ASHRAE STANDARD

BACnet®—A Data Communication Protocol for Building Automation and Control Networks

Approved by the ASHRAE Standards Committee on June 20, 2009; by the ASHRAE Board of Directors on June 24, 2009; and by the American National Standards Institute on June 25, 2009.

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, http://www.ashrae.org, or in paper form from the Manager of Standards. The latest edition of an ASHRAE Standard may be purchased 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).

Approved American National Standard

ANSI

www.ansi.org

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

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ASHRAE Standing Standard Project Committee 135
Cognizant TC: TC 1.4, Control Theory and Application
SPLS Liaison: Douglas T. Reindl

SPECIAL NOTE

This American National Standard (ANS) is a national voluntary consensus standard developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (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:

    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
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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

Addendum 135s to ANSI/ASHRAE Standard 135-2008 contains a number of changes to the current standard. 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.

135-2008*s*-1. Clarify the circumstances that cause the File object's Archive property to be set to TRUE or
 FALSE, p. 2.
135-2008*s*-2. Require support for COV subscriptions of at least 8 hours' lifetime, p. 3.

In the following document, language to be added to existing clauses of ANSI/ASHRAE 135-2008 and Addenda is indicated through the use of *italics*, while deletions are indicated by ~~strikethrough~~. Where entirely new subclauses are added, plain type is used throughout.

SSPC 135 wishes to acknowledge David Fisher and René Kälin for the help they provided in developing this addendum.

135-2008*s*-1. Clarify the circumstances that cause the File object's Archive property to be set to TRUE or FALSE.

Rationale
The File object's Archive property does not clearly define the expected circumstances that cause the value to be set to TRUE and FALSE.

Addendum 135-2008*s*-1

[Change **Clause 12.13.6**, p. 193.]

12.13.6 File_Size

This property, of type Unsigned, indicates the size of the file data in octets. If the size of the file can be changed by writing to the file, and File_Access_Method is STREAM_ACCESS, then this property shall be writable.

Writing to the File_Size property with a value less than the current size of the file shall truncate the file at the specified position. Writing a File_Size of 0 shall delete all of the file data but not the File object itself. Writing to the File_Size property with a value greater than the current size of the file shall expand the size of the file but the value of the new octets of the file shall be a local matter.

Devices may restrict the allowed values for writes to the File_Size. Specifically, devices may allow deletion of the file contents by writing a value of zero, but not necessarily allow arbitrary truncation or expansion.

Any change to the File_Size property shall also update the Modification_Date property to reflect the date when the size was changed.

[Change **Clause 12.13.7**, p.194.]

12.13.7 Modification_Date

This property, of type BACnetDateTime, indicates the last time this ~~object~~ *object's underlying file data or File_Size* was modified. A File object shall be considered modified when ~~it is created or written to.~~ *any of these conditions occur:*
  (a)   the File object is created;
  (b)   the underlying file data that it represents is written using AtomicWriteFile or ConfirmedPrivateTransfer or UnconfirmedPrivateTransfer services or is written by some internal process; or
  (c)   the File_Size property changes.

[Change **Clause 12.13.8**, p.194.]

12.13.8 Archive

This property, of type BOOLEAN, ~~indicates whether the File object has been saved for historical or backup purposes. This property shall be logical TRUE only if no changes have been made to the file data by internal processes or through File Access Services since the last time the object was archived.~~ *shall be set to FALSE when the Modification_Date property changes for any reason. It is the responsibility of an archiving process to set the value of this property to TRUE when it completes. The mechanism by which archiving occurs shall be a local matter.*

135-2008*s*-2. Require support for COV subscriptions of at least 8 hours' lifetime.

Rationale
The committee determined that devices supporting COV subscriptions should be able to support subscriptions with lifetimes less than or equal to 8 hours. The value was chosen as a round value in hours which can be counted in seconds in a 15-bit register, permitting easy detection that the value has "wrapped" (the sign bit changes).

Addendum 135-2008*s*-2

[Change **Clause 13.14.1.5**, p. 326.]

13.14.1.5 Lifetime

This parameter, of type Unsigned, shall convey the desired lifetime of the subscription in seconds. A value of zero shall indicate an indefinite lifetime, without automatic cancellation. A non-zero value shall indicate the number of seconds that may elapse before the subscription shall be automatically cancelled. If both the 'Issue Confirmed Notifications' and 'Lifetime' parameters are absent, then this shall indicate a cancellation request. If the 'Lifetime' parameter is present then the 'Issue Confirmed Notifications' parameter shall be present.

Devices that execute this service shall accept, at a minimum, lifetime values up to and including 28800 seconds (8 hours). Devices may optionally support lifetime values larger than 28800. Devices that initiate this service shall be capable of providing Lifetime values less than or equal to 28800.

[Change **Clause 13.15.1.5**, p. 328.]

13.15.1.5 Lifetime

This parameter, of type Unsigned, shall convey the desired lifetime of the subscription in seconds. A value of zero shall not be allowed. A non-zero value shall indicate the number of seconds that may elapse before the subscription shall be automatically cancelled. If both the 'Issue Confirmed Notifications' and 'Lifetime' parameters are absent, then this shall indicate a cancellation request. If the 'Issue Confirmed Notifications' parameter is present then the 'Lifetime' parameter shall be present.

Devices that execute this service shall accept, at a minimum, lifetime values up to and including 28800 seconds (8 hours). Devices may optionally support lifetime values larger than 28800. Devices that initiate this service shall be capable of providing Lifetime values less than or equal to 28800.

[Add a new entry to **History of Revisions**, p. 688]

(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

Protocol		Summary of Changes to the Standard
Version	Revision	
…	…	…
1	9	**Addendum s to ANSI/ASHRAE 135-2008** Approved by the ASHRAE Standards Committee June 20, 2009; by the ASHRAE Board of Directors June 24, 2009; and by the American National Standards Institute June 25, 2009. 1. Clarify the circumstances that cause the File object's Archive property to be set to TRUE or FALSE. 2. Require support for COV subscriptions of at least 8 hours' lifetime.

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.