



# ASHRAE GUIDELINE

## Specifying Direct Digital Control Systems

Approved by the ASHRAE Standards Committee on June 25, 2005, and by the ASHRAE Board of Directors on June 30, 2005.

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 Web site, <http://www.ashrae.org>, or in paper form from the Manager of Standards. The latest edition of an ASHRAE Guideline may be purchased from ASHRAE Customer Service, 1791 Tullie Circle, NE, Atlanta, GA 30329-2305. E-mail: [orders@ashrae.org](mailto: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).

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**SPECIAL NOTE**

This Guideline was developed under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (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 members of the project committee 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 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,
- d. permission to reprint portions of the Guideline.

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**DISCLAIMER**

ASHRAE publishes Guidelines in order to provide assistance to interested parties on issues that relate to the design, testing, application, and/or evaluation of products, concepts, and practices where there may be more than one acceptable approach. Guidelines are not mandatory and only provide one source of information that may be helpful in any given situation.

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**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 is not part of the guideline. It is merely informative and does not contain requirements necessary for conformance to the guideline.]

**FOREWORD**

This addendum modifies sample specification Table 1 (Section 7.9 of guideline) to increase the accuracy water flow meters and power meters.

In this addendum, changes to the current guideline are indicated in the text by underlined blue type (for additions) and ~~strike through~~ (for deletions) unless the instructions specifically mention some other means of indicating the changes.

**Addendum f to ASHRAE Guideline 13-2000**

*Change the reported accuracy of two variables as indicated in table. Table notes (not shown) do not change.*

**TABLE 1 Reporting Accuracy**

| <b>Measured Variable</b>              | <b>Reported Accuracy</b>                                  |
|---------------------------------------|---|
| Space Temperature                     | ±0.5°C (±1°F)   |
| Ducted Air                            | ±0.5°C (±1°F)   |
| Outside Air                           | ±1.0°C (±2°F)   |
| Dew Point                             | ±1.5°C (±3°F)   |
| Water Temperature                     | ±0.5°C (±1°F)   |
| Delta-T                               | ±0.15° (±0.25°F)  |
| Relative Humidity                     | ±5% RH  |
| Water Flow                            | <u>±2</u> <del>5</del> % of full scale                    |
| Airflow (terminal)                    | ±10% of full scale ( <i>see Note 1</i> )                  |
| Airflow (measuring stations)          | ±5% of full scale   |
| Airflow (pressurized spaces)          | ±3% of full scale   |
| Air Pressure (ducts)                  | ±25 Pa (±0.1 in. w.g.)                                    |
| Air Pressure (space)                  | ±3 Pa (±0.01 in. w.g.)                                    |
| Water Pressure                        | ±2% of full scale ( <i>see Note 2</i> )                   |
| Electrical<br>(A, V, W, Power Factor) | <u>±1</u> <del>5</del> % of reading ( <i>see Note 3</i> ) |
| Carbon Monoxide (CO)                  | ±5% of reading  |
| Carbon Dioxide (CO <sub>2</sub> )     | ±50 ppm   |

## **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.