

© Copyright SEK Svensk Elstandard. Reproduction in any form without permission is prohibited.

Anslutningsdon för radiofrekvens – Del 65: Gruppspecifikation för koaxialdon med skruvfattning och 1,35 mm innerdiameter på ytterledaren, 50 ohm

Radio-frequency connectors –

Part 65: Sectional specification for RF coaxial connectors, 1,35 mm inner diameter of outer conductor, with screw-coupling, characteristic impedance 50 Ω

Som svensk standard gäller europastandarden EN IEC 61169-65:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61169-65:2021.

Nationellt förord

Europastandarden EN IEC 61169-65:2021

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61169-65, First edition, 2021 - Radio-frequency connectors - Part 65: Sectional specification for RF coaxial connectors, 1,35 mm inner diameter of outer conductor, with screw-coupling, characteristic impedance 50 Ω**

utarbetad inom International Electrotechnical Commission, IEC.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a mätning, säkerhet och provning och för utförande, skötsel och dokumentation av elprodukter och elanläggningar.

Genom att utforma sådana standarder blir säkerhetsfordringar tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

SEK Svensk Elstandard svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

SEK Svensk Elstandard

Box 1284
164 29 Kista
Tel 08-444 14 00
www.elstandard.se

English Version

Radio-frequency connectors - Part 65: Sectional specification for
RF coaxial connectors, 1,35 mm inner diameter of outer
conductor, with screw-coupling, characteristic impedance 50 Ω
(IEC 61169-65:2021)

Connecteurs pour fréquences radioélectriques - Partie 65:
Spécification intermédiaire relative aux connecteurs
coaxiaux pour fréquences radioélectriques, avec un
diamètre intérieur du conducteur extérieur de 1,35 mm, à
couplage à vis, impédance caractéristique de 50 Ω
(IEC 61169-65:2021)

Hochfrequenz-Steckverbinder - Teil 65:
Rahmenspezifikation für koaxiale HF-Steckverbinder mit
1,35 mm Innendurchmesser des Außenleiters, mit
Schraubkupplung, Wellenwiderstand 50 Ohm, für den
Einsatz bis 90 GHz
(IEC 61169-65:2021)

This European Standard was approved by CENELEC on 2021-02-23. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 46F/527(F)/FDIS, future edition 1 of IEC 61169-65, prepared by SC 46F “RF and microwave passive components” of IEC/TC 46 “Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61169-65:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2021–11–23 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2024–02–23 document have to be withdrawn

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61169-65:2021 was approved by CENELEC as a European Standard without any modification.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61169-1	2013	Radio frequency connectors - Part 1: Generic specification - General requirements and measuring methods	EN 61169-1	2013
IEC 61726	-	Cable assemblies, cables, connectors and passive microwave components - Screening attenuation measurement by the reverberation chamber method	EN 61726	-
IEC 62037	-	RF connectors, connector cable-assemblies and cables - Intermodulation level measurement		-
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	EN 62153-4-7	-

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Radio-frequency connectors –

Part 65: Sectional specification for RF coaxial connectors, 1,35 mm inner diameter of outer conductor, with screw-coupling, characteristic impedance 50 Ω

Connecteurs pour fréquences radioélectriques –

Partie 65: Spécification intermédiaire relative aux connecteurs coaxiaux pour fréquences radioélectriques, avec un diamètre intérieur du conducteur extérieur de 1,35 mm, à couplage à vis, impédance caractéristique de 50 Ω

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 33.120.30

ISBN 978-2-8322-9259-4

Warning! Make sure that you obtained this publication from an authorized distributor.

Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

CONTENTS

FOREWORD.....	3
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Mating face and gauge information	6
4.1 Dimensions – General purpose connectors – Grade 1.....	6
4.1.1 Connector with pin centre contact.....	6
4.1.2 General purpose connector with socket centre contact	7
4.2 Gauge pin for socket centre contact.....	8
4.2.1 Dimensions.....	8
4.2.2 Test procedure	8
4.3 Dimensions standard test connectors – Grade 0	8
4.3.1 Standard test connector with pin centre contact.....	8
4.3.2 Standard test connector with socket centre contact	9
5 Quality assessment procedures	11
5.1 General.....	11
5.2 Ratings and characteristics (see Clause 5 of IEC 61169-1:2013)	11
5.3 Test schedule and inspection requirements.....	12
5.3.1 Acceptance tests	12
5.3.2 Periodic tests.....	13
5.4 Procedures for quality conformance	15
5.4.1 Quality conformance inspection	15
5.4.2 Quality conformance and its maintenance.....	15
6 Instructions for preparation of detail specifications	15
6.1 General.....	15
6.2 Identification of the component	15
6.3 Performance	15
6.4 Marking, ordering information and related matters	16
6.5 Selection of tests, test conditions and severities	16
6.6 Blank detail specification pro-forma for 1,35 mm connectors	16
Figure 1 – General purpose connector with pin centre contact	6
Figure 2 – General purpose connector with socket centre contact.....	7
Figure 3 – Gauge pin for socket centre contact.....	8
Figure 4 – Standard test connector with pin centre contact	9
Figure 5 – Standard test connector with socket centre contact	10
Table 1 – Dimensions of connector with pin centre contact – Grade 1.....	6
Table 2 – Dimensions of connector with socket centre contact – Grade 1	7
Table 3 – Dimensions of gauge pin for socket centre contact.....	8
Table 4 – Dimensions of connector with pin centre contact – Grade 0.....	9
Table 5 – Dimensions of connector with socket centre contact – Grade 0	10
Table 6 – Ratings and characteristics	11
Table 7 – Acceptance tests.....	12
Table 8 – Periodic tests	13

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –

**Part 65: Sectional specification for RF coaxial connectors,
1,35 mm inner diameter of outer conductor, with screw-coupling,
characteristic impedance 50 Ω**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61169-65 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.

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

FDIS	Report on voting
46F/527/FDIS	46F/542/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document 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 document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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

RADIO-FREQUENCY CONNECTORS –

Part 65: Sectional specification for RF coaxial connectors, 1,35 mm inner diameter of outer conductor, with screw-coupling, characteristic impedance 50 Ω

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 1,35 mm RF coaxial connectors with screw coupling, characteristic impedance 50 Ω , for operating frequencies up to 90 GHz. Typical use in test and measurement applications.

It describes mating face dimensions for general purpose connectors – grade 1, 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 1,35 mm RF connectors.

This specification 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.

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

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 61726, *Cable assemblies, cables, connectors and passive microwave components – Screening attenuation measurement by the reverberation chamber method*

IEC 62037, *Passive RF and microwave devices, intermodulation level measurement*

IEC 62153-4-7, *Metallic communication cables 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*