

# **SLOVENSKI STANDARD**

## **SIST EN 60130-9:2011**

**01-junij-2011**

**Nadomešča:**

**SIST EN 60130-9:2001**

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**Konektorji za frekvence pod 3 MHz - 9. del: Okrogli konektorji za radijsko in pripadajočo zvokovno opremo (IEC 60130-9:2011)**

Connectors for frequencies below 3 MHz - Part 9: Circular connectors for radio and associated sound equipment (IEC 60130-9:2011)

Steckverbinder für Frequenzen unter 3 MHz - Teil 9: Rundsteckverbinder für Rundfunk und verwandte elektroakustische Geräte (IEC 60130-9:2011)

Connecteurs utilisés aux fréquences jusqu'à 3 MHz - Partie 9: Connecteurs circulaires pour appareils de radiodiffusion et équipements électroacoustiques associés (CEI 60130-9:2011)

**Ta slovenski standard je istoveten z: EN 60130-9:2011**

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**ICS:**

31.220.10	Vtiči in vtičnice, konektorji	Plug-and-socket devices. Connectors
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**SIST EN 60130-9:2011**

**en**

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SIST EN 60130-9:2011

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 60130-9**

April 2011

ICS 31.220.10

Supersedes EN 60130-9:2000

English version

**Connectors for frequencies below 3 MHz -  
Part 9: Circular connectors for radio and associated sound equipment  
(IEC 60130-9:2011)**

Connecteurs utilisés aux fréquences  
jusqu'à 3 MHz -  
Partie 9: Connecteurs circulaires pour  
appareils de radiodiffusion et équipements  
électroacoustiques associés  
(CEI 60130-9:2011)

Steckverbinder für Frequenzen unter  
3 MHz -  
Teil 9: Rundsteckverbinder für Rundfunk-  
und verwandte elektroakustische Geräte  
(IEC 60130-9:2011)

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This European Standard was approved by CENELEC on 2011-03-30. 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, Croatia, 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

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 48B/2180/CDV, future edition 4 of IEC 60130-9, prepared by SC 48B, Connectors, of IEC TC 48, Electromechanical components and mechanical structures for electronic equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60130-9 on 2011-03-30.

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

This European Standard supersedes EN 60130-9:2000.

EN 60130-9:2011 includes the following significant technical changes with respect to EN 60130-9:2000:

- the scope has been amended to clarify its separation through its field of application, from EN 61076-2-106;
- 8-pole connector styles 60130-9 IEC-22 through 60130-9 IEC-25 with screw locking have been deleted as obsolete and overlapping with some styles of EN 61076-2-106;
- application and connections in Table 1 have been deleted because of referencing obsolete sound equipment. Titles of the dimension sheets and the clause headlines of Annex A have been amended accordingly;
- the reference to safety requirements according to EN 60065 has been deleted.

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) 2011-12-30
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-03-30

Annex ZA has been added by CENELEC.

## Endorsement notice

The text of the International Standard IEC 60130-9:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60065      NOTE Harmonized as EN 60065.

## 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1 + A1	1988 1992	Environmental testing - Part 1: General and guidance	EN 60068-1	1994
IEC 60512	Series	Connectors for electronic equipment - Tests and measurements	EN 60512	Series
IEC 60512-1-1	-	Connectors for electronic equipment - Tests and measurements - Part 1-1: General examination - Test 1a: Visual examination	EN 60512-1-1	-
IEC 60512-1-2	-	Connectors for electronic equipment - Tests and measurements - Part 1-2: General examination - Test 1b: Examination of dimension and mass	EN 60512-1-2	-
IEC 60512-2-1	-	Connectors for electronic equipment - Tests and measurements - Part 2-1: Electrical continuity and contact resistance tests - Test 2a: Contact resistance - Millivolt level method	EN 60512-2-1	-
IEC 60512-3-1	-	Connectors for electronic equipment - Tests and measurements - Part 3-1: Insulation tests - Test 3a: Insulation resistance	EN 60512-3-1	-
IEC 60512-4-1	-	Connectors for electronic equipment - Tests and measurements - Part 4-1: Voltage stress tests - Test 4a: Voltage proof	EN 60512-4-1	-
IEC 60512-7-1	-	Connectors for electronic equipment - Tests and measurements - Part 7-1: Impact tests (free connectors) - Test 7a: Free fall (repeated)	EN 60512-7-1	-
IEC 60512-7-2	- <sup>1)</sup>	Connectors for electronic equipment - Tests and measurements - Part 7-2: Impact tests (free connectors) - Test 7b: Mechanical strength impact	EN 60512-7-2	- <sup>1)</sup>
IEC 60512-9-1	-	Connectors for electronic equipment - Tests and measurements - Part 9-1: Endurance tests - Test 9a: Mechanical operation	EN 60512-9-1	-

<sup>1)</sup> To be published.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60512-11-1	-	Electromechanical components for electronic equipment - Basic testing procedures and measuring methods - Part 11: Climatic tests - Section 1: Test 11a - Climatic sequence	EN 60512-11-1	-
IEC 60512-11-3	-	Connectors for electronic equipment - Tests and measurements - Part 11-3: Climatic tests - Test 11c: Damp heat, steady state	EN 60512-11-3	-
IEC 60512-11-9	-	Connectors for electronic equipment - Tests and measurements - Part 11-9: Climatic tests - Test 11i: Dry heat	EN 60512-11-9	-
IEC 60512-11-10	-	Connectors for electronic equipment - Tests and measurements - Part 11-10: Climatic tests - Test 11j: Cold	EN 60512-11-10	-
IEC 60512-11-12	-	Connectors for electronic equipment - Tests and measurements - Part 11-12: Climatic tests - Test 11m: Damp heat, cyclic	EN 60512-11-12	-
IEC 60512-13-2	-	Connectors for electronic equipment - Tests and measurements - Part 13-2: Mechanical operating tests - Test 13b: Insertion and withdrawal forces	EN 60512-13-2	-
IEC 60512-16-5	-	Connectors for electronic equipment - Tests and measurements - Part 16-5: Mechanical tests on contacts and terminations - Test 16e: Gauge retention force (resilient contacts)	EN 60512-16-5	-
IEC 60512-17-1	-	Connectors for electronic equipment - Tests and measurements - Part 17-1: Cable clamping tests - Test 17a: Cable clamp robustness	EN 60512-17-1	-
IEC 60512-17-2	- <sup>1)</sup>	Connectors for electronic equipment - Tests and measurements - Part 17-2: Cable clamping tests - Test 17b: Cable clamp resistance to cable rotation	EN 60512-17-2	- <sup>1)</sup>
IEC 60512-17-3	-	Connectors for electronic equipment - Tests and measurements - Part 17-3: Cable clamping tests - Test 17c: Cable clamp resistance to cable pull (tensile)	EN 60512-17-3	-
IEC 60512-17-4	-	Connectors for electronic equipment - Tests and measurements - Part 17-4: Cable clamping tests - Test 17d: Cable clamp resistance to cable torsion	EN 60512-17-4	-
IEC 61076-2-106	- <sup>1)</sup>	Connectors for electronic equipment - Product requirements - Part 2-106: Circular connectors - Detail specification for connectors m 16 x 0,75 with screw-locking and degree of protection ip40 or ip65/67	EN 61076-2-106	- <sup>1)</sup>
ISO 1302	-	Geometrical Product Specifications (GPS) - Indication of surface texture in technical product documentation	EN ISO 1302	-



IEC 60130-9

Edition 4.0 2011-02

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

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**Connectors for frequencies below 3 MHz –  
Part 9: Circular connectors for radio and associated sound equipment**

**Connecteurs utilisés aux fréquences jusqu'à 3 MHz –  
Partie 9: Connecteurs circulaires pour appareils de radiodiffusion et  
équipements électroacoustiques associés**

INTERNATIONAL  
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COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## CONNECTORS FOR FREQUENCIES BELOW 3 MHz –

**Part 9: Circular connectors for radio  
and associated sound equipment**

## 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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- 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 60130-9 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This fourth edition cancels and replaces the third edition of IEC 60130-9, published in 2000, and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- the scope has been amended to clarify its separation through its field of application, from IEC 61076-2-106;
- 8-pole connector styles 60130-9 IEC-22 through 60130-9 IEC-25 with screw locking have been deleted as obsolete and overlapping with some styles of IEC 61076-2-106;

- application and connections in Table 1 have been deleted because of referencing obsolete sound equipment. Titles of the dimension sheets and the clause headlines of Annex A have been amended accordingly;
- the reference to safety requirements according to IEC 60065 has been deleted.

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

CDV	Report on voting
48B/2180/CDV	48B/2222/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.

A list of all parts of IEC 60130 series, under the general title *Connectors for frequencies below 3 MHz*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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.

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## CONNECTORS FOR FREQUENCIES BELOW 3 MHz –

### Part 9: Circular connectors for radio and associated sound equipment

#### 1 Scope

This part of IEC 60130 relates to circular connectors for radio and associated sound equipment.

NOTE IEC 61076-2-106 specifies connectors with a similar mating interface for connectors M16x0,75 with screw-locking and degree of protection IP40 or IP65/IP67 and with M16x0,75 screw-locking accessory. As the IEC 60130-9 connector styles mating with the corresponding ones of IEC 61076-2-106 do not have a locking mechanism specified they are therefore not appropriate for industrial process measurement and control equipment. Users of this IEC 60130-9 standard should be aware that some of the IEC 61076-2-106 styles could be mated but not locked to some connector styles of this IEC 60130-9 standard.

#### 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 60068-1: 1988, *Environmental testing – Part 1: General and guidance*  
Amendment 1 (1992)

IEC 60512 (all parts), *Connectors for electronic equipment – Basic testing procedures and measuring methods*

IEC 60512-1-1, *Connectors for electronic equipment – Tests and measurements – Part 1-1: General examination – Test 1a: Visual examination*

IEC 60512-1-2, *Connectors for electronic equipment – Tests and measurements – Part 1-2: General examination – Test 1b: Examination of dimension and mass*

IEC 60512-2-1, *Connectors for electronic equipment – Tests and measurements – Part 2-1: Electronic continuity and contact resistance tests – Test 2a: Contact resistance – Millivolt level method*

IEC 60512-3-1, *Connectors for electronic equipment – Tests and measurements – Part 3-1: Insulation tests – Test 3a: Insulation resistance*

IEC 60512-4-1, *Connectors for electronic equipment – Tests and measurements – Part 4-1: Voltage stress tests – Test 4a: Voltage proof*

IEC 60512-7-1, *Connectors for electronic equipment – Tests and measurements – Part 7-1: Impact tests (free connectors) – Test 7a: Free fall (repeated)*

IEC 60512-7-2, *Connectors for electronic equipment – Tests and measurements – Part 7-2: Impact tests (free components) – Test 7b: Mechanical strength impacts and measurements<sup>1</sup>*

<sup>1</sup> To be published.

IEC 60512-9-1, *Connectors for electronic equipment – Tests and measurements – Part 9-1: Endurance tests – Test 9a: Mechanical operation*

IEC 60512-11-1, *Electromechanical components for electronic equipment – Basic testing procedures and measuring methods – Part 11 – Section 1: Test 11a – Climatic sequence*

IEC 60512-11-3, *Connectors for electronic equipment – Tests and measurements – Part 11-3: Climatic tests – Test 11c: Damp heat, steady state*

IEC 60512-11-9, *Connectors for electronic equipment – Tests and measurements – Part 11-9: Climatic tests – Test 11i: Dry heat*

IEC 60512-11-10, *Connectors for electronic equipment – Tests and measurements – Part 11-10: Climatic tests – Test 11j: Cold*

IEC 60512-11-12, *Connectors for electronic equipment – Tests and measurements – Part 11-12: Climatic tests – Test 11m: Damp heat, cyclic*

IEC 60512-13-2, *Connectors for electronic equipment – Tests and measurements – Part 13-2: Mechanical operation tests – Test 13b: Insertion and withdrawal forces*

IEC 60512-16-5, *Connectors for electronic equipment – Tests and measurements – Part 16-5: Mechanical tests on contacts and terminations – Test 16e: Gauge retention force (resilient contacts)*

IEC 60512-17-1, *Connectors for electronic equipment – Tests and measurements – Part 17-1: Cable clamping tests – Test 17a: Cable clamp robustness*

IEC 60512-17-2, *Connectors for electronic equipment – Tests and measurements – Part 17-2: Cable clamping tests – Test 17b: Cable clamp resistance to cable rotation<sup>2</sup>*

IEC 60512-17-3, *Connectors for electronic equipment – Tests and measurements – Part 17-3: Cable clamping tests – Test 17c: Cable clamp resistance to cable pull (tensile)*

IEC 60512-17-4, *Connectors for electronic equipment – Tests and measurements – Part 17-4: Cable clamping tests – Test 17d: Cable clamp resistance to cable Torsion*

IEC 61076-2-106, *Connectors for electronic equipment – Product requirements – Part 2-106: Circular connectors – Detail specification for connectors M 16 x 0,75 with screw-locking and degree of protection IP40 or IP65/67<sup>3</sup>*

ISO 1302, *Geometrical Product Specifications (GPS) – Indication of surface texture in technical product documentation*

### 3 Technical information

#### 3.1 IEC type designation

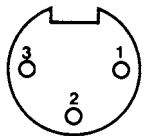
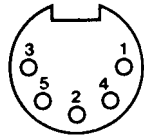
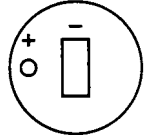
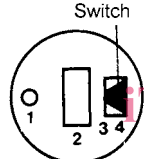

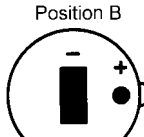
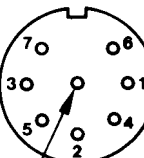
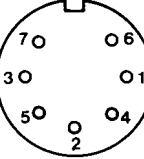
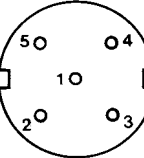
Connectors according to this part of IEC 60130 shall be designated by:

- a) the reference to this standard: 60130-9 IEC;
- b) a serial number according Table 1.

<sup>2</sup> Under consideration.

<sup>3</sup> To be published.

Table 1 – Type designation

Contact arrangement	Type designation	
See note 1 of 3.2	Male connector	Female connector
	60130-9 IEC-01	60130-9 IEC-02
	60130-9 IEC-03	60130-9 IEC-04
	60130-9 IEC-06	60130-9 IEC-07 60130-9 IEC-09
	60130-9 IEC-08 See note 2 of 3.2	
Position A  Position B  Pin connector	SIST EN 60130-9:2011 <a href="https://standards.iteh.ai/catalog/standards/sist/d74f7cec-09ab-48cb-bd74-9968b0a1aa16/sist-en-60130-9-2011">https://standards.iteh.ai/catalog/standards/sist/d74f7cec-09ab-48cb-bd74-9968b0a1aa16/sist-en-60130-9-2011</a> 60130-9 IEC-05 See note 2	
	60130-9 IEC-10	60130-9 IEC-11
	60130-9 IEC-12	60130-9 IEC-13
	60130-9 IEC-14	60130-9 IEC-15 60130-9 IEC-15a