GUIDELINE

ASHRAE Guideline 13-2015
(Supersedes ASHRAE Guideline 13-2014)
Includes ASHRAE addenda listed in Annex G

Specifying Building Automation Systems

See Annex G for ASHRAE approval dates.

This guideline is under continuous maintenance by a Standing Guideline Project Committee (SGPC) 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 guideline. 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 from 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 1049-894X

Includes Web-based access to Example Specification for Building Automation Systems (Requires Microsoft® Word®)

SPECIAL NOTE

This Guideline was developed under the auspices of ASHRAE. ASHRAE Guidelines are developed under a review process, identifying a Guideline for the design, testing, application, or evaluation of a specific product, concept, or practice. As a Guideline it is not definitive but encompasses areas where there may be a variety of approaches, none of which must be precisely correct. ASHRAE Guidelines are written to assist professionals in the area of concern and expertise of ASHRAE's Technical Committees and Task Groups.

ASHRAE Guidelines are prepared by Project Committees appointed specifically for the purpose of writing Guidelines. 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 Guideline.

Development of ASHRAE Guidelines follows procedures similar to those for ASHRAE Standards except that (a) committee balance is desired but not required, (b) an effort is made to achieve consensus but consensus is not required, (c) Guidelines are not appealable, and (d) Guidelines are not submitted to ANSI for approval.

The Senior Manager of Standards of ASHRAE should be contacted for

a. interpretation of the contents of this Guideline,
b. participation in the next review of the Guideline,
c. offering constructive criticism for improving the Guideline, or
d. permission to reprint portions of the Guideline.

CONTENTS
ASHRAE Guideline 13-2015,
Specifying Building Automation Systems

NOTE

Approved addenda, errata, or interpretations for this guideline can be downloaded free of charge from the ASHRAE Web site at www.ashrae.org/technology.

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

FOREWORD

This guideline is intended to provide a designer of building automation systems (BASs) with background information, recommendations for good practice, project considerations, and detailed discussion of options with respect to the design of a BAS.

The reader should be aware that the technologies available in BAS products change more rapidly than those in the rest of the HVAC industry. A careful review of suppliers' offerings should be made before proceeding with creation of any BAS design. The creation of a BAS specification is a process similar to that used to design the rest of a facility's systems. This guideline attempts to guide the reader through this process. Informative Annex E provides guidance for specifying various levels of performance monitoring.

This guideline includes online access to an example specification, presented as excerpted parts and embedded throughout the document and also available as a separate file in Microsoft Word® format. Its function is to illustrate the concepts described in the body of the text. The example should be used as it was intended—as an example only. The example is not a guide specification; it does not include exhaustive options for every conceivable project system architecture, requirement, or configuration. It does not fit all applications, nor is it the best way to proceed on every job.

The example is protocol neutral, and refers the BAS designer to the cognizant organization for the selected protocol. Many of these organizations have guide specification language based on their protocol.

The excerpted parts of the example are presented in a typeface different from the text of the guideline, with lines above and below. An outline of the example specification is included as an annex to this guideline to allow the reader to see how its sections fit together.

Download the Microsoft® Word® version of the example specification at www.ashrae.org/G13Spec. Refer to Informative Annex G for a summary of changes to the 2014 edition of the guideline.

1. PURPOSE

The purpose of this guideline is to provide recommendations for developing specifications for building automation systems (BASs) in heating, ventilating, and air-conditioning (HVAC) control applications.

2. SCOPE

This guideline covers building automation systems (BASs) for HVAC control, monitoring, and management functions. The guideline specifies hardware performance, installation, and training. It also addresses system architecture, input/output structure, communication, program configuration, system testing, and documentation. The guideline only includes examples of how to integrate to fire, life safety, lighting, and other systems. The design and specification of these non-HVAC systems is not part of this document. There is also no specification of facility management functions, as this is beyond the scope of this document.

3. PREAMBLE

3.1 Intent of this Document. This guideline provides building automation system (BAS) designers of BAS with a tool to help them create and edit specifications for projects of virtually any size, scope, or complexity. It is the result of industry consensus obtained from the controls and equipment manufacturers, users, consulting engineers, installation contractors, and testing contractors who composed ASHRAE Standing Guideline Project Committee (SGPC) 13.

This guideline discusses the options, considerations, perceived benefits, and concerns associated with each part of an installed system. The authors chose specific configurations, components, and methodology. One such selection decision was the architecture or topology of the system. These selections are not the only way to build a system, nor are they necessarily the best for each project. The information provided should assist the reader in understanding why these selections were made and how to make these decisions for his/her project.

This guideline represents a standardization of approach to the design, documentation, and specification of BAS for HVAC control and energy management applications. This standardization should improve both the quality and value of BAS for building owners and users. The guideline should *not* be used as a statutory standard for compliance. The examples are not an exhaustive representation of all types and features of BAS. This guideline and its annexes require substantial editing and customization for the particular requirements of any given project.

3.2 Use of this Guideline. This guideline is to be used when preparing written and drawn specifications of BAS control and energy management systems and can be a reference for the design of these BAS as well. The term *direct digital control* is only used when referring to the process of controlling equipment directly with digital controllers.

The terms *BAS designer*, *contractor*, *subcontractor*, and *owner* are used throughout this document. These terms are used for clarity—they are not intended to define contractual or legal requirements of any party.

BAS designer: the creator of the work or the author of the specification. The BAS designer may be a consulting engineer, a licensed professional engineer, a facility master system integrator, or other. It is possible that with the need to have Internet connectivity and sharing of control-point data, there could be more than one party involved in the specification of the work.

contractor: the performer of the work defined in the specification; the person or company who enters into contractual agreement to execute the work and the entity responsible for its completion in accordance with the contract documents.

subcontractor: the performer of the work defined in the specification; this person or company is contracted by the contractor—not the owner—to perform some or all of the work defined by the specification in accordance with the contract documents.