SLOVENSKI STANDARD
SIST EN 61169-1:2014

01-januar-2014

Radiofrekvenčni konektorji - 1. del: Rodovna specifikacija - Splošne zahteve in merilne metode

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

Hochfrequenz-Steckverbinder - Teil 1: Fachgrundspezifikation - Allgemeine Anforderungen und Messverfahren

Ta slovenski standard je istoveten z: **EN 61169-1:2013**

ICS:

33.120.30	Radiofrekvenčni konektorji (RF)	R.F. connectors

SIST EN 61169-1:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 61169-1

November 2013

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Supersedes EN 61169-1:1994 + A1:1996 + A2:1997

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)

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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.

CENELEC

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

Ref. No. EN 61169-1:2013 E

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.

Publication	Year	Title	EN/HD	Year
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 - Part 1: General and guidance	EN 60068-1	-
IEC 60068-2-1	1990	Environmental testing - Part 2: Tests - Tests A: Cold	EN 60068-2-1 [1)]	1993
IEC 60068-2-2	1974	Environmental testing - Part 2: Tests - Tests B: Dry heat	EN 60068-2-2 [2) 3)]	1993
IEC 60068-2-6	-	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)	EN 60068-2-6	-
IEC 60068-2-11	-	Environmental testing - Part 2: Tests - Test Ka: Salt mist	EN 60068-2-11	-
IEC 60068-2-13	-	Environmental testing - Part 2: Tests - Test M: Low air pressure	EN 60068-2-13	-
IEC 60068-2-14	2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature	EN 60068-2-14	2009
IEC 60068-2-17	-	Environmental testing - Part 2: Tests - Test Q: Sealing	EN 60068-2-17	-
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	EN 60068-2-20	-
IEC 60068-2-27	-	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock	EN 60068-2-27	-
IEC 60068-2-29	-	Environmental testing - Part 2: Tests - Test Eb and guidance: Bump	EN 60068-2-29	- [4)]
IEC 60068-2-30	-	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)	EN 60068-2-30	-

[1)] EN 60068-2-1 is superseded by EN 60068-2-1:2007, which is based on IEC 60068-2-1:2007.

[2)] EN 60068-2-2 includes supplement(s) A to IEC 60068-2-2.

[3)] EN 60068-2-2 is superseded by EN 60068-2-2:2007, which is based on IEC 60068-2-2:2007.

[4)] EN 60068-2-29 is superseded by EN 60068-2-27:2009, which is based on IEC 60068-2-27:2009.

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

[5)] ISO 1000:1992 has been withdrawn.

IEC 61169-1

Edition 2.0 2013-07

INTERNATIONAL STANDARD

colour inside

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

PRICE CODE XA

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

RADIO FREQUENCY CONNECTORS –

Part 1: Generic specification – General requirements and measuring methods

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.
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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 61169-1 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.

This second edition cancels and replaces the first edition, published in 1992, its Amendments 1 (1996) and 2 (1997). This edition constitutes a technical revision.

With respect to the previous edition, tests methods have been updated as well as terminology.

The text of this standard is based on the following documents:

CDV	Report on voting
46F/216/CDV	46F/226/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 the parts in the IEC 61169 series, published 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.

A bilingual version of this publication may be issued at a later date.

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 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*[1]

IEC 60068-2-2:1974, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*[2]

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*

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1 This publication has been withdrawn.

2 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*[3]

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)

[3] This publication has been withdrawn.

3.1.3
male (pin) contact
contact intended to make electrical engagement on its outer surface and which will enter a female (socket) contact

3.1.4
female (socket) contact
contact intended to make electrical engagement on its inner surface and which will accept entry of a male (pin) contact

3.1.5
hermaphroditic contact
contact which is intended to mate with an identical contact

3.1.6
resilient contact
contact having elastic properties to provide a force to its mating part

3.2 Basic connector terms

3.2.1
connector
component normally attached to a cable or mounted on a piece of apparatus (excluding an adaptor) for electrically joining separable parts of a transmission line system

3.2.2
connector pair
two connectors having complementary mating faces and locking means, so as to be mateable and interlockable

3.2.3
series type
terms characterizing the particular mating faces and locking means of a connector pair with regard to construction and dimension

Note 1 to entry: The term "series" is sometimes used as an approximate synonym of 'type' for designating the entirety of connector styles with identical mating face and locking means.

3.2.4
style
particular form or shape of connector, as well as a combination of connectors of the same type

Note 1 to entry: For "adaptor", see 3.5.1 to 3.5.5: a 'within-type adaptor" may also be considered as a particular style of a given type.

Note 2 to entry: Examples are: free and fixed connectors, both straight and right angle, within-type adaptors straight and right angle.

3.2.5
variant
variation of a style, in particular details, such as cable-entry dimensions

3.2.6
grade
qualification of a connector with regard to mechanical and electrical precision in particular with respect to a defined return loss

3.2.7
general purpose connector: Grade 2
connector making use of the widest permitted dimensional deviations (tolerances) so as still to guarantee minimum stated performance and intermateability

Note 1 to entry: A requirement for the return loss may or may not be specified.