

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) –
Part 1: General requirements

Systèmes Electroniques pour les Foyers Domestiques et les Bâtiments (HBES)
et Systèmes de Gestion Technique du Bâtiment (SGTB) –
Partie 1: Exigences générales



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**Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) –
Part 1: General requirements**

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et Systèmes de Gestion Technique du Bâtiment (SGTB) –
Partie 1: Exigences générales**

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IEC 63044-1:2017

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International Standard IEC 63044-1 has been prepared by IEC technical committee 23: Electrical accessories.

A list of all parts in the IEC 63044 series, published under the general title *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*, can be found on the IEC website.

The text of this International Standard is based on the following documents:

CDV	Report on voting
23/734/CDV	23/746/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

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HOME AND BUILDING ELECTRONIC SYSTEMS (HBES) AND BUILDING AUTOMATION AND CONTROL SYSTEMS (BACS) –

Part 1: General requirements

1 Scope

This part of IEC 63044 applies to all Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) and specifies the general requirements for these systems and products.

This document 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, and
- cabling and interconnection of devices

used within a dedicated HBES/BACS network.

This document provides an overview of the IEC 63044 series.

To enable integration of a wide spectrum of applications, the IEC 63044 series covers

- electrical safety,
- functional safety,
- environmental conditions,
- EMC requirements, and
- installation and cabling rules and topologies.

IEC 63044 is a series of product family standards

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1.1

home and building electronic/building automation and control products

HBES/BACS products

devices intended to be used for control, monitoring, operation or management of building services and/or home electronic systems which can interact via a dedicated HBES/BACS network

3.1.2

HBES/BACS network

interconnection between HBES/BACS products used for communication

Note 1 to entry: An HBES/BACS network can carry digital data as well as analogue signals.

3.1.3

HBES/BACS

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

Note 1 to entry: Other names used such as "home control network", "home control systems", "home and building electronic systems", "building systems", "building automation system", etc. describe types of HBES/BACS system.

3.1.4

interface

shared boundary between two implementations of functions belonging to one or more functional groupings

3.1.5

interoperability

ability of devices to exchange commands via the higher layers resulting in meaningful actions

Note 1 to entry: This includes aspects of the application domain, which by definition is beyond the OSI domain.

3.1.6

service

benefit provided by an interapplication binding, or a local controller or remotely by a service provider to a consumer, and using entities and functions of applications that are available to it

3.1.7

cluster

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

3.2 Abbreviated terms

BACS Building Automation and Control Systems

HBES Home and Building Electronic Systems

HVAC Heating, Ventilation and Air Conditioning

4 General requirements

A product claiming compliance with IEC 63044 shall comply with all applicable parts listed under Clause 5 in the framework of its intended use as declared by the manufacturer. Compliance with single parts of IEC 63044 shall be notified individually in the product documentation (e.g. compliant with IEC 63044-3, IEC 63044-5-1 and IEC 63044-5-2, etc.).

5 Standardization structure

5.1 Part 2: Environmental conditions

This part is under consideration.

IEC 63044-2 provides the environmental conditions for all devices connected to HBES/BACS and defines the general requirements for devices operating in weather protected and non-weather protected locations, sea environments, portable use and also for storage and transport.

5.2 Part 3: Electrical safety requirements

IEC 63044-3 provides the electrical safety requirements related to the HBES/BACS network in addition to the product safety standards for HBES/BACS devices.

It also applies to devices used within a HBES/BACS network for which no specific HBES/BACS product safety standard exists.

In addition, IEC 63044-3 defines safety requirements for the interface of equipment intended to be connected to an HBES/BACS network. It does not apply to interfaces to other networks.

NOTE An example of other networks is a dedicated ICT network covered by IEC 62949.

5.3 Part 4: Functional safety

This part is under consideration. (standards.iteh.ai)

IEC 63044-4 sets the requirements for functional safety for HBES/BACS products and systems. The requirements may also apply to the distributed functions of any equipment connected in a home or building control system if no specific functional safety standard exists for this equipment or system. IEC 63044-4 does not provide functional safety requirements for safety-related systems.

5.4 Part 5: EMC requirements

5.4.1 Overview

This product family standard sets the minimum level of EMC performance for the HBES/BACS network in addition to the product EMC standards for HBES/BACS devices.

It also applies to devices used within a HBES/BACS network for which no specific HBES/BACS product EMC standard exists.

In addition, it defines EMC requirements for the interface of equipment intended to be connected to an HBES/BACS network. It does not apply to interfaces to other networks.

5.4.2 Part 5-1: EMC requirements, conditions and test set-up

IEC 63044-5-1 provides the general performance requirements and test set-ups.

5.4.3 Part 5-2: EMC requirements for HBES/BACS used in residential, commercial and light-industrial environments

IEC 63044-5-2 specifies EMC requirements for HBES/BACS to be installed in residential, commercial and light-industrial environments, according to the definition given in IEC 61000-6-1.

5.4.4 Part 5-3: EMC requirements for HBES/BACS used in industrial environments

IEC 63044-5-3 specifies EMC requirements for HBES/BACS to be installed in industrial environments, according to the definition given in IEC 61000-6-2.

NOTE Industrial environment covers the office spaces that may be present in industrial premises.

Industrial automation systems are outside the scope of IEC 63044-5-3.

5.5 Part 6: Planning and installation of HBES

This part is under consideration.

IEC 63044-6 specifies the additional specific HBES requirements for the common rules for the planning and the installation of HBES/BACS.

Power line systems are outside the scope of IEC 63044-6.

6 HBES/BACS applications and clusters overview

Table 1 provides an overview of Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS).

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[IEC 63044-1:2017](https://standards.iteh.ai/catalog/standards/sist/6d189c2a-433f-43e4-8045-24bc72c6bb6c/iec-63044-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/6d189c2a-433f-43e4-8045-24bc72c6bb6c/iec-63044-1-2017>

Table 1 – Summary of the most relevant application requirements

Cluster	Applications covered by HBES and BACS	Exchange of information					
		Control/ Commands	Mono-channel streaming		Multi-channel streaming		Data
			Audio	Video	Audio	Video	
Automation	Lighting control	X					
	Shutters control	X					
	Portal and door control	X					
HVAC	Heating control	X					X
	Air conditioning control	X					
	Ventilation	X					
	Smart energy metering	(X)					(X)
Security	Gas detection	X					
	Smoke detection	X					
	Fire alarm detection	X					
	Flood detection	X					
Ultra low voltage installer	Intrusion detection	(X)		(X)			
	Social alarm	X	X				
	Access control	(X)		(X)			
	Building intercom	X	X	X			
	Video surveillance	X		X			
	Indoor voice communication						
	Outdoor voice communication	X	X				
AV	Music distribution	X	X				
	Video distribution	X					
	TV programme distribution	X			X	X	
IT	PC and peripherals sharing						X
	Internet access	X			X	X	X
	Network storage				X	X	X
General	Home supervision	X					
X = relevant (X) = conditional							

An overview of the applications and clusters of services for HBES/BACS is available in Table 2.