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Building automation and control systems (BACS) —

Part 2: Hardware

Systèmes d'automatisation et de contrôle des bâtiments (BACS) —

Partie 2: Matériel

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 205, *Building environment design*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 247, *Building Automation, Controls and Building Management,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 16484-2:2004), which has been technically revised.

The main changes are as follows:

— overall structure of document has been updated;

— Clause 1, Clause 2 and Clause 3 have been revised;

— technical content throughout the document has been modified and updated.

A list of all parts in the ISO 16484 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Building automation and control systems (BACS) —

Part 2:
Hardware

1 Scope

This document specifies the hardware requirements needed to carry out building automation tasks.

This document is applicable to physical devices, i.e.:

— devices that require human interaction, such as management stations or operator panels;

— devices for data storage and analysis, such as edge or cloud servers;

— devices for control applications, such as automation stations;

— devices for physical quantities acquisition, such as sensors and actuators.

This document provides a generic system topology based on a building network infrastructure, which includes both the devices inside the building envelope and those outside the building envelope.

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 60529, *Degrees of protection provided by enclosures (IP code)*

IEC/TR 62443-3-1, *Industrial communication networks — Network and system security — Part 3-1: Security technologies for industrial automation and control systems*

IEC 62443-3-3, *Industrial communication networks — Network and system security — Part 3-3: System security requirements and security levels*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
access control system
dedicated security system, that includes the automatic checking of access rights under organizational measures, barrier and door control for buildings and rooms, and registration of events

3.2
alarm
warning given by the system either:

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a) indicating the presence of a hazard to property, the environment, or to life

b) a condition detected by a device or controller regarded as abnormal, that implements a rule or logic specifically designed to look for that condition, e.g. "frost alarm"

Note 1 to entry: An alarm can be an annunciation that is either audible, visual or both that alerts an operator to an abnormal condition, which can require corrective action.

3.3
analogue input
part of the hardware pertaining to a control device for measuring

3.4
analogue output
part of the hardware pertaining to a control device for positioning

3.5
application
set of user information processing requirements or functions that together form a logical unit supporting a process

Note 1 to entry: A building automation and control system can support many different applications.

3.6
binary input
hardware pertaining to control devices for state processing

Note 1 to entry: The function is also referred to as binary input state.

3.7
binary output
hardware pertaining to control devices for switching

Note 1 to entry: The function is also referred to as output switching.

3.8
building
large volume separate fixed structures, i.e. commercial or residential premises, however excluding industrial structures

Note 1 to entry: Building automation and control system can also be employed for other structures, such as houses, tunnels, railways, and ships.

3.9
building automation and control system
system, comprising all products, software and engineering services for automatic controls (including interlocks), monitoring, optimization, operation, human intervention, and management to achieve energy-efficient, economical, and safe operation of building services

Note 1 to entry: The trade designation and the industry branch are also referred to as either building automation or building control, or both.

[SOURCE: ISO 52120-1:2021, 3.2, modified — Note 1 has been added.]

Note 2 to entry: Building automation and control system (BACS) is also referred to as building management system (BMS), of which building energy management is part.

Note 3 to entry: The use of the word "control" does not imply that either the system or the device or both are restricted to control functions. Processing of data and information is also possible.

Note 4 to entry: If a building automation and control system, or building energy management system, conforms to the requirements of the ISO 16484 series, it may be designated as a BACS.

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