

PUBLICLY
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SPECIFICATION

IEC
PAS 61169-38

Pre-Standard

First edition
2007-06

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**



Reference number
IEC/PAS 61169-38:2007(E)



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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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IEC-PAS 61169-38 has been prepared by IEC 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.

The text of this PAS is based on the following document:

This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document

Draft PAS	Report on voting
46F/58A/PAS	46F/68A/RVD

Following publication of this PAS, which is a pre-standard publication, the technical committee or subcommittee concerned will transform it into an International Standard.

This PAS shall remain valid for an initial maximum period of three years starting from 2007-05. The validity may be extended for a single three-year period, following which it shall be revised to become another type of normative document, or shall be withdrawn.

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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 PAS 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 microstrip in microwave fields that has a blind entry and middle low power. The connectors can be used up to a frequency of at least 6 GHz.

It also prescribes mating face dimensions for general purpose connectors, 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 TMA connectors.

This PAS 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*

3 Mating face and gauge information

Metric dimensions are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

3.1 Dimensions – General connectors – Grade 2

3.1.1 Connectors with pin-centre contact

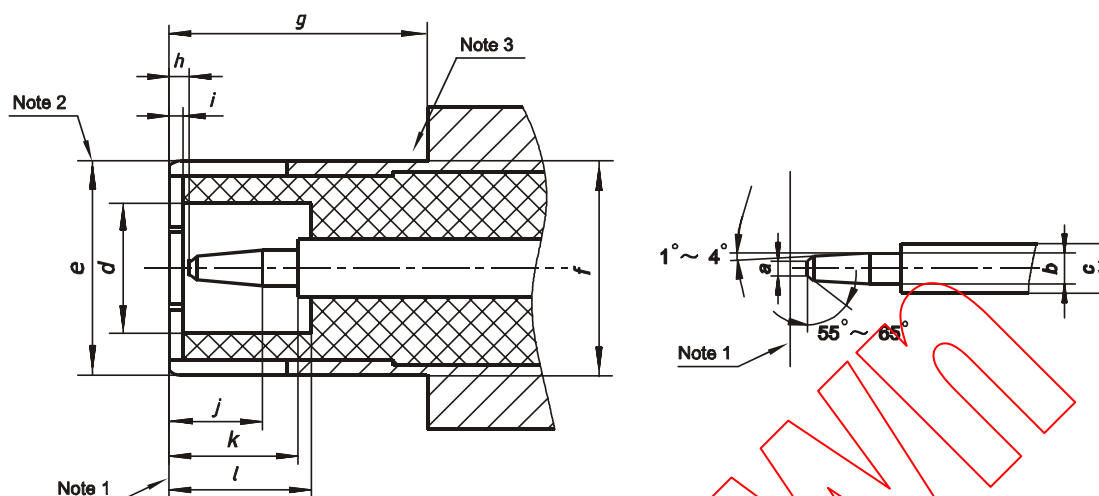


Figure 1 – Connectors with pin-centre contact
(for dimensions, see Table 1)

Table 1 – Dimensions of connector with pin-centre contact

Ref.	Millimetres		Inches		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	—	—	—	—	Diameter (see Note 2)
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 Slotted and flared to meet electrical and mechanical requirements.

NOTE 3 Design and location of the sealing feature is optional but should ensure that environmental performance requirement are met.

3.1.2 Connectors with socket-centre contact

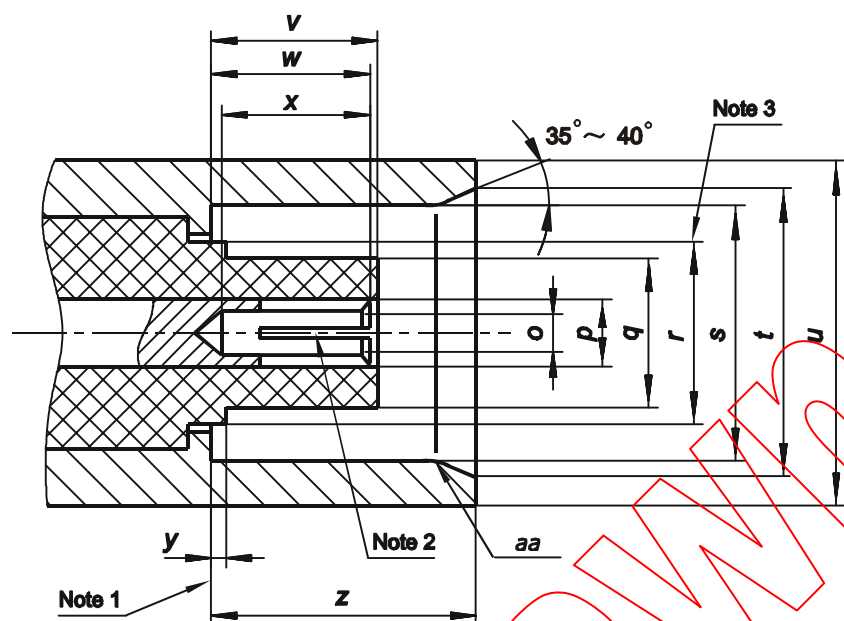


Figure 2 – Connectors with socket-centre contact
(for dimensions, see Table 2)

Table 2 – Dimensions of connectors with socket-centre contact

Ref.	Millimetres		Inches		Notes
	Min.	Max.	Min.	Max.	
<i>o</i>	—	—	—	—	Diameter (see Note 2)
<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	Diameter (see Note 3)
<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>	—	—	—	—	See Note 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

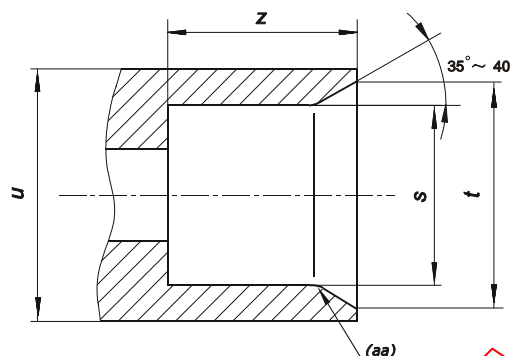


Figure 3 – Gauge for outer contact of pin connector
(for dimensions, see Table 3)

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

Gauge A (for sizing purposes)					Gauge B (for measurement of gauge retention force for outer conductor) Mass of gauge(weight): 225 ± 5 g				Notes
Ref.	Millimetres		Inches		Millimetres		Inches		
	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		Radius (see Note 2)
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 once over the outer electrical contact of the connector. 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.