

# SLOVENSKI STANDARD

## SIST EN 50090-2- 2:1998/A1:2003

februar 2003

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Home and building electronic systems (HBES) - Part 2-2: System overview -  
General technical requirements

### iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 50090-2-2:1998/A1:2003  
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ICS 97.120

Referenčna številka  
SIST EN 50090-2-2:1998/A1:2003(en)

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EUROPEAN STANDARD

**EN 50090-2-2/A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2002

ICS 97.120

English version

**Home and building electronic systems (HBES)  
Part 2-2: System overview -  
General technical requirements**

Systèmes électroniques pour les foyers  
domestiques et les bâtiments (HBES)  
Partie 2-2: Vue d'ensemble du système -  
Exigences techniques générales

Elektrische Systemtechnik für Heim und  
Gebäude (ESHG)  
Teil 2-2: Systemübersicht -  
Allgemeine technische Anforderungen

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This amendment A1 modifies the European Standard EN 50090-2-2:1996; it was approved by CENELEC on 2001-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, 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

This amendment to the European Standard EN 50090-2-2 was prepared by the Technical Committee CENELEC TC 205, Home and Building Electronic Systems (HBES).

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 50090-2-2:1996 on 2001-07-01.

The following dates were fixed:

- |   |       |            |
|---|-------|------------|
| - latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2002-08-01 |
| - latest date by which the national standards conflicting with the amendment have to be withdrawn   | (dow) | 2004-08-01 |

NOTE EN 50090-2-2 is listed under the EMC and LV-Directives.

The main reasons for this amendment are

- clarification of the scope, to eliminate the restriction by SELV or PELV (clause 1),
- reduction of the electrical strength test from 2,5 kV AC to 2,0 kV AC, 5 minutes (5.2.3.3 and 5.2.3.4),
- clarification if product standards exist or not (5.2.4.2 and clause 6),
- clarification on "Simple separation" and "Protective separation" (5.2.4.3),
- reference to power line communication (clause 7).

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## Foreword

**Add** at the end:

Part 8: Conformity

Part 9: Installation requirements

## 1 Scope

**Replace** the first paragraph by

This European Standard defines the general technical requirements of a Home and Building Electronic System (HBES). It concerns cabling and topology, electrical safety for HBES device parts, in particular based on SELV or PELV, functional safety, environmental conditions, EMC requirements and behaviour in case of failures as well as specific HBES installation rules.

**Replace** the second paragraph by

This standard covers the interface of devices and equipment providing connection to the HBES as well as separately mounted HBES equipment.  
Parts of devices and equipment not providing HBES functionality are not covered by this standard. This standard is used as a product family standard. The electrical safety part is not intended to be used as a stand-alone standard. The safety requirements of this standard apply either together with the relevant product standard for the device or together with the basic safety standards if no product standard exists.

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## 2 Normative references

**Delete** "EN 29646-1".

**Delete** "EN 45001". [SIST EN 50090-2-2:1998/A1:2003  
https://standards.iteh.ai/catalog/standards/sist/4f1ea72a-a710-4c2c-914d-e81d4c505c1c/sist-en-50090-2-2-1998-a1-2003](https://standards.iteh.ai/catalog/standards/sist/4f1ea72a-a710-4c2c-914d-e81d4c505c1c/sist-en-50090-2-2-1998-a1-2003)

**Delete** "EN 45011".

**Add** the following references:

EN 50065	Series	Signalling on low-voltage electrical installations in the frequency range 3 kHz to 148,5 kHz
EN 60742		Isolating transformers and safety isolating transformers - Requirements (IEC 60742, mod.)
EN 61558-1		Safety of power transformers, power supply units and similar - Part 1: General requirements and tests (IEC 61558-1, mod.)
EN 61558-2-6		Safety of power transformers, power supply units and similar - Part 2-6: Particular requirements for safety isolating transformers for general use (IEC 61558-2-6)

**Replace** the reference number "HD 21.1 S2" by "HD 21.1 S3" and **delete** from the title "(IEC 227-1:1979, modified)".

**Replace** the reference number "HD 21.2 S2" by "HD 21.2 S3" and **delete** from the title "(IEC 227-2:1979, modified)".

**Replace** the reference number "HD 323.2.14 S2" by "EN 60068-2-14" and **replace** the title by: Environmental testing – Part 2-14: Tests – Test N: Change of temperature.

**Replace** the reference number "HD 323.2.30 S3" by "EN 60068-2-30" and **replace** the title by: Environmental testing – Part 2-30: Tests – Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle).

**Replace** the reference number "IEC 50(191)" by "IEC 60050-191".

**Replace** the reference number "IEC 189-2" by "IEC 60189-2".

**Delete** "IEC 536-2".

**Replace** the reference number "IEC 664-1" by "HD 625.1 S1:1996".

**Replace** the reference number "IEC 1140" by "EN 61140".

**Replace** the reference number "IEC 1196-1" by "IEC 61196-1".

#### 4 Topology, cabling and power supply

**Replace** the heading by:

**Topology, cabling and power supply for devices connected to Twisted Pair or coaxial media**

##### 5.2.2 General

**Replace** in the second paragraph "IEC 1140" by "EN 61140".

**Delete** in the second paragraph "or in IEC 536-2".

##### 5.2.3.1 Types of cables

**Replace** "IEC 189-2" by "IEC 60189-2".

**Replace** "IEC 1196-1" by "IEC 61196-1".

##### 5.2.3.3 Electric strength and installation requirements

**Replace** in the first sentence "2,5 kV AC" by "2 kV AC".

##### 5.2.3.4 Electric strength test

**Replace** in the second sentence "HD 21.1 S2" by "HD 21.1 S3" and "HD 21.2 S2" by "HD 21.2 S3".

**Replace** in the third sentence "2,5 kV AC" by "2 kV AC".

**Delete** in the third sentence, after "or", "in addition".

##### 5.2.4.1 General

**Replace** at the end of the first paragraph "see also 4.3 in IEC 536-2:1992" by "see also subclause 5.3.2 of EN 61140:2001, applications are described in subclauses 6.6 to 6.8".

**Replace** Table 1 by:

**Table 1 - Applicable standards for HBES devices**

Situation for product standard		Applicable standards	
Product standard exists	Product standard includes SELV or PELV requirements	Product standard	5.2.4 of EN 50090-2-2
YES	YES	applies	---
YES	NO	applies	applies

**Move** "NOTE Subclause 5.2.4 does not cover basic safety of the device" to subclause 5.2.4.

**Add** as new paragraphs:

If no product standard exists, EN 50090-2-2 applies in addition to other relevant standards.

In all cases, 5.2.2 shall always apply.

#### 5.2.4.2 Specification of insulation

**Replace** “IEC 664-1” by “HD 625.1 S1:1996” two times.

#### 5.2.4.3 Protective separation

**Replace** the first paragraph by:

Arrangements shall ensure electrical separation between mains (and other hazardous voltages) and SELV/PELV circuit in accordance with EN 61140:2001, subclauses 6.6 and 6.7.

Additionally, the requirements from HD 384.4.41 S2:1996, subclause 411.1.2.1 apply [the protective separation shall be at least as good as for safety transformers by EN 61558-2-6 or EN 60742].

According to EN 61140:2001, the required insulation for protective separation can be achieved by one of the methods given in Table 2, figures 2 and 3.

**Replace** Table 2 by:

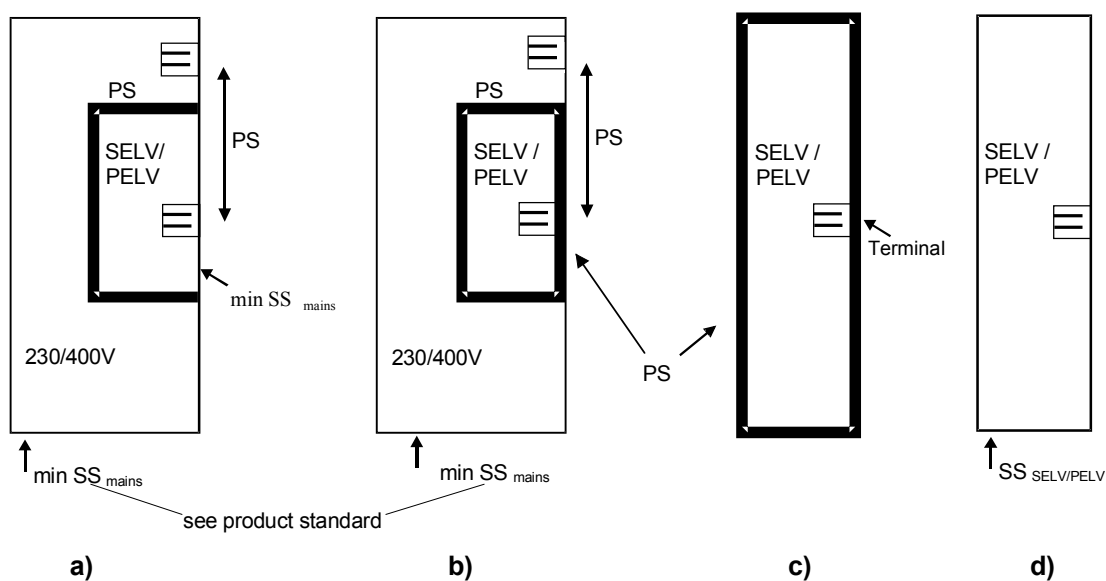
**Table 2 - Methods used to provide the required insulation for protective separation**

Environment	Insulation
Mains 230/400 V e.g. HBES devices for use in mains distribution boards or in combinations with mains devices	<ul style="list-style-type: none"> <li>- Basic insulation for <math>U_R</math><sup>1)</sup> and supplementary insulation for <math>U_R</math></li> <li>- Basic insulation for <math>U_R</math> applied two times</li> <li>- Basic insulation for <math>U_R</math> and screen connected to protective earth</li> <li>- Basic insulation for <math>U_R</math> and an additional external insulation</li> </ul>
Other non-SELV/PELV circuits with voltages less than mains supply voltage	Double or reinforced insulation for $U_R$ according to the methods under mains environment
SELV/PELV e.g. HBES devices containing only SELV or PELV circuits which are in the same enclosure together with other equipment also with SELV/ PELV only or are mounted far away from other than SELV/PELV circuits	- Basic insulation for $U_R$
<sup>1)</sup> $U_R$ : rated insulation voltage (see HD 625.1 S1:1996, subclause 1.3.9.1) for mains devices e.g. 250 V or for mains cable e.g. 300/500 V.	

**Delete**, on page 10, the complete third paragraph (after NOTE 1):

“Double or reinforced insulation for the rated insulation voltage shall be .....”

Replace figure 2 by:



SS = Simple Separation = Basic Insulation for rated insulation voltage

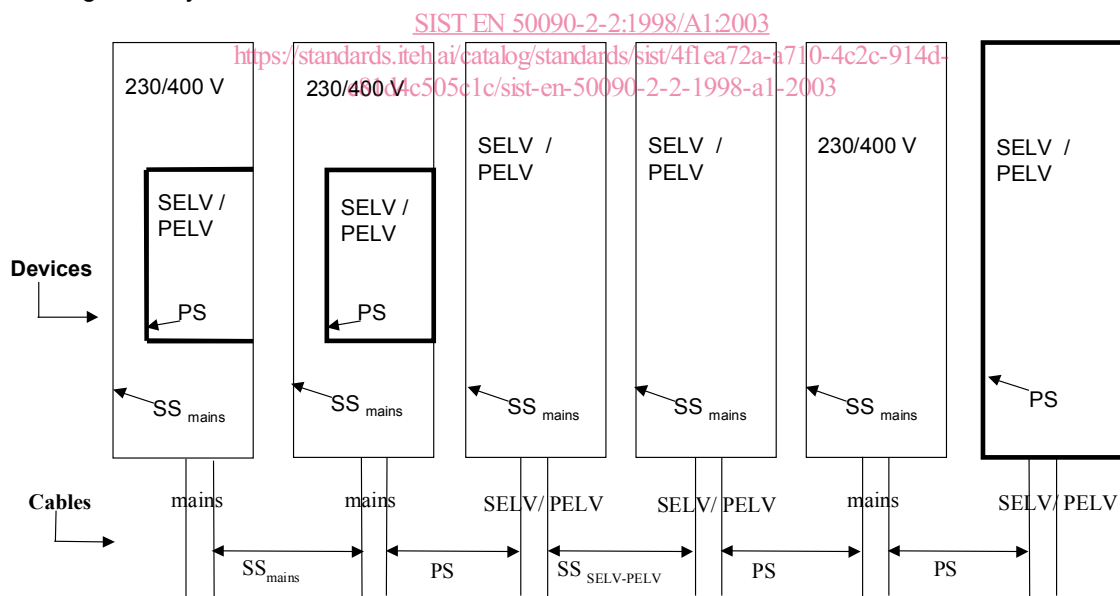
PS = Protective Separation = Double Insulation or

= Reinforced Insulation for rated insulation voltage in mains environment

Figure 2 - Protective separation for separately mounted HBES devices

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Replace figure 3 by:



SS = Simple Separation = Basic Insulation for rated insulation voltage

PS = Protective Separation = Double Insulation or

= Reinforced Insulation for rated insulation voltage in mains environment

Figure 3 - Protective separation for adjacently mounted HBES devices



#### 5.2.4.4 Compliance check

**Replace** the first sentence by:

Compliance of the required clearance and creepage distances shall be checked by carrying out the test in accordance with HD 625.1 S1:1996, subclauses 4.1 and 4.2.

**Add** as new second sentence:

Compliance of separation with solid insulation shall be checked by carrying out the dielectric strength test in accordance with EN 61558-1.

#### 5.2.5 Installation

**Renumber** the subclause from 5.2.5 to 5.2.6.

**Add** a new subclause:

#### 5.2.5 Power line communication interface

Devices with power line communication shall follow

- 5.2.4 for the separation of the user interface and other interfaces of HBES circuit;
- 5.2.4 for separation between HBES parts mains and HBES parts SELV/PELV.

### 6 Environmental conditions

**Add** the following new paragraphs:

If a product standard exists, the environmental conditions and requirements of this product standard apply.

If the product standard has no environmental conditions and requirements or if no product standard exists, 6.1 to 6.3 of this standard apply.

#### 6.3 Basic requirements and tests based on IEC 68

**Replace** "IEC 68" by "EN 60068".

##### 6.3.2 Climatic tests, devices in normal operation

**Replace** "HD 323.2.14 S2" by "EN 60068-2-14".

**Replace** "(t<sub>1</sub> of figure 2 of HD 323.2.14 S2:1987)" by "(t<sub>1</sub> of figure 2 of EN 60068-2-14:1999)".

**Replace** "HD 323.2.3 S1" by "HD 323.2.3 S2".

**Replace** "HD 323.2.30 S3" by "EN 60068-2-30".

### 7 Electromagnetic compatibility requirements

**Replace** the heading by:

**Electromagnetic compatibility requirements for devices connected to Twisted Pair or coaxial media**

**Add** the following new sentence:

For devices using PL (power line) communication, the series EN 50065 applies.

#### 7.1 Application area

**Replace** the second paragraph by: