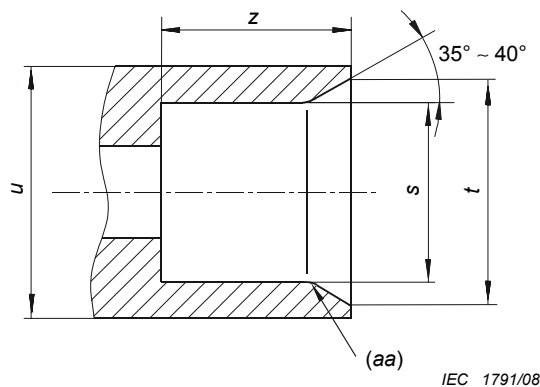


Figure 3 – Gauge for outer contact of pin connector (for dimensions, see Table 3)

Table 3 – Dimensions of gauge for outer contact of pin connector

Gauge A (for sizing purposes)					Gauge B (for measurement of gauge retention force for outer conductor) Mass of gauge(weight): 225 g ± 5 g				Notes
Ref.	mm		in		mm		in		
	min.	max.	min.	max.	min.	max.	min.	max.	
s	8,08	8,10	0,318	0,319	8,15	8,18	0,321	0,322	Diameter
t	10,00	10,15	0,394	0,400	10,00	10,15	0,394	0,400	Diameter
u	12,4	—	0,488	—	12,4	—	0,488	—	Diameter
z	8,41	8,46	0,331	0,333	8,36	8,41	0,329	0,331	Diameter
aa	0,8		0,031		0,8		0,031		2/ Radius
NOTE 1 Material: steel, polished, surface roughness: Ra ≤ 0,4 μm (16 μin).									
NOTE 2 Parentheses indicate the reference size for size.									

3.2.1.2 Test sequence

Gauge A shall be placed over the outer electrical contact of the connector once. This is a sizing operation and should only be carried out when the insulator is removed from the connector.

After this, gauge B shall be placed over the outer contact in a vertical position. The gauge shall be retained. This test can also be carried out on connectors when the insulator is not removed.