

**Mechanical structures for electronic equipment -  
Dimensions of mechanical structures of the 482, 6 mm  
(19 in) series - Part 5-104: Subracks and associated  
plug-in units; Keying**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60297-5-104:2002 sisaldab Euroopa standardi EN 60297-5-104:2001 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 18.12.2002 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 60297-5-104:2002 consists of the English text of the European standard EN 60297-5-104:2001.

This standard is ratified with the order of Estonian Centre for Standardisation dated 18.12.2002 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

The standard is available from Estonian standardisation organisation.

### ICS 31.240

19 inch series, 482, 6 mm series, front panel, junction boxes, mechanic, mechanical properties, modular, plug boxes, plug-in units, printed-circuit boards, replaceability, representations, series, shields, structural systems, subbracks, suitable for plug-in connection

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English version

**Mechanical structures for electronic equipment -  
Dimensions of mechanical structures of the 482,6 mm (19 in) series  
Part 5-104: Subracks and associated plug-in units -  
Keying  
(IEC 60297-5-104:2001)**

Structures mécaniques pour équipement  
électronique -  
Dimensions de structures mécaniques de  
la série de 482,6 mm (19 in)  
Partie 5-104: Bacs et blocs enfichables  
associés - Codage  
(CEI 60297-5-104:2001)

Bauweisen für elektronische  
Einrichtungen -  
Maße der 482,6-mm-(19-in-)Bauweise  
Teil 5-104: Baugruppenträger und  
zugehörige Baugruppen - Kodierung  
(IEC 60297-5-104:2001)

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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.

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Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

The text of document 48D/242/FDIS, future edition 1 of IEC 60297-5-104, prepared by SC 48D, Mechanical structures for electronic equipment, 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 60297-5-104 on 2001-03-01.

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) 2001-12-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-03-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex ZA is normative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 60297-5-104:2001 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60297-3	<sup>1)</sup>	Dimensions of mechanical structures of the 482,6 mm (19 in) series Part 3: Subracks and associated plug-in units	HD 493.3 S2	1993 <sup>2)</sup>
IEC 60297-4	<sup>1)</sup>	Part 4: Subracks and associated plug-in units - Additional dimensions	EN 60297-4 + A1	1995 <sup>2)</sup> 1999
IEC 60297-5-100	<sup>1)</sup>	Part 5-100: Subracks and associated plug-in units - Design overview	EN 60297-5-100	2001 <sup>2)</sup>
IEC 60297-5-107	<sup>1)</sup>	Part 5-107: Subracks and associated plug-in units - Rear mounted plug-in units	EN 60297-5-107	2001 <sup>2)</sup>
IEC 60917-1	<sup>1)</sup>	Modular order for the development of mechanical structures for electronic equipment practices Part 1: Generic standard	EN 60917-1	1998 <sup>2)</sup>
IEC 61587-1	<sup>1)</sup>	Mechanical structures for electronic equipment - Tests for IEC 60917 and IEC 60297 Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis	EN 61587-1	1999 <sup>2)</sup>

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<sup>1)</sup> undated reference.

<sup>2)</sup> valid edition at date of issue.

INTERNATIONAL  
STANDARD

IEC  
60297-5-104

First edition  
2001-01

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**Mechanical structures for electronic equipment –  
Dimensions of mechanical structures  
of the 482,6 mm (19 in) series –**

**Part 5-104:  
Subracks and associated plug-in units –  
Keying**

*Structures mécaniques pour équipement électronique –  
Dimensions des structures mécaniques de la série  
de 482,6 mm (19 in) –*

*Partie 5-104:  
Bacs et blocs enfichables associés –  
Codage*



Reference number  
IEC 60297-5-104:2001(E)

## Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

## Consolidated editions

The IEC is now publishing consolidated versions of its publications. For example, edition numbers 1.0, 1.1 and 1.2 refer, respectively, to the base publication, the base publication incorporating amendment 1 and the base publication incorporating amendments 1 and 2.

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- **Catalogue of IEC publications**  
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International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT –  
DIMENSIONS OF MECHANICAL STRUCTURES  
OF THE 482,6 mm (19 in) SERIES –**

**Part 5-104: Subracks and associated plug-in units –  
Keying**

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
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- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60297-5-104 has been prepared by subcommittee 48D: Mechanical structures for electronic equipment, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48D/242/FDIS	48D/251/RVD

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 3.

IEC 60297-5 consists of the following parts under the general title: Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series:

Part 5-100, Subracks and associated plug-in units – Design overview

Part 5-101, Subracks and associated plug-in units – Injector/extractor handle

Part 5-102, Subracks and associated plug-in units – Electromagnetic shielding provision

Part 5-103, Subracks and associated plug-in units – Electrostatic discharge protection

Part 5-104, Subracks and associated plug-in units – Keying

Part 5-105, Subracks and associated plug-in units – Alignment and/or earth pin

Part 5-107, Subracks and associated plug-in units – Rear mounted plug-in units

The committee has decided that the contents of this publication will remain unchanged until 2004. 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.

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## INTRODUCTION

This part of IEC 60297 is based on IEC 60297-3 (1984), its Amendment 1 (1992), and IEC 60297-4 (1995). It contains detail dimensions which ensure dimensional interchangeability of subracks, plug-in units and keys where board type plug-in units requiring an accessible method of keying for subrack front and/or rear mounted plug-in units.

This standard applies only to the mechanical structures for electronic equipment practices according to the IEC 60297 series.

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# MECHANICAL STRUCTURES FOR ELECTRONIC EQUIPMENT – DIMENSIONS OF MECHANICAL STRUCTURES OF THE 482,6 mm (19 in) SERIES –

## Part 5-104: Subracks and associated plug-in units – Keying

### 1 Scope and object

This part of IEC 60297 covers extended features of a retained keying method added to subracks and plug-in units with front panels according to IEC 60297-3, IEC 60297-4 and IEC 60297-5-107. By implementing this extended feature to the subracks and plug-in units, a new subrack and plug-in unit type (incompatible with IEC 60297-3 and IEC 60297-4) is created.

The purpose of this standard is to specify dimensions which will ensure dimensional interchangeability of subracks and associated plug-in units using the extended feature of a retained keying method added to IEC 60297-3, IEC 60297-4 and IEC 60297-5-107.

For mechanical and climatic tests refer to IEC 61587-1.

### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60297. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 60297 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60297-3, *Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 3: Subracks and associated plug-in units*

IEC 60297-4, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 4: Subracks and associated plug-in units – Additional dimensions<sup>1</sup>*

IEC 60297-5-100, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-100: Subracks and associated plug-in units – Design overview*

IEC 60297-5-107, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-107: Subracks and associated plug-in units – Rear mounted plug-in units*

IEC 60917-1, *Modular order for the development of mechanical structures for electronic equipment practices – Part 1: Generic standard*

IEC 61587-1, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 1: Climatic, mechanical tests and safety aspects for cabinets, racks, subracks and chassis*

<sup>1</sup> There is a consolidated edition 1.1 (1999) that includes IEC 60297-4 (1995) and its amendment 1 (1999).