
Metoda vrednotenja toplotnih lastnosti ohišij (IEC 62194:2005)

Method of evaluating the thermal performance of enclosures (IEC 62194:2005)

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EUROPEAN STANDARD

EN 62194

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2005

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English version

Method of evaluating the thermal performance of enclosures
(IEC 62194:2005)

Méthode d'évaluation de la performance
thermique des enveloppes
(CEI 62194:2005)

Verfahren zur Bewertung
der Wärmeleistung von Gehäusen
(IEC 62194:2005)

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This European Standard was approved by CENELEC on 2005-09-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 text of document 48D/324/FDIS, future edition 1 of IEC 62194, 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 62194 on 2005-09-01.

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) 2006-06-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2008-09-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62194:2005 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:

<u>SIST EN 62194:2006</u>		
IEC 60297-2	NOTE	Harmonized as HD 493.2-S1:1988 (not modified).
IEC 60721	NOTE	Harmonized in EN 60721 series (not modified).
IEC 60917-2	NOTE	Harmonized as EN 60917-2:1994 (not modified).
IEC 61587-1	NOTE	Harmonized as EN 61587-1:1999 (not modified).
IEC 61969-1	NOTE	Harmonized as EN 61969-1:2000 (not modified).
IEC 61969-2	NOTE	Harmonized as EN 61969-2:2000 (not modified).
IEC 61969-3	NOTE	Harmonized as EN 61969-3:2001 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application 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 Where 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	Series	Mechanical structures for electronic equipment - Dimensions of mechanical structures of the 482,6 mm (19 in) series	EN 60297	Series
IEC 60721-2-4	- 1)	Classification of environmental conditions Part 2: Environmental conditions appearing in nature - Solar radiation and temperature	HD 478.2.4 S1	1989 2)
IEC 60917	Series	Modular order for the development of mechanical structures for electronic equipment practices	EN 60917	Series
IEC 61969	Series	Mechanical structures for electronic equipment - Outdoor enclosures	EN 61969	Series

1) Undated reference.

2) Valid edition at date of issue.

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METHOD OF EVALUATING THE THERMAL PERFORMANCE OF ENCLOSURES

FOREWORD

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International Standard IEC 62194 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/324/FDIS	48D/328/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 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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INTRODUCTION

When installing enclosures with electronic components, the climatic conditions are very important, as the function of the electronics is affected by the ambient temperature. Because of heat load and solar radiation, the enclosures become hot. Since the heat transfer via the enclosure surface is often not sufficient, a climate control unit may be required to maintain tolerable enclosure internal conditions. For the enclosure design, the effect of the solar radiation was either estimated via the solar constant or added with a fixed value for heat load. Closer observation of the radiation allows for a more accurate and cost-efficient method of enclosure thermal performance evaluation.

There are existing standards defining the environmental conditions: for outdoor enclosures, IEC 61969-3 and EN 300 019 and, for indoor enclosures, IEC 60721, EN 300 019, and IEC 61587-1.

Dimensional standards referred to for outdoor enclosures are IEC 61969-1 and IEC 61969-2, and, for indoor enclosures, IEC 60297-2, EN 300 119 and IEC 60917-2.

As requested by users and manufacturers, a unified heat management property of empty enclosures had to be developed. This standard establishes a method of thermal performance evaluation for enclosures.

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