



BSI Standards Publication

Home and building electronic systems (HBES) and building automation and control systems (BACS)

Part 6: Requirements for planning and installation

National foreword

This British Standard is the UK implementation of EN IEC 63044-6:2021. It is identical to IEC 63044-6:2021. It supersedes BS EN 50491-6-1:2014, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PEL/23, Electrical accessories.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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Published by BSI Standards Limited 2021

ISBN 978 0 539 01251 4

ICS 29.120.01; 29.120.99; 97.120

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This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2021.

Amendments/corrigenda issued since publication

Date	Text affected
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English Version

Home and building electronic systems (HBES) and building
automation and control systems (BACS) - Part 6: Requirements
for planning and installation
(IEC 63044-6:2021)

Systèmes électroniques pour les foyers domestiques et les
bâtiments (HBES) et systèmes de gestion technique du
bâtiment (SGTB) - Partie 6: Exigences de planification et
d'installation
(IEC 63044-6:2021)

Allgemeine Anforderungen an die Elektrische
Systemtechnik für Heim und Gebäude (ESHG) und an
Systeme der Gebäudeautomation (GA) - Teil 6:
Anforderungen für Planung und Installation
(IEC 63044-6:2021)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 23/972/FDIS, future edition 1 of IEC 63044-6, prepared by IEC/TC 23 “Electrical accessories” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63044-6:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2022-05-03 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2024-08-03 document have to be withdrawn

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60364-5-52 NOTE Harmonized as HD 60364-5-52

IEC 60364-7-716¹ NOTE Harmonized as HD 60364-7-716²

IEC 60670-1 NOTE Harmonized as EN IEC 60670-1

IEC 60715 NOTE Harmonized as EN 60715

IEC 63044-5-1 NOTE Harmonized as EN IEC 63044-5-1

IEC 63044-5-2 NOTE Harmonized as EN IEC 63044-5-2

¹ To be published. Stage at the time of publication: IEC CDV 60364-7-716:2021.

² To be published. Stage at the time of publication: prHD 60364-7-716:2020.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60364-4-41	-	Low-voltage electrical installations - Part 4-41: Protection for safety - Protection against electric shock	HD 60364-4-41	-
IEC 60364-4-44	-	Low-voltage electrical installations - Part 4-44: Protection for safety - Protection against voltage disturbances and electromagnetic disturbances	HD 60364-4-442	-
IEC 60364-5-54	-	Low-voltage electrical installations - Part 5-54: Selection and erection of electrical equipment - Earthing arrangements and protective conductors	HD 60364-5-54	-
IEC 61386-24	-	Conduit systems for cable management - Part 24: Particular requirements - Conduit systems buried underground	EN 61386-24	-
IEC 63044-1	-	Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 1: General requirements	EN 63044-1	-
IEC 63044-3	-	Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 3: Electrical safety requirements	EN IEC 63044-3	-
IEC 63044-4	-	Home and building electronic systems (HBES) and building automation and control systems (BACS) - Part 4: General functional safety requirements for products intended to be integrated in HBES and BACS	-EN IEC 63044-4	-
IEC 63044-5	series	Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) - Part 5: EMC requirements	EN IEC 63044-5	series

EN IEC 63044-6:2021 (E)

ISO/IEC 11801-1	-	Information technology - Generic cabling for customer premises - Part 1: General requirements	-	-
ISO/IEC 14763-2	-	Information technology - Implementation and operation of customer premises cabling - Part 2: Planning and installation	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**HOME AND BUILDING ELECTRONIC SYSTEMS (HBES) AND
BUILDING AUTOMATION AND CONTROL SYSTEMS (BACS) –****Part 6: Requirements for planning and installation****FOREWORD**

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IEC 63044-6 has been prepared by IEC technical committee 23: Electrical accessories. It is an International Standard.

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

FDIS	Report on voting
23/972/FDIS	23/974/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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 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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

A HBES/BACS network is part of the home/building network, which includes cabling for information and communication technology (ICT) and broadcast communication technology (BCT) applications. ISO/IEC 14763-2 is the specific standard for ICT and BCT cabling installation and planning.

This document covers installation and planning requirements specific to a HBES/BACS network in addition to safety requirements for electrical installations included in the IEC 60364 series.

Installation and planning specific requirements include:

- infrastructures for cabling,
- coexistence with electric wiring,
- hints for sensors.

Wireless systems are also considered. Planning the cabled backbone for wireless systems is less complex compared to a full cabled network pathway, power supply cabling. Additional provisions are provided to guarantee coverage and reliability.

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

Part 6: Requirements for planning and installation

1 Scope

This document specifies the requirements for planning and installation of HBES/BACS and the supporting infrastructure.

Radio frequency (RF) HBES/BACS are also considered.

Safety requirements are covered by IEC 60364 (all parts).

Information and communication technology (ICT) and broadcasting and communication technology (BCT) network installations are typically interfaced with HBES/BACS.

The requirements for ICT and BCT network installations are covered by ISO/IEC 14763-2.

This document does not cover HBES/BACS implementation with:

- optical fibre,
- power lines,
- power over Ethernet (PoE).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

IEC 60364-4-41, *Low-voltage electrical installations – Part 4-41: Protection for safety – Protection against electric shock*

IEC 60364-4-44, *Low-voltage electrical installations – Part 4-44: Protection for safety – Protection against voltage disturbances and electromagnetic disturbances*

IEC 60364-5-54, *Low-voltage electrical installations – Part 5-54: Selection and erection of electrical equipment – Earthing arrangements and protective conductors*

IEC 63044-1, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 1: General requirements*

IEC 63044-3, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 3: Electrical safety requirements*

IEC 63044-4, *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 4: General functional safety requirements for products intended to be integrated in HBES and BACS*

IEC 63044-5 (all parts), *Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) – Part 5: EMC requirements*

IEC 61386-24, *Conduit systems for cable management – Part 24: Particular requirements – Conduit systems buried underground*

ISO/IEC 11801-1, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-2, *Information technology – Implementation and operation of customer premises cabling – Part 2: Planning and installation*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 63044-1 and the following 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

BCT cabling

broadcast and communication technologies cabling

cabling system designed to support applications using the HF band (3 MHz to 30 MHz), the VHF band (30 MHz to 300 MHz) and the UHF band (300 MHz to 3 000 MHz) for transmission of sound radio, TV and two-way data services, as well as for in-home inter-networking, as defined in ISO/IEC 11801-1

3.1.2

HBES/BACS application

single automated action performed by HBES/BACS (see definition 3.1.4)

Note 1 to entry: Applications are normally integrated to perform higher-level actions.

3.1.3

home/building network

network for digital and analogue information transport for a home or a building, providing defined access points and using one or more media in any topology

3.1.4

ICT cabling

information and communication technologies cabling

cabling system designed to support applications using information and communication technologies, as defined in ISO/IEC 11801-1

3.1.5

wired HBES/BACS

HBES/BACS with wired power and signals

3.1.6

RF HBES/BACS

HBES/BACS whose signals are exchanged by radio frequency; power can be wired or not (e.g. battery)

3.2 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

AV	Audiovisual
BCT	Broadcast and communication technologies
BO	Broadcasting outlet
CO	Control outlet
HD	Home distributor
HF	High frequency
HVAC	Heating, ventilation, and air conditioning
ICT	Information and communication technologies
IT	Information technology
MATO	Multi-application telecommunication outlet
RF	Radio frequency
SHD	Secondary home distributor
TO	Telecommunications outlet
UHF	Ultra high frequency
VHF	Very high frequency

4 Home/building networks

The home/building networks:

- ensure the distribution of services, such as:
 - communication,
 - HBES/BACS;
- need components such as conduits, boxes, etc. as physical infrastructures for the system.

The implementation of the home/building network goes through the following steps:

- design,
- planning of physical infrastructure,
- installation.

The planning of a common physical infrastructure for HBES/BACS, ICT, and BCT and the supporting power distribution network is advantageous for the following reasons:

- cost optimization through common works,
- optimization of the pathways,
- planning of common installation spaces for interfacing units,
- simplify the planning of spaces for future updates.

Specific requirements for the planning and the installation of a communication services generic cabling infrastructure are given in ISO/IEC 14763-2. Requirements for the HBES/BACS physical infrastructure are given in this document.

HBES/BACS networks can be wired, wireless or a combination of both and require a supporting physical infrastructure. For example, wireless HBES/BACS are composed of the housing of the device, the supporting power network, the positioning of interfacing modules, etc.