

SLOVENSKI STANDARD

SIST EN ISO 16484-6:2014

01-julij-2014

Nadomešča:

SIST EN ISO 16484-6:2009

Avtomatizacija stavb in sistemi za regulacijo - 6. del: Preskušanje skladnosti protokolov za izmenjavo podatkov (ISO 16484-6:2014)

Building automation and control systems (BACS) - Part 6: Data communication conformance testing (ISO 16484-6:2014)

Systeme der Gebäudeautomation - Teil 6: Datenübertragungsprotokoll - Konformitätsprüfung (ISO 16484-6:2014)

Systèmes d'automatisation et de gestion technique du bâtiment - Partie 6: Essais de conformité de la communication de données (ISO 16484-6:2014)

Ta slovenski standard je istoveten z: EN ISO 16484-6:2014

ICS:

35.240.99	Uporabniške rešitve IT na drugih področjih	IT applications in other fields
97.120	Avtomatske krmilne naprave za dom	Automatic controls for household use

SIST EN ISO 16484-6:2014

en

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

SIST EN ISO 16484-6:2014

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 16484-6

May 2014

ICS 91.040.01

Supersedes EN ISO 16484-6:2009

English Version

**Building automation and control systems (BACS) - Part 6: Data
communication conformance testing (ISO 16484-6:2014)**

Systèmes d'automatisation et de gestion technique du
bâtiment - Partie 6: Essais de conformité de la
communication de données (ISO 16484-6:2014)

Systeme der Gebäudeautomation - Teil 6:
Datenübertragungsprotokoll - Konformitätsprüfung (ISO
16484-6:2014)

This European Standard was approved by CEN on 6 April 2014.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.

[SIST EN ISO 16484-6:2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
---------------	---

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 16484-6:2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

Foreword

This document (EN ISO 16484-6:2014) 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 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 November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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 ISO 16484-6:2009.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

Endorsement notice

The text of ISO 16484-6:2014 has been approved by CEN as EN ISO 16484-6:2014 without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN ISO 16484-6:2014
<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 16484-6:2014

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

INTERNATIONAL STANDARD

ISO
16484-6

Third edition
2014-05-15

Building automation and control systems (BACS) —

Part 6: Data communication conformance testing

*Systèmes d'automatisation et de gestion technique du bâtiment —
Partie 6: Essais de conformité de la communication de données*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 16484-6:2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)

[https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-
e662c24b474a/sist-en-iso-16484-6-2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)



Reference number
ISO 16484-6:2014(E)

© ISO 2014

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO 16484-6:2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

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 documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received. www.iso.org/patents

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/foreword

The committee responsible for this document is ISO/TC 205, *Building environment design*.

This third edition cancels and replaces the second edition (ISO 16484-6:2009), of which it forms the subject of a minor revision.

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

- *Part 1: Project specification and implementation*
- *Part 2: Hardware*
- *Part 3: Functions*
- *Part 5: Data communication protocol*
- *Part 6: Data communication conformance testing*

Applications and project implementation are to form the subjects of future Parts 4 and 7.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 16484-6:2014

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

Building automation and control systems (BACS) — Part 6: Data communication conformance testing

1 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. This part of ISO 16484 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.

2 Relationship between this part of ISO 16484 and ANSI/ASHRAE 135.1-2011

This part of ISO 16484 comprises the US standard ANSI/ASHRAE 135.1-2011, *Method of Test for Conformance to BACnet*, published by the American National Standards Institute and the American Society of Heating, Refrigerating and Air-Conditioning Engineers.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN ISO 16484-6:2014

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

STANDARD

**ANSI/ASHRAE Standard 135.1-2011**

(Supersedes ANSI/ASHRAE Standard 135.1-2009)

Includes ANSI/ASHRAE Addenda listed in the History of Revisions

Method of Test for Conformance to BACnet[®]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN ISO 16484-6:2014](https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014)

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b474a/sist-en-iso-16484-6-2014>

See the History of Revisions at the back of this standard for approval dates of addenda.

This standard is under continuous maintenance by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. The change submittal form, instructions, and deadlines may be obtained in electronic form from the ASHRAE Web site (www.ashrae.org) or in paper form from the Manager of Standards. The latest edition of an ASHRAE Standard may be purchased from the ASHRAE Web site (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 404-321-5478. Telephone: 404-636-8400 (worldwide), or toll free 1-800-527-4723 (for orders in US and Canada). For reprint permission, go to www.ashrae.org/permissions.

© 2012 ASHRAE

ISSN 1041-2336



ASHRAE Standing Standard Project Committee 135
Cognizant TC: TC 1.4, Control Theory and Application
SPLS Liaison: Richard L Hall

David Robin, *Chair*
Carl Neilson, *Vice-Chair*
Bernhard Isler, *Secretary*
Donald P. Alexander
Barry B. Bridges
Clifford H. Copass
Sharon E. Dinges

Stephen T. Karg
Simon Lemaire
J. Damian Ljungquist
John J. Lynch
Frank Schubert
Ted Sunderland

William O. Swan, III
David B. Thompson
Stephen J. Treado
Klaus Wagner
J. Michael Whitcomb
Grant N. Wichenko
Christoph Zeller

ASHRAE STANDARDS COMMITTEE 2011–2012

Carol E. Marriott, *Chair*
Kenneth W. Cooper, *Vice-Chair*
Douglass S. Abramson
Karim Amrane
Charles S. Barnaby
Hoy R. Bohanon, Jr.
Steven F. Bruning
David R. Conover
Steven J. Emmerich
Allan B. Fraser

Krishnan Gowri
Maureen Grasso
Cecily M. Grzywacz
Richard L. Hall
Rita M. Harrold
Adam W. Hinge
Debra H. Kennoy
Jay A. Kohler
Frank Myers

Janice C. Peterson
Douglas T. Reindl
Boggarm S. Setty
James R. Tauby
James K. Vallort
William F. Walter
Michael W. Woodford
Craig P. Wray
Eckhard A. Groll, *BOD ExO*
Ross D. Montgomery, *CO*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Stephanie C. Reiniche, *Manager of Standards*

SIST EN ISO 16484-6:2014

<https://standards.iteh.ai/catalog/standards/sist/fcc717f0-62bc-425f-baa7-e662c24b45e6/iso-16484-6-2014>

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus standard developed under the auspices of ASHRAE. *Consensus* is defined by the American National Standards Institute (ANSI), of which ASHRAE is a member and which has approved this standard as an ANS, as “substantial agreement reached by directly and materially affected interest categories. This signifies the concurrence of more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that an effort be made toward their resolution.” Compliance with this standard is voluntary until and unless a legal jurisdiction makes compliance mandatory through legislation.

ASHRAE obtains consensus through participation of its national and international members, associated societies, and public review.

ASHRAE Standards are prepared by a Project Committee appointed specifically for the purpose of writing the Standard. The Project Committee Chair and Vice-Chair must be members of ASHRAE; while other committee members may or may not be ASHRAE members, all must be technically qualified in the subject area of the Standard. Every effort is made to balance the concerned interests on all Project Committees.

The Manager of Standards of ASHRAE should be contacted for:

- interpretation of the contents of this Standard,
- participation in the next review of the Standard,
- offering constructive criticism for improving the Standard, or
- permission to reprint portions of the Standard.

DISCLAIMER

ASHRAE uses its best efforts to promulgate Standards and Guidelines for the benefit of the public in light of available information and accepted industry practices. However, ASHRAE does not guarantee, certify, or assure the safety or performance of any products, components, or systems tested, installed, or operated in accordance with ASHRAE's Standards or Guidelines or that any tests conducted under its Standards or Guidelines will be nonhazardous or free from risk.

ASHRAE INDUSTRIAL ADVERTISING POLICY ON STANDARDS

ASHRAE Standards and Guidelines are established to assist industry and the public by offering a uniform method of testing for rating purposes, by suggesting safe practices in designing and installing equipment, by providing proper definitions of this equipment, and by providing other information that may serve to guide the industry. The creation of ASHRAE Standards and Guidelines is determined by the need for them, and conformance to them is completely voluntary.

In referring to this Standard or Guideline and in marking of equipment and in advertising, no claim shall be made, either stated or implied, that the product has been approved by ASHRAE.

CONTENTS

CLAUSE	PAGE
1. PURPOSE	1
2. SCOPE	1
3. DEFINITIONS	1
4. ELECTRONIC PICS FILE FORMAT	1
4.1 Character Encoding	1
4.2 Structure of EPICS Files	2
4.3 Character Strings	3
4.4 Notational Rules for Parameter Values	3
4.5 Sections of the EPICS File	4
5. EPICS CONSISTENCY TESTS	23
6. CONVENTIONS FOR SPECIFYING BACnet CONFORMANCE TESTS	24
6.1 TCSL Components	24
6.2 TCSL Statements	25
6.3 Time Dependencies	30
6.4 BACnet References	31
6.5 TD Requirements	31
7. OBJECT SUPPORT TESTS	32
7.1 Read Support for Properties in the Test Database	32
7.2 Write Support for Properties in the Test Database	32
7.3 Object Functionality Tests	35
8. APPLICATION SERVICE INITIATION TESTS	131
8.1 AcknowledgeAlarm Service Initiation Tests	131
8.2 ConfirmedCOVNotification Service Initiation Tests	132
8.3 UnconfirmedCOVNotification Service Initiation Tests	141
8.4 ConfirmedEventNotification Service Initiation Tests	144
8.5 UnconfirmedEventNotification Service Initiation Tests	177
8.6 GetAlarmSummary Service Initiation Tests	184
8.7 GetEnrollmentSummary Service Initiation Tests	184
8.8 GetEventInformation Service Initiation Tests	186
8.9 LifeSafetyOperation Service Initiation Tests	187
8.10 SubscribeCOV Service Initiation Tests	187
8.11 SubscribeCOVProperty Service Initiation Tests	188
8.12 AtomicReadFile Service Initiation Tests	189
8.13 AtomicWriteFile Service Initiation Tests	190
8.14 AddListElement Service Initiation Tests	190
8.15 RemoveListElement Service Initiation Tests	191
8.16 CreateObject Service Initiation Tests	191
8.17 DeleteObject Service Initiation Tests	192
8.18 ReadProperty Service Initiation Tests	193
8.19 ReadPropertyConditional Service Initiation Tests	194
8.20 ReadPropertyMultiple Service Initiation Tests	195
8.21 ReadRange Service Initiation Tests	197
8.22 WriteProperty Service Initiation Tests	201
8.23 WritePropertyMultiple Service Initiation Tests	203
8.24 DeviceCommunicationControl Service Initiation Tests	205
8.25 ConfirmedPrivateTransfer Service Initiation Test	207
8.26 UnconfirmedPrivateTransfer Service Initiation Test	207
8.27 ReinitializeDevice Service Initiation Tests	207
8.28 ConfirmedTextMessage Service Initiation Tests	208
8.29 UnconfirmedTextMessage Service Initiation Tests	209
8.30 TimeSynchronization Service Initiation Tests	210
8.31 UTCTimeSynchronization Service Initiation Tests	210
8.32 Who-Has Service Initiation Tests	211
8.33 I-Have Service Initiation Tests	212