



SLOVENSKI STANDARD

SIST EN 50491-2:2011

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Splošne zahteve za stanovanjske in stavbne elektronske sisteme (HBES) in sisteme za avtomatizacijo in krmiljenje stavb (BACS) - 2. del: Okoljski pogoji

General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 2: Environmental conditions

Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 2: Umgebungsbedingungen

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Exigences générales pour systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) et pour systèmes de gestion technique du bâtiment (SGTB) - Partie 2 : Exigences d'environnement

Ta slovenski standard je istoveten z: EN 50491-2:2010

ICS:

97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use
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EUROPEAN STANDARD
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English version

**General requirements for Home and Building Electronic Systems (HBES)
and Building Automation and Control Systems (BACS) -
Part 2: Environmental conditions**

Exigences générales pour systèmes
électroniques pour les foyers domestiques
et les bâtiments (HBES) et pour systèmes
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Allgemeine Anforderungen an die
Elektrische Systemtechnik für Heim
und Gebäude (ESHG) und an Systeme
der Gebäudeautomation (GA) -
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This European Standard was approved by CENELEC on 2010-03-01. 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, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

This European Standard was prepared by a joint working group of CLC/TC 205, Home and Building Electronic Systems (HBES) and CEN/TC 247, Building Automation, Controls and Building Management (BACS).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50491-2 on 2010-03-01.

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

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) 2011-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-03-01

As a result of the discussions at the CLC/TC 205 meeting on 2004-10-5/6 concerning the structuring of their standards in general parts and open system parts (see CLC/TC 205/Sec0413/INF) the following new parts of EN 50491 under the generic title “*General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*” under the task of the JWG CEN/TC 247-CLC/TC 205 are proposed:

- [SIST EN 50491-2:2011](https://standards.ghs.ai/catalog/standards/sist/19ab6b8c-086e-47c2-a9d6-1042fb446e68/sist-en-50491-2-2011)
- Part 2 Environmental conditions;
 - Part 3 Electrical safety requirements;
 - Part 4-1 ¹⁾ Functional safety requirements (for non safety related systems);
 - Part 4-2 ¹⁾ Functional safety requirements (for safety related systems);
 - Part 5-1 ²⁾ EMC requirements, conditions and test set-up;
 - Part 5-2 ²⁾ EMC requirements for HBES/BACS used in residential, commercial and light industry environment;
 - Part 5-3 ²⁾ EMC requirements for HBES/BACS used in industry environment.

¹⁾ Under consideration.

²⁾ To be ratified.

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Introduction

The EN 50491 series deals with developing and testing Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS).

The expression HBES/BACS covers any combination of HBES and/or BACS devices including their separate connected/detachable devices linked together via one or more networks.

Part 2 of this series applies to HBES/BACS devices and defines the environmental conditions for these devices.

1 Scope

This European Standard provides the environmental conditions for all devices connected to HBES/BACS.

This European Standard is applicable (but not limited) to

- operator stations and other human system interface devices,
- devices for management functions,
- control devices, automation stations and application specific controllers,
- field devices and their interfaces,
- cabling and interconnection of devices,
- dedicated devices for engineering and commissioning tools for HBES/BACS.

The standard defines the general requirements for devices operating in weather protected and non-weather protected locations, ship environments, portable use and also for storage and transport.

2 Normative references

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.

EN 60068-2-1	Environmental testing - Part 2-1: Tests - Test A: Cold (IEC 60068-2-1)
EN 60068-2-6	Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal) (IEC 60068-2-6:1995 + corrigendum March 1995)
EN 60068-2-10	Environmental testing - Part 2-10: Tests - Test J and guidance: Mould growth (IEC 60068-2-10)
EN 60068-2-11	Environmental testing - Part 2: Tests - Test Ka: Salt mist (IEC 60068-2-11)
EN 60068-2-14:1999	Environmental testing - Part 2: Tests - Test N: Change of temperature (IEC 60068-2-14:1984 + A1:1986)
EN 60068-2-27	Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock (IEC 60068-2-27)
EN 60068-2-30	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle) (IEC 60068-2-30)
EN 60068-2-32	Basic environmental testing procedures - Part 2: Tests - Test Ed: Free fall (IEC 60068-2-32)

EN 60068-2-43	Environmental testing - Part 2-43: Tests - Test Kd: Hydrogen sulphide test for contacts and connections (IEC 60068-2-43)
EN 60068-2-64	Environmental testing - Part 2-64: Tests - Test Fh: Vibration, broadband random and guidance (IEC 60068-2-64)
EN 60529:1991+ A1:2000	Degrees of protection provided by enclosures (IP Code) (IEC 60529)
EN 60721-3-1	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 1: Storage (IEC 60721-3-1)
EN 60721-3-2	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 2: Transportation (IEC 60721-3-2)
EN 60721-3-3	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 3: Stationary use at weatherprotected locations (IEC 60721-3-3)
EN 60721-3-4	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weatherprotected locations (IEC 60721-3-4)
EN 60721-3-6	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 6: Ship environment (IEC 60721-3-6)
EN 60721-3-7	Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 7: Portable and non-stationary use (IEC 60721-3-7)

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3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 60721 series and EN 60068 series and the following apply.

3.1

product documentation

set of documents that may contain any of the following:

- the manufacturer's installation and operations literature which accompanies the product;
- the product information contained in the manufacturer's catalogue and other product marketing material-information;
- the description, definitions, product literature and usage as presented in electronic format on the manufacturer's (or supplier's) website on the World Wide Web/Internet

3.2

weather protected locations: controlled conditions

locations that are enclosed, and where direct weather influences are totally excluded. In addition, temperature is controlled by heating or cooling to maintain the required conditions, especially where these are very different from those of the open-air climate. Humidity is not controlled. Vibration and shock are insignificant.

These locations may be in rural and some urban areas with low industrial activities and moderate traffic. There is no particular risk of biological attack due to mould growth, animals, etc.

EXAMPLES:

- normal living or working areas, for example living rooms, and rooms for general use such as theatres, restaurants, offices, shops, workshops for electronic assembly and products;

- telecommunication centres;
- storage rooms for valuable and sensitive products.

3.3

weather protected locations: uncontrolled conditions

locations that are enclosed, but whether direct weather influences are not completely excluded. In addition, neither temperature nor humidity is controlled, although heating may be used to raise low temperatures where there is a large difference between the conditions of this class and those of the open-air-climate. Vibration is of low significance.

EXAMPLES:

- entrances and staircases of buildings, garages, cellars, and certain workshops;
- buildings in factories and industrial process plants;
- unattended equipment stations, certain telecommunication buildings, ordinary storage;
- rooms for frost-resistant products, farm buildings, etc.

4 General explanation for all tests

The variety and the diversity of the devices within the scope of this standard make it difficult to define precise criteria for the evaluation of the immunity test results.

If, as a result of the application of the tests defined in this standard, the device becomes dangerous or unsafe, the device shall be deemed to have failed the test.

5 Environmental conditions

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5.1 General test conditions (standards.iteh.ai)

The HBES/BACS devices shall be designed for use in one or more of the environment classes according to the classification in the EN 60721-3 series as indicated in Table 6.1 up to Table 6.4.

All test procedures are described in the EN 60068 series.

Environmental tests shall be applied in accordance with the test method in the relevant basic standard of the EN 60068 series. In addition the following shall apply:

- the device shall be in operation during all tests except those for storage and transportation;
- the tests shall be made in the most susceptible operating mode;
- it is not always possible to test every function of the devices, and in such cases the most critical mode of operation shall be selected;
- the tests shall be carried out as single tests in sequence. The sequence of testing is optional;
- the description of the test, the test method and the test set-up are given in basic standards (EN 60068-x-x) which are referred to in the following tables;
- the content of these basic standards is not repeated here. However, details of modifications and other information needed for the practical application of the tests are given in this European Standard.

5.2 General performance criteria

During (except for storage and transportation) and after all tests the device shall not block the transmission media or send unintended telegrams.

A functional description and a definition of performance criteria, during or as a consequence of environmental testing, shall be provided by the manufacturer and noted in the test report, based on the following criteria.

Changes in stored data, such as communication error logs, and which are not directly related to the intended function of the equipment may be ignored.

In addition the device shall continue to operate according its product documentation as intended during and after the test. No unintended change of state, stored data, unintended or loss of function is allowed.

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