SLOVENSKI STANDARD
SIST EN IEC 62610-2:2018

01-september-2018

Mehanske strukture za električno in elektronsko opremo - Uravnavanje toplote v omaricah v skladu s skupinama standardov IEC 60297 in IEC 60917 - 2. del: Metoda za ugotavljanje strukture hlajenja zraka (IEC 62610-2:2018)

Mechanical structures for electrical and electronic equipment - Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series - Part 2: Method for the determination of forced air cooling structure (IEC 62610-2:2018)

Ta slovenski standard je istoveten z: **EN IEC 62610-2:2018**

ICS:

31.240	Mehanske konstrukcije za elektronsko opremo	Mechanical structures for electronic equipment

SIST EN IEC 62610-2:2018 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62610-2

July 2018

ICS 31.240

English Version

Mechanical structures for electrical and electronic equipment - Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series - Part 2: Method for the determination of forced air cooling (IEC 62610-2:2018)

Structures mécaniques pour équipements électriques et électroniques - Gestion thermique pour les armoires conformes aux séries IEC 60297 ET IEC 60917 - Partie 2: Méthode pour la détermination du refroidissement par ventilation forcée (IEC 62610-2:2018)

Mechanische Bauweisen für elektrische und elektronische Einrichtungen - Wärmemanagement für Schränke nach den Reihen IEC 60297 und IEC 60917 - Teil 2: Verfahren zur Bestimmung der Zwangskühlungsstruktur (IEC 62610-2:2018)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62610-2:2018 E

European foreword

The text of document 48D/664/FDIS, future edition 1 of IEC 62610-2, prepared by SC 48D "Mechanical structures for electrical and electronic equipment" of IEC/TC 48 "Electrical connectors and mechanical structures for electrical and electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62610-2:2018.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2019-03-20
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-06-20

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 62610-2:2018 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60297-3-100	NOTE	Harmonized as EN 60297-3-100.
IEC 60297-3-101	NOTE	Harmonized as EN 60297-3-101.
IEC 60917-2-1	NOTE	Harmonized as EN 60917-2-1.
IEC 60917-2-2	NOTE	Harmonized as EN 60917-2-2.
IEC 62610-5	NOTE	Harmonized as EN 62610-5.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 Where 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.

Publication	Year	Title	EN/HD	Year
IEC 60917-1	-	Modular order for the development of mechanical structures for electronic equipment practices - Part 1: Generic standard	EN 60917-1	-

IEC 62610-2

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Mechanical structures for electrical and electronic equipment – Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series – Part 2: Method for the determination of forced air cooling

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CONTENTS

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MECHANICAL STRUCTURES FOR ELECTRICAL AND ELECTRONIC EQUIPMENT – THERMAL MANAGEMENT FOR CABINETS IN ACCORDANCE WITH IEC 60297 AND IEC 60917 SERIES –

Part 2: Method for the determination of forced air cooling

FOREWORD

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International Standard IEC 62610-2 has been prepared by subcommittee 48D: Mechanical structures for electrical and electronic equipment, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment.

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

FDIS	Report on voting
48D/664/FDIS	48D/673/RVD

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 in the IEC 62610 series, published under the general title *Mechanical structures for electrical and electronic equipment – Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series*, 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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

Power dissipation of high-end servers, telecommunication equipment and electronic controllers has been increasing rapidly. Thermal management for electronic systems has become critical to maintain performance and reliability.

For a long time natural convection air cooling was an adequate and reliable solution. Typically, the cooling air entered a system at the bottom and the heated air exited at the top. However, with increasing packaging density heat dissipation of components required “compartmentalizing” of functions within a cabinet. Individual subracks and chassis require their own individual cooling solutions often enhanced by forced air cooling devices such as fans.

In the absence of any guide, subrack and chassis designers typically solve their cooling problems in a way that is best suited for their specific application leaving the cabinet system integrator to deal with a mix of incompatible subrack and/or chassis cooling concepts.

An improper arrangement of multiple subracks and/or chassis (the equipment) in a cabinet may cause a severe imbalance of airflow within the cabinet. Two typical undesirable factors may be triggered by such an imbalanced airflow. The required airflow volume to each individual cabinet mounted equipment may be inadequate for proper cooling. The temperature of components in a cabinet mounted subrack and/or chassis may increase as the exhaust air of one equipment increases the intake air temperature of other equipment.

This document defines the basic and principal method to implement forced air cooling in electrical and electronic cabinets. This is applied for the thermal design of any electrical/electronic cabinet, as well as for their set-up in machine rooms, such as data centers using aisle containment. Cooling airflow is considered not only inside of the cabinets but also outside of the cabinets. A variable speed fan may be optional in cabinets or subracks/chassis, but is not regarded in this standard.

The intention of this document is to guide the subrack and/or chassis system designer, the cabinet integrator and also the data centre system integrator who deploys equipment cabinets in the machine room to provide for compatible forced air cooling solutions.

This document is based on the mechanical structures as defined in the IEC 60297 and IEC 60917 series of standards.