



# SLOVENSKI STANDARD SIST EN ISO 16484-6:2006

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## Avtomatizacija stavb in sistemi za regulacijo – 6. del: Protokol izmenjave preskušanja skladnosti (ISO 16484-6:2005)

Building automation and control systems (BACS) - Part 6: Data communication conformance testing (ISO 16484-6:2005)

Systeme der Gebäudeautomation - Teil 6: Datenübertragungsprotokoll Konformitätsprüfung (ISO 16484-6:2005)

Systemes d'automatisation et de gestion technique du bâtiment - Partie 6: Essais de conformité de la communication de données (ISO 16484-6:2005)

**Ta slovenski standard je istoveten z: EN ISO 16484-6:2005**

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35.240.99	IT applications in other fields
97.120	Automatic controls for household use

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NORME EUROPÉENNE  
EUROPÄISCHE NORM

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## Building automation and control systems (BACS) - Part 6: Data communication conformance testing (ISO 16484-6:2005)

Systèmes d'automatisation et de gestion technique du bâtiment - Partie 6: Essais de conformité de la communication de données (ISO 16484-6:2005)

Systeme der Gebäudeautomation - Teil 6: Datenübertragungsprotokolle Konformitätsprüfung (ISO 16484-6:2005)

This European Standard was approved by CEN on 14 December 2005.

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**EN ISO 16484-6:2005 (E)****Foreword**

This document (EN ISO 16484-6:2005) has been prepared by Technical Committee ISO/TC 205 "Building environment design" in collaboration with Technical Committee CEN/TC 247 "Building Automation, Controls and Building Management", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by June 2006, and conflicting national standards shall be withdrawn at the latest by June 2006.

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**Building automation and control systems  
(BACS) —**

**Part 6:  
Data communication conformance testing**

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Partie 6: Essais de conformité de la communication de données*

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## Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this Technical Report may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 16484-6 was prepared by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) as ANSI/ASHRAE 135.1-2003, and was adopted (without modifications except those stated in Clause 2 of this International Standard) by Technical Committee ISO/TC 205, *Building environment design*.

ISO 16484 consists of the following parts, under the general title *Building automation and control systems (BACS)*:

*Part 2: Hardware* <https://standards.iteh.ai/catalog/standards/sist/ccfcc98c-b763-4a2b-b6f1-4ec677c4d1f4/sist-en-iso-16484-6-2006>

*Part 3: Functions*

*Part 5: Data communication protocol*

*Part 6: Data communication conformance testing*

The task of updating this part of ISO 16484 has been delegated to an ISO Maintenance Agency. Details are given in the "Maintenance" clause overleaf.

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# Building automation and control systems (BACS) —

## Part 6: Data communication conformance testing

### Scope

This part of ISO 16484 defines a standard method for verifying that an implementation of the BACnet protocol provides each capability claimed in its Protocol Implementation Conformance Statement (PICS) in conformance with the BACnet standard (ISO 16484-5).

The scope is further detailed in Clause 2 of the enclosed ANSI/ASHRAE publication.

### Recommendations

The technical recommendations are those made in the following publication (reproduced on the following pages), which is adopted as an International Standard:

ANSI/ASHRAE 135.1-2003, Method for Test for Conformance to BACnet

International Standards cited in the text are the following:

ISO 16484-5, *Building automation and control systems — Part 5: Data communication protocol*

ISO 10646, *Information technology — Universal Multiple-Octet Coded Character Set (UCS)*

ISO/IEC 8802-2, *Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements — Part 2: Logical link control*

ISO/IEC 8802-3, *Information technology — Telecommunications and information exchange between systems — Local and metropolitan area networks — Specific requirements — Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer*

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

### Maintenance

The ISO Maintenance Agency for ISO 16484-5 and ISO 16484-6, as designated by the ISO Council, is

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The procedures for the maintenance of ISO 16484-5 and ISO 16484-6 are available at

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## 1. PURPOSE

To define a standard method for verifying that an implementation of the BACnet protocol provides each capability claimed in its Protocol Implementation Conformance Statement (PICS) in conformance with the BACnet standard.

## 2. SCOPE

This standard provides a comprehensive set of procedures for verifying the correct implementation of each capability claimed on a BACnet PICS including:

- (a) support of each claimed BACnet service, either as an initiator, executor, or both,
- (b) support of each claimed BACnet object-type, including both required properties and each claimed optional property,
- (c) support of the BACnet network layer protocol,
- (d) support of each claimed data link option, and
- (e) support of all claimed special functionality.

## 3. DEFINITIONS

All definitions from ISO 16484-5 also apply to this standard.

**3.1 local network:** the network to which a BACnet device is directly connected.

**3.2 remote network:** a network that is accessible from a BACnet device only by passing through one or more routers.

**3.3 test database:** a database of BACnet functionality and objects created by reading the contents of an EPICS.

### 3.4 Abbreviations and Acronyms Used in the Standard

<b>BNF</b>	Backus-Naur Form syntax
<b>EPICS</b>	electronic protocol implementation conformance statement
<b>IUT</b>	implementation under test
<b>TCSL</b>	testing and conformance scripting language
<b>TD</b>	testing device
<b>TPI</b>	text protocol information

## 4. ELECTRONIC PICS FILE FORMAT

An electronic protocol implementation conformance statement (EPICS) file contains a BACnet protocol implementation conformance statement expressed in a standardized text form. EPICS files are machine and human readable representations of the implementation of BACnet objects and services within a given device. EPICS files shall use the extension ".TPI" (text protocol information) and contain normal editable text lines consisting of text character codes ending in carriage return/linefeed pairs (X'0D', X'0A').

EPICS files are used by software testing tools to conduct and interpret the results of tests defined in this standard. An EPICS file shall accompany any device tested according to the procedures of this standard.

### 4.1 Character Encoding

BACnet provides for a variety of possible character encodings. The character encodings in BACnet fall into three groups: octet streams, double octet streams and quad octet streams. Octet streams represent characters as single octet values. In some cases, such as Microsoft DBCS and JIS C 6226, certain octet values signal that the second octet which follows should be viewed along with the leading octet as a single value, thus extending the range to greater than 256 possible characters. In contrast, double octet streams view pairs of octets as representing single characters. The ISO 10646 UCS-2 encoding is an example. The first or leading octet of the pair is the most significant part of the value. Quad octet streams, such as ISO 10646 UCS-4, treat tuples of four octets at a time as single characters with the first or leading octet being the most significant.

To accommodate the various encodings that may be used with BACnet device descriptions, EPICS files begin with a header that serves both to identify the file as an EPICS file, and to identify the particular encoding used. The header begins with the string "PICS #" where # is replaced by a numeral representing the character set as shown in Table 4-1.