

**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**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60297-5-100:2002 sisaldab Euroopa standardi EN 60297-5-100:2001 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 60297-5-100:2002 consists of the English text of the European standard EN 60297-5-100:2001.

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 pane, junction boxes, mechanic, mechanical properties, modular, plug boxes, plug-in units, printed-circuit boards, replaceability, representations, series, shields, structural systems, subracks, suitable for plug-in connection

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**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 60297-5-100:2001)**

Structures mécaniques pour équipement
électronique -
Dimensions des structures mécaniques
de la série de 482,6 mm (19 in)
Partie 5-100: Bacs et blocs enfichables
associés -
Vue d'ensemble de la conception
(CEI 60297-5-100:2001)

Bauweisen für elektronische
Einrichtungen -
Maße der 482,6-mm-(19-in-)Bauweise
Teil 5-100: Baugruppenträger und
zugehörige Baugruppen -
Konstruktionsübersicht
(IEC 60297-5-100:2001)

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CENELEC

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

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

Foreword

The text of document 48D/238/FDIS, future edition 1 of IEC 60297-5-100, 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 60297-5-100 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.

Endorsement notice

The text of the International Standard IEC 60297-5-100:2001 was approved by CENELEC as a European Standard without any modification.

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 60297-1	¹⁾	Dimensions of mechanical structures of the 482,6 mm (19 in) series Part 1: Panels and racks	HD 493.1 S1	1988 ²⁾
IEC 60297-3	¹⁾	Part 3: Subracks and associated plug-in units	HD 493.3 S2	1993 ²⁾
IEC 60297-4	¹⁾	Part 4: Subracks and associated plug-in units - Additional dimensions	EN 60297-4 + A1	1995 ²⁾ 1999
IEC 60297-5-101	¹⁾	Part 5-101: Subracks and associated plug-in units - Injector/extractor handle	EN 60297-5-101	2001 ²⁾
IEC 60297-5-102	¹⁾	Part 5-102: Subracks and associated plug-in units - Electromagnetic shielding provision	EN 60297-5-102	2001 ²⁾
IEC 60297-5-103	¹⁾	Part 5-103: Subracks and associated plug-in units - Electrostatic discharge protection	EN 60297-5-103	2001 ²⁾
IEC 60297-5-104	¹⁾	Part 5-104: Subracks and associated plug-in units - Keying	EN 60297-5-104	2001 ²⁾
IEC 60297-5-105	¹⁾	Part 5-105: Subracks and associated plug-in units - Alignment and/or earth pin	EN 60297-5-105	2001 ²⁾
IEC 60297-5-107	¹⁾	Part 5-107: Subracks and associated plug-in units - Rear mounted plug-in units	EN 60297-5-107	2001 ²⁾

¹⁾ undated reference.

²⁾ valid edition at date of issue.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60603-2	¹⁾	Connectors for frequencies below 3 MHz for use with printed boards Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features	EN 60603-2	1998 ²⁾
IEC 60917-1	¹⁾	Modular order for the development of mechanical structures for electronic equipment practices Part 1: Generic standard	EN 60917-1	1998 ²⁾
IEC 61076-4-101	¹⁾	Connectors with assessed quality, for use in d.c., low-frequency analogue and in digital high-speed data applications Part 4: Printed board connectors -- Section 101: Detail specification for two-part connector modules having a basic grid of 2,0 mm for printed boards and backplanes in accordance with IEC 60917	EN 61076-4-101	1998 ²⁾
IEC 61076-4-113	¹⁾	Part 4-113: Printed board connectors - Detail specification for two-part connectors having 5 rows with a grid of 2,54 mm for printed boards and backplanes in bus applications	-	-
IEC 61587-1	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	EN 61587-1	1999 ²⁾
IEC 61587-3	¹⁾	Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks	-	-

INTERNATIONAL STANDARD

IEC
60297-5-100

First edition
2001-01

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

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

*Partie 5-100:
Bacs et blocs enfichables associés –
Vue d'ensemble de la conception*



Reference number
IEC 60297-5-100:2001(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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Commission Electrotechnique Internationale
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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 5-100: Subracks and associated plug-in units – Design overview

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.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
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- 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 60297-5-100 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/238/FDIS	48D/247/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.

INTRODUCTION

This part of IEC 60297 is based on IEC 60297-1 (1986), IEC 60297-3 (1984), its Amendment 1 (1992), and IEC 60297-4 (1995). Contained in this design overview are references to related detail standards which ensure dimensional interchangeability of subracks and plug-in units requiring plug-in unit injector/extractors, electromagnetic shielding provision, electrostatic discharge (ESD) protection, keying, a multi-purpose alignment pin and subrack rear mounted plug-in units. The dimensional relationship of IEC 60297-3 and IEC 60297-4 is based upon the IEC 60603-2 connector series

This standard, in whole or in part, applies only to the mechanical structures for electronic equipment practices according to the IEC 60297 series.

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

1 Scope and object

This part of IEC 60297 covers extended features added to subracks and compatible printed boards and plug-in units according to IEC 60297-3 and IEC 60297-4. By implementing these extended features to the subracks and plug-in units, a new subrack and plug-in unit (incompatible with IEC 60297-3 and IEC 60297-4) type is created.

The purpose of this standard is to give a design overview of the related detail standards which will ensure dimensional interchangeability of subracks and associated plug-in units. The extended features contained in this standard may be referred to and/or implemented independently. For mechanical and climatic tests, refer to IEC 61587-1. For electromagnetic shielding performance tests refer to IEC/TS 61587-3.

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 60297-1, *Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 1: Panels and racks*

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*¹

IEC 60297-5-101, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-101: Subracks and associated plug-in units – Injector/extractor handle*

IEC 60297-5-102, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-102: Subracks and associated plug-in units – Electromagnetic shielding provision*

IEC 60297-5-103, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-103: Subracks and associated plug-in units – Electrostatic discharge protection*

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

IEC 60297-5-104, *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 60297-5-105, *Mechanical structures for electronic equipment – Dimensions of mechanical structures of the 482,6 mm (19 in) series – Part 5-105: Subracks and associated plug-in units – Alignment and/or earth pin*

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 60603-2, *Connectors for frequencies below 3 MHz for use with printed boards – Part 2: Detail specification for two-part connectors with assessed quality, for printed boards, for basic grid of 2,54 mm (0,1 in) with common mounting features*

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

IEC 61076-4-101, *Connectors with assessed quality, for use in d.c. low-frequency analogue and in digital high speed data applications – Part 4: Printed board connectors – Section 101: Detail specification for two-part connector modules having a basic grid of 2,0 mm for printed boards and backplanes in accordance with IEC 60917*

IEC 61076-4-113, *Connectors with assessed quality, for use in d.c. low-frequency analogue and in digital high speed data applications – Part 4-113: Printed board connectors – Detail specification for two-part connectors having 5 rows with a grid of 2,54 mm for printed boards and backplanes in bus applications*²

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*

IEC/TS 61587-3, *Mechanical structures for electronic equipment – Tests for IEC 60917 and IEC 60297 – Part 3: Electromagnetic shielding performance tests for cabinets, racks and subracks*

3 Definitions

For the purpose of this part of IEC 60297, the definitions of IEC 60917-1 apply.

4 Extended features added to IEC 60297-3 and IEC 60297-4

This standard gives dimensions only where they differ from or supplement those to be found in IEC 60297-3 and 60297-4. The dimensions used in this standard shall take precedence over those of IEC 60297-3 and 60297-4 when conformance to this standard is claimed. Dimensions shown in brackets are for reference only and are found in the stated standards.

The drawings in this standard are not intended to indicate product design.

² To be published.