

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

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 61169-24:2019 sisaldab Euroopa standardi EN IEC 61169-24:2019 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 61169-24:2019 consists of the English text of the European standard EN IEC 61169-24:2019.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 20.09.2019.	Date of Availability of the European standard is 20.09.2019.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 31.220.10

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

Radio-frequency connectors - Part 24: Sectional specification -  
Radio frequency coaxial connectors with screw coupling,  
typically for use in 75 Ohm cable networks (type F)  
(IEC 61169-24:2019)

Connecteurs pour fréquences radioélectriques - Partie 24:  
Spécification intermédiaire - Connecteurs coaxiaux pour  
fréquences radioélectriques avec couplage vissé,  
typiquement utilisés dans des réseaux de distribution par  
câbles de 75 Ohms (type F)  
(IEC 61169-24:2019)

Hochfrequenz-Steckverbinder - Teil 24:  
Rahmenspezifikation - Koaxiale  
Hochfrequenzsteckverbinder mit Schraubkupplung,  
vorzugsweise für den Einsatz in 75 Ohm Kabelnetzen (Typ  
F)  
(IEC 61169-24:2019)

This European Standard was approved by CENELEC on 2019-08-23. 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/417/CDV, future edition 3 of IEC 61169-24, 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 61169-24:2019.

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) 2020-05-23
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2022-08-23

This document supersedes EN 61169-24:2009 and all of its amendments and corrigenda (if any).

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 61169-24:2019 was approved by CENELEC as a European Standard without any modification.

## CONTENTS

FOREWORD .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Interface dimensions .....	6
4.1 Dimensions .....	6
4.1.1 Connector “F” type female socket (indoor) physical dimensions .....	6
4.1.2 Connector “F” type male plug (indoor) physical dimensions .....	7
4.2 Mechanical gauges .....	9
4.2.1 Mating socket centre conductor acceptance diameter test .....	9
4.2.2 Mating port centre conductor acceptance electrical test .....	10
4.2.3 Reference plane electrical contact .....	10
5 Quality assessment procedures .....	10
5.1 General .....	10
5.2 Ratings and characteristics .....	10
5.3 Environmental characteristics for outdoor sockets (see Annex A) .....	12
5.4 Test schedule and inspection requirements .....	12
5.4.1 Acceptance tests .....	12
5.4.2 Periodic tests .....	13
5.5 Procedures .....	15
5.5.1 Quality conformance inspection .....	15
5.5.2 Qualification approval 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 .....	16
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 type F connector .....	16
Annex A (informative) Recommended outdoor “F” type socket / Plug physical dimensions .....	22
A.1 Outdoor “F” type female socket .....	22
A.2 Outdoor “F” type male plug .....	23
Annex B (informative) Recommended satellite broadcasting “F” type socket / Plug physical dimensions .....	25
B.1 Satellite broadcasting “F” type female socket .....	25
B.2 Satellite broadcasting “F” type male plug .....	25
Figure 1 – Connector “F” type female socket (indoor) (for dimensions, see Table 1) .....	7
Figure 2 – Connector “F” type male plug (indoor) (for dimensions, see Table 2) .....	8
Figure 3 – Gauge for the centre socket conductor .....	9
Figure A.1 – Outdoor female “F” socket (for dimensions, see Table A.1) .....	22
Figure A.2 – Outdoor “F” type male plug (for dimensions, see Table A.2) .....	23
Figure B.1 – Satellite broadcasting “F” socket (for dimensions, see Table B.1) .....	25
Figure B.2 – Satellite broadcasting “F” type male plug (for dimensions, see Table B.2) .....	26

Table 1 – Connector “F” type female socket (indoor).....	7
Table 2 – Connector “F” type male plug (indoor) .....	8
Table 3 – Test sequence for the centre socket conductor.....	9
Table 4 – Ratings and characteristics .....	11
Table 5 – Acceptance tests .....	13
Table 6 – Periodic tests .....	14
Table A.1 – Outdoor female “F” socket dimensions .....	23
Table A.2 – Outdoor “F” type male plug dimensions.....	24
Table B.1 – Satellite broadcasting “F” type socket dimensions .....	25
Table B.2 – Satellite broadcasting “F” type male plug dimensions.....	26

This document is a preview generated by EVS

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## 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 61169-24 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.

This third edition cancels and replaces the second edition published in 2009. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: all drawings have been reworked and improved to allow frequency extension up to 3 GHz.

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

CDV	Report on voting
46F/417/CDV	46F/436A/RVC

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.

**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.**



## RADIO-FREQUENCY CONNECTORS –

### Part 24: Sectional specification – Radio frequency coaxial connectors with screw coupling, typically for use in 75 $\Omega$ 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  $\Omega$  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.

NOTE Millimetres are original dimensions. All undimensioned pictorial configurations are for reference purposes 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*

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

#### 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

#### 4 Interface dimensions

##### 4.1 Dimensions

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

Figure 1 shows a connector “F” type female socket (indoor).