
Splošne zahteve za stanovanjske in stavbne elektronske sisteme (HBES) in sisteme za avtomatizacijo in krmiljenje stavb (BACS) - 6-3. del: Inštalacije HBES - Ocenjevanje in opredelitev nivojev

General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 6-3: HBES installations - Assessment and definition of levels

Allgemeine Anforderungen an die Elektrische Systemtechnik für Heim und Gebäude (ESHG) und an Systeme der Gebäudeautomation (GA) - Teil 6 3: ESHG-Installationen - Bewertung und Festlegung der Stufen

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**General requirements for Home and Building Electronic Systems (HBES)
and Building Automation and Control Systems (BACS) -
Part 6-3: HBES installations -
Assessment and definition of levels**

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Elektrische Systemtechnik für Heim und
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CENELEC

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

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Table

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Foreword

This document (CLC/TR 50491-6-3:2011) has been prepared by CLC/TC 205, "Home and Building Electronic Systems (HBES)".

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

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Introduction

HBES are based on the integrated control of the components of an installation, and the clusters for HBES include the following:

- energy management;
- security;
- comfort;
- communication from and to the system through external telecommunication networks

Due to the increasing bandwidth in the telecommunication networks, the number of functions that can be provided by HBES systems, related to the clusters mentioned above, has increased. Additional clusters are audio/video and information technology.

The system control networks, i.e. dedicated cable, power line communication or radio-frequency, should be installed in relation with the existing networks, i.e. electricity, telephone and TV, according to the installation rules defined for the respective control networks, to minimise perturbations of the system.

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1 Scope

This Technical Report establishes the general rules for assessing HBES installations, according to its complexity and energy performance.

This Technical Report applies to

- household HBES installation, from and up to the connection point with the utility (i.e. electricity, telecommunications, tele-service, water, gas, security and similar),
- HBES installations that include applications related to automation and integrated control of electrical and/or electronic devices,
- the networks used for the HBES interconnection regardless of the transmission media used for their communications,
- new HBES installations, retrofitting and enlargement of existing installations.

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 15232, *Energy performance of buildings – Impact of Building Automation, Controls and Building Management*

EN 50491-3, *General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 3: Electrical safety requirements*

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 50491-5-2, *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*

EN 50491-5-3, *General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5-3: EMC requirements for HBES/BACS used in industry environment*

EN 50491-6-1 ¹⁾, *General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 6-1: HBES installations – Installation and planning*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purpose of this document, the following terms and definitions apply:

3.1.1

actuator

device responsible for actuating a physical device in the system

EXAMPLES Electro valves, alarms, electric motors, dimmers, etc.

1) At draft stage.

3.1.2

cluster

group of applications using the same type of HBES for approximately the same type of information to be exchange driven by the same industrial and market sector

3.1.3

energy management

set of measures intended to improve the efficiency of the energy consumption in household and building applications

3.1.4

HBES application

process that reacts in a defined way to inputs and delivers outputs. Inputs can be generated by events, or can be invoked by discovery and configuration

NOTE HBES applications are shown in Table 1.

3.1.5

HBES complexity level

level assigned to an HBES installation as a result of the points of the applications and devices that it includes

3.1.6

HBES device

products intended to be used for control, monitoring, operation or management of home electronic systems which can interact via a communication network

3.1.7

HBES installation

installation that incorporates the infrastructure and equipment for HBES

3.1.8

HBES installer

installer suitably trained and qualified to install HBES systems

3.1.9

HBES integrator

specialised company, with knowledge on several HBES technologies, able to advice, integrate and commissioning the whole HBES installation

3.1.10

HBES system

any combination of HBES devices (including their separate connected/detachable devices) linked together via one or more networks

NOTE 1 Other names to describe types of HBES systems:

- home control network;
- home control systems;
- home and building electronic systems;
- etc.

NOTE 2 HBES can have interfaces with telecommunication networks such as telephone network or internet.

3.1.11

HBES/BACS network

any interconnection between HBES devices used for communication

NOTE An HBES network can carry digital data as well as analogue signals.

3.1.12**node**

point of a data network, where one or more functional units interconnect data channels or data circuits

[IEV 721-16-19]

3.1.13**power line communication**

use of the existing utility network and/or the electrical power network inside premises as the medium to send communications data

3.1.14**security**

protection of human beings, animals and goods

3.1.15**telecommunication network**

metallically terminated transmission medium intended for communication between equipments that may be located in separate buildings, excluding

- the mains systems for supply, transmission and distribution of electrical power, if used as a telecommunication transmission medium,
- cable distribution systems,
- SELV circuits connecting units of information technology equipment

NOTE 1 "Telecommunication network" is defined in terms of its functionality, not its electrical characteristics. A telecommunication network is not itself defined as being either a SELV circuit or a TNV circuit. Only the circuits in the equipment are so classified.

NOTE 2 A telecommunication network may be

- publicly or privately owned,
- subject to transient overvoltages due to atmospheric discharges and faults in power distribution systems,
- subject to longitudinal (common mode) voltages induced from nearby power lines or electric traction lines.

EXAMPLES of telecommunication networks:

- a public switched telephone network;
- a public data network;
- an Integrated Services Digital Network (ISDN);
- a private network with electrical interface characteristics similar to the above.

3.1.16**topology**

schematic description of the arrangement of a network, including its nodes and connecting lines

EXAMPLES Bus, ring, star, tree.

3.1.17**twisted pair**

type of cable that consists of two independently insulated wires twisted around one another to obtain a balanced transmission line

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

HBES Home and Building Electronic System

SMS Short Message Service