



DPC: 24 / 30505078 DC

BSI Group Headquarters

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

Date: 19 November 2024

Origin: International

Latest date for receipt of comments: 11 December 2024

Project No. 2024/03362

Responsible committee: EPL/46 Cables, wires and waveguides, radio frequency connectors and accessories for communication and signalling

Interested committees:

Title: BS EN IEC 61169-74 Radio-frequency connectors

Part 74: Sectional specification for HN series RF coaxial connectors with screw coupling - Characteristic impedance 50 ohms

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

**WARNING: THIS IS A DRAFT AND MUST NOT BE REGARDED OR USED AS A BRITISH STANDARD.
THIS DRAFT IS NOT CURRENT BEYOND 11 December 2024**

This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

No copying is allowed, in any form, without prior written permission from BSI except as permitted under the Copyright, Designs and Patent Act 1988 or for circulation within a nominating organization for briefing purposes. Electronic circulation is limited to dissemination by e-mail within such an organization by committee members.

Further copies of this draft may be purchased from BSI Shop <http://shop.bsigroup.com> or from BSI Customer Services, Tel: +44(0) 20 8996 9001 or email cservices@bsigroup.com. British, International and foreign standards are also available from BSI Customer Services.

Information on the co-operating organizations represented on the committees referenced above may be obtained from <http://standardsdevelopment.bsigroup.com>

Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
------------------	------------------------

1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



PROJECT NUMBER:

IEC 61169-74 ED1

DATE OF CIRCULATION:

2024-11-15

CLOSING DATE FOR COMMENTS:

2025-01-10

SUPERSEDES DOCUMENTS:

46F/667/NP, 46F/677/RVN

IEC SC 46F : RF AND MICROWAVE PASSIVE COMPONENTS

SECRETARIAT:

United States of America

SECRETARY:

Mr John Morelli

OF INTEREST TO THE FOLLOWING COMMITTEES:

HORIZONTAL FUNCTION(S):

ASPECTS CONCERNED:

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Recipients of this document are invited to submit, with their comments, notification of any local regulations or technical reasons that may exist and should be considered should this proposal proceed, recognizing that failure to address such requirements could result in the need for new or existing "In Some Countries" clauses. (See [AC/22/2007](#) or [NEW GUIDANCE DOC](#)).

TITLE:

Radio-frequency connectors – Part 74: Sectional specification for HN series RF coaxial connectors with screw coupling – Characteristic impedance 50 ohms

NOTE FROM TC/SC OFFICERS:

CONTENTS

1	Scope.....	3
2	Normative references	3
3	Mating face and gauge information	3
3.1	General connectors – Grade 2.....	3
3.1.1	Connector with pin centre contact.....	3
3.1.2	Connector with socket centre contact	5
3.2	Gauges	6
3.2.1	Gauge pin for socket centre contact	6
3.2.2	Gauge for outer contact of connector with pin centre contact.....	6
3.3	Dimensions – Standard test connectors – Grade 0	7
3.3.1	Connectors with pin centre contact	7
3.3.2	Connector with socket centre contact	8
4	Quality assessment procedures	10
4.1	General	10
4.2	Ratings and characteristics	10
4.3	Test schedule and inspection requirements	12
4.3.1	Acceptance tests	12
4.3.2	Periodic tests	13
4.3.3	Procedures for the quality conformance	14
5	Instructions for preparation of detail specifications	15
5.1	General	15
5.2	Identification of the component	15
5.3	Performance.....	15
5.4	Marking, ordering information and related matters	15
5.5	Selection of tests, test conditions and severities	15
5.6	Blank detail specification pro-forma for HN connectors	16
	Bibliography	20

RADIO-FREQUENCY CONNECTORS –

Part 754: Sectional specification for HN series RF coaxial connectors with screw coupling – Characteristic impedance 50 ohms

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 series HN RF coaxial connectors with screw coupling with a characteristic impedance of 50 Ω .

This document prescribes mating face dimensions for high performance connectors – grade 2, 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 HN RF connectors.

This document indicates 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.

The series HN connectors which are used with all kinds of RF cables and microstrips in microwave transmission systems. The operating frequency is up to 6 GHz.

NOTE Metric dimension are original dimensions. All undimensioned pictorial configurations are for reference purpose only.

2 Normative references

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 62153-4-7, *Metallic communication cable test methods – Part 4-7: Electromagnetic compatibility (EMC) – Test method for measuring of transfer impedance Z_T and screening attenuation a_s or coupling attenuation a_c of connectors and assemblies up to and above 3 GHz – Triaxial tube in tube method*

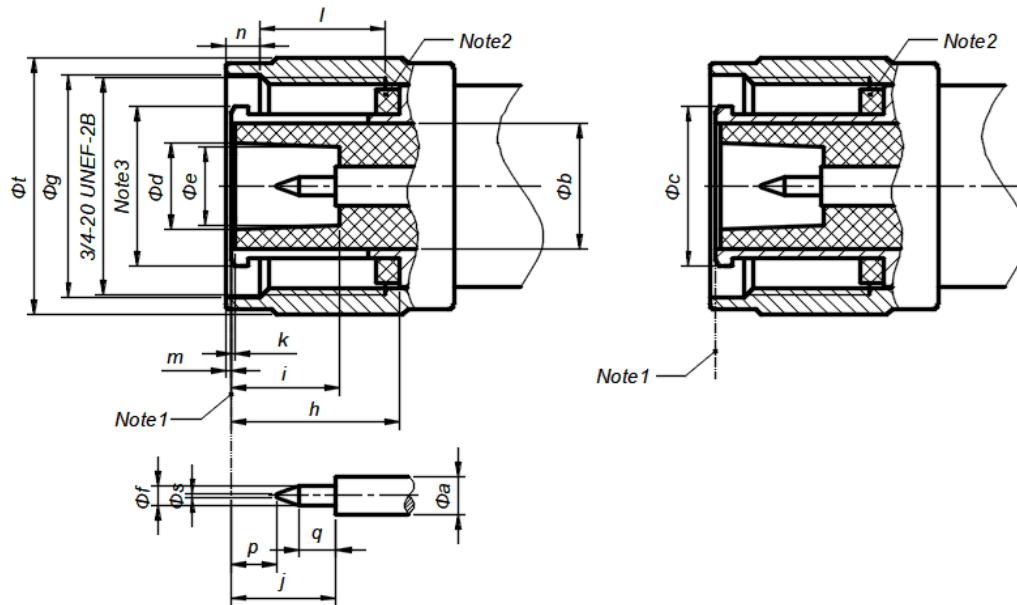
IEC 62037-3, *Passive RF and microwave devices, intermodulation level measurement - Part 3: Measurement of passive intermodulation in coaxial connectors*

3 Mating face and gauge information

3.1 General connectors – Grade 2

3.1.1 Connector with pin centre contact

The mating face of connector with pin centre contact is shown in Figure 1 and its dimensions are shown in Table 1.



a) Connector with slotted outer conductor

b) Connector with unslotted outer conductor

NOTE 1 Mechanical and electrical reference plane.

NOTE 2 Sealing ring.

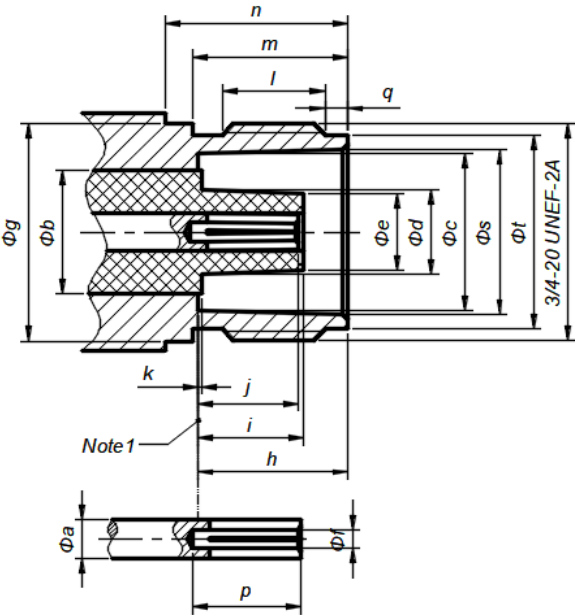
NOTE 3 Slot is optional. Slotted and flared to meet gauge requirements of 3.2.2.

Figure 1 – Connector with pin centre contact (for dimensions, see Table 1)**Table 1 – Dimensions of connector with pin centre contact**

Ref.	mm		in		Remarks
	min	max	min	max	
a ^a	—	3,35	—	0,132	
b ^a	10,8 nom		0,425 nom		
c	13,80	13,90	0,543	0,547	
d	7,34	—	0,289	—	
e	6,68	—	0,263	—	
f	1,57	1,68	0,062	0,066	
g	19,30	—	0,760	—	
h ^b	13,34	—	0,525	—	
i	9,35	—	0,368	—	
j	9,04	9,86	0,356	0,388	
k	0,13	—	0,005	—	
l ^c	10,24	—	0,403	—	
m ^d	—	1,47	—	0,058	
n	2,54	—	0,100	—	
p	3,51	—	0,138	—	
q	3,05	—	0,120	—	
s	—	0,38	—	0,015	
t	—	23,50	—	0,925	
^a Dimension b depends on the dimension a and dielectric constant, and it must meet the requirement of 50 Ω characteristics. ^b Dimension h shall meet the requirement of electrical and sealing performance requirements. ^c Full thread. ^d Coupling nut in forward position.					

3.1.2 Connector with socket centre contact

The mating face of connector with socket centre contact is shown in Figure 2 and its dimensions are shown in Table 2.



NOTE 1 Mechanical and electrical reference plane.

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

Table 2 – Dimensions of connector with socket centre contact

Ref.	mm		in		Remarks
	min	max	min	max	