ADDENDA

ANSI/ASHRAE Addendum bn to
ANSI/ASHRAE Standard 135-2016

A Data Communication Protocol for Building Automation and Control Networks

Approved by ASHRAE on June 15, 2018, and by the American National Standards Institute on June 15, 2018.

This addendum was approved 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® website (www.ashrae.org) or in paper form from the Senior Manager of Standards.

The latest edition of an ASHRAE Standard may be purchased on the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 678-539-2129. 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.

 ISSN 1041-2336

Approved American National Standard
ANSI
www.ansi.org

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 Senior Manager of Standards of ASHRAE should be contacted for

a. interpretation of the contents of this Standard,
b. participation in the next review of the Standard,
c. offering constructive criticism for improving the Standard, or
d. 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.

[This foreword and the "rationales" on the following pages are not part of this standard. They are merely informative and do not contain requirements necessary for conformance to the standard.]

FOREWORD

The purpose of this addendum is to present changes to ANSI/ASHRAE Standard 135-2016. These modifications are the result of change proposals made pursuant to the ASHRAE continuous maintenance procedures and of deliberations within Standing Standard Project Committee 135. The changes are summarized below.

In the following document, language to be added to existing clauses of ANSI/ASHRAE Standard 135-2016 is indicated through the use of *italics*, while deletions are indicated by ~~strikethrough~~. Where entirely new subclauses are added, plain type is used throughout.

The use of placeholders like X, Y, Z, X1, X2, etc., should not be interpreted as literal values of the final standard. These placeholders will be assigned actual numbers/letters only with incorporation of this addendum into the standard for republication.

135-2016*bn*-1. Make SCHED BIBBs consistent on supported datatypes, and add BOOLEAN.

Rationale

The datatypes which must be supported in BIBB SCHED-E-B and SCHED-VM-A are not currently specified in the standard.

BIBB SCHED-E-B specifies the minimum requirements, in terms of datatypes which must be supported. The datatypes specified by SCHED-VM-A are aligned, in order that these BIBBs have meaningful utility when comparing devices which claim them.

In addition, the datatype BOOLEAN is added to be supported.

[Change **K.3.3**, p. 1063]

K.3.3 BIBB - Scheduling - External - B (SCHED-E-B)

The B device provides date and time scheduling of the values of specific properties of specific objects in other devices. Devices *at Protocol_Revision X or higher, and* claiming conformance to SCHED-E-B shall *at a minimum support the writing of primitive datatypes BOOLEAN, REAL, Enumerated, and Unsigned32 to all standard properties of those datatypes in any standard objects. A Schedule object in the device shall support the writing of primitive datatype NULL to commandable standard properties in standard objects. This occurs when the value in the Relinquish_Default property is NULL and no schedule actions are in effect from the Weekly_Schedule and Exception_Schedule properties. Scheduling of other datatypes may also be supported.*

The device shall ~~also~~ support SCHED-I-B and DS-WP-A. The List_Of_Object_Property_References property shall support references to objects in external devices.

[Change **Clause K.3.5**, p. 1063]

K.3.5 BIBB - Scheduling - Advanced View and Modify - A (SCHED-AVM-A)

...

Devices claiming support for this BIBB shall be capable of presenting, and modifying Schedule objects that schedule any of the following types:

BOOLEAN, REAL, ENUMERATED, Unsigned32

and which may contain NULL values and shall be capable of changing the datatype that a Schedule object schedules. Schedule objects contain a number of properties that need to be consistent in the datatype of the values they contain. Devices claiming support for this BIBB shall be prepared to interact *with, as well as* allow display and modification of, Schedule objects that are self-inconsistent. A self-inconsistent Schedule object is one in which the scheduled values in the Weekly_Schedule, Exception_Schedule, and Schedule_Default properties are not all of the same datatype or in which the controlled objects are not all of the same datatype or are of a datatype different than the scheduled values.

Devices claiming support for this BIBB shall be capable of creating, deleting, presenting, and modifying Timer objects that write any of the following types:

BOOLEAN, REAL, ENUMERATED, Unsigned32, NULL

and shall be capable of changing the datatype that a Timer object writes, and shall be capable of setting the 'No Value' option. Timer objects contain a number of properties that need to be consistent in the datatype of the values they contain. Devices claiming support for this BIBB shall be prepared to interact *with, as well as* allow display and modification of, Timer objects that are self-inconsistent. A self-inconsistent Timer object is one in which the values to write in the State_Change_Values property are not all of the same datatype or in which the controlled objects are not all of the same datatype or are of a datatype different than the values to be written.

...

[Change **Clause K.3.6**, p. 1064]

K.3.6 BIBB - Scheduling - View and Modify - A (SCHED-VM-A)

...

Devices claiming support for this BIBB shall be capable of presenting, and modifying Schedule objects that schedule any of the following types:

BOOLEAN, REAL, ENUMERATED, Unsigned32

and which may contain NULL values.

Devices claiming support for this BIBB shall be capable of presenting and modifying Timer objects that write any of the following types:

BOOLEAN, REAL, ENUMERATED, Unsigned32, NULL

and which may contain the 'No-Value' option.

...

[Change **Clause K.3.7**, p. 1065]

K.3.7 BIBB - Scheduling - Weekly Schedule - A (SCHED-WS-A)

...

Devices claiming support for this BIBB shall be capable of presenting, and modifying Schedule objects that schedule any of the following types:

BOOLEAN, ~~ENUMERATED,~~ REAL, *ENUMERATED*, Unsigned32

and which may contain NULL values.

The A device shall be capable of presenting and modifying Schedule objects of the forms defined both prior to, and in Protocol_Revision 4.

...

135-2016*bn*-2. Clarify COV and COVP related BIBBs.

Rationale

If all SubscribeCOV and/or SubscribeCOVProperty requests are initiated with the 'Issue Confirmed Notifications' flag either consistently TRUE or consistently FALSE, then no legitimate COV notification service request of the other polarity of the flag would ever be received. The DS-COV-A and DS-COVP-A BIBBs are changed to not require both services be executed. Note that the DS-COVM-A already requires only one type of COV multiple notification execution.

The DS-COVP-A BIBB requirements are inconsistent with the SubscribeCOVProperty service definition regarding the 'Lifetime' parameter. The DS-COVP-A and DS-COVP-B BIBBs are made consistent with SubscribeCOVProperty regarding the subscription 'Lifetime' parameter.

Also, it is unclear which COV related BIBBs require support of cancellation of subscriptions. The DS-COV-A, DS-COVP-A, and DS-COVP-B BIBBs are changed to be clear on cancellation requirements.

[Change **Clause K.1.11**, p. 1039]

K.1.11 BIBB - Data Sharing-COV-A (DS-COV-A)

The A device is a user of COV data from device B.

BACnet Service	Initiate	Execute
SubscribeCOV	x	
ConfirmedCOVNotification		x[1]
UnconfirmedCOVNotification		x[1]

[1] *Execution of at least one of these services is required.*

Support for subscriptions of a limited lifetime is required, and support for subscriptions of indefinite lifetime is optional. *Support for cancellation is optional, except in the case where the device is able to request indefinite subscriptions, in which case it is required.*

[Change **Clause K.1.13**, p. 1039]

K.1.13 BIBB - Data Sharing-COVP-A (DS-COVP-A)

The A device is a user of COV data from device B.

BACnet Service	Initiate	Execute
SubscribeCOVProperty	x	
ConfirmedCOVNotification		x[1]
UnconfirmedCOVNotification		x[1]

[1] *Execution of at least one of these services is required.*

~~Support for subscriptions of a limited lifetime is required, and support for subscriptions of indefinite lifetime is optional~~. *Support for cancellation of subscriptions is optional.*

[Change **Clause K.1.14**, p. 1039]

K.1.14 BIBB - Data Sharing-COVP-B (DS-COVP-B)

The B device is a provider of COV data of an arbitrary property of a specified object to device A.

BACnet Service	Initiate	Execute
SubscribeCOVProperty		x
ConfirmedCOVNotification	x	
UnconfirmedCOVNotification	x	

Devices claiming conformance to DS-COVP-B shall support a minimum of five concurrent subscriptions. ~~Support for subscriptions of a limited lifetime is required, and support for subscriptions of indefinite lifetime is optional.~~

135-2016*bn*-3. Clock is required for support of AE-ACK-A.

Rationale

A device that initiates AcknowledgeAlarm requests is typically sophisticated enough that it is not unreasonable to require the device contains a clock and produce BACnetDateTime form timestamps for the 'Time of Acknowledgment' parameter.

The requirement to support the Local_Date and Local_Time properties for AE-ACK-A will mandate that the 'Time of Acknowledgment' parameter of the AcknowledgeAlarm request is filled with a BACnetTimeStamp of type BACnetDateTime, as required by Clause 12.1.7.

[Change **Clause K.2.4**, p. 1053]

K.2.4 BIBB - Alarm and Event Management-Acknowledge-A (AE-ACK-A)

Device A acknowledges alarm/event notifications.

BACnet Service	Initiate	Execute
AcknowledgeAlarm	x	

Devices claiming conformance to AE-ACK-A shall also support the Local_Date and Local_Time properties in the Device object.

[Add a new entry to **History of Revisions**, p. 1364]

(This History of Revisions is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard.)

HISTORY OF REVISIONS

…	…	**…**
1	20	**Addendum *bn* to ANSI/ASHRAE 135-2016** Approved by ASHRAE on June 15, 2018; and by the American National Standards Institute on June 15, 2018. 1. Make SCHED BIBBs consistent on supported datatypes, and add BOOLEAN. 2. Clarify COV and COVP related BIBBs. 3. Clock is required for support of AE-ACK-A.

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

ASHRAE · 1791 Tullie Circle NE · Atlanta, GA 30329 · www.ashrae.org

About ASHRAE

ASHRAE, founded in 1894, is a global society advancing human well-being through sustainable technology for the built environment. The Society and its members focus on building systems, energy efficiency, indoor air quality, refrigeration, and sustainability. Through research, Standards writing, publishing, certification and continuing education, ASHRAE shapes tomorrow's built environment today.

For more information or to become a member of ASHRAE, visit www.ashrae.org.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards.

Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, on CD-ROM, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.

6/18