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

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CONTENTS

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

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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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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*

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[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.

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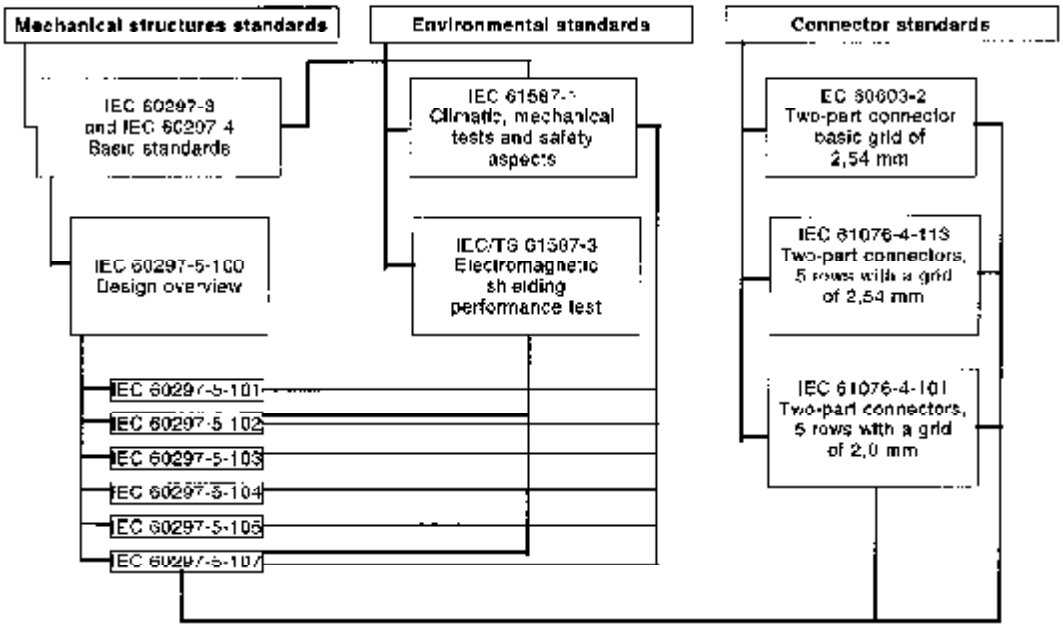
[2] To be published.

Extended feature	Basic standards	Extended standards	Environmental standards	Connector standards
Injector/extractor handle	IEC 60297-1 IEC 60297-3 IEC 60297-4	IEC 60297-5-101 IEC 60297-5-107	IEC 61587-1	
Electromagnetic shielding provision		IEC 60297-5-102 IEC 60297-5-105 IEC 60297-5-107	IEC 61587-1 IEC/TS 61587-3	
Electrostatic discharge protection		IEC 60297-5-103 IEC 60297-5-107	IEC 61587-1	
Keying		IEC 60297-5-104 IEC 60297-5-107	IEC 61587-1	
Alignment and/or earth pin		IEC 60297-5-102 IEC 60297-5-105 IEC 60297-5-107	IEC 61587-1 IEC/TS 61587-3	
Rear mounted plug-in units		IEC 60297-5-107	IEC 61587-1 IEC/TS 61587-3	IEC 60603-2 IEC 61076-4-113 IEC 61076-4-101

Application of extended features for IEC 60297-3 and IEC 60297-4



5 General equipment arrangement

Generally subracks and plug-in units complying with IEC 60297-3 and/or IEC 60297-4 may add only one or all of the extended features provided for in this standard.

The general equipment arrangement below points out all the added features of IEC 60297-5-100 giving a design overview.

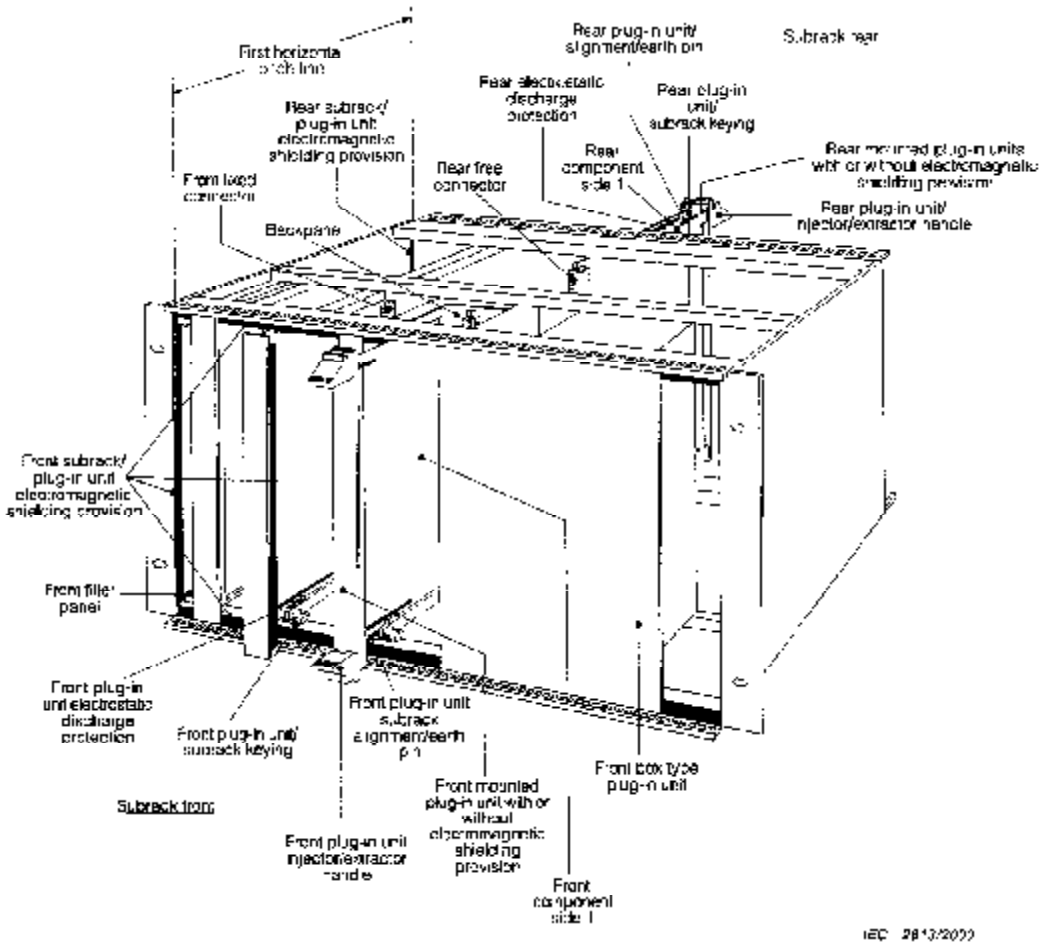


Figure 1 – General equipment arrangement –
Typical 6U subrack with front and rear mounted plug-in units

6 Detail equipment arrangement

The detail arrangement below points out all the added features of IEC 60297-5-100 giving a design detail overview.

The front of the subrack is shown, the detail can equally be applicable to the rear of the subrack.

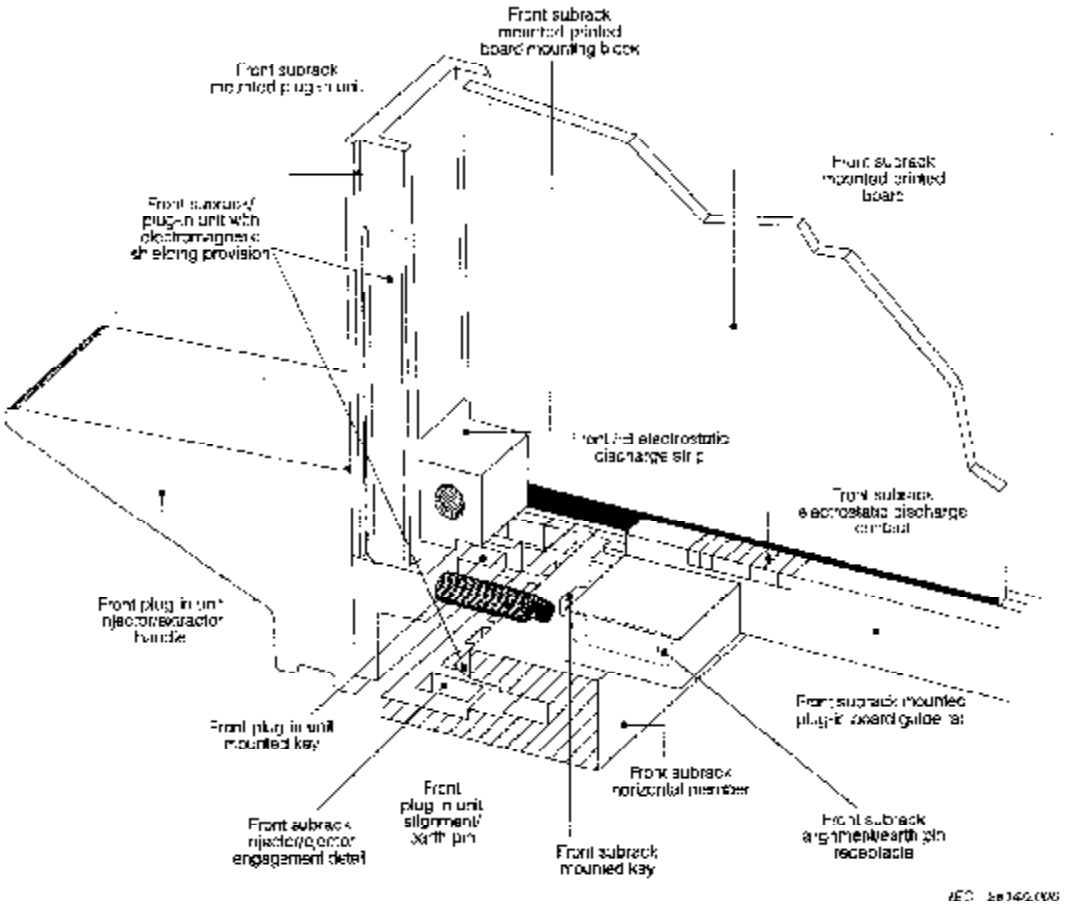


Figure 2 – Design detail equipment arrangement

7 Subracks and associated plug-in units – Extended features – Summary

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. A detail standard for designing interchangeable injector/extractor handles for plug-in units and corresponding subrack interface detail*

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. A detail standard for designing interchangeable plug-in unit front panels and filler panels and corresponding subrack interface detail*

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. A detail standard for designing interchangeable plug-in unit printed board dimensional requirements and corresponding subrack interface detail*

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. A detail standard for designing subrack front/rear accessible keying positions with interchangeable keys and corresponding plug-in unit keying interface detail*

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. A detail standard for designing an interchangeable plug-in unit front panel alignment and/or earth pin and corresponding subrack interface detail*

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. A detail standard defining a mechanical method of rear subrack mounting of plug-in units based on IEC 60603-2, IEC 61076-4-113 and IEC 61076-4-101 connectors*

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