



SLOVENSKI STANDARD
SIST HD 493.3 S2:2002
01-september-2002

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

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

Maße der 482,6-mm-Bauweise (19-in-Bauweise) -- Teil 3: Baugruppenträger und
Baugruppen

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Dimensions des structures mécaniques de la série de 482,6 mm (19 in) -- Partie 3: Bacs
et blocs enfichables associés

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Ta slovenski standard je istoveten z: HD 493.3 S2:1993

ICS:

31.240

Mehanske konstrukcije za
elektronsko opremo

Mechanical structures for
electronic equipment

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en

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HARMONIZATION DOCUMENT

HD 493.3 S2

DOCUMENT D'HARMONISATION

HARMONISIERUNGSDOKUMENT

October 1993

UDC 621.3-213

Descriptors: Mounting of electronic equipment on a vertical plane,
subracks, plug-in units, description, dimensions

ENGLISH VERSION

Dimensions of mechanical structures of the
482,6 mm (19 in) series
Part 3: Subracks and associated plug-in units
(IEC 297-3:1984 + A1:1992)

Dimensions des structures
mécaniques de la série de
482,6 mm (19 in)
Troisième partie: Bacs et blocs
enfichables associés
(CEI 297-3:1984 + A1:1992)

Maße der 482,6-mm-Bauweise
(19-Zoll-Bauweise)
Teil 3: Baugruppenträger und
Baugruppen
(IEC 297-3:1984 + A1:1992)

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This Harmonization Document was approved by CENELEC on 1993-09-22.
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Up-to-date lists and bibliographical references concerning national implementation
may be obtained on application to the Central Secretariat or to any CENELEC member.

This Harmonization Document exists in three official versions (English, French,
German).

CENELEC members are the national electrotechnical committees of Austria, Belgium,
Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg,
Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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 CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 297-3:1984 and its amendment 1:1992 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as Harmonization Document.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as HD 493.3 S2 on 22 September 1993.

The following dates were fixed:

- latest date of announcement
of the HD at national level (doa) 1994-02-01
- latest date of publication of
a harmonized national standard (dop) 1994-08-01
- latest date of withdrawal of
conflicting national standards (dow) 1994-08-01

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For products which have complied with HD 493.3 S1:1988 before 1994-08-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-08-01.

Annexes designated "normative" are part of the body of the standard. In this standard, annex ZA is normative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 297-3:1984 and its amendment 1:1992 was approved by CENELEC as a Harmonization Document without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This Harmonization Document 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 Harmonization Document only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE : When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
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249-2	1970*	Base materials for printed circuits Part 2: Specifications.	-	-
297-1	1986	Dimensions of mechanical structures of the 482,6 mm (19 in) series Part 1: Panels and racks	HD 493.1 S1	1988
603-1	1981	Connectors for frequencies below 3 MHz for use with printed boards Part 1: General rules and guide for the preparation of detail specifications	-	-
603-2	1988	Part 2: Two-part connectors for printed boards for basic grid of 2.54 mm (0.1 in) with common mounting features	-	-

* IEC 249-2 and its supplements have been superseded by specifications IEC 249-2-X which were harmonized in the HD 313.2.X series

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE
NORME DE LA CEI

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC STANDARD

Publication 297-3

Première édition – First edition

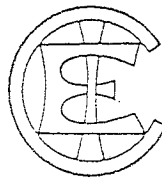
1984

Dimensions des structures mécaniques
de la série de 482,6 mm (19 in)

Troisième partie: Bacs et blocs enfichables associés
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Dimensions of mechanical structures
of the 482.6 mm (19 in) series

Part 3: Subracks and associated plug-in units



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Bureau Central de la Commission Electrotechnique Internationale
Chemin de Valentin
Genève Suisse

Publications de la CEI préparées
par le Comité d'Etudes n° 48

- 130 — Connecteurs utilisés aux fréquences jusqu'à 3 MHz
- 130-0 (1970) Partie zéro: Guide concernant les renseignements devant être fournis par les dessins des spécifications détaillées.
- 130-1 (1962) Première partie: Règles générales et méthodes de mesure. Modification n° 1 (1964). Modification n° 2 (1972).
- 130-1A (1968) Premier complément.
- 130-2 (1965) Deuxième partie: Connecteurs pour récepteurs de radiodiffusion et équipements électroacoustiques similaires. Modification n° 1 (1969).
- 130-3 (1965) Troisième partie: Connecteurs pour piles.
- 130-4 (1966) Quatrième partie: Connecteurs circulaires multipôles avec accouplement par vis.
- 130-4A (1970) Premier complément.
- 130-5 (1966) Cinquième partie: Connecteurs rectangulaires multipôles avec contacts à lames.
- 130-6 (1965) Sixième partie: Connecteurs miniatures rectangulaires multipôles avec contacts à lames.
- 130-7 (1971) Septième partie: Connecteurs circulaires multipôles avec accouplement du type battonnette ou «push-pull».
- 130-8 (1976) Huitième partie: Connecteurs concentriques pour circuits audio de postes de radio.
- 130-9 (1971) Neuvième partie: Connecteurs circulaires pour appareils de radiodiffusion et équipements électroacoustiques associés. Premier complément.
- 130-9A (1975) Deuxième complément.
- 130-9B (1978) Troisième complément.
- 130-10 (1971) Dixième partie: Connecteurs pour le branchement à une source extérieure basse tension des équipements portatifs utilisés à des fins récréatives.
- 130-11 (1971) Onzième partie: Connecteurs pour circuits à contacts individuels imprimés à extrémités fermées et écartement des contacts égal à 2,54 mm (0,1 in), s'accouplant soit avec des fiches montées sur plaquette de câblage imprimé, soit avec des plaquettes de câblage imprimé à contacts d'extrémité.
- 130-11A (1975) Premier complément: Connecteurs multirangées montés sur circuits imprimés ayant un écartement des contacts et des sorties suivant une grille carrée de 2,54 mm (0,1 in).
- 130-12 (1976) Douzième partie: Connecteurs de liaison et d'essai.
- 130-15 (1975) Quinzième partie: Connecteurs ultra-miniatures montés sur circuits imprimés ayant un écartement des contacts de 1,27 mm (0,05 in).
- 130-16 (1976) Seizième partie: Connecteurs montés sur carte pour circuits imprimés à deux rangées de contacts et de sorties en quinconce écartés de 2,54 mm (0,1 in).
- 131 — Interrupteurs à levier.
- 131-1 (1962) Première partie: Règles générales et méthodes de mesure.
- 131-1A (1973) Premier complément.
- 131-2 (1963) Deuxième partie: Prescriptions pour les interrupteurs du type 1, à fermeture et à rupture non brusque.
- 131-3 (1969) Troisième partie: Prescriptions pour les interrupteurs du type 2, à fermeture et à rupture brusque (interrupteurs à bascule).
- 132 — Commutateurs rotatifs (à faible intensité nominale).
- 132-1 (1962) Première partie: Règles générales et méthodes de mesure.
- 132-1A (1973) Premier complément.
- 132-2 (1963) Deuxième partie: Commutateurs rotatifs à fixation centrale.
- 132-2A (1965) Premier complément.
- 132-3 (1963) Troisième partie: Commutateurs rotatifs à deux trous de fixation.
- 132-3A (1965) Premier complément.
- 132-4 (1966) Quatrième partie: Commutateurs rotatifs à fixation centrale: à 12 positions au maximum et de diamètre maximal 40 mm.
- 132-5 (1966) Cinquième partie: Commutateurs rotatifs à deux trous de fixation, à 26 positions au maximum et de diamètre maximal 60 mm.
- 132-6 (1974) Sixième partie: Commutateurs rotatifs à galette avec galettes imprimées: à 12 positions au maximum et de 45 mm d'encombrement maximal au montage.
- 132-7 (1981) Septième partie: Commutateurs rotatifs à galette à fixation centrale, à 12 positions au maximum et de diamètre maximal 20 mm.
- 149 — Supports et accessoires pour dispositifs électroniques enfichables.
- 149-1 (1963) Première partie: Règles générales et méthodes de mesure. Modification n° 1 (1970). Modification n° 2 (1972).
- 149-2 (1965) Deuxième partie: Feuilles particulières de supports et dimensions des mandrins de câblage et redresseurs de broches.
- 149-2A (1968) Premier complément.
- 149-2B (1969) Deuxième complément.
- 149-2C (1971) Troisième complément.
- 149-2D (1971) Quatrième complément.
- 149-2E (1971) Cinquième complément.
- 149-2F (1972) Sixième complément.
- 149-2G (1972) Septième complément.
- 149-2H (1972) Huitième complément.
- 149-2I (1972) Neuvième complément.
- 149-2K (1976) Dixième complément.
- 149-2L (1976) Onzième complément.
- 149-3 (1975) Douzième partie: Supports pour boîtiers de quartz.
- 149-3A (1976) Premier complément.

IEC publications prepared
by Technical Committee No. 48

- 130 — Connectors for frequencies below 3 MHz.
- 130-0 (1970) Part 0: Guide to drawing information in detail specifications.
- 130-1 (1962) Part 1: General requirements and measuring methods. Amendment No. 1 (1964). Amendment No. 2 (1972).
- 130-1A (1968) First supplement.
- 130-2 (1965) Part 2: Connectors for radio receivers and associated sound equipment. Amendment No. 1 (1969).
- 130-3 (1965) Part 3: Battery connectors.
- 130-4 (1966) Part 4: Circular multipole connectors with threaded coupling.
- 130-4A (1970) First supplement.
- 130-5 (1966) Part 5: Rectangular multipole connectors with blade contacts.
- 130-6 (1965) Part 6: Rectangular miniature multipole connectors with blade contacts.
- 130-7 (1971) Part 7: Circular multipole connectors with bayonet or push-pull coupling.
- 130-8 (1976) Part 8: Concentric connectors for audio circuits in radio receivers.
- 130-9 (1971) Part 9: Circular connectors for radio and associated sound equipment.
- 130-9A (1975) First supplement.
- 130-9B (1978) Second supplement.
- 130-10 (1971) Part 10: Connectors for coupling an external low-voltage power supply to portable entertainment equipment.
- 130-11 (1971) Part 11: Edge socket connectors with closed ends and having a contact spacing of 2.54 mm (0.1 in) mating either with board mounted connectors or printed wiring boards with edge board contacts.
- 130-11A (1975) First supplement: Multi-row board mounted printed circuit connectors having contact and termination spacing on a 2.54 mm (0.1 in) square grid.
- 130-12 (1976) Part 12: Link and test connectors.
- 130-15 (1975) Part 15: Ultra-miniature board-mounted printed-wiring connectors having a staggered contact spacing of 1.27 mm (0.05 in).
- 130-16 (1976) Part 16: Printed circuit board mounted connectors with two rows of staggered contacts and terminations with spacing of 2.54 mm (0.1 in).
- 131 — Lever switches.
- 131-1 (1962) Part 1: General requirements and measuring methods. First supplement.
- 131-1A (1973) First supplement.
- 131-2 (1963) Part 2: Requirements for switches of Type 1, slow-make, slow-break.
- 131-3 (1969) Part 3: Requirements for switches of Type 2, quick-make, quick-break (toggle switches).
- 132 — Rotary wafer switches (low current rating).
- 132-1 (1962) Part 1: General requirements and measuring methods.
- 132-1A (1973) First supplement.
- 132-2 (1963) Part 2: Rotary wafer switches with central mounting.
- 132-2A (1965) First supplement.
- 132-3 (1963) Part 3: Rotary wafer switches with two-hole mounting.
- 132-3A (1965) First supplement.
- 132-4 (1966) Part 4: Rotary wafer switches with central mounting: maximum 12 positions: maximum diameter 40 mm.
- 132-5 (1966) Part 5: Rotary wafer switches with two-hole mounting: maximum 26 positions: maximum diameter 60 mm.
- 132-6 (1974) Part 6: Rotary wafer switches with printed wafers: maximum 12 positions: maximum mounting dimension 45 mm.
- 132-7 (1981) Part 7: Rotary wafer switches with central mounting, maximum 12 positions and maximum diameter 20 mm.
- 149 — Sockets and accessories for electronic plug-in devices.
- 149-1 (1963) Part 1: General requirements and methods of test. Amendment No. 1 (1970). Amendment No. 2 (1972).
- 149-2 (1965) Part 2: Specification sheets for sockets and dimensions of wiring pins and pin straighteners.
- 149-2A (1968) First supplement.
- 149-2B (1969) Second supplement.
- 149-2C (1971) Third supplement.
- 149-2D (1971) Fourth supplement.
- 149-2E (1971) Fifth supplement.
- 149-2F (1972) Sixth supplement.
- 149-2G (1972) Seventh supplement.
- 149-2H (1972) Eighth supplement.
- 149-2I (1972) Ninth supplement.
- 149-2K (1976) Tenth supplement.
- 149-2L (1976) Eleventh supplement.
- 149-3 (1975) Part 3: Sockets for crystal holders.
- 149-3A (1976) First supplement.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DIMENSIONS OF MECHANICAL STRUCTURES
OF THE 482.6 mm (19 in) SERIES**
Part 3: Subracks and associated plug-in units

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

iTeh STANDARD PREVIEW

PREFACE

This standard has been prepared by Sub-Committee 48D: Mechanical Structures for Electronic Equipment, of IEC Technical Committee No. 48: Electromechanical Components for Electronic Equipment.

SIST HD 493.3 S2:2002

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

<https://standards.itih.ai/catalog/standards/sist/21622e08-b533-45e5-8c30-794119b67b6/sist-hd-493-3-s2-2002>

Six Months' Rule	Report on Voting
48D(CO)6	48D(CO)9
48D(CO)8	48D(CO)10

Further information can be found in the relevant Reports on Voting, indicated in the table above.

DIMENSIONS OF MECHANICAL STRUCTURES OF THE 482.6 mm (19 in) SERIES

Part 3: Subracks and associated plug-in units

1. Scope

This standard covers the basic dimensions of a modular range of subracks for mounting in equipment according to IEC Publication 297*, together with the basic dimensions of a compatible range of plug-in units and printed boards.

This standard covers also the connector-dependent dimensions to be used when two-part connector types according to IEC Publication 603-2 are mounted on subracks and plug-in units. It specifies also the standard positions of free connectors such that plug-in units are mechanically interchangeable in subracks with corresponding fixed connector positions.

Subsequent appendices will give the dimensions of associated plug-in units using suitable connectors standardized or to be standardized by the IEC, together with applicable detail dimensions of the subracks.

This standard should be used in conjunction with the following IEC publications:

Publications Nos. 249-2 (1970): Base Materials for Printed Circuits, Part 2: Specifications.

[https://standards.iteh.ai/catalog/standards/sist/21622e08-b533-45e5-8c30-](https://standards.iteh.ai/catalog/standards/sist/21622e08-b533-45e5-8c30-794119b67b6/sist-hd-493-3-s2-2002)

[794119b67b6/sist-hd-493-3-s2-2002](https://standards.iteh.ai/catalog/standards/sist/21622e08-b533-45e5-8c30-794119b67b6/sist-hd-493-3-s2-2002)

297 (1975): Dimensions of Panels and Racks.

603-1 (1981): Connectors for Frequencies below 3 MHz for Use with Printed Boards, Part 1: General Rules and Guide for the Preparation of Detail Specifications.

603-2 (1980): Part 2: Two-part Connectors for Printed Boards, for Basic Grid of 2.54 mm (0.1 in), with Common Mounting Features.

2. Object

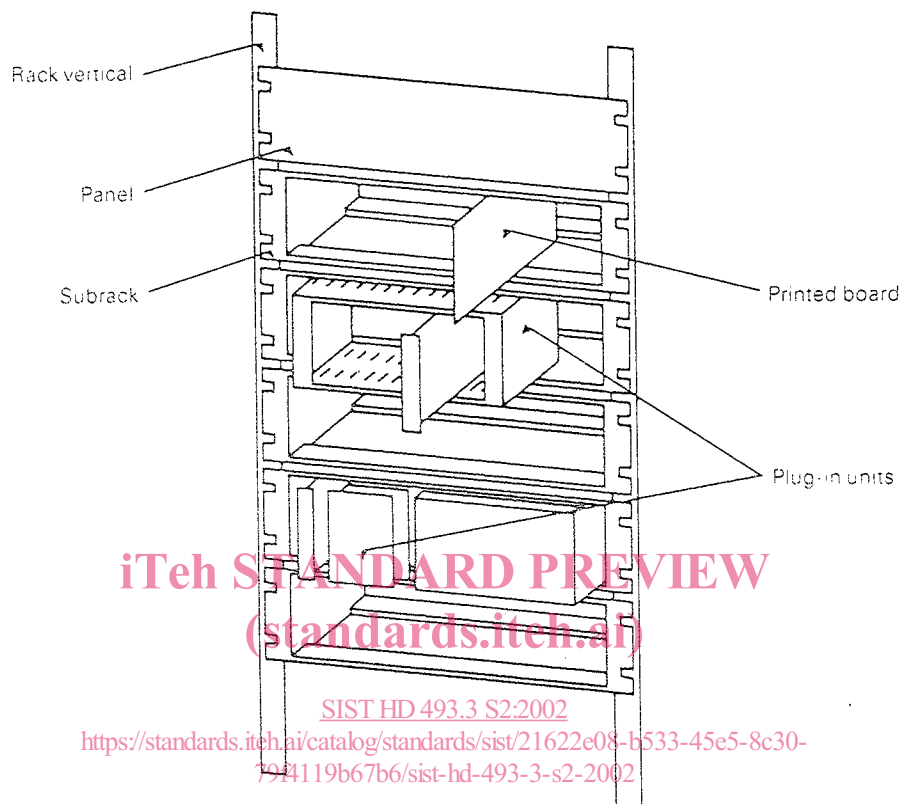
The purpose of this standard is the specification of dimensions which will ensure the mechanical interchangeability of subracks and of plug-in units.

The drawings contained in this standard are not intended to indicate details of design.

* When revised, IEC Publication 297 (Second edition, 1975) will become IEC Publication 297-1: Dimensions of Mechanical Structures of the 482.6 mm (19 in) Series, Part 1: Panels and Racks.

3. General arrangement

The subracks may be mounted, one above another or in combination with suitable instruments and panels (which also conform to the panel dimensions given in IEC Publication 297) in equipment complying with the rack dimensions given in IEC Publication 297.



211/84

FIG. 1. — General arrangement of rack, subrack, printed board and plug-in unit.

- Notes 1.* — Generally subracks are equipped with printed board or rack and panel type connectors at the rear side, and have guides for locating and/or supporting printed boards or types of plug-in units.
2. — In principle components are mounted on the right-hand side of the printed board as viewed from the front of the subrack.
3. — Clause 8 and the subsequent appendices define the dimensions required for mechanical interchangeability of plug-in units.

4. Subrack description

For the purpose of this standard, a typical subrack comprises horizontal members, secured between two side plates as shown in Figure 2, page 10. The side plates have right-angled flanges equivalent to the extremities of the panels shown in IEC Publication 297.

5. Plug-in unit description

A plug-in unit can be of various types as shown in Figures 1, 3, page 12 and 4, page 14. It usually consists of a printed board assembly with or without connector(s), handle(s), ejector(s), front panel, rear panel, mounting rails and covers. A plug-in unit can itself house a plurality of different types of plug-in units.