

<b>STN</b>	<b>Stavebnicové konštrukcie pre elektrické a elektronické zariadenia. Tepelné manažérstvo pre skrine podľa súborov noriem IEC 60297 a IEC 60917. Časť 5: Hodnotenie chladiaceho výkonu - skrine do vnútorného prostredia.</b>	<b>STN EN 62610-5</b>  18 8003
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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 5: Cooling performance evaluation for indoor cabinets

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/16

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EUROPEAN STANDARD

**EN 62610-5**

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2016

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 5: Cooling performance  
evaluation for indoor cabinets  
(IEC 62610-5:2016)**

Structures mécaniques pour équipements électriques et  
électroniques - Gestion thermique pour les armoires  
conformes aux séries IEC 60297 et IEC 60917 - Partie 5:  
Évaluation des performances de refroidissement pour les  
baies intérieures  
(IEC 62610-5:2016)

Mechanische Bauweisen für elektronische Einrichtungen -  
Wärmemanagement für Schränke nach den Reihen IEC  
60297 und IEC 60917 - Teil 5: Bewertung der Kühlleistung  
für Innenraumschränke  
(IEC 62610-5:2016)

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The text of document 48D/591/CDV, future edition 1 of IEC 62610-5, 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 62610-5:2016.

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# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Mechanical structures for electrical and electronic equipment – Thermal management for cabinets in accordance with IEC 60297 and IEC 60917 series – Part 5: Cooling performance evaluation for indoor cabinets**

**Structures mécaniques pour équipements électriques et électroniques – Gestion thermique pour les armoires conformes aux séries IEC 60297 et IEC 60917 – Partie 5: Évaluation des performances de refroidissement pour les baies intérieures**





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# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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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 5: Cooling performance evaluation for indoor cabinets**

**Structures mécaniques pour équipements électriques et électroniques – Gestion thermique pour les armoires conformes aux séries IEC 60297 et IEC 60917 – Partie 5: Évaluation des performances de refroidissement pour les baies intérieures**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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 5: Cooling performance evaluation for indoor cabinets**

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48D/591/CDV	48D/604/RVC

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 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.

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## INTRODUCTION

Indoor cabinets containing electronic equipment in subrack(s) and/ or chassis provide cooling by several different means, depending on the heat load of the equipment in the cabinet. In most cases air convection is used for cooling. The cabinets can be sealed or non-sealed, and may be equipped with fans for forced air cooling or rely on natural convection cooling without fans. In addition the subrack(s) or chassis may contain their own fans or rely on natural convection. Air convection systems are used to cool low to medium heat load applications. Indoor cabinets containing subrack(s) and/ or chassis assembled with high heat load electronic equipment typically are cooled by air to air heat exchangers or water supplied heat exchangers, and are not considered in this standard.

Sealed cabinets are used for systems operated in an industrial atmosphere, to protect the equipment against harsh environments, such as dust or water (IP), or provisions for EMC or acoustic noise. Non-sealed cabinets are used in offices, laboratories or data centres, where the environment is controlled.

The cooling performance of an electronic cabinet depends on the type of the cabinet, either sealed or non-sealed, with or without air moving devices, ventilated or re-circulated, and also, on the heat loads and the additional cooling systems (if any) of the equipment inside the cabinet.

Therefore, it is difficult to determine properly the cooling capabilities of empty electronic cabinets for various applications. This standard introduces a simplified method for an overall cooling performance evaluation for empty indoor cabinets in accordance with IEC 60917 or IEC 60297 series.

The purpose of this standard is to classify the cooling methods of empty indoor cabinets, to simplify the thermal hydraulic formulae for the evaluation and classification of cabinet cooling performances, and to exemplify the cooling performances for representative cabinet sizes based on IEC 60917 or IEC 60297.

This enables the users to select the appropriate cabinet cooling solutions for their applications.

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

**Part 5: Cooling performance evaluation for indoor cabinets**

**1 Scope**

This part of IEC 62610 specifies a method for evaluating the cooling capacity mainly for air convection cooling of empty cabinets in accordance with IEC 60297 and IEC 60917 series.

**2 Normative references**

Void.

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