
Irish Standard
I.S. EN 61169-38:2009

# Radio-frequency connectors -- Part 38: Sectional specification - Radio frequency coaxial connectors model, slide-in (rack and panel applications) - Characteristic impedance 50 O (type TMA) - 50 O applications (IEC 61169 -38:2008 (EQV))

# I.S. EN 61169-38:2009

*Incorporating amendments/corrigenda issued since publication:*

| *This document replaces:* | *This document is based on:* EN 61169-38:2009 | *Published:* 2 March, 2009 |
|---|---|---|

This document was published under the authority of the NSAI and comes into effect on:

12 June, 2009

ICS number:
33.120.20

**NSAI**
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W **NSAI.ie**

**Sales:**
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

**Price Code:**
J

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

# EN 61169-38

March 2009

ICS 33.120.20

English version

# Radio-frequency connectors - Part 38: Sectional specification - Radio frequency coaxial connectors model, slide-in (rack and panel applications) - Characteristic impedance 50 Ω (type TMA) - 50 Ω applications

(IEC 61169-38:2008)

Connecteurs pour fréquences radioélectriques - Partie 38: Spécification intermédiaire - Connecteurs coaxiaux pour fréquences radioélectriques avec accouplements de type glis (applications de "panneau" et "fond de panier") - Impédance caractéristique 50 Ω (type TMA) - Applications à 50 Ω
(CEI 61169-38:2008)

Hochfrequenz-Steckverbinder - Teil 38: Rahmenspezifikation - Koaxiale Hochfrequenzsteckverbinder mit Einschubkupplung (Einschubausführung) - Wellenwiderstand 50 Ω (Typ TMA) - 50-Ω-Anwendungen
(IEC 61169-38:2008)

This European Standard was approved by CENELEC on 2008-12-01. 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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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

CENELEC

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

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 46F/75/CDV, future edition 1 of IEC 61169-38, 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 was approved by CENELEC as EN 61169-38 on 2008-12-01.

The following dates were fixed:

| | | |
|---|---|---|
| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2009-09-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2011-12-01 |

Annex ZA has been added by CENELEC.

———————

## Endorsement notice

The text of the International Standard IEC 61169-38:2008 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 referenced documents are indispensable for the application 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 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 61169-1 | 1992 | Radio-frequency connectors - Part 1: Generic specification - General requirements and measuring methods | EN 61169-1 | 1994 |
| IEC QC 001005 | - [1)] | IEC Quality assessment system for electronic components (IECQ) - Register of films, products and services approved under the IECQ system, including ISO 9000 | - | - |

[1)] Undated reference.

# CONTENTS

FOREWORD ..... 4
1 Scope ..... 6
2 Normative references ..... 6
3 Mating face and gauge information ..... 7
3.1 Dimensions – General connectors – Grade 2 ..... 7
3.1.1 Connector with pin centre contact (see Figure 1) ..... 7
3.1.2 Connectors with socket-centre contact (see Figure 2) ..... 8
3.2 Gauges ..... 9
3.2.1 Connectors with pin-centre contact ..... 9
3.2.2 Connectors with socket-centre contact ..... 10
3.3 Dimensions – standard test connectors – Grade 0 ..... 11
3.3.1 Connector with pin-centre contact (see Figure 5) ..... 11
3.3.2 Connector with socket-centre contact (see Figure 6) ..... 12
3.4 General requirements for connector mounting in modules and on panels ..... 14
3.4.1 Radial misalignment ..... 14
3.4.2 Axial misalignment ..... 14
4 Quality assessment procedure ..... 15
4.1 General ..... 15
4.2 Rating and characteristics ( see Clause 6 of IEC 61169-1/QC220000) ..... 15
4.3 Test schedule and inspection requirements ..... 18
4.3.1 Acceptance tests (see Table 8) ..... 18
4.3.2 Periodic tests (see Table 9) ..... 19
4.4 Procedures ..... 20
4.4.1 Quality conformance inspection ..... 20
4.4.2 Qualification approval and its maintenance ..... 20
5 Instructions for preparation of detail specifications ..... 20
5.1 General ..... 20
5.2 Identification of the detail specification ..... 21
5.3 Identification of the component ..... 21
5.4 Performance ..... 21
5.5 Marking, ordering information and related matters ..... 21
5.6 Selection of tests, test conditions and severities ..... 22
5.7 Blank detail specification pro-forma for type TMA connector ..... 23

Figure 1 – Connector with pin-centre contact (for dimensions, see Table 1) ..... 7
Figure 2 – Connector with socket-centre contact (for dimensions, see Table 2) ..... 8
Figure 3 – Gauge for outer contact of pin connector (for dimensions, see Table 3) ..... 9
Figure 4 – Gauge pin for socket-centre contact (for dimensions, see Table 4) ..... 10
Figure 5 – Standard test connector with pin-centre contact (for dimensions, see Table 5) ..... 11
Figure 6 – Standard test connector with socket-centre contact (for dimensions, see Table 6) ..... 12
Figure 7 – The sketch map of connector radial misalignment ..... 14
Figure 8 – The sketch map of rigidly mounted and float-mounted connector ..... 14

Table 1 – Dimensions of connector with pin-centre contact ..... 7

Table 2 – Dimensions of connector with socket-centre contact ..... 8
Table 3 – Dimensions of gauge for outer contact of pin connector ..... 9
Table 4 – Dimensions of gauge pin for socket-center contact ..... 10
Table 5 – Dimensions of standard test connector with pin-centre contact ..... 11
Table 6 – Dimensions of standard test connector with socket-centre contact ..... 13
Table 7 – Rating and characteristics ..... 15
Table 8 – Acceptance tests ..... 18
Table 9 – Periodic tests ..... 19

INTERNATIONAL ELECTROTECHNICAL COMMISSION

# RADIO-FREQUENCY CONNECTORS –

# Part 38: Sectional specification – Radio frequency coaxial connectors model, slide-in (rack and panel applications) – Characteristic impedance 50 Ω (type TMA) – 50 Ω applications

## 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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
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 61169-38 has been prepared by subcommittee 46F: RF and microwave passive components, of IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This standard cancels and replaces IEC/PAS 61169-38 published in 2007.

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

| CDV | Report on voting |
|---|---|
| 46F/75/CDV | 46F/90/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 maintenance result 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.

# RADIO-FREQUENCY CONNECTORS –

# Part 38: Sectional specification – Radio frequency coaxial connectors model, slide-in (rack and panel applications) – Characteristic impedance 50 Ω (type TMA) – 50 Ω applications

## 1 Scope

This part of 61169, which is a sectional specification, provides information and rules for the preparation of detail specifications for series TMA r.f. connectors together with the pro forma blank detail specification.

Series TMA connectors have a characteristic impedance of 50 Ω and are normally used with R.F cables or with microstrip in microwave fields that has a blind-entry and middle low-power. The connectors are usable up to a frequency of at least 6 GHz.

This specification also prescribes mating face dimensions for general purpose connectors, dimensional details of standard test connectors grade 0, gauging information and tests selected from QC 220000 (IEC 61169-1), applicable to all detail specifications relating to series TMA connectors.

This specification indicates the 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.

## 2 Normative references

The following referenced documents are indispensable for the application 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 61169-1:1992, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

IEC QC 001005, *Register of firms, products and services approved under the IECQ system, including ISO 9000*