

**Radio-frequency connectors -- Part 1: Generic  
specification - General requirements and measuring  
methods**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

|   |  |
|---|--|
| See Eesti standard EVS-EN 61169-1:2013 sisaldab Euroopa standardi EN 61169-1:2013 inglisekeelset teksti.            | This Estonian standard EVS-EN 61169-1:2013 consists of the English text of the European standard EN 61169-1:2013.                  |
| 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 08.11.2013. | Date of Availability of the European standard is 08.11.2013.   |
| 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).

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English version

**Radio-frequency connectors -  
Part 1: Generic specification -  
General requirements and measuring methods  
(IEC 61169-1:2013)**

Connecteurs pour fréquences  
radioélectriques -  
Partie 1: Spécification générique -  
Exigences générales et méthodes de  
mesure  
(CEI 61169-1:2013)

Hochfrequenz-Steckverbinder -  
Teil 1: Fachgrundspezifikation -  
Allgemeine Anforderungen und  
Messverfahren  
(IEC 61169-1:2013)

This European Standard was approved by CENELEC on 2013-08-14. 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.

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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/216/CDV, future edition 2 of IEC 61169-1, 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 61169-1:2013.

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) 2014-05-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-08-14

This document supersedes EN 61169-1:1994.

EN 61169-1:2013 includes the following significant technical changes with respect to EN 61169-1:1994:

Tests methods have been updated as well as terminology.

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 61169-1:2013 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

|                  |      |                                |
|------------------|------|--------------------------------|
| IEC 61196 series | NOTE | Harmonised in EN 61196 series. |
| ISO 286-1        | NOTE | Harmonised as EN ISO 286-1.    |
| ISO 1302         | NOTE | Harmonised as EN ISO 1302.     |

## 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 When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

| <u>Publication</u> | <u>Year</u> | <u>Title</u>  | <u>EN/HD</u>                  | <u>Year</u>     |
|--------------------|-------------|---|-------------------------------|-----------------|
| IEC 60027          | Series      | Letter symbols to be used in electrical technology  | EN 60027                      | Series          |
| IEC 60050          | Series      | International Electrotechnical Vocabulary   | -                             | -               |
| IEC 60068-1        | -           | Environmental testing -<br>Part 1: General and guidance   | EN 60068-1                    | -               |
| IEC 60068-2-1      | 1990        | Environmental testing -<br>Part 2: Tests - Tests A: Cold  | EN 60068-2-1 <sup>1)</sup>    | 1993            |
| IEC 60068-2-2      | 1974        | Environmental testing -<br>Part 2: Tests - Tests B: Dry heat  | EN 60068-2-2 <sup>2) 3)</sup> | 1993            |
| IEC 60068-2-6      | -           | Environmental testing -<br>Part 2-6: Tests - Test Fc: Vibration<br>(sinusoidal)   | EN 60068-2-6                  | -               |
| IEC 60068-2-11     | -           | Environmental testing -<br>Part 2: Tests - Test Ka: Salt mist   | EN 60068-2-11                 | -               |
| IEC 60068-2-13     | -           | Environmental testing -<br>Part 2: Tests - Test M: Low air pressure   | EN 60068-2-13                 | -               |
| IEC 60068-2-14     | 2009        | Environmental testing -<br>Part 2-14: Tests - Test N: Change of<br>temperature  | EN 60068-2-14                 | 2009            |
| IEC 60068-2-17     | -           | Environmental testing -<br>Part 2: Tests - Test Q: Sealing  | EN 60068-2-17                 | -               |
| IEC 60068-2-20     | -           | Environmental testing -<br>Part 2-20: Tests - Test T: Test methods for<br>solderability and resistance to soldering heat<br>of devices with leads | EN 60068-2-20                 | -               |
| IEC 60068-2-27     | -           | Environmental testing -<br>Part 2-27: Tests - Test Ea and guidance:<br>Shock  | EN 60068-2-27                 | -               |
| IEC 60068-2-29     | -           | Environmental testing -<br>Part 2: Tests - Test Eb and guidance: Bump   | EN 60068-2-29                 | - <sup>4)</sup> |
| IEC 60068-2-30     | -           | Environmental testing -<br>Part 2-30: Tests - Test Db: Damp heat, cyclic<br>(12 h + 12 h cycle)   | EN 60068-2-30                 | -               |

<sup>1)</sup> EN 60068-2-1 is superseded by EN 60068-2-1:2007, which is based on IEC 60068-2-1:2007.

<sup>2)</sup> EN 60068-2-2 includes supplement(s) A to IEC 60068-2-2.

<sup>3)</sup> EN 60068-2-2 is superseded by EN 60068-2-2:2007, which is based on IEC 60068-2-2:2007.

<sup>4)</sup> EN 60068-2-29 is superseded by EN 60068-2-27:2009, which is based on IEC 60068-2-27:2009.

| <u>Publication</u>             | <u>Year</u>     | <u>Title</u>   | <u>EN/HD</u>  | <u>Year</u> |
|--------------------------------|-----------------|--|---------------|-------------|
| IEC 60068-2-42                 | -               | Environmental testing -<br>Part 2-42: Tests - Test Kc: Sulphur dioxide<br>test for contacts and connections  | EN 60068-2-42 | -           |
| IEC 60068-2-52<br>+ corr. July | 1996<br>1996    | Environmental testing -<br>Part 2-52: Tests - Test Kb: Salt mist, cyclic<br>(sodium chloride solution)   | EN 60068-2-52 | 1996        |
| IEC 60068-2-54                 | -               | Environmental testing -<br>Part 2-54: Tests - Test Ta: Solderability<br>testing of electronic components by the<br>wetting balance method              | EN 60068-2-54 | -           |
| IEC 60068-2-61                 | 1991            | Environmental testing -<br>Part 2: Test methods - Test Z/ABDM: Climatic<br>sequence  | EN 60068-2-61 | 1993        |
| IEC 60068-2-78                 | -               | Environmental testing -<br>Part 2-78: Tests - Test Cab: Damp heat,<br>steady state   | EN 60068-2-78 | -           |
| IEC 60457-1                    | -               | Rigid precision coaxial lines and their<br>associated precision connectors -<br>Part 1: General requirements and measuring<br>methods                  | HD 351.1 S1   | -           |
| IEC 60617                      | Data-<br>base   | Graphical symbols for diagrams   | -             | -           |
| IEC 61726                      | -               | Cable assemblies, cables, connectors and<br>passive microwave components - Screening<br>attenuation measurement by the reverberation<br>chamber method | EN 61726      | -           |
| IEC 62037                      | Series          | Passive RF and microwave devices,<br>intermodulation level measurement   | EN 62037      | Series      |
| IEC 62153                      | Series          | Metallic communication cables test methods   | EN 62153      | Series      |
| ISO 1000                       | - <sup>5)</sup> | SI units and recommendations for the use of<br>their multiples and of certain other units  | -             | -           |

<sup>5)</sup> ISO 1000:1992 has been withdrawn.

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## RADIO FREQUENCY CONNECTORS –

### Part 1: Generic specification – General requirements and measuring methods

#### 1 Scope

This part of IEC 61169, which is a generic specification, relates to radio frequency connectors for r.f. transmission lines for use in telecommunications, electronics and similar equipment.

It provides the basis for the sectional standards, which apply to individual connector types. It is intended to establish uniform concepts and procedures concerning:

- terminology;
- standard ratings and characteristics;
- testing and measuring procedures concerning electrical, mechanical and climatic properties;
- classification of connectors with regard to climatic testing procedures involving temperature and humidity.

The test methods and procedures of this standard are intended for acceptance and type approval testing.

#### 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 60027 (all parts), *Letter symbols to be used in electrical technology*

IEC 60050 (all parts), *International Electrotechnical Vocabulary* (available from: <http://www.electropedia.org>)

IEC 60068-1, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1:1990, *Environmental testing – Part 2-1: Tests – Test A: Cold*<sup>1</sup>

IEC 60068-2-2:1974, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*<sup>2</sup>

IEC 60068-2-6, *Environmental testing – Part 2-6: Tests – Test Fc: Vibration (sinusoidal)*

IEC 60068-2-11, *Environmental testing – Part 2-11: Tests – Test Ka: Salt mist*

IEC 60068-2-13, *Environmental testing – Part 2-13: Tests – Test M: Low air pressure*

IEC 60068-2-14:2009, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-17, *Environmental testing – Part 2-17: Tests – Test Q: Sealing*

<sup>1</sup> This publication has been withdrawn.

<sup>2</sup> This publication has been withdrawn.

IEC 60068-2-20, *Environmental testing – Part 2-20: Tests – Test T: Test methods for solderability and resistance to soldering heat of devices with leads*

IEC 60068-2-27, *Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock*

IEC 60068-2-29, *Environmental testing – Part 2: Tests – Test Eb and guidance: Bump*

IEC 60068-2-30, *Environmental testing – Part 2-30: Tests – Test Db: Damp heat, cyclic (12 h + 12 h cycle)*

IEC 60068-2-42, *Environmental testing – Part 2-42: Tests – Test Kc: Sulphur dioxide test for contacts and connections*

IEC 60068-2-52:1996, *Environmental testing – Test Kb: Salt mist, cyclic (sodium, chloride solution)*

IEC 60068-2-54, *Environmental testing – Part 2-54: Tests – Test Ta: Solderability testing of electronic components by the wetting balance method*

IEC 60068-2-61:1991, *Environmental testing – Part 2-61: Test methods – Test Z/ABDM: Climatic sequence*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60457-1, *Rigid precision coaxial lines and their associated precision connectors – Part 1: General requirements and measuring methods*

IEC 60617, *Graphical symbols for diagrams* (available from: <http://std.iec.ch/iec60617>)

IEC 62153 (all parts), *Metallic communication cables test methods*

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

IEC 62037 (all parts), *Passive RF and microwave devices, intermodulation level measurement*

ISO 1000, *SI units and recommendations for the use of their multiples and of certain other units*<sup>3</sup>

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE Some of the terms defined are not used in the present document, but may be used in the different sectional specifications.

#### 3.1 General, parts of connectors

##### 3.1.1

##### **contact (electrical)**

state in which individual electrically conductive parts are in such close mechanical touch as to provide a low resistance path to electrical current in either direction

##### 3.1.2

##### **contact**

conductive element in a component which mates with a corresponding element to provide an electrical path (to provide electrical contact)

<sup>3</sup> This publication has been withdrawn.