BS EN 13321-1:2012

BSI Standards Publication

Open data communication in building automation, controls and building management — Home and building electronic system

Part 1: Product and system requirements

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National foreword

This British Standard is the UK implementation of EN 13321-1:2012. It supersedes BS EN 13321-1:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee RHE/16, Performance requirements for control systems.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Open data communication in building automation, controls and building management - Home and building electronic system - Part 1: Product and system requirements

Réseau ouvert de communication de données pour l'automatisation, la régulation et la gestion technique du bâtiment - Systèmes électroniques pour la maison et le bâtiment - Partie 1: Spécification des produits et des systèmes

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Foreword

This document (EN 13321-1:2012) has been prepared by Technical Committee CEN/TC 247 “Building Automation, Controls and Building Management”, the secretariat of which is held by SNV.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2013, and conflicting national standards shall be withdrawn at the latest by April 2013.

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

This document supersedes EN 13321-1:2006.

Compared to the previous version (EN 13321–1:2006), the following changes have been made:

a) Clause 2 "Normative references" has been added;

b) references to the EN 50090 series have been updated;

c) the new EN 50491 series has been added to the references;

d) EN 50090-6 has been deleted from Clause 3 "Requirements";

e) the references to EN 50090 series and EN 50491 series in Annex A and Annex C have been updated;

f) reference to EN 50090-1 was deleted in Annex D, it is now included in Annex C.

CEN/TC 247, "Building Automation, Controls and Building Management", in collaboration with CENELEC/TC 205 "Home and Building Electronic Systems (HBES)" and its co-operation partner KNX Association, has prepared this document to reference the relevant parts of EN 50090 series. Furthermore, it is also a CEN/TC 247 specification and intended to extend their area of application to Building, Automation and Control Systems (BACS). The patent rights concern mainly series EN 50090. Each part of EN 50090 concerned has patent right information in its Foreword, and for each part concerned, CCMC has received patent right declarations by KNX Association.

EN 13321, *Open data communication in building automation, controls and building management — Home and building electronic system* consists of the following parts:

— *Part 1: Product and system requirements* (the present document);

— *Part 2: KNXnet/IP communication*.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The permanent objective of CENELEC/TC 205 is to prepare standards for all aspects of Home and Building Electronic Systems (HBES) in relation to the Information Society. Such HBES standards ensure the integration of a wide spectrum of control applications and the control and management aspects of other applications in and around homes and buildings, including the gateways to different transmission media and public networks. Moreover, they take all matters of EMC and electrical and functional safety into account. Hence, they are the pre-condition that conforming products interwork and are installer friendly to facilitate the system designers' and installers' task of providing the necessary networks according to their costumers service needs.

Extending these standardised Home and Building Electronic Systems (HBES) requirements to Building Automation and Control System Application and Building Management (BACS) generates important synergies in functionality and further enhances the economy of scale in this growing, open multivendor market of interoperable BACS products.

This European Standard is intended for use by all involved in design, manufacture, engineering, installation and commissioning activities.

Moreover, and in line with the EU's co-regulatory view of European standardization, this European Standard supports the European objectives and helps users comply with important EU Directives such as the Construction Products Directive and the Energy Performance of Buildings Directive.

1 Scope

This European Standard specifies, as for Home or Building Electronic Systems (HBES) for the domain of Building Automation and Control System Application and Building Management (BACS), common rules for a class of multi-application bus systems where the functions are decentralised and linked through a common communication process. This European Standard sets the basic requirements for 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 standard exists for this equipment or system.

Due to its reference to the EN 50090 series, this European Standard sets requirements for the BACS area in relation to Architecture and Hardware and Application and Communication of systems based on HBES amongst other areas, and specifies the basic requirements for interoperability (between products and systems).

Aspects such as environmental conditions/external influences, electrical safety, EMC, etc. also used to be covered by EN 50090-2-2, which will be superseded by the now available EN 50491 series. The latter European Standards series was jointly developed by CENELEC/TC 205 and CEN/TC 247 and will in the future also include aspects like functional safety in normal use (now contained in the EN 50090-2-3). The EN 50491 series applies, together with the relevant product standard for devices, if applicable.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50090-1, *Home and Building Electronic Systems (HBES) — Part 1 Standardization structure*

EN 50090-2-2, *Home and Building Electronic Systems (HBES) — Part 2-2: System overview — General technical requirements*

EN 50090-2-3, *Home and Building Electronic Systems (HBES) — Part 2-3: System overview — General functional safety requirements for products intended to be integrated in HBES*

EN 50090-3-1, *Home and Building Electronic Systems (HBES) — Part 3-1: Aspects of application — Introduction to the application structure*

EN 50090-3-2, *Home and Building Electronic Systems (HBES) — Part 3-2: Aspects of application — User process for HBES Class 1*

EN 50090-3-3, *Home and Building Electronic Systems (HBES) — Part 3-3: Aspects of application — HBES Interworking model and common HBES data types*

EN 50090-4-1, *Home and Building Electronic Systems (HBES) — Part 4-1: Media independent layers — Application layer for HBES Class 1*

EN 50090-4-2, *Home and Building Electronic Systems (HBES) — Part 4-2: Media independent layers — Transport layer, network layer and general parts of data link layer for HBES Class 1*

EN 50090-4-3, *Home and Building Electronic Systems (HBES) — Part 4-3: Media independent layers — Communication over IP*

EN 50090-5-1, *Home and Building Electronic Systems (HBES) — Part 5-1: Media and media dependent layers — Power line for HBES Class 1*

EN 50090-5-2, *Home and Building Electronic Systems (HBES) — Part 5-2: Media and media dependent layers — Network based on HBES Class 1, Twisted Pair*

EN 50090-5-3, *Home and Building Electronic Systems (HBES) — Part 5-3: Media and media dependent layers — Radio frequency*

EN 50090-7-1, *Home and Building Electronic Systems (HBES) — Part 7-1: System management — Management procedures*

3 Requirements

Building Automation and Control Systems (BACS) applications according to this European Standard shall use the requirements stated in the European Standard series EN 50090. The following parts of EN 50090 shall be used:

— *Part 1: Standard structure*

— *Part 2: System overview*

— *Part 3: Aspects of application*

— *Part 4: Media independent layers*

— *Part 5: Media and media dependent layers*

— *Part 7: System management*

All applicable parts of EN 50090 series are listed together with their exact references in Annex C.

Annex A
(informative)

General safety requirements and environmental conditions

As the part EN 50090-2-2, *General technical requirements*, is listed under the Low Voltage Directive and the EMC Directive, it is necessarily a part of EN 13321-1 for the time being.

A review of these requirements has been jointly worked out by CEN/TC 247 and CENELEC/TC 205, and published in the EN 50491 series. These will supersede the EN 50090-2-2. The same goes for EN 50090-2-3, which will become a part of the EN 50491 series.

As soon as the applicability of the EN 50090-2-2 or EN 50090-2-3 expires, the list of parts will be amended via the Maintenance procedure applicable to this European Standard provided by Annex B.

Annex B
(normative)

Maintenance procedure applicable to this European Standard

Considering that

— CENELEC continues to further develop the EN 50090 series and/or related EN standards, e.g. the one to result from the process mentioned in Annex A above, and

— these standards are already submitted to the Public Enquiry and Approval process within the same set of member countries,

it would be a waste of time and resources for any amendment to the list in Annex C to result in running through the process a second time.

Furthermore, any necessary updating of the current standard by CENELEC can be likened to the EN ISO 16484-5 (and EN ISO 16484–6) case where the processing of amendments already dealt with and approved in the originating organisation ASHRAE under an internationally open procedure was agreed to be submitted to the established CEN (and ISO) rules of the Maintenance Agency (cf. CEN BT RESOLUTION BT 146/1994).

Any necessary updating in view of new CENELEC results shall be handled according to the same set of rules, with CENELEC, being recognised as the Maintenance agency for this CEN/TC 247 European Standard.

Annex C
(normative)

List of referenced CENELEC/TC 205 European Standards

EN 50090-1, *Home and Building Electronic Systems (HBES) — Part 1 Standardization structure*

EN 50090-2-1, *Home and Building Electronic Systems (HBES) — Part 2-1: System overview — Architecture*

EN 50090-2-2, *Home and Building Electronic Systems (HBES) — Part 2-2: System overview — General technical requirements*

EN 50090-2-3, *Home and Building Electronic Systems (HBES) — Part 2-3: System overview — General functional safety requirements for products intended to be integrated in HBES*

EN 50090-3-1, *Home and Building Electronic Systems (HBES) — Part 3-1: Aspects of application — Introduction to the application structure*

EN 50090-3-2, *Home and Building Electronic Systems (HBES) — Part 3-2: Aspects of application — User process for HBES Class 1*

EN 50090-3-3, *Home and Building Electronic Systems (HBES) — Part 3-3: Aspects of application — HBES Interworking model and common HBES data types*

EN 50090-4-1, *Home and Building Electronic Systems (HBES) — Part 4-1: Media independent layers — Application layer for HBES Class 1*

EN 50090-4-2, *Home and Building Electronic Systems (HBES) — Part 4-2: Media independent layers — Transport layer, network layer and general parts of data link layer for HBES Class 1*

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EN 50090-5-3, *Home and Building Electronic Systems (HBES) — Part 5-3: Media and media dependent layers — Radio frequency*

EN 50090-7-1, *Home and Building Electronic Systems (HBES) — Part 7-1: System management — Management procedures*

EN 50491-2, *General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) — Part 2: Environmental conditions*

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 50491-4-1 *General requirements for Home and Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS) — Part 4-1: General functional safety requirements for products intended to be integrated in Building Electronic Systems (HBES) and Building Automation and Control Systems (BACS)*

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*

Annex D
(informative)

Other related (but not referenced) CENELEC/TC 205 HBES European Standards

The EN 50090, *Home and Building Electronic Systems (HBES)* series contains the following parts which are not referenced by this European Standard:

— *Part 8: Conformity assessment of products*

— *Part 9: Installation requirements*

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