

# **SLOVENSKI STANDARD**

## **SIST EN 61188-7:2017**

**01-oktober-2017**

**Nadomešča:**  
**SIST EN 61188-7:2010**

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**Plošče tiskanih vezij in sestavi plošč tiskanih vezij - Oblika in uporaba - 7. del:**  
**Niželna orientacija elektronske komponente za izdelavo knjižnice CAD**

Printed boards and printed board assemblies - Design and use - Part 7: Electronic component zero orientation for CAD library construction

Leiterplatten und Flachbaugruppen – Konstruktion und Anwendung – Teil 7:  
Nullorientierung elektronischer Bauelemente für CAD-Bibliotheksaufbau

Cartes imprimées et cartes imprimées équipées – Conception et utilisation - Partie 7:  
Orientation nulle des composants électroniques pour l'élaboration de la bibliothèque CAO

**Ta slovenski standard je istoveten z: EN 61188-7:2017**

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**ICS:**

31.180 Tiskana vezja (TIV) in tiskane Printed circuits and boards  
plošče

**SIST EN 61188-7:2017**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61188-7**

June 2017

ICS 31.180

Supersedes EN 61188-7:2009

English Version

Printed boards and printed board assemblies - Design and use -  
Part 7: Electronic component zero orientation for CAD library  
construction  
(IEC 61188-7:2017)

Cartes imprimées et cartes imprimées équipées -  
Conception et utilisation - Partie 7: Orientation nulle des  
composants électroniques pour l'élaboration de la  
bibliothèque CAO  
(IEC 61188-7:2017)

Leiterplatten und Flachbaugruppen - Konstruktion und  
Anwendung - Teil 7: Nullorientierung elektronischer  
Bauelemente für CAD-Bibliotheksaufbau  
(IEC 61188-7:2017)

This European Standard was approved by CENELEC on 2017-05-15. 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**

**EN 61188-7:2017****European foreword**

The text of document 91/1382/CDV, future edition 2 of IEC 61188-7, prepared by IEC/TC 91 "Electronics assembly technology" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61188-7:2017.

The following dates are fixed:

- latest date by which the document has to be (dop) 2018-02-15  
implemented at national level by  
publication of an identical national  
standard or by endorsement
- latest date by which the national (dow) 2020-05-15  
standards conflicting with the  
document have to be withdrawn

This document supersedes EN 61188-7:2009.

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

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

<u>Publication</u>	<u>Year</u> series	<u>Title</u>	<u>EN/HD</u>	<u>Year</u> series
IEC 61188-5		Printed boards and printed board assemblies - Design and use	EN 61188-5	

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IEC 61188-7

Edition 2.0 2017-04

# INTERNATIONAL STANDARD



**Printed boards and printed board assemblies – Design and use –  
Part 7: Electronic component zero orientation for CAD library construction**

SIST EN 61188-7:2017  
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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

ICS 31.180

ISBN 978-2-8322-4165-3

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PRINTED BOARDS AND PRINTED BOARD ASSEMBLIES –  
DESIGN AND USE –****Part 7: Electronic component zero orientation  
for CAD library construction**

## FOREWORD

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International Standard IEC 61188-7 has been prepared by IEC technical committee 91: Electronics assembly technology.

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

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

- a) Figure 1 has been corrected;
- b) the term "rectangle" has generally been replaced by "polygon";
- c) level B has been indicated as preferred level for new libraries.

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

CDV	Report on voting
91/1382/CDV	91/1428/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 61188 series, under the general title *Printed boards and printed board assemblies – Design and use*, 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.

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

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## INTRODUCTION

One of the factors of establishing a CAD library component description and land pattern standard is to adopt a fixed zero component orientation so that all CAD images are built with the same rotation for the purpose of assembly machine automation.

The land pattern standards clearly define all the properties necessary for standardization and acceptability of a one world CAD library. The main objective in defining a one world CAD library is to achieve the highest level of electronic product development automation. This encompasses all the processes involved from engineering to PCB layout to fabrication, assembly and test. The data format standards need this type of consistency in order to meet the efficiency that electronic data transfer can bring to the industry.

Many large firms have spent millions of dollars creating and implementing their own unique standards for their own electronic product development automation. These standards are proprietary to each firm and are not openly shared with the rest of the industry. This has resulted in massive duplication of effort, costing the industry millions of man hours in waste and creating industry chaos and global non-standardization.

The main purpose of creating the land pattern standards is to achieve reliable solder joint formation platforms; the reason for developing the data transfer structure is to improve the efficiency with which engineering intelligence is converted into manufacturing reality. Even if the neutral CAD format can drive all the manufacturing machines, it would be meaningless unless the component description standard for CAD land patterns were implemented with some consistency. Zero component orientation has a key role in machine automation.

The obvious choice for global standardization for EE hardware engineering, PCB design layout, manufacturing, assembly and testing processes is to incorporate the standard land pattern conventions. Any other option continues the confusion and additional manual hours of intervention in order to achieve the goals of automation. In addition, the ease of having one system export a file so that another system can accomplish the work can require unnecessary manipulation of the neutral format in order to meet the object of clear, unambiguous software code.

The design of any assembly will continue to permit arrangement and orientation of components at any orientation consistent with design standards. Starting from a commonly understood data capture concept will benefit the entire supply chain.

This standard defines angle and origin point of land patterns for land pattern designing.