

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

Anslutningsdon för högfrekvens – Del 50: Grupp-specifikation för koaxialdon med snabbblåsning och med 4,11 mm innerdiameter på ytterledaren, 50 ohm (typ QMA)

Radio-frequency connectors –

*Part 50: Sectional specification for RF coaxial connectors with
inner diameter of outer conductors 4,11 mm with quick lock system –
Characteristic impedance 50 Ω (type QMA)*

Som svensk standard gäller europastandarden EN 61169-50:2015. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61169-50:2015.

Nationellt förord

Europastandarden EN 61169-50:2015

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61169-50, First edition, 2014 - Radio-frequency connectors - Part 50: Sectional specification for RF coaxial connectors with inner diameter of outer conductors 4,11 mm with quick lock system - Characteristic impedance 50 Ω (type QMA)**

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 50: Sectional specification for
RF coaxial connectors with inner diameter of outer conductors
4,11 mm with quick lock system - Characteristic impedance
50 Ohm (type QMA)
(IEC 61169-50:2014)

Connecteurs pour fréquences radioélectriques - Partie 50:
Spécification intermédiaire relative aux connecteurs
coaxiaux pour fréquences radioélectriques avec diamètre
intérieur des conducteurs extérieurs de 4,11 mm à système
de verrouillage rapide - Impédance caractéristique 50 Ohm
(type QMA)
(IEC 61169-50:2014)

Hochfrequenz-Steckverbinder - Teil 50:
Rahmenspezifikation für koaxiale HF Steckverbinder mit
4,11 mm Innendurchmesser des Außenleiters und
Schnellverriegelung - Wellenwiderstand 50 Ohm (Typ QMA)
(IEC 61169-50:2014)

This European Standard was approved by CENELEC on 2014-11-27. 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, 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: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document 46F/264/CDV, future edition 1 of IEC 61169-50, prepared by SC 46F "R.F. and microwave passive components", of IEC/TC 46 "Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61169-50:2015.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2015-09-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2017-11-27

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

Endorsement notice

The text of the International Standard IEC 61169-50:2014 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, 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.

NOTE 1 When 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 62037	series	Passive RF and microwave devices, intermodulation level measurement	EN 62037	series

CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references	6
3 Mating face and gauge information	7
3.1 Dimensions – General connectors.....	7
3.1.1 Connector with socket-centre contact	7
3.1.2 Connector with pin-centre contact.....	9
3.2 Gauges for general purpose connectors.....	10
3.2.1 Gauge pins for socket-centre contact.....	10
3.2.2 Test procedure	11
4 Quality assessment procedures	11
4.1 General.....	11
4.2 Ratings and characteristics (see Clause 5 of IEC 61169-1:2013)	11
4.3 Test schedule and inspection requirements.....	13
4.3.1 Acceptance tests	13
4.4 Procedures for the quality conformance	14
4.4.1 Quality conformance inspection	14
4.4.2 Qualification approval and its maintenance.....	15
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	16
5.6 Blank detail specification pro-forma for type QMA connector.....	16
6 Marking	21
6.1 Marking of component.....	21
6.2 Marking and contents of package.....	21
Figure 1 – Connector with socket centre contact (for dimensions, see Table 1).....	7
Figure 2 – Female centre contact (for dimensions, see Table 1)	7
Figure 3 – Connector with pin centre contact (for dimensions, see Table 2)	9
Figure 4 – Details of pin centre contact (for dimensions, see Table 2).....	9
Figure 5 – Gauge pin for socket-centre contact (for dimensions, see Table 3).....	10
Table 1 – Dimensions of connector with socket centre contact.....	8
Table 2 – Dimensions of connector with pin-centre contact.....	10
Table 3 – Gauge dimensions for socket centre contact	11
Table 4 – Rating and characteristics	11
Table 5 – Acceptance tests.....	13
Table 6 – Periodic tests	14

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO-FREQUENCY CONNECTORS –**Part 50: Sectional specification for RF coaxial connectors with inner diameter of outer conductors 4,11 mm with quick lock system – Characteristic impedance 50 Ω (type QMA)**

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.

International Standard IEC 61169-50 has been prepared by subcommittee 46F: R.F. 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 standard is based on the following documents:

CDV	Report on voting
46F/264/CDV	46F/285/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 stability 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

The International Electrotechnical Commission (IEC) draws attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning the design of the connector given in 3.1.

IEC takes no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the IEC that he/she is willing to negotiate licence under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holders of this patent right is registered with IEC. More detailed information may be obtained from:

HUBER+SUHNER AG

Mr. Germann Reto, RF Division

Reto.germann@hubersuhner.com

Phone:+41 71 353 4653

Degersheimerstrasse 14, CH-9100 Herisau, Switzerland

Or

Radiall SA

Mr. Pierre Bigot, RFI Division

Pierre.bigot@radiall.com

Phone:+33 47 650 0057

Z.I Centr'alp – 642 rue Emile Romanet, B.P. 35 – F-38341 Voreppe Cedex, France

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

ISO (www.iso.org/patents) and IEC (<http://patents.IEC.ch>) maintain on-line data bases of patents relevant to their standards. Users are encouraged to consult the data bases for the most up to date information concerning patents.

RADIO-FREQUENCY CONNECTORS –

Part 50: Sectional specification for RF coaxial connectors with inner diameter of outer conductors 4,11 mm with quick lock system – Characteristic impedance 50 Ω (type QMA)

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 type QMA R.F. coaxial connectors with quick lock.

The connectors are normally used with 50 Ω corrugated cable and flexible cables for middle power applications in an operating range up to 6 GHz.

It describes the interface dimensions for general purpose connectors with gauging information and the mandatory tests selected from IEC 61169-1, applicable to all detail specifications relative to type QMA connectors.

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

NOTE Metric dimension are original dimensions.

All un-dimensioned 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 62037 (all parts), *Passive RF and microwave devices, intermodulation level measurement*