

SLOVENSKI STANDARD

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Splošne zahteve za stanovanjske in stavbne elektronske sisteme (HBES) in sisteme za avtomatizacijo in krmiljenje stavb (BACS) - 5-2. del: Zahteve EMC za HBES/BACS, ki se uporabljajo v bivalnih in poslovnih okoljih ter v okoljih z lahko industrijo

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General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 5-2: EMC requirements for HBES/BACS used in residential, commercial and light industry environment

[SIST EN 50491-5-2:2011](https://standards.iteh.ai/catalog/standards/sist/b43b85a7-4d78-480b-9712-971297129712/sist-en-50491-5-2-2011)

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Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 5-2: EMV-Anforderungen an ESHG/GA für den Gebrauch in Wohnbereichen, Geschäfts- und Gewerbebereichen sowie in Kleinbetrieben

Exigences générales relatives aux systèmes électroniques pour les foyers domestiques et les bâtiments (HBES) et aux Systèmes de Gestion Technique du Bâtiment (SGTB) - Partie 5-2: Exigences CEM relatives aux HBES/SGTB destinés à être utilisés en environnement de locaux résidentiels, commerciaux et de petites industries

Ta slovenski standard je istoveten z: EN 50491-5-2:2010

ICS:

97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use
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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 50491-5-2

April 2010

ICS 97.120

Supersedes EN 50090-2-2:1996 (partially) + corr. Mar.1997 (partially) + A1:2002 (partially)
+ A2:2007 (partially)

English version

**General requirements for Home and Building Electronic Systems (HBES)
and Building Automation and Control Systems (BACS) -
Part 5-2: EMC requirements for HBES/BACS used in residential,
commercial and light industry environment**

Exigences générales relatives
aux systèmes électroniques pour
les foyers domestiques et les bâtiments
(HBES) et aux Systèmes de Gestion
Technique du Bâtiment (SGTB) -
Partie 5-2: Exigences CEM relatives
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Allgemeine Anforderungen
an die Elektrische Systemtechnik für Heim
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an ESHG/GA für den Gebrauch
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<https://standards.iteh.ai/catalog/standards/sist/b43b85a7-4d78-480b-b013-5e890af2a706/sist-en-50491-5-2-2011>

This European Standard was approved by CENELEC on 2010-04-01. 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

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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). It was submitted to the formal vote and was approved by CENELEC as EN 50491-5-2 on 2010-04-01.

This standard supersedes the relevant parts of EN 50090-2-2:1996 ¹⁾; it is referenced by CEN/TC 247 and CLC/TC 205.

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) 2011-04-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2013-04-01

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:

- <https://standards.iteh.ai/catalog/standards/sist/b43b85a7-4d78-480b-6013-5e890af2a706/sist-en-50491-5-2-2011>
- Part 2 Environmental conditions;
 - Part 3 Electrical safety requirements;
 - Part 4-1 ²⁾ Functional safety requirements (for non safety related systems);
 - Part 4-2 ²⁾ Functional safety requirements (for safety related systems);
 - Part 5-1 EMC requirements, conditions and test set-up;
 - Part 5-2 EMC requirements for HBES/BACS used in residential, commercial and light industry environment;
 - Part 5-3 EMC requirements for HBES/BACS used in industry environment.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive EMC Directive 2004/108/EC. See Annex ZZ.

¹⁾ EN 50090-2-2:1996 + Corr. Mar 1997 + A1:2002 + A2:2007, *Home and Building Electronic Systems (HBES) – Part 2-2: System overview – General technical requirements*

²⁾ Under consideration.

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Introduction

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

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

Part 5 of this series applies to HBES/BACS devices to ensure a common level of EMC requirements.

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1 Scope

The scope of EN 50491-5-1:2010 applies, with the following modification:

Replace the 3rd paragraph by the following ones:

This is the specific part of EN 50491-5 for HBES/BACS used in residential, commercial and light industry environment.

The environments covered by this standard are residential, commercial and light-industrial locations, according to the definition in EN 61000-6-1.

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 50491-5-1	General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-1: EMC requirements, conditions and test set-up
EN 61000-4-2	Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test (IEC 61000-4-2)
EN 61000-4-3	Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3)
EN 61000-4-4	Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test (IEC 61000-4-4)
EN 61000-4-5	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test (IEC 61000-4-5)
EN 61000-4-6	Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6)
EN 61000-4-8	Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test (IEC 61000-4-8)
EN 61000-4-11	Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11)
EN 61000-6-1	Electromagnetic compatibility (EMC) – Part 6-1: Generic standards – Immunity for residential, commercial and light-industrial environments (IEC 61000-6-1)
EN 61000-6-3	Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3)

3 Terms, definitions and abbreviations

For the purposes of this document, the terms, definitions and abbreviations given in EN 50491-5-1:2010 apply.

4 General requirements

The general requirements of EN 50491-5-1:2010 apply.

5 Performance criteria

The performance criteria of EN 50491-5-1:2010 apply.

6 Standard test conditions

The standard test conditions of EN 50491-5-1:2010 apply.

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7 EMC requirements

7.1 Immunity requirements

7.1.1 Enclosure

Table 1 – EMC immunity requirements for enclosure

Phenomenon	Basic standard	Test specification	Performance criterion	Remarks
Power-frequency magnetic fields	EN 61000-4-8	50/60 Hz 3 A/m	A	a,b,c
Radio-frequency electromagnetic field Amplitude modulated	EN 61000-4-3 ^d	(80 to 1 000) MHz 80 % AM (1 kHz) 3 V/m 10 V/m	A B ^g	e,f
Radio-frequency electromagnetic field Amplitude modulated	EN 61000-4-3 ^d	(1,4 to 2,0) GHz 80 % AM (1 kHz) 3 V/m ^e	A	h
Radio-frequency electromagnetic field Amplitude modulated	EN 61000-4-3 ^d	(2,0 to 2,7) GHz 80 % AM (1 kHz) 1 V/m	A	e,h
Electrostatic discharge	EN 61000-4-2	± 4 kV (contact) ± 8 kV (air)	B B	i

^a The test shall be carried out at the frequencies appropriate to the power supply frequency. Equipment intended for use in areas supplied only at one of these frequencies need only be tested at that frequency.

^b Applicable only to apparatus containing devices susceptible to magnetic fields.

^c For CRTs, the acceptable jitter depends upon the character size and is calculated for a test level of 1 A/m as follows:

$$J = \frac{(3C+1)}{40}$$

where jitter J and character size C are in millimetres.

As jitter is linearly proportional to the magnetic field strength, tests can be carried out at other test levels extrapolating the maximum jitter level appropriately.

^d EN 61000-4-20 may be used for small EUTs as defined in EN 61000-4-20:2003, 6.1.

^e The test level specified is the r.m.s. value of the unmodulated carrier.

^f If the test is passed with the higher level and performance criteria A the test for the lower level is not necessary.

^g Except for the ITU broadcast frequency bands 87 MHz to 108 MHz, 174 MHz to 230 MHz and 470 MHz to 790 MHz, where the level shall be 3 V/m and the performance criteria A.

^h The frequency range has been selected to cover the frequencies with the highest potential risk of disturbance.

ⁱ See basic standard for applicability of contact and/or air discharge tests.