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High-Performance Sequences of Operation for HVAC Systems

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NOTE

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

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(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 establishes a set of standardized advanced sequences of operation for common HVAC systems. Standardized advanced control sequences provide the following benefits:

- *Reduced engineering time. Rather than develop sequences themselves, design engineers can adapt existing standard sequences that have been proven to perform.*
- *Reduced programming and commissioning time for contractors.*
- *Reduced energy consumption by making systems less dependent on proper implementation and commissioning of control sequences.*
- *Reduced energy consumption by ensuring that proven, cost-effective strategies, including those required by ASHRAE standards and building codes, are fully implemented.*
- *Improved indoor air quality by ensuring control sequences are in compliance with IAQ standards and codes such as ASHRAE Standard 62.1.*
- *Reduced energy consumption and reduced system down-time by including diagnostic software to detect and diagnose system faults and make operators aware of them before they cause performance problems.*

The intended audience for the guideline includes HVAC designers, control contractors, commissioning agents, and building owners, operators, and maintenance technicians.

This document falls under ASHRAE's continuous maintenance process. For more information, visit ASHRAE's website, or refer to the forms at the end of the guideline.

Note section numbers down to 3rd level, e.g., Section 5.1.2, will not change as addenda are developed, allowing people to reference those sections without concern they will be renumbered in the future.

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Note on Format

This guideline includes two kinds of informative notes:

Notes in bold between thick lines provide direction to the editor of these sequences so that they are properly implemented (e.g., identifying mutually exclusive options).

Notes in italics between thin lines provide guidance or additional information about specific sequences.

These notes are not a part of this guideline. They are merely informative and do not contain requirements necessary for conformance to the guideline.

1. PURPOSE

The purpose of this guideline is to provide uniform sequences of operation for heating, ventilating, and air-conditioning (HVAC) systems that are intended to maximize HVAC system energy efficiency and performance, provide control stability, and allow for real-time fault detection and diagnostics.

2. SCOPE

2.1 This guideline provides detailed sequences of operation for HVAC systems.

2.2 This guideline describes functional tests that, when performed, will confirm implementation of the sequences of operation.

3. SETPOINTS, DESIGN AND FIELD DETERMINED

3.1 Information Provided by Designer