

INTERNATIONAL STANDARD

**Radio-frequency connectors –
Part 24: Sectional specification – Radio frequency coaxial connectors with screw
coupling, typically for use in 75 Ω cable networks (type F)**



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –**Part 24: Sectional specification –
Radio frequency coaxial connectors
with screw coupling, typically for use
in 75 Ω cable networks (type F)**

FOREWORD

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International Standard IEC 61169-24 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 second edition cancels and replaces the first edition published in 2001. It constitutes a technical revision.

This second edition differs from the first edition in that all drawings have been reworked and improved to allow frequency extension up to 3 GHz.

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

FDIS	Report on voting
46F/108/FDIS	46F/128/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.

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- withdrawn,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.

RADIO-FREQUENCY CONNECTORS –

Part 24: Sectional specification – Radio frequency coaxial connectors with screw coupling, typically for use in 75 Ω cable networks (type F)

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 RF coaxial connectors with screw coupling, typically for use in 75 Ω cable networks (type F).

It describes the interface dimensions with gauging information and the mandatory tests selected from IEC 61169-1, applicable to all DS relating to type F connectors.

This specification indicates the recommended performance characteristics to be considered when writing a DS and covers test schedules and inspection requirements.

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*
Amendment 1 (1996)
Amendment 2 (1997)

EN 60068-2-52, *Environmental testing – Test methods. Tests. Test Kb. Salt mist cyclic (sodium chloride solution)*

3 Interface dimensions

3.1 Dimensions

Millimetres are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

3.1.1 Connector “F” type female socket (indoor) physical dimensions

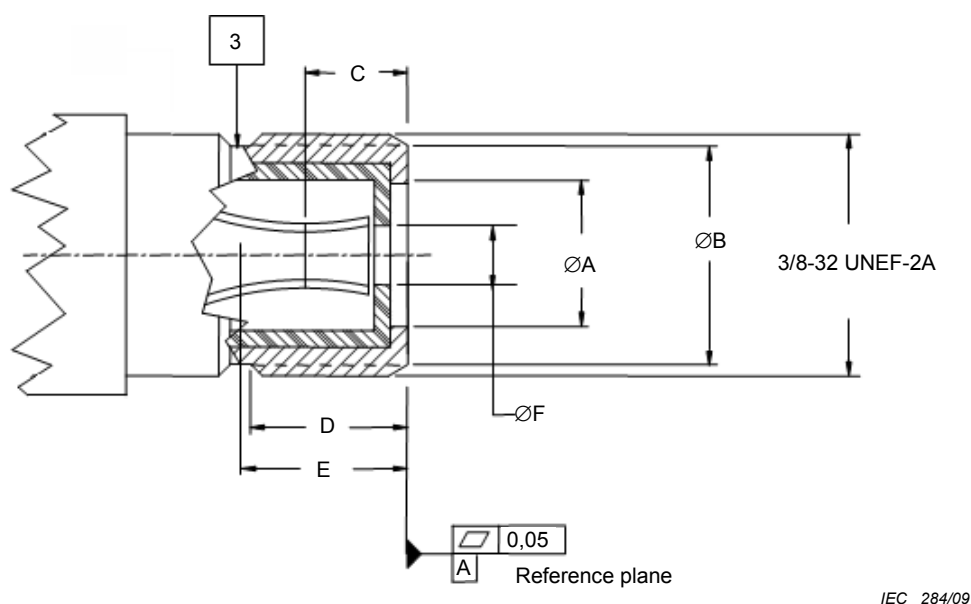


Figure 1 – Connector “F” type female socket (indoor) (for dimensions, see Table 1)

Table 1 – Connector “F” type female socket (indoor)

Description	Reference	mm		inch		Note
		Min.	Max.	Min.	Max.	
Reference plane opening inner diameter	A	3,90	7,4	0,154	0,291	2
Reference plane outer diameter	B	7,50	8,50	0,295	0,335	
Positive contact point depth	C	-	4,70	-	0,185	4
Port minimum full thread length	D	7,50	-	0,295	--	3
Minimum center contact depth	E	9,00	-	0,354	-	5
Center conductor guide inner diameter	F	1,2	1,5	0,047	0,059	
NOTE 1 Drawing not to scale.						
NOTE 2 No protrusion of the dielectric beyond the reference plane is permitted.						
NOTE 3 Thread relief not to exceed two full threads.						
NOTE 4 Recommended mating male center conductor diameter: 0,025 in (0,64 mm) min. to 0,042 in. (1,07 mm) max.						
NOTE 5 Center contact geometry optional.						

3.1.2 Connector “F” type male plug (indoor) physical dimensions

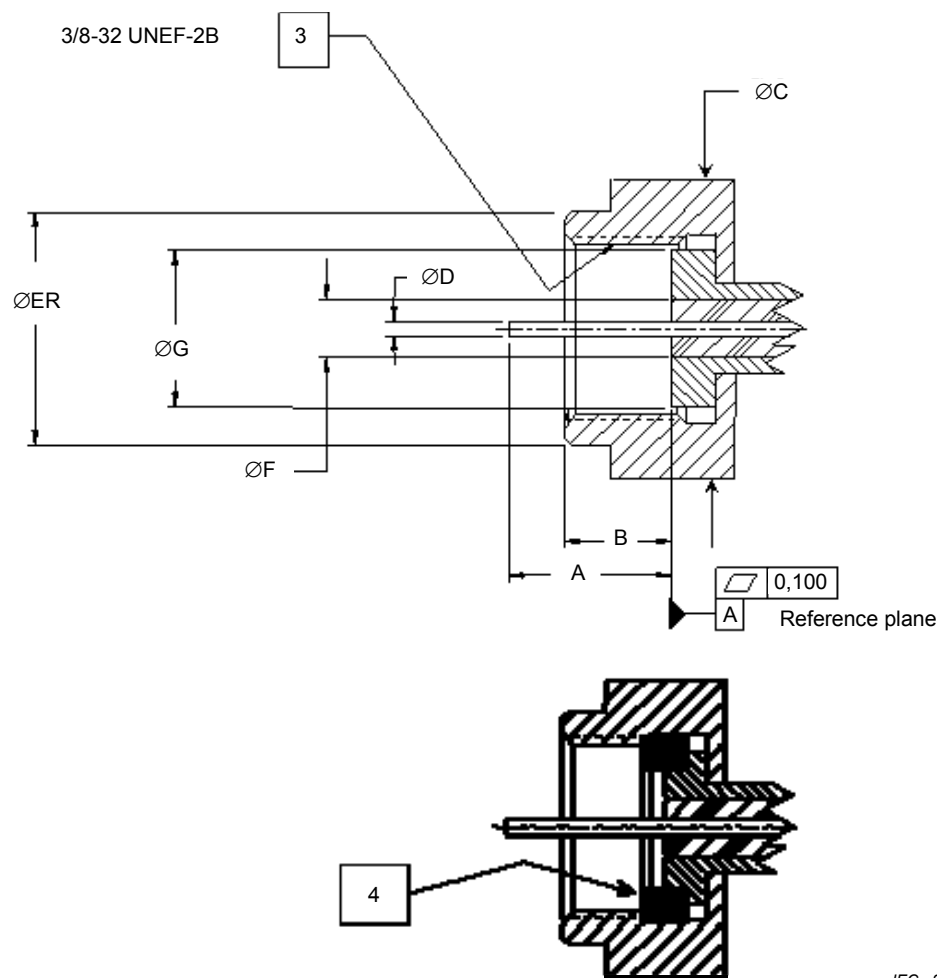


Figure 2 – Connector “F” type male plug (indoor) (for dimensions, see Table 2)

Table 2 – Connector “F” type male plug (indoor)

Description	Reference	mm		inch		Note
		Min.	Max.	Min.	Max.	
Inner conductor length	A	6,35	8,63	0,250	0,340	
Length of nut	B	4,00	7,29	0,157	0,287	2
Maximum envelope dimension	C	-	16,61	-	0,654	
Inner conductor diameter	D	0,64	1,13	0,025	0,044	
Sealing surface diameter for seal ring	E	10,41	11,04	0,410	0,435	
Reference plane opening inner diameter	F	-	5,84	-	0,230	2
Reference plane opening outer diameter	G	7,88		0,310		
NOTE 1 Drawing not to scale.						
NOTE 2 No protrusion of the dielectric beyond the reference plane is permitted.						
NOTE 3 The mating of the F female socket to the reference plane is not impeded.						
NOTE 4 Gasket seal optional, if used, does not avoid to meet all performance requirements.						

3.2 Mechanical gauges

Millimetres are original dimensions.

All undimensioned pictorial configurations are for reference purposes only.

3.2.1 Mating socket centre conductor acceptance diameter test

In order to verify that the centre female contact of the socket does not suffer from mechanical deformation when mated with the full range of indicated inner conductor diameters, a test has been devised. This test measures the force required to insert and withdraw a selection of precision test pins into and out of the “F” female socket under test.

NOTE Retention of the inner conductor should be by means of pressure exerted by the conductive centre female contact, not by means of any other non-conductive insert within the reference plane opening.

The test apparatus should be so designed as to enable accurate alignment of the “F” female socket under test with the precision test pin. The apparatus should hold either the socket or the test pin in a fixed position, and the moving part of the apparatus should be fitted with an instrument capable of measuring the insertion and withdrawal force.

Using the test sequence shown below, the insertion and withdrawal force shall be measured and recorded in newtons.

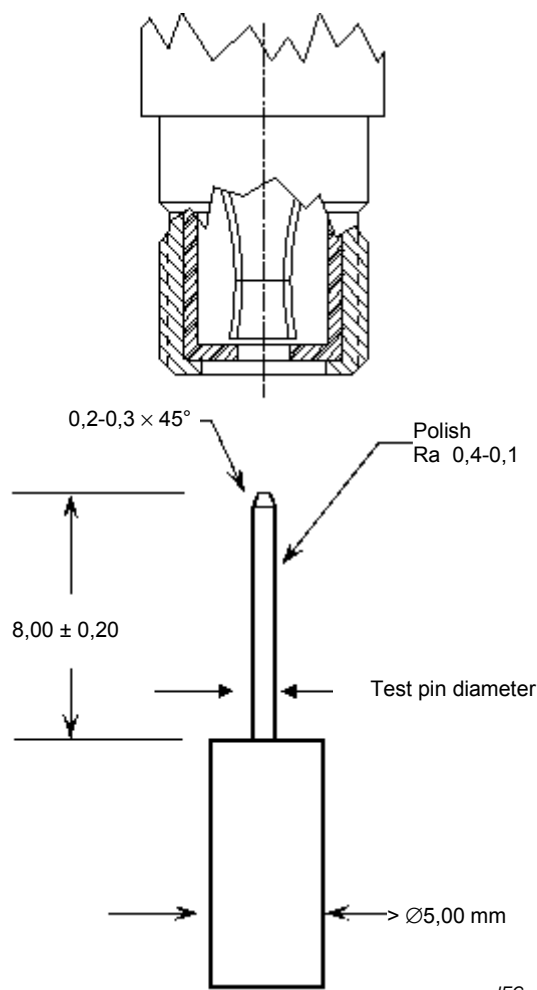


Figure 3 – Gauge for the centre socket conductor

Table 3 – Test sequence for the centre socket conductor

Test sequence	1 st test	2 nd test	3 rd test	4 th test	5 th test	6 th test
Test pin diameter	0,635 +/- 0,005 mm	0,850 +/- 0,005 mm	1,136 +/- 0,005 mm	0,635 +/- 0,005 mm	1,136 +/- 0,005 mm	0,635 +/- 0,005 mm

The insertion force required to insert the test pin into the socket centre female contact shall not exceed 20 N under all circumstances.

The withdrawal force required to withdraw the test pin from the socket centre female contact shall be a minimum of 0,3 N under all circumstances.

3.2.2 Mating port centre conductor acceptance electrical test

After completion of the mechanical tests described in 3.2.1, the centre conductor contact resistance, when re-mated with a male “F” plug whose centre conductor diameter is 0,635 mm, shall not exceed 10 mΩ with an applied test ampere rate of 1 A.

3.2.3 Reference plane electrical contact

The electrical contact shall be made by the mating of the reference plane face of the “F” female socket with the mating face of the “F” male plug and not by the threads alone.

4 Quality assessment procedures

4.1 General

The following subclauses provide recommended ratings, performance and test conditions to be considered when writing a detail specification (DS). They also provide an appropriate schedule of tests with minimum levels of conformance inspection.

4.2 Ratings and characteristics

The RF connectors defined in this standard are designed for use with a variety of flexible and semi-rigid coaxial cables and in microwave integrated circuits and similar uncabled applications.

Table 4 – Ratings and characteristics

Ratings and characteristics	IEC 61169-1 subclause	Value	Remarks including any deviations from standard test methods
<u>Electrical</u>			
Nominal impedance			Shall meet the requirements of 9.2.1.1 of IEC 61169-1 when terminating a $Z_c = 75 \Omega$ cable
Frequency range		5 MHz to 1 GHz 5 MHz to 2 GHz 5 MHz to 3 GHz	See DS For most applications For some satellite applications For some head end applications
Reflection factor	9.2.1		
– straight styles •		Min. 30 dB up to 1 000 MHz min. 25 dB up to 2 GHz min. 20 dB up to 3 GHz	
– right angle styles			See DS
– solder bucket and PCB mounting style			Under consideration

Table 4 (continued)

Ratings and characteristics	IEC 61169-1 subclause	Value	Remarks including any deviations from standard test methods
– insertion loss		0,1 dB max. up to 1 GHz 0,2 dB max. at 2 GHz 0,3 dB max. at 3 GHz	
Centre contact resistance	9.2.3		
– initial		$\leq 5 \text{ m}\Omega$	
– after conditioning		$\leq 10 \text{ m}\Omega$	
Outer conductor continuity	9.2.3		
– initial		$\leq 2,5 \text{ m}\Omega$	
– after conditioning		$\leq 5 \text{ m}\Omega$	
Insulation resistance	9.2.5		
– initial		$> 1 \text{ G}\Omega$	
– after conditioning		$> 1 \text{ M}\Omega$	
Proof voltage at sea level + #	9.2.6	750 V	86 kPa – 106 kPa
Screening effectiveness	9.2.8	$a_s \geq 90 \text{ dB}$	$Z_t < 3,2 \text{ m}\Omega$
Discharge test (Corona)	9.2.9	na	
<u>Mechanical</u>			
Gauge retention force (resilient contacts)	9.3.4		See 3.2 of IEC 61169-1
Contact captivation	9.3.5		
– axial force		20 N max.	Captivated contacts only
– torque		na	
Engagement and separation	9.3.6		Screw coupling connectors
Coupling torque			To overcome friction of a coupling nut
– friction		0,066 Nm max.	
– coupling		0,46 Nm to 0,69 Nm	
– proof		2,8 Nm	
Mechanical tests on cable			
– cable pulling #	9.3.8	120 N	
– cable torsion #	9.3.10	0,1 Nm	
Tensile strength of coupling mechanism	9.3.11	300 N	
Bending moment	9.3.12	2 Nm	Relative to reference plane
<u>Environmental</u>			
Vibration	9.3.3	98 m/s ² 10 Hz to 500 Hz	10 g acceleration
Climatic sequence	9.4.2	40/70/21	
Sealing	9.4.5	1 cm ³ /h max	100 kPa – 110 kPa pressure
Salt mist	9.4.6	48 h	
<u>Endurance</u>			
Mechanical	9.5	1 000 cycles	
High temperature	9.6	1 000 h	

Table 4 (continued)

Details of symbols, abbreviations and procedures:

- these values apply to basic connectors. They depend on the cable used. Relevant values are given in the DS.
- + voltage values are r.m.s. values at 50 Hz - 60 Hz, unless otherwise specified.
- # cables used with these connectors may have values of lower performance than those given in this table.
- na not applicable.

4.3 Environmental characteristics for outdoor sockets (see Annex A)

When the “F” type male plug and the “F” type female socket are mated, the physical attributes shall be protected and sealed to prevent moisture ingress and as a minimum shall meet IPX8 rating.

Any “F” type (outdoor) male plug or female socket shall be resistant to corrosion and shall meet EN 60068-2-52 salt mist cyclic test.

4.4 Test schedule and inspection requirements

4.4.1 Acceptance tests

Table 5 – Acceptance tests

	Test method IEC 61169-1 subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test required	IL	AQL %	Period	Test required	IL	AQL %	Period
<i>Group A1</i>									
Visual examination	9.1.2	a	II	1,0		a	S3	1,5	
<i>Group B1</i>									
Outline dimensions	9.1.3.1	a	S4	0,4		a	S3	4,0	
Mechanical compatibility	9.1.3.3	a	II	1,0		a	S3	1,5	
Engagement and separation	9.3.6	a	S4	0,40	Lot	a	S3	1,5	Lot
Gauge retention (resilient contact)	9.3.4	ia	II	1,0		ia	S3	1,5	
Sealing, non-hermetic	9.4.5.1	ia	II	0,65	by	ia	S3	1,0	by
Sealing, hermetic	9.4.5.2	ia	II	0,015		ia	S3	0,02 5	
Voltage proof	9.2.6	a	S4	0,40	lot	a	II	4,0	lot
Solderability piece parts	9.3.2.1.1	ia	S4	0,40		ia	S3	4,0	
Insulation resistance	9.2.5	a	S4	0,40		a	S3	4,0	

Details of symbols, abbreviations and procedures:

IL inspection level

AQL acceptable quality level

a suggested as applicable

ia test suggested (if technically applicable)

4.4.2 Periodic tests

There are no group C tests for levels H and M.

Table 6 – Periodic tests

	Test method IEC 61169-1 subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test requir- ed	Number of speci- mens	Permit- ted failures per group	Period	Test requir- ed	Number of speci- mens	Permitted failures per group	Period
<i>Group D1 (d)</i>			6	1	3 years		3	1	3 years
Solderability connector assemblies	9.3.2.1.1	ia				ia			
Resistance to soldering heat	9.3.2.1.2	ia				ia			
Mechanical tests on cable fixing									
– cable rotation (nutation)	9.3.7.2	ia				ia			
– cable pulling	9.3.8	ia				ia			
– cable bending	9.3.9	ia				ia			
– cable torsion	9.3.10	ia				ia			
<i>Group D2 (d)</i>			6	1	3 years		3	1	3 years
Contact resistance, outer conductor and screen continuity centre conductor continuity	9.2.3	a				a			
Vibration	9.3.3	a							
Damp heat, steady state	9.4.3	a				a			
<i>Group D3 (d)</i>			1*	1	3 years		1*	1	3 years
Dimensions piece-parts and materials	9.1.3.2	a				a			
<i>Group D4 (d)</i>			6	1	3 years		3	1	3 years
Mechanical endurance	9.5	a				a			
High temperature endurance	9.6	a				a			
Sulphur dioxide	9.4.8	na				na			
<i>Group D5 (d)</i>			6	1	3 years		3	1	3 years
Reflection factor	9.2.1	a				a			
Screening effectiveness	9.2.8	a				a			
Water immersion	9.2.7	ia				ia			
<i>Group D6 (d)</i>			6	1	3 years		3	1	3 years
Contact captivation	9.3.5	a				a			

Table 6 (continued)

	Test method IEC 61169-1 subclause	Assessment level M (higher)				Assessment level H (lower)			
		Test requir- ed	Number of speci- mens	Permit- ted failures per group	Period	Test requir- ed	Number of speci- mens	Permitted failures per group	Period
Rapid change of temperature	9.4.4	na				na			
Climatic sequence	9.4.2	a				a			
Group D7 (d)			1§		3 years		1#		3 years
Resistance to solvents and contaminating fluids	9.7	ia				ia			

Details of symbols, abbreviations and procedures:

a suggested as applicable

ia test suggested (if technically applicable)

na not applicable

* one set of piece-parts each style and variant, unless using common piece parts

for qualification approval (QA) a total of two failures only permitted for level H, and 1 failure only for level M from groups D1 to D7

§ group D7 – number of pairs for each solvent

(d) destructive tests – specimens shall not be returned to stock.

4.5 Procedures

4.5.1 Quality conformance inspection

This shall consist of test groups A1 and B1 on a lot-by-lot basis.

4.5.2 Qualification approval and its maintenance

This shall consist of three consecutive lots passing test groups A1 and B1 followed by selection of specimens from the lots as appropriate. These specimens shall successfully pass the specified periodic D tests.

5 Instructions for preparation of detail specifications

5.1 General

Detail specifications (DS) writers shall use the appropriate BDS pro-forma. The following pages comprise the pro-forma BDS dedicated for use with 75 Ω type F connectors. As such, it will already have entered on it information relating to

- the basic specification number applicable to all the detail specifications covering connector styles of the type covered by the sectional specification;
- the connector series designation.

The specification writer should enter the details relating to the connector style/variant(s) to be covered as indicated. The numbers in brackets on the BDS pro-forma correspond to the following indications which shall be given.

5.2 Identification of the detail specification

- (1) The name of the national standards organization (NSO) under whose authority the DS is published and, if applicable, the organization from whom the DS is available.
- (2) The relevant mark of conformity and the number allotted to the DS by the relevant national or international organization authorizing the DS.
- (3) The number and issue number of the IEC/IECQ generic or sectional specification as relevant; also national reference if different.
- (4) If different from the IEC/IECQ number, any national number of the DS, date of issue and any further information required by the national system, together with any amendment numbers.

5.3 Identification of the component

- (5) Enter the following details:

Style: The style designation of the connector including type of fixing and sealing, if applicable.

Attachment: By deletion of the inapplicable options of cable/wire: given for centre and outer conductors.

Special features and markings: As applicable.

- (6) Enter details of assessment level and the climatic category.
- (7) A reproduction of the outline drawing and details of the panel piercing, if applicable. It shall provide the maximum envelope dimensions, also the position of the reference plane and, in the case of a fixed connector, the position of the mounting plane(s) relative to the front face of the connector.

Any maximum panel thickness limitations for fixed connectors shall be stated.

- (8) Particulars of all variants covered by the DS. As appropriate, the information shall include:
 - cable types (or sizes) applicable to each variant;
 - alternative plated or protective finishes;
 - details of alternative mounting flanges having either tapped or plain mounting holes;
 - details of alternative solder spills or solder buckets including, when applicable, those for use with microwave integrated circuit (MIC) components.

5.4 Performance

- (9) Performance data listing the most important characteristics of the connector, taking into account the recommended values in 4.2 of this specification. Deviations from the minimum requirements shall be clearly indicated. Non-applicable parameters shall be marked 'na'.

5.5 Marking, ordering information and related matters

- (10) Insert marking and ordering information as appropriate, together with details of related documents and any invoked structural similarity.

5.6 Selection of tests, test conditions and severities

- (11) 'na' shall be used to indicate non-applicable tests. All tests marked 'a' by the detail specification writer shall be mandatory.

When using the normal procedure with a dedicated BDS, the letter 'a' – for applicable – shall be entered in the 'test required' column against each of the tests indicated as being mandatory in the test schedule as in 4.3 of this specification. Any additional tests required at the discretion of the specification writer shall also be indicated by an 'a'.

The specification writer shall also indicate, when necessary, details of deviations from the standard test methods and test conditions, including any relevant deviations given in the test schedule of the sectional specification.

The qualification approval and conformance inspection shall be such that the national supervising inspectorate (NSI) shall be satisfied that they are appropriate and in line with those for other connectors within the system providing a reasonably comparable service.

5.7 Blank detail specification pro-forma for type F connector

The following pages contain the complete BDS pro-forma.

(1)		Page 1 of 10			
		QC 222401			
ELECTRONIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH GENERIC SPECIFICATION QC 220000 SECTIONAL SPECIFICATION QC 222400 NATIONAL REFERENCE		(4) ISSUE			
(5) Detail specification for radio frequency coaxial connector of assessed quality				type F	
Style:.....		Special features and markings			
Method of cable/wire+ attachment		centre conductor – solder/crimp+ outer conductor – solder/clamp/crimp + + delete as appropriate			
(6) Assessment level.....	Characteristic impedance 75 Ω		Climatic category.../.../.../		
(7) Outline and maximum dimensions		Panel piercing and mounting details			
(8) Variants					
Variant No.	Description of variant	60096 IEC			
01.....	.....	.....	.....	.....	.....
.....
.....
.....
.....
.....
.....
.....
Information about manufacturers who have components qualified to this detail specification is available in the current QC 001005 qualified product list.					

(9) Performance (including limiting conditions of use)

Ratings and characteristics		IEC 61169-1 (QC 220000) subclause	Value	Remarks including any deviations from standard test methods
<i>Electrical</i>				
Nominal impedance			75 Ω	
Frequency range			0 GHz - 3 GHz	Measurement frequency range
Reflection factor		9.2.1		
	Variant No. Designation 01..... .....		..... ..... .....	..... ..... .....
Centre contact resistance		9.2.3	≤mΩ ≤mΩ	Initial After conditioning
Centre conductor continuity	01.....	9.2.3	.....mΩ.....mΩ.....mΩ.....mΩ	Resistance change due to conditioning
Outer contact continuity		9.2.3	≤mΩ ≤mΩ	Initial After conditioning
Insulation resistance		9.2.5	≥GΩ ≥GΩ	Initial After conditioning
+ Proof voltage at sea level	01.....	9.2.6	.....kV.....kV.....kV.....kV	86 kPa - 106 kPa
+ Proof voltage at 4,4 kPa	01..... ..... ..... .....		.....V.....V.....V.....V	.....kPa (if not 4,4 kPa)
+ Environment test voltage at sea level	01..... ..... ..... .....		.....V.....V.....V.....V	86 kPa - 106 kPa
Environment test voltage at 4,4 kPa	01..... ..... ..... .....		.....V.....V.....V.....V	.....kPa (if not 4,4 kPa)
Screening effectiveness	01.....	9.2.8	≥ dB at...GHz	Z _t ≤.....Ω
ADDITIONAL ELECTRICAL CHARACTERISTICS				

+ Voltage values are r.m.s. values at 50 Hz - 60 Hz, unless otherwise specified.

Ratings and characteristics	IEC 61169-1 (QC 220000) subclause	Value	Remarks including any deviations from standard test methods
<i>Mechanical</i>			
Soldering - bit size	9.3.2.1.1	.....
Gauge retention resilient contacts - inner contact - outer contact	9.3.4	.....
Centre contact captivation - axial force - permitted displacement each direction	9.3.5	.....N.....mm	
Engagement and separation - axial force	9.3.6	.....N (eng) .....N (sep)	
Effectiveness of cable fixing against			
- cable rotation 01.....	9.3.7.2	Rotations	
- cable pulling 01.....	9.3.8	.....N	
- cable bending 01.....	9.3.9	.....Cycles	Length of cable mass
- cable torsion 01.....	9.3.10	.....Nm	
Bending moment	9.3.12	.....Nm	Relative to reference plane
Vibration	9.3.3	.....m/s ².....to.....Hz	(.....g _n acceleration)
ADDITIONAL MECHANICAL CHARACTERISTICS			

Ratings and characteristics	IEC 61169-1 (QC 220000) Subclause	Value	Remarks including any deviations from standard test methods
<i>Environmental</i>			
Climatic category	/...../.....	
Sealing non-hermetically sealed connectors	9.4.5.1	.....cm ³ /h	100 kPa - 110 kPa pressure differential
Sealing hermetically sealed connectors	9.4.5.2	10 ⁻⁵ bar/cm ³ /h	100 kPa - 110 kPa pressure differential
Water immersion	9.2.7		
ADDITIONAL ENVIRONMENTAL CHARACTERISTICS			
<i>ENDURANCE</i>			
Mechanical	9.5	.....operations	
High temperature	9.6	.....h at.....°C	
ADDITIONAL ENDURANCE CHARACTERISTICS			
<i>CHEMICAL CONTAMINATION</i>			
Resistance to solvents and contaminating fluids to be used	9.7	..... ..... .....
Applicable fluids			
Sulphur dioxide	9.4.8	... ..days	

(10) Supplementary information

- Marking of the component: in accordance with 11.1 of IEC 61169-1 (QC 220000) in the following order of preference:

- 1) Manufacturer code:
- 2) Manufacturing date code: year/week
- 3) Component identification: Variant No./ Identification Designation
.....
.....
.....
.....
.....
.....
.....

- Marking and contents of package: in accordance with 11.2 of IEC 61169-1

- 1) Information prescribed in 11.1 of IEC 61169-1 detailed above
- 2) Nominal characteristic impedance75 Ω.....
- 3) Assessment level code letter
- 4) Any additional marking required

Ordering information

- 1) Number of the detail specification IECQC 222401...../Variant code..
- 2) Assessment level code letter
- 3) Body finish (if more than one listed)
- 4) Any additional information or special requirements

- Related documents (if not included in IEC 61169-1 or sectional specification):

.....
.....

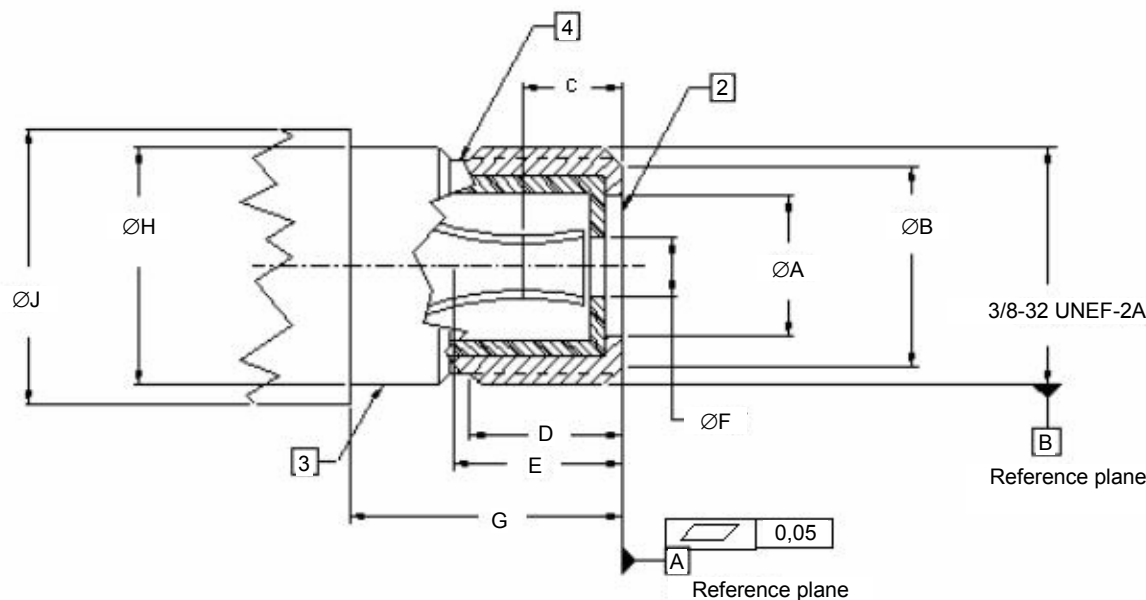
- Structural similarity in accordance with 10.2.2 of IEC 61169-1

NOTE Relevant information on a basic style should be entered as variant 01.

Annex A (informative)

Recommended outdoor “F” type socket / Plug physical dimensions

A.1 Outdoor “F” type female socket



IEC 287/09

Figure A.1 – Outdoor female “F” socket (for dimensions, see Table A.1)

Table A.1 – Outdoor female “F” socket dimensions

Description	Reference	mm		inch		Note
		Min.	Max.	Min.	Max.	
Reference plane opening inner diameter	A	3,90	6,10	0,154	0,240	2
Reference plane outer diameter	B	7,50	8,00	0,295	0,315	
Positive contact point depth	C	-	4,70	-	0,185	5
Full thread depth	D	8,26	8,89	0,325	0,350	4
Minimum center conductor clearance	E	9,00	-	0,354	-	6,7
Center conductor guide inner diameter	F	1,20	1,50	0,047	0,059	
Port length	G	12,32	13,08	0,485	0,515	
Sealing surface diameter for seal ring	H	9,35	9,65	0,368	0,380	3
Bulkhead diameter	J	10,80	-	0,425	-	

NOTE 1 Drawing not to scale.

NOTE 2 No material must protrude beyond reference plane.

NOTE 3 If cast feature, no parting lines permitted.

NOTE 4 Thread relief not to exceed two full threads.

NOTE 5 Dimension to point of positive contact of male center conductor.

Recommended mating male center conductor diameter:

0,025 in (0,64 mm) min. / 0,042 in (1,07 mm) max.

NOTE 6 Minimum clearance required for maximum length male center conductor.

NOTE 7 Center contact geometry optional.

NOTE 8 Minimum bulkhead stop geometry optional (example: hex, cylindrical, flat surface area).

A.2 Outdoor “F” type male plug

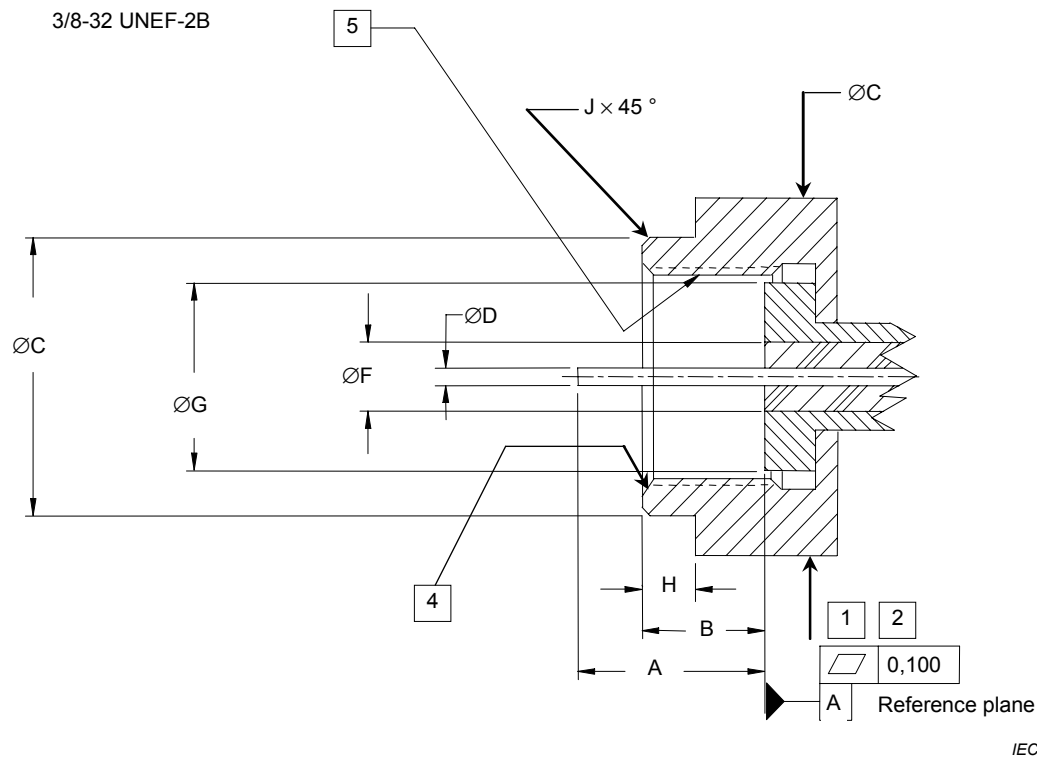


Figure A.2 – Outdoor “F” type male plug (for dimensions, see Table A.2)

Table A.2 – Outdoor “F” type male plug dimensions

Description	Reference	mm		inch		Note
		Min.	Max.	Min.	Max.	
Inner conductor length	A	6,35	8,63	0,250	0,340	
Length of nut	B	4,29	6,10	0,169	0,240	3
Maximum envelope dimension	C	-	16,61	-	0,654	
Inner conductor diameter	D	0,64	1,07	0,025	0,42	5
Sealing diameter for seal ring	E	10,50	11,00	0,413	0,433	
Reference plane inner diameter	F	-	5,84	-	0,230	
Reference plane outer diameter	G	7,11	-	0,310	-	
Sealing surface length	H	1,78	4,45	0,079	0,175	
Chamfer break	J	0,127	0,381	0,005	0,015	4
NOTE 1 Dielectric must not protrude beyond reference plane.						
NOTE 2 The mating of the “F” female socket to the reference plane should not be impeded.						
NOTE 3 Minimum one thread lead-in.						
NOTE 4 Drawing not to scale.						
NOTE 5 Cable inner conductor or integral pin.						

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