ASHRAE Standard 236P

Advisory Public Review Draft

Method of Test for Control Programming Conformance with HVAC Sequences of Operation

Advisory Public Review (November 2026)

This draft has been recommended for public review by the responsible project committee. To submit a comment on this proposed standard, go to the ASHRAE website at www.ashrae.org/standards-research--technology/public-review-drafts and access the online comment database. The draft is subject to modification until it is approved for publication by the Board of Directors and ANSI. Until this time, the current edition of the standard (as modified by any published addenda on the ASHRAE website) remains in effect. The current edition of any standard may be purchased from the ASHRAE Online Store at www.ashrae.org/bookstore or by calling 404-636-8400 or 1-800-727-4723 (for orders in the U.S. or Canada).

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FOREWORD

This Advisory Public Review is provided to gather input on the overall test structure and approach, rather than the specifics of each individual test step. Though the method of test has been successfully piloted against two standardized Guideline 36 programming libraries using two separate software tools, the committee recognizes that there are a diversity of programming architectures. As the method of test aims to be automated, objective, and vendor-neutral, the standard committee is specifically interested in feedback on the compatibility of the current test approach with a range of standardized programming libraries. This Advisory Public Review includes the full body of the draft method of test along with normative appendices, which include the detailed test scripts, so that readers can better understand the context around the test approach; however, the committee asks that readers focus attention on the test structure, rather than the specifics of how the pass/fail thresholds are currently determined for individual sequences. The initial draft method of test was developed and tested as part of an emerging technologies study funded by California ratepayers; more information on that work is available at: https://calnext.com/wp-content/uploads/2026/04/ET24SWE0019_Automated-Guideline-36-Validation_Final-Report.pdf

Building automation systems (BAS) frequently underperform due to inconsistent control implementation, gaps in the commissioning process, and project-specific programming that duplicates effort and introduces avoidable variation. Standardization around detailed HVAC sequences of operation provides an opportunity to improve quality control, increase consistency, and streamline development and deployment of control programming. When such sequences are defined in natural language, however, translation into executable control logic remains subjective, labor intensive, and prone to differences in interpretation. A standardized method of test can reduce this ambiguity by providing an objective basis for evaluating whether implemented control programming conforms to the functional intent of the underlying sequence.

This method of test (MOT) is intended to verify the conformance of control programming logic with standardized HVAC control sequences. The tests are intended to be automated, objective, repeatable, and vendor-neutral. When applied as described, the tests provide a clear pass or fail result for the equipment and sequences being tested. The primary target of the tests is programming libraries developed by BAS manufacturers, though the tests may also be applicable to other collections of programming. For users of such programming, including designers, installers, and building owners, this MOT may provide assurance that the programming is complete, robust, and consistent with the intent of the associated standardized sequences. For developers of control programming, this method of test may provide an unambiguous interpretation of the standardized sequences as a reference during software development. This method of test may also serve as an objective metric where the use of standardized control programming is required by building energy efficiency standards or project specifications.

This standard is intended to support a flexible conformance-testing ecosystem. The method is defined by the requirements of this standard and by the normative test files included herein, rather than by any single software implementation. Test software may therefore be developed by manufacturers, independent third parties, or other entities, provided that the software meets the requirements of this standard and executes the approved test scripts as specified.

This method of test is a bench-scale procedure that tests control programming hosted on physical controllers through BACnet network communication protocols, with no physical sensors or devices involved. Test conditions are written to the controller through scripted BACnet overrides, and monitored controller responses are evaluated against expected responses for each discrete test step to determine conformance. When all of the applicable tests for a particular piece of equipment are successfully completed, that equipment's programming is deemed to be in conformance with the standard. Conformance with the standard may be determined for an entire programming library or at the individual equipment level.

This procedure is generally not intended to be applied to project-specific programming for an individual building. The test scripts included herein assume coverage of the complete set of features required by the applicable

standardized sequence and therefore may not be suitable for project-specific implementations that cover only a subset of those features or that include custom programming outside the scope of this standard.

Though the use of programming that has been successfully tested to this procedure may reduce effort and improve quality, this method of test is not a substitute for project-specific functional testing and commissioning. It does not address sensor calibration, end-to-end point mapping, control loop tuning, programming outside the scope of the test scripts, or many other factors that may need to be evaluated during the commissioning process. This procedure verifies programming conformance with standardized control sequences; it should not be construed as validating the energy performance or effectiveness of the control sequences themselves.

ASHRAE Guideline 36 is one example of a standardized sequence document that may be evaluated using this method. At present, the test scripts included in this standard address only a portion of the sequences associated with Guideline 36, and only those portions for which normative test scripts have been provided as part of this standard may be validated for conformance under this standard.

1. PURPOSE

This standard specifies a Method of Test to verify that control programming logic conforms with the functional intent of standardized HVAC control sequences.

2. SCOPE

2.1 This standard applies to the programming of building automation system controllers intended to implement standardized control sequences such as are included in ASHRAE Guideline 36.

2.2 This standard defines a series of test scripts detailing test conditions for applicable *control points* to be evaluated against expected responses, with pass/fail criteria for each test.

2.3 This standard defines a bench-scale procedure and software tool requirements that test control programming hosted on physical controllers through BACnet network communication protocols with no physical sensors or devices involved.

2.4 This standard does not apply to programming for which test scripts have not yet been specifically included in this standard.

3. DEFINITIONS

3.1 **General.** Certain terms are defined in this section for the purposes of this standard. When the tense or plurality of the term is different than the defined term, the definition still applies. These definitions are applicable to all sections of this standard, where *italicized*. Terms that are not italicized shall have their ordinarily accepted meanings within the context in which they are used. Ordinarily accepted meanings shall be based on American standard English language usage as documented in an unabridged dictionary accepted by the *adopting authority*.

3.2 Definitions

analog: a type of *control point* that holds an *analog* numerical value

binary: a type of *control point* that holds *binary* (0 or 1) value.

comma separated values (CSV): a text file format for representing tabular data as records separated by line breaks, with fields separated by commas

continuously: occurring every cycle of the *testbed sampling rate*.

control point: a discrete element representing state within a building automation system controller, which shall correspond to an *input variable*, *output variable*, or internal value

controller under test: the specific physical controller or controllers that host(s) the *logic under test* and is exercised during testing. Where multiple connected controllers are tested as a system, said system shall include only those controllers and hardware normally required to run the *sequence under test* on that hardware platform.

current value: the value of a variable as of the most recent *testbed* cycle.

extensible markup language (XML): a text-based markup language and file format for representing structured data using tagged elements and attributes. *XML* files that reflect data structured as a *logical table* can be read and edited using common spreadsheet applications.

input variable: a *control point* whose value is set by the *testbed software* over BACnet as specified by the *Test Script*

logical table: a tabular representation of data consisting of rows, columns, and cell values, independent of file format.

logic under test: the control programming logic that implements the *sequence under test*, which is installed on the *controller under test*. The Method of Test described by this Standard evaluates whether the *logic under test* follows (conforms to) the *sequence under test***.**

monitored variable: see *output variable*

multi-state value (MSV): a type of *control point* that holds an integer value within a predefined range.

output variable: a *control point* whose value is read by the *testbed software* over BACnet and evaluated against an expected response

Point Mapping Index: a file that associates the required *input variables* and *output variables* for a *Test Script* with their corresponding device and control point identifiers for a particular controller and network configuration. See Section 5.3.

pre-set parameter: a *control point* whose value is set manually before the test begins, and does not change during the course of a given test.

Pre-Set Parameter file: a file that defines the static states and values for *pre-set parameters*. See Section 5.2.

previous value: the value of a variable as of the end of the previous *test step*.

sequence under test: the specific version of a standardized control sequence referenced by the applicable *Test Script* used for conformance evaluation under this Standard. The *logic under test* is an implementation of the *sequence under test*.

testbed: the complete system required for testing sequences under this Standard, including *controller under test*, *testbed software*, and a network connection that will allow BACnet communication to the *controller under test*.

testbed software: test software on a computer that is used to communicate with building automation system controllers and execute the test procedures

testbed sampling rate: the frequency with which the *testbed software* updates real time *input variables* and monitors threshold value limits

test block: a collection of *test steps*, generally for related logic, that are grouped together for testing continuity or convenience

Test Configuration File: a file that specifies which tests and/or *test blocks* are to be executed in a test run. See Section 5.5.

Test Definition Package: a collection of required files that define test conditions under this Method of Test. See Section 0.

Test Run: a single autonomous and continuous execution of the *test blocks* selected from the *Test Configuration file*. A *test run* begins at user initiation and ends when the required outputs are generated, with no interruption or user intervention in between.

Test Script: a file that is organized as a logical table and that is used to control the execution and evaluation of the conformance test. See Section 5.4.

Test Series: a set of tests for a single equipment instance or configuration.

test step: a discrete test event that begins when *input variables* are overridden to predefined values to establish a test condition, and ends when *output variables* are compared to expected values to determine pass/fail status for that *test step*.

4. DATA VALUES

4.1 Analog control point values. Values for analog control points shall be expressed in the inch-pound unit system as follows:

1. Airflow: cubic feet per minute (cfm)
2. Temperature: degrees Fahrenheit (F)
3. Carbon dioxide concentration: parts per million (ppm)
4. Water flow: gallons per minute (gpm)
5. Air pressure: inches of water column (in.W.C.)
6. Water pressure: pounds per square inch (psi)
7. Valve/Damper command: percent expressed from 0 to 100 open (%)

Informative Note: Valve and damper position values refer to the expected physical position of the device. In practice, a reverse-acting actuator may have a control signal that is reversed to achieve these physical positions, such as for a normally open valve. This test standard assumes that any required scaling of the analog point is downstream of the control point that is used for testing, such that a 0 value always corresponds to a closed position and a 100 value always corresponds to an open position.

8. Speed command: percent expressed from 0 to 100 (%)

Informative Note: Speed commands from a control system are often mapped to different speeds on variable speed drives. For example, a 0% speed command from a control system might be mapped to a minimum speed configured on the drive. Or when "overspeeding" a motor, a 100% speed command might be mapped to 66 Hertz or a 110% speed command might be mapped to 66 Hertz. This test standard assumes that speed range is limited from 0 to 100% corresponding to the control loop output. Any scaling in the control logic should be configured for this expectation.

9. Loop output: percent expressed from 0 to 100 (%)
10. Time: seconds

4.2 Binary control point values. *Binary control point* values are English words indicating state of two-position switches. The *testbed software* shall map these paired expressions as 1 / 0 by default where used. For applications that differ from this default, mappings shall be overridden in the populated version of the *Point Mapping Index*.

1. Boolean: True/False
2. Occupancy: Populated/Unpopulated
3. Status: Enabled/Disabled
4. Commanded State: Start/Stop
5. Run State: On/Off
6. Window switch: Closed/Open

4.3 Multi-state values. *Multi-state values* (*MSV*) indicate switch states with more than two positions. For applications that differ from the following defaults, mappings shall be overridden in the populated version of the *Point Mapping Index*.

Informative Note: In practice, *analog* points may be used as MSV points if the *sequence under test* uses only integer values for those *control points*.

4.3.1. Numerical values. *MSVs* presented numerically as whole numbers shall be defined as follows by default.

1. Demand Limit Level (0, 1, 2, or 3)

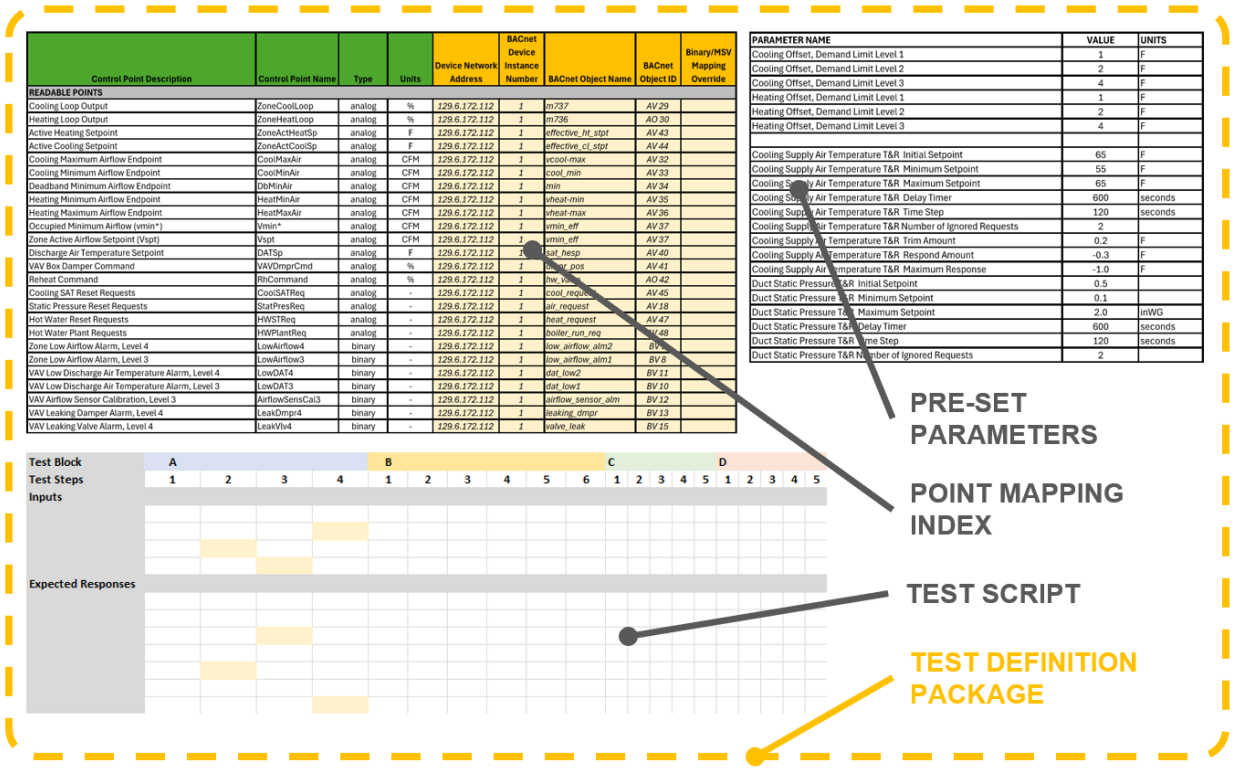
4.3.2. English-language values. *MSVs* represented as English-language values shall be mapped to numerical values as follows by default.

1. Mode (Occupied = 1, Cooldown = 2, Setup = 3, Warmup = 4, Setback = 5, Unoccupied = 6, None = 7)

5. REQUIRED TEST FILES

5.1 Overview. This section specifies required test files.

5.1.1. Test Definition Package. A *Test Definition Package* shall define tests in accordance with this Method of Test. There shall be a separate, distinct *Test Definition Package* for each sequence for which tests have been included under this Standard. Each *Test Definition Package* is specific to the type of equipment being controlled and the *sequence under test*. Executing a test run requires a *Test Configuration File*, which references one or more *Test Definition Packages* and specifies which tests and/or *test blocks* are to be executed for that run.



Informative Figure 1: Conceptual Illustration of the composition of a Test Definition Package

5.1.1.1. Components. A *Test Definition Package* shall consist of the following:

1. The Pre-Set Parameters file specifies static states which must be set in the controller under test before testing commences.

2. The Test Script file specifies control point input variable values and expected output variable values (pass/fail conditions) for each test step.

3. The Point Mapping Index associates the control point inputs and outputs listed in the Test Script with their corresponding BACnet point IDs on the controller under test. The Point Mapping Index must be populated with required user inputs in order to configure the testbed prior to running any tests.

5.1.1.2. Scope and Version. All files constituting a given *Test Definition Package* shall have the same scope and version. Each file in the *Test Definition Package* shall include the following information:

1. Applicable equipment configuration.
2. Applicable version of *sequence under test*.
3. Last-revised date. This is the revision date for the *Test Definition Package*, not the *sequence under test*.
4. The version number of the *Test Definition Package* of which the file is part.

Informative Note: Example equipment configurations include a single-duct VAV reheat terminal unit or Air Handler with Return Fans. An example version of the *sequence under test* is Guideline 36-2021.

5.1.1.3. File Format. Each file constituting a *Test Definition Package* shall be a human-legible and machine-readable data file structured as a *logical table* and provided in *XML* format.

5.2 Pre-Set Parameters. The *Pre-Set Parameters* file specifies static states for *pre-set parameters* that must be set in the *controller under test* before testing commences. Each row of the table after the header rows shall identify a single state condition from the *sequence under test* and specify the static value to which it must be set before testing begins. *Pre-set parameters* shall be set manually within the *controller under test* before testing commences. *Pre-set parameters* do not change value during the testing process and are not subject to pass/fail evaluation. Each *Pre-Set Parameters* file corresponds to a specific *Test Script* as part of a *Test Definition Package* and is versioned with that *Test Definition Package* as a normative part of this Standard. *Pre-Set Parameters* files are included in Appendix A.

Informative Note: For simple cases, these settings may be expressed rigorously in terms of a value assigned to a specified control point. Where manufacturers' implementations differ, required settings may be abstracted from specific control points. For example, the economizer lockout setting may be based on climate zone, without specifying the exact variable(s) used to program the lockout.

5.3 Point Mapping Index. The *Point Mapping Index* associates the *input variables* and *output variables* listed in the *Test Script* with their corresponding BACnet point IDs on the *controller under test*, so that the *testbed* can read and write values to *control points* as dictated by the *Test Script*. The *Point Mapping Index* shall be populated with required user inputs, specific to the BACnet schema of the *controller under test*, prior to initiating a test. Each *Point Mapping Index* corresponds to a specific *Test Script* as part of a *Test Definition Package* and is versioned with that *Test Definition Package* as a normative part of this Standard. *Point Mapping Index* files are provided for each equipment test in Appendix B.

5.3.1. Logical table structure. The first four columns shall be defined as a normative part of the Standard. The points descriptions, point names, and point type shall exactly match the corresponding *Test Script*. The subsequent six columns are user inputs fields.

5.3.1.1. Normative Information Fields. Normative Information Fields shall match the corresponding information in the *Test Script*.

1. *Control Point* Description: Verbose descriptive names.

2. *Control Point* Name: Short point (variable) names. Shall match one-to-one the *control point* names listed on the corresponding *Test Script*.

3. *Control Point* Data Type: Each *control point* shall be identified as *analog* (A), *binary* (B), or *multi-state value* (*MSV*).

4. Units: Each *analog control point* shall have the expected units defined.

5.3.1.2. User Input Fields. User input fields shall be populated before commencing testing, based on the controller and *sequence under test*.

1. Device Network Address: The BACnet device address of the *controller under test* when connected to the *testbed*.

2. BACnet Device Instance Number: The BACnet device instance of the *controller under test* when connected to the *testbed*.

3. BACnet Object Name: The name of the equivalent *control point* in the *sequence under test*.

4. BACnet Object ID: The BACnet Object ID number for the corresponding *control point* on the *controller under test*.

5. *Binary*/*MSV* Mapping: Definition of the mapping between values used in the *Test Script* and their numerical equivalents where different from the defaults. For *binary* and *multi-state values* only, blank otherwise.

6. Notes: Human-legible notes and explanations about individual *control points*. Optional.

5.3.2. Data Rows. After the column titles, each row represents a single *control point*, with columns divided between normative information and user input fields. Rows shall be grouped as input points followed by output points, exactly matching the list of points in the corresponding *Test Script*.

5.4 Test Script. The *Test Script* controls the *testbed's* execution and evaluation of the conformance test. The *Test Script* is organized as a *logical table* that identifies values for *input variable*s to be written to the *controller under test* and *output variables* to be monitored, along with expected responses for each *test step*. *Test steps* shall be enumerated sequentially and organized into *test blocks*. Each *Test Script* corresponds to the specific to the type of equipment being controlled and the *sequence under test*, defining the scope of the *Test Definition Package* of which it is part. *Test Scripts* are maintained under version control as part of the normative Standard and shall not be modified by the user. *Test Scripts* are included in Appendix C.

5.4.1. Scope and Version Block. The first four rows and two columns of each *test script* contains scope and version information to identify the equipment configuration, *sequence under test*, *Test Definition Package* version, and *Test Script* revision date.

5.4.2. Header Rows. The first five rows of each *test script*, beyond the scope and version block, shall contain descriptive information that support users with understanding the test scope and purpose. The next two rows of each *test script* describe the *test block* and *test step* identifiers.

1. Test Block Description. A title describing the scope of the *test block*.

2. Test Step Purpose. A brief title for each *test step*.

3. SOO Reference. A reference to the paragraph number(s) for the *sequence under test* in each *test step*.

4. Intervention. A plain English description of what changes are being made to establish the test condition in each *test step*.

5. Expected Response. A plain English description of the response that is expected to be read from the controller in each *test step*.

6. Test Block Identifier. An identifier for each *test block* consisting of a sequential alphabetic character.

7. Test Step Identifier. An identifier for each *test step* consisting of a sequential numeric character.

5.4.3. Logical Table Structure. Starting with the leftmost column, below the scope and version block, the columns of the *Test Script* file shall be organized as follows:

1. *Control Point* Description: Verbose *control point* names that match, as closely as practicable, those used in the *sequence under test*.

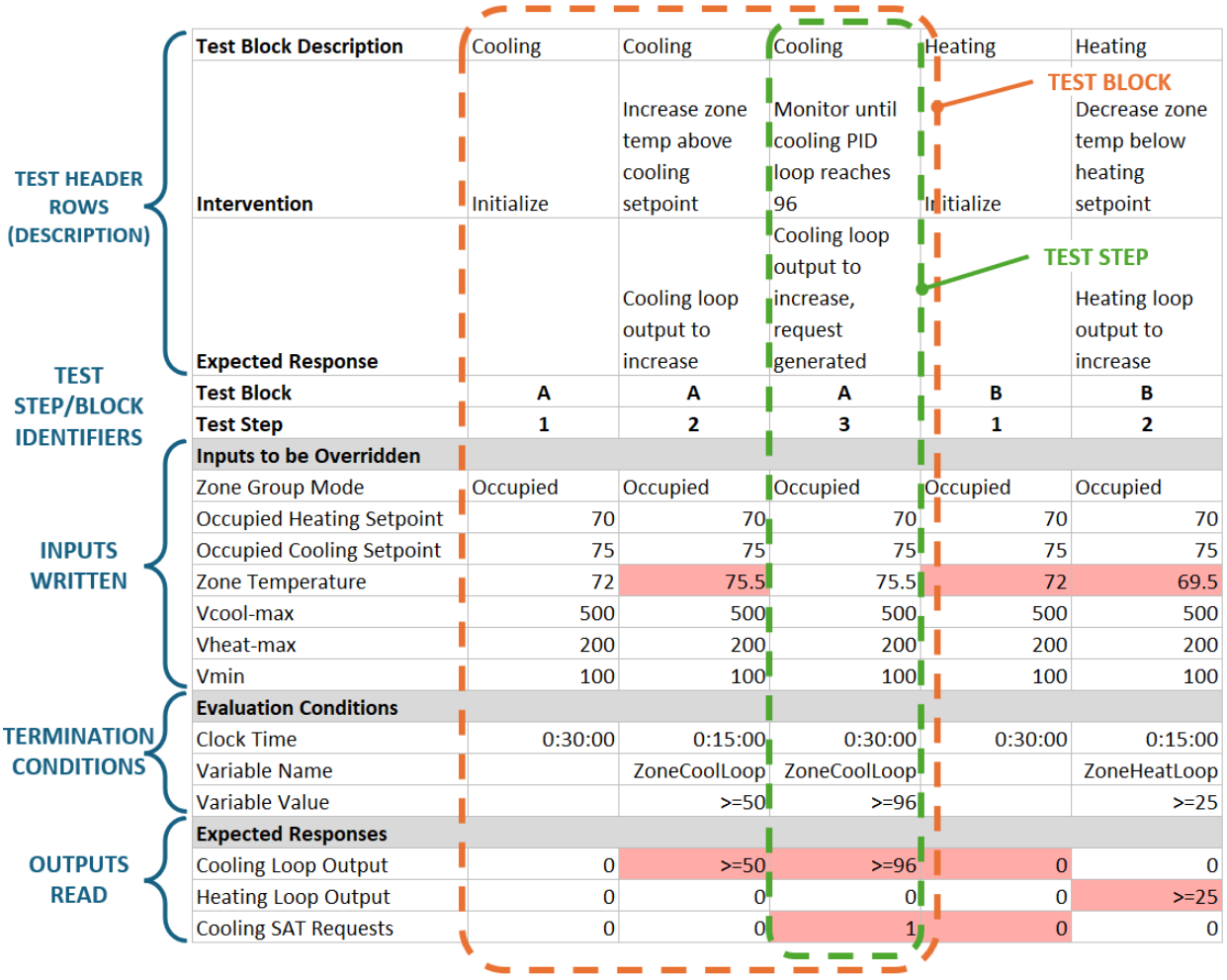
2. *Control Point* Name: Short names for each *control point* that do not contain spaces. *Control point* names used in the *Test Scripts* shall match one-to-one with the *control point* names listed on the corresponding

Point Mapping Index. The testbed software shall support their use in test calculations or direct references. (see Section 5.4.6).

3. Output Tolerance: For *monitored variables*, the maximum allowable deviation between the measured value and the expected value that shall not result in test failure. For *input variables,* no tolerance shall be specified.

4. *Test Steps*: Each column after the third represents a single *test step*. *Test steps* are organized into *test blocks* identified by letter and enumerated within each block. Any *test step* can be uniquely identified by its block-number index.

Informative Note: *Test block* identifiers may be identified by sequential letters, such as A, B, C, etc. with *test steps* within each *test block* identified by sequential numbers, such as 1, 2, 3, etc. *Test step* C-12 would signify the twelfth *test step* of the third *test block.*



Test Block Description	Cooling	Cooling	Cooling	Heating	Heating
Intervention	Initialize	Increase zone temp above cooling setpoint	Monitor until cooling PID loop reaches 96	Initialize	Decrease zone temp below heating setpoint
Expected Response		Cooling loop output to increase	Cooling loop output to increase, request generated		Heating loop output to increase
Test Block	**A**	**A**	**A**	**B**	**B**
Test Step	**1**	**2**	**3**	**1**	**2**
Inputs to be Overridden					
Zone Group Mode	Occupied	Occupied	Occupied	Occupied	Occupied
Occupied Heating Setpoint	70	70	70	70	70
Occupied Cooling Setpoint	75	75	75	75	75
Zone Temperature	72	75.5	75.5	72	69.5
Vcool-max	500	500	500	500	500
Vheat-max	200	200	200	200	200
Vmin	100	100	100	100	100
Evaluation Conditions					
Clock Time	0:30:00	0:15:00	0:30:00	0:30:00	0:15:00
Variable Name		ZoneCoolLoop	ZoneCoolLoop		ZoneHeatLoop
Variable Value		>=50	>=96		>=25
Expected Responses					
Cooling Loop Output	0	>=50	>=96	0	0
Heating Loop Output	0	0	0	0	>=25
Cooling SAT Requests	0	0	1	0	0

Informative Figure 2: Conceptual Illustration of a Test Script

5.4.4. Test Step Structure. The test step structure within the *logical table* shall be organized as follows:

1. The header rows shall describe the intent and expected response for that *test step*, and shall provide a section reference to the relevant logic in the *sequence under test*.

2. After the column titles, each of a series of rows (quantity varies by test) shall represent one *input variable*.

3. After the *input variables*, the next three rows shall specify the termination conditions for that *test step*, which consist of a time limit, and optionally two rows with a *monitored variable* and a limit value.

4. After the termination condition, each of a series of rows (quantity varies by test) shall represent one *output variable*.

5. For each *input variable* or *output variable* and at each *test step* (each cell of the *logical table*), the *Test Script* shall assign a simple data value or a function/expression value.

5.4.5. Simple Data Values. Simple data values are decimal numbers or all-caps keywords. Simple data values shall appear as values for *input variables* or *output variables*.

Informative Note: Example simple data values that are all-caps keywords include OPEN and OCCUPIED, which are mapped to numerical values by the *testbed software*.

1. *Analog control point* values: See Section 4.1

2. *Binary control point* values: See Section 4.2

3. *MSV*s. See Paragraph 4.3. For *MSVs* defined in 4.3.2, the *Test Script* shall reference the English-language representations.

5.4.6. Expressions and Functions. A cell containing an expression or function shall be prefixed with an equal sign "=" if it is an *input variable* or a comparison operator (>, <, >=, <=, =) if it is an *output variable*.

5.4.6.1. Expressions. Expressions shall apply to *input variables* and *output variables*.

a. **Variable references.** A variable reference shall represent the value of the referenced *control point* during the *test step*. Variable references shall be used in isolation or embedded in functions or expressions.

b. **Math operations.** Simple math operations for addition, subtraction, multiplication, and division shall be defined with an all-caps function call and two values contained within parentheses, which shall be *input variables*, *output variables,* or decimals.

1. Addition: ADD(A; B) = A + B

2. Subtraction: SUB(A; B) = A - B

3. Multiplication: MULT(A; B) = A * B

4. Division: DIV(A; B) = A / B

c. **Last Expression.** The LAST expression denotes the *previous value* of that variable at the end of the previous *test step*. The effect is logically equivalent to the variable referencing itself.

5.4.6.2. Input Functions: Input functions apply to *input variables* only. They are defined with an all-caps function call followed by values in parentheses. Input functions are real-time calculations that update *continuously*, based on the *current value* of any referenced variables.

a. **Ramp Function.** The ramp function shall be used to write a value that varies linearly from starting and ending limits over a specified duration. The ramp function syntax shall be as follows: RAMP(start_value; end_value; duration). The RAMP function writes 'start_value' to the target *control point* at the beginning of the *test step* and then *continuously* updates the value until it reaches 'end_value' after a total of 'duration' seconds or until it reaches the end of the *test step*, whichever comes sooner. Either or both of 'start_value' and 'end_value' shall be permitted to be expressions. However, only expressions that are fixed for the duration of the *test step* shall be used, in order to avoid logic conflicts in the *testbed software*.

Informative Note: If an expression varies in value during the *test step*, use PERIODIC instead.

Informative Note: Example: RAMP(ZoneTemp; 74.1; 60). This example commands the *testbed* to increase or decrease the target variable from the value of ZoneTemp to 74.1°F over a duration of one minute (60 seconds). This is useful for simulating (simple, linear) changing physical conditions.

b. **Periodic Function.** The PERIODIC function writes the value of a specified variable or expression to the target *control point* repeatedly for the duration of the *test step*. The periodic function syntax shall be as follows: PERIODIC(value). When PERIODIC references a variable, the value of that variable shall be updated each cycle before the value of the function is recalculated.

Informative Note: This function is typically used to simulate simple physical feedback that would occur in a real building system, by referencing another control point whose value is itself changing over the duration of the test step.

Informative Note: Example: PERIODIC(SUB(AirSp;5)). If this function is applied to the Zone Supply Airflow control point, the value of Zone Supply Airflow is continuously set to 5 CFM less than the current value of the Airflow Setpoint *control point*. This may be useful if Airflow Setpoint is changing in real time due to a setpoint reset in the sequence under test.

5.4.6.3. Output Operators and Functions. Output operators and functions apply to *output variables* only.

a. **Comparisons.** A comparison operator (>, <, >=, <=, =) can be applied to any *output variable*, expression, or function and are operative in determining pass/fail status for that variable at that *test step*.

b. **Any.** The operator ANY shall denote that any value for that *output variable* is accepted as passing for that *test step*. (Choice of comparison operator is irrelevant; typically prefixed with "=".)

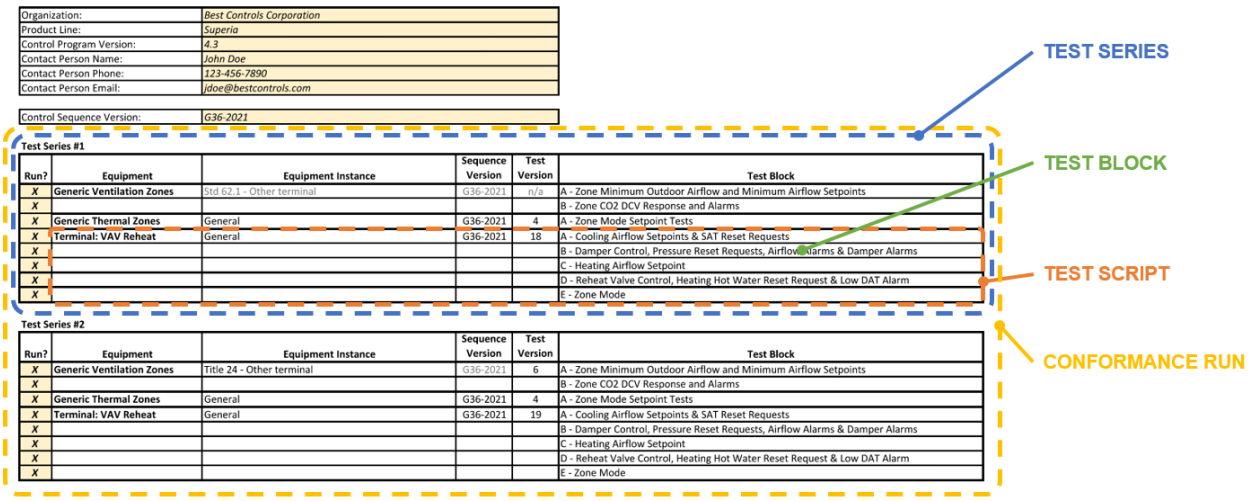
c. **Interpolate.** The interpolate function shall return a linearly interpolated value based on the specified inputs. The interpolate function syntax shall be as follows: INTERPOLATE(x; x0; x1; y0; y1; [min_out]; [max_out]), where the function shall return a linearly interpolated (or extrapolated) value y from x using *control points* (x0,y0) and (x1,y1), computed as:

$$y = y_0 + (y_1 - y_0) * \frac{(x - x_0)}{(x_1 - x_0)}$$

If MIN_OUT and/or MAX_OUT are provided, the result shall be clamped to the corresponding limit(s). If both are provided, the result shall be clamped to the interval. When MAX_OUT alone is provided, MIN_OUT shall be "N/A".

5.5 Test Configuration File. The *Test Configuration file* is used to specify which tests and/or *test blocks* are to be executed in a test run. There shall be one *Test Configuration file* for each major equipment type for which tests have been defined under this Standard. *Test Configuration files* are organized into one or more *Test Series*. A *Test Series* is a set of tests for a single equipment instance/configuration. Each *Test Series* references one or more *Test Definition Packages*, specified by control sequence version and *Test Definition Package* version. The version of the control *sequence under test* shall be specified by the user and shall be the same for all tests in the *Test Configuration file*. The version of the *Test Definition Package* shall be the latest included with this Standard. The user shall indicate specific *test blocks* to be tested from among the list of blocks corresponding to each *Test Definition Package*. For any single run, the user shall only select *test blocks* within a single *Test Series*. *Test Configuration files* are included in Normative Appendix D.

Informative Note: For example, each of the following equipment types would have a separate *Test Configuration File*: cooling-only VAV terminal, VAV reheat terminal, multiple-zone VAV AHU. A single Test Series for a VAV reheat terminal test might reference separate *Test Definition Packages* for generic thermal zones, generic ventilation zones, and VAV reheat terminal control. A second *Test Series* in the same *Test Configuration File* might reference a similar set of three *Test Definition Packages*, but with different ventilation logic (e.g., Title 24 vs. Standard 62.1 requirements). In this way, modular or configurable control sequences that support multiple equipment or control logic variations can be comprehensively tested as complete, functional sequences, as is required to demonstrate Conformance under this Standard (see Paragraph 10).



Informative Figure 3: Conceptual Illustration of the Test Configuration File

5.5.1. Logical Table Structure: Each *Test Configuration file* is part of the normative standard but includes a limited number of user-entry fields.

5.5.1.1. Test Information. These are user-entry fields providing general test information:

1. Organization
2. Product Line: the name of the manufacturer and product line of the *controller under test*
3. Control Program Version: the version of the BAS software running on the *controller under test*
4. Contact Person Name
5. Contact Person Phone
6. Contact Person Email
7. Control Sequence Version: the control *sequence under test*; all tests in the *Test Configuration file* shall reference the same control *sequence under test*

5.5.1.2. Test Selection: These are user-entry fields indicating which tests are to be run.

1. Run. A user-entry field to indicate which *test blocks* to run
2. Equipment
3. Equipment Instance
4. Sequence Version: the *Test Configuration file* automatically reproduces the Control Sequence Version selected above
5. Test Version
6. *Test Block*

6. TESTBED REQUIREMENTS

6.1 Overview. The *testbed* consists of the complete system required to execute and evaluate conformance tests under this Standard. The *testbed* shall not require or provide for connection to physical sensors or devices. All tests are conducted through BACnet communication with the *controller under test*. The *testbed* includes:

1. The *logic under test* (see Definitions)
2. The *controller under test* (see Definitions)

3. The *sequences under test* (see Definitions)

4. The *testbed software* (see Definitions)

5. A network connection that will allow BACnet communication between the *testbed software* and the *controller under test*.

6. One or more *Test Definition Packages* (*Test Script*, *Pre-Set Parameters*, and *Point Mapping Index* – see Required Test Files) corresponding to the *sequences under test*.

7. A single *Test Configuration file* (see Required Test Files).

Informative Note: The intent is for the test to be fully automated in software based on the scripted conditions, and without the need for any external sensors or devices. However, static external signals may be permittable where required to achieve expected outcomes. For example, if the control logic for an electric heating coil requires that a flow switch be proven to enable a control loop, the controller could potentially use a software override, a jumper, or an external electrical input to enable the desired functionality - provided that those interventions are static throughout the duration of the test, not manipulated by an operator.

6.2 **Network connection.** The *Testbed* shall support communication via BACnet/IP. The workstation running the *testbed software* shall connect to the *controller under test* via a standard BACnet stack.

Informative Note: A hardwired RJ-45 cable connection is recommended to minimize network latency and communication issues that could cause spurious failures.

6.3 **Controller Under Test.** The controller under test shall be established and configured according to the requirements in this section.

1. The *controller under test* shall consist of one or more physical or logical devices, and shall consist of the minimum equipment required to attain functionality for the test.

2. The *controller under test* shall be configured in accordance with this Standard prior to testing.

3. The *logic under test* shall be fully loaded and enabled on the *controller under test*.

4. All state conditions specified in the *Pre-Set Parameters* file shall be programmed or set.

5. All *control points* listed in the selected *Test Script*s and *Point Mapping Index* files shall be exposed via BACnet.

6. All *output variables* shall be available to read, and all *input variables* shall be available to read and write.

7. The *controller under test* shall be in an operational state suitable for executing the *logic under test* using the input stimulation provided by the *testbed software*.

6.4 **Testbed Software Required Capabilities.** The *testbed software* shall support BACnet communication capabilities sufficient to execute the selected *Test Scripts*, including: reading values from mapped *input variables* and *output variables* (Standard 135 ReadProperty service request)*, and* writing values to mapped *input variables* (Standard 135 WriteProperty service request). The *testbed software* shall autonomously connect to the *controller under test* based on the information provided in the *Point Mapping Index* (See Required Test Files). The *testbed software* shall:

1. Use the provided device network address or BACnet device instance number to connect to the *controller under test*.

2. Use the provided BACnet object names and IDs to connect to each specified *control point*.

3. Provide verification failsafes for accurate point mapping. If it cannot confirm access (read access for *output variables* or read/write access for *input variables*) to all required *control points* for selected tests prior to execution, the test run shall terminate immediately with an informative error message. Upon verification of mapping, it shall output the list of BACnet Object Names discovered on the *controller under*

test, along with the associated variable names from *Point Mapping Index* file, to allow the user to manually verify that the mapping is correct.

4. Upon user initiation, autonomously execute the *Test Scripts* specified in the *Test Configuration file* (See Required Test Files). For each *test block* specified in the Test Configuration, the *testbed software* shall execute each *test step* in sequential order as specified in the *Test Script*. Once initiated, the *testbed software* shall require no further user intervention or oversight until the test process is complete.

5. Perform read and write operations at the *testbed sampling rate*, which shall be six cycles per minute (one cycle per 10 seconds).

7. TEST PROTOCOL

7.1 **General:** This section specifies the actions the *testbed software* shall perform automatically during a *test run* to execute and evaluate each *Test Script*. A flowchart of the test protocol is provided in Figure 4.

7.2 **Test Structure.** The sequence of actions within each *Test Script* shall be organized into *test blocks*. Each *test block* is a set of *test steps* that are logically or procedurally related to a specific control function. Each *test block* shall be organized such that it can be executed in isolation, without dependence on other blocks within the same *Test Script*. The first *test step* within a *test block* shall be an initialization step that defines a consistent starting condition and which is maintained sufficiently for the controller to stabilize from any starting state. Subsequent *test steps* within a *test block* shall proceed successively based on the conditions from the previous *test step*, except where otherwise noted.

7.3 **Test Step Lifecycle.** Each test step shall consist of the following sequences:

7.3.1. **Test Step Start.** Each test step shall commence with the following ordered actions.

1. The *testbed software* shall store the *previous value* of each *output variable* from the *controller under test* (except for the first step), and load the specified value or function of each *input variable* in the *Test Script*.

2. The *testbed software* shall calculate the values of any functions assigned to *input variables*, using the *input variable* and *output variable* values just obtained.

3. The *testbed software* shall then write specified or calculated values to the *input variables* on the *controller under test*. *Binary control point* values referenced in the *Test Script* as English language words shall be written as digital values (1 or 0) per the *Point Mapping Index*. *MSVs* referenced in the *Test Script* as English language words shall be written as numerical values per the *Point Mapping Index*.

7.3.2. **Test Step Duration.** The *test step* shall continue until it achieves a termination condition specified in the *Test Script*. If the termination condition includes a *monitored variable* and limit value, the *testbed software* shall sample that variable *continuously* for the duration of the *test step*. For the duration of the *test step*, the *testbed software* shall *continuously* evaluate and update the values of any real-time input functions. All other *input variables* shall remain at their specified values. Before updating an input function that references another variable, the *testbed software* shall read the *current value* of that variable and use that value in the calculation.

7.3.3. **Test Step End**. Each *test step* shall end (reach a Termination Condition) when the specified time limit has elapsed or when the specified variable reaches the limit value, whichever comes first. A time limit shall be specified for each *test step*. A limit value shall be optionally specified. At the end of the *test step*, the *testbed software* shall read the *current value* of each *input variable* and *output variable*. The end-of-step values of all variables shall be recorded to the output file with a timestamp.

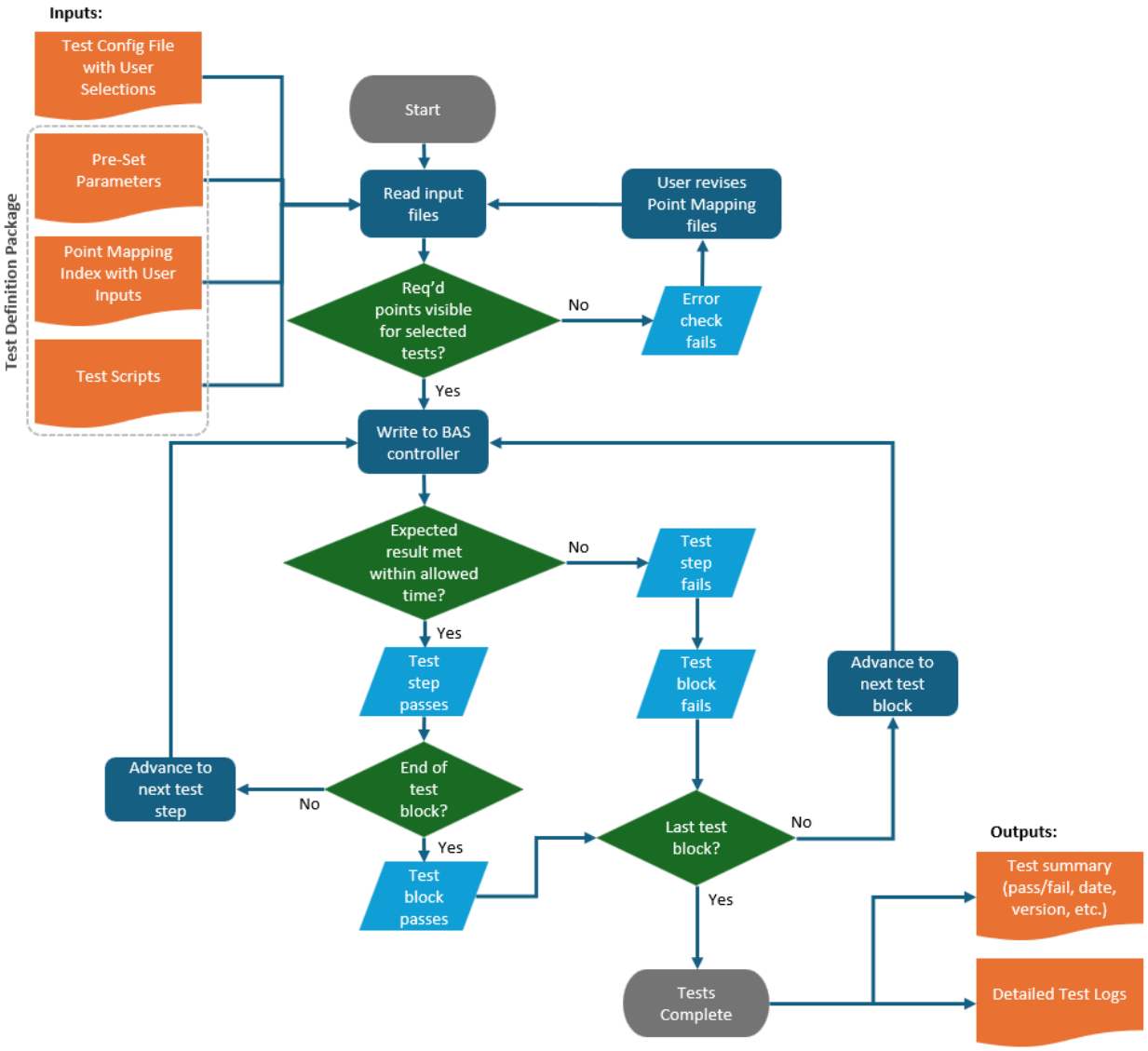


Figure 4 Test Protocol Flowchart

7.4 **Test Evaluation and Continuation.** Before beginning the next *test step*, the *testbed software* shall evaluate the *test step* as a PASS or a FAIL. The *testbed software* shall compare the recorded value for each *output variable* to the expected value as specified for that *test step* in the *Test Script*. The *testbed software* shall record the expected value, tolerance, comparison operator, and pass/fail status of each *output variable* adjacent to the variable's end-of-step value.

7.4.1. **Output Evaluation.** An output shall PASS if the recorded value and the expected value differ by no more than the specified tolerance. Otherwise, the output shall FAIL.

7.4.2. **Test Step Evaluation.** A *test step* shall PASS only if every *output variable* in that *test step* does PASS. Otherwise, the *test step* shall FAIL.

7.4.3. **Test Step Progression.** If a *test step* does PASS, the *testbed software* shall proceed directly to the next *test step*. Successful *test steps* shall proceed until the entire *test block* is completed. If a *test step* does FAIL, the current *test block* shall FAIL and be terminated, processing no additional *test steps* in that block. At the end of each *test block*, PASS or FAIL, the *testbed software* shall proceed directly to the next *test block* indicated in the *Test Configuration File*. When all specified *test blocks* are complete, the *testbed software* shall finish generating the required output files.

7.4.4. Test Script Evaluation. For each *Test Definition Package* in the *Test Configuration file*, the *testbed software* shall evaluate PASS or FAIL for the *Test Script* as a whole, if and only if all *test blocks* for that *Test Definition Package* have been selected for execution. A *Test Script* shall PASS only if every block in that *Test Script* does PASS. Otherwise, the *Test Script* shall FAIL. If any *test blocks* have been omitted from the test run, the *Test Script* results shall evaluate as N/A.

8. TEST PROCEDURE

8.1 General: This section specifies the actions the person conducting the test shall perform to prepare the *testbed*, initiate the *test run*, and obtain the required outputs.

8.2 Testbed Preparation. The following steps shall be followed to prepare the testbed for testing.

1. Select the *Test Configuration file* corresponding to the relevant equipment and *sequences under test*.

2. Specify *test blocks* to be run in the *Test Configuration file*. All blocks specified for a given run shall be from the same *Test Series*. If the purpose of the test is to demonstrate Conformance under this Standard, then all *test blocks* for the relevant *Test Series* must be selected.

3. Populate user-input fields of *Point Mapping Index* for the *controller under test*.

4. Prepare the *controller under test*. Set *pre-set parameters* in the control programming to the values expected in the *Pre-Set Parameters* file. Load the control programming for the *sequences under test*. Connect controller to *testbed*.

8.3 Initiating Test. The following steps shall be followed to initiate a test.

1. Load each *Point Mapping Index* file and execute point mapping check

2. Load each *Test Script* file. *Test Script* shall be used as provided, without user edits or modifications.

3. Load *Test Configuration file*.

4. Initiate test. Test shall run without user intervention. Allow test to run to completion.

9. REQUIRED OUTPUTS

9.1 Test Record. The testbed software shall automatically generate a test record in *CSV* file format. The test record shall provide the following information:

1. Listing of equipment tests executed and number passed or failed, by *test steps* and *test blocks*

2. Time elapsed for each test

3. For failed tests, recorded vs expected values which resulted in test failure.

4. Summary of testing information indicated in the *Test Configuration File* (Paragraph 5.5.1.1).

5. Date of test

9.2 Detailed Test Log. The testbed software shall automatically generate a detailed test log in *CSV* file format. The detailed test log shall be organized by *test block* and *test step*, with timestamped values reported at the *testbed sampling rate* for each of the following:

1. *Input variable* values written

2. *Output variable* values read

3. Expected outputs

4. Failed tests

10. CONFORMANCE TESTING

10.1 General. This Standard defines a Method of Test for demonstrating that a particular control sequence implementation (the *logic under test*) conforms to the functional intent of the sequence of operations on which the logic was based (the *sequence under test*). This shall require:

1. Comprehensively testing all equipment variations for which tests have been developed under this Standard.

2. Testing complete, fully-functional control logic implementations that support all features required by the applicable tests.

10.2 Conformance. Each of the following conditions shall be met in order to demonstrate Conformance under this standard. Logic implementations that do not support all of the equipment variations for which tests have been defined under this standard, shall not be deemed to Conform under this Standard.

1. The *logic under test* shall be tested in accordance with unmodified *Test Scripts* that are a normative part of this Standard.

2. Testing shall be performed using a *testbed* system and *testbed software* that meet the requirements of this Standard.

3. For each *Test Series* in the applicable *Test Configuration file*, the *logic under test* shall PASS every *test step* in every *test block* in all *Test Definition Packages* specified for that *Test Series*. Each *Test Series* in the applicable *Test Configuration file* shall achieve this in a single autonomous and continuous testing run, without interruption or user intervention.

Informative Note: Test runs may be performed on a subset of test blocks for evaluation or pre-testing purposes, but such fractional testing shall not demonstrate Conformance under this standard.

4. Each *Test Series* shall be performed as a single, distinct testing run, and every *Test Series* in the *Test Configuration file* shall PASS. The *logic under test* shall be loaded onto the *controller under test* as required between *Test Series* runs, in order to reflect the equipment variations being tested in each *Test Series*.

NORMATIVE APPENDIX A – PRE-SET PARAMETER FILES

PARAMETER NAME	VALUE	UNITS
Cooling Offset, Demand Limit Level 1	1	F
Cooling Offset, Demand Limit Level 2	2	F
Cooling Offset, Demand Limit Level 3	4	F
Heating Offset, Demand Limit Level 1	1	F
Heating Offset, Demand Limit Level 2	2	F
Heating Offset, Demand Limit Level 3	4	F
Cooling Supply Air Temperature T&R Initial Setpoint	65	F
Cooling Supply Air Temperature T&R Minimum Setpoint	55	F
Cooling Supply Air Temperature T&R Maximum Setpoint	65	F
Cooling Supply Air Temperature T&R Delay Timer	600	seconds
Cooling Supply Air Temperature T&R Time Step	120	seconds
Cooling Supply Air Temperature T&R Number of Ignored Requests	2	
Cooling Supply Air Temperature T&R Trim Amount	0.2	F
Cooling Supply Air Temperature T&R Respond Amount	-0.3	F
Cooling Supply Air Temperature T&R Maximum Response	-1.0	F
Duct Static Pressure T&R Initial Setpoint	0.5	
Duct Static Pressure T&R Minimum Setpoint	0.1	
Duct Static Pressure T&R Maximum Setpoint	2.0	inWG
Duct Static Pressure T&R Delay Timer	600	seconds
Duct Static Pressure T&R Time Step	120	seconds
Duct Static Pressure T&R Number of Ignored Requests	2	
Duct Static Pressure T&R Trim Amount	-0.05	inWG
Duct Static Pressure T&R Respond Amount	0.06	inWG
Duct Static Pressure T&R Maximum Response	0.13	inWG
Lowest Cooling SAT Setpoint	55	F
Highest Cooling SAT Setpoint	65	F
OAT Reset Lower Bound	60	F
OAT Reset Upper Bound	70	F
Economizer Lockout Climate Zone	3	
Economizer Lockout Method	Fixed Drybulb	
Standard 62.1 Design Total Outdoor Airflow, DesVot		CFM
MinOA Damper DP for Design Minimum Airflow		inWG
MinOA Damper DP for Absolute Minimum Airflow		inWG
Building Pressure Setpoint	0.05	inWG
Relief Fan Minimum Speed		%
Return Fan Minimum Speed		%
Return Fan Discharge Static Pressure Setpoint, Minimum		inWG
Return Fan Discharge Static Pressure Setpoint, Maximum		inWG
Supply-Return Airflow Differential		CFM
Return Fan Maximum Airflow Rate		CFM

NORMATIVE APPENDIX B – POINT MAPPING INDEX FILES

Generic Ventilation Zones

Generic Thermal Zones

Variable Air Volume Reheat Terminal

Variable Air Volume Reheat Terminal (populated example)

Multiple Zone VAV Air Handling Unit – Common Tests

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
WRITABLE POINTS								
Zone Temperature Setpoint, Occupied Heating	OccHeatSp	analog	F					
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp	analog	F					
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp	analog	F					
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp	analog	F					
Zone Minimum Outdoor Airflow for Building Area (Varea-min	VAreaMin	analog	CFM					
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin	analog	CFM					
Zone CO2 Limit	ZoneCO2Limit	analog	PPM					
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax	analog	CFM					
Zone Minimum Airflow (Vmin)	Vmin	analog	CFM					
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax	analog	CFM					
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin	analog	CFM					
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT	analog	F					
VAV Box Controllable Minimum (Vm)	Vm	analog	CFM					
Zone Discharge Airflow	ZoneSupAirflow	analog	CFM					
Zone Discharge Air Temperature	ZoneDAT	analog	F					
Zone Temperature	ZoneTemp	analog	F					
Zone CO2 Level	ZoneCO2	analog	PPM					
Local Override	ZoneOverSwitch	binary	-					
Occupancy Sensor	ZoneOccSensor	binary	-					
Window Switch	ZoneWinSwitch	binary	-					
AHU Supply Fan Status	AHUSupFanStatus	binary	-					
AHU Supply Air Temperature Setpoint	AHUSATSp	analog	F					
AHU Supply Air Temperature	AHUSAT	analog	F					
Hot Water Plant Status	HWPlantStatus	binary	-					
Zone Group Mode	ZoneGrpMode	analog/ multistate	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
READABLE POINTS								
CO2 Control Loop Output	ZoneCO2Loop	analog	%					
Cooling Maximum Airflow Endpoint	CoolMaxAir	analog	CFM					
Cooling Minimum Airflow Endpoint	CoolMinAir	analog	CFM					
Deadband Minimum Airflow Endpoint	DbMinAir	analog	CFM					
Heating Minimum Airflow Endpoint	HeatMinAir	analog	CFM					
Heating Maximum Airflow Endpoint	HeatMaxAir	analog	CFM					
Occupied Minimum Airflow (vmin*)	Vmin*	analog	CFM					
Zone Active Airflow Setpoint (Vspt)	Vspt	analog	CFM					
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	analog	CFM					
Zone Design Minimum Outside Airflow	ZoneDesOAmin	analog	CFM					
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	binary	-					
High CO2 Concentration Alarm, Level 3	HiCO23	binary	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
WRITABLE POINTS								
Zone Temperature Setpoint, Occupied Heating	OccHeatSp	analog	F					
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp	analog	F					
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp	analog	F					
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp	analog	F					
Demand Limit Level	DemandLimit	analog/ multistate	-					
Zone CO2 Limit	ZoneCO2Limit	analog	PPM					
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax	analog	CFM					
Zone Minimum Airflow (Vmin)	Vmin	analog	CFM					
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax	analog	CFM					
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin	analog	CFM					
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT	analog	F					
VAV Box Controllable Minimum (Vm)	Vm	analog	CFM					
Zone Discharge Airflow	ZoneSupAirflow	analog	CFM					
Zone Discharge Air Temperature	ZoneDAT	analog	F					
Zone Temperature	ZoneTemp	analog	F					
Zone CO2 Level	ZoneCO2	analog	PPM					
Local Override	ZoneOverSwitch	binary	-					
Occupancy Sensor	ZoneOccSensor	binary	-					
Window Switch	ZoneWinSwitch	binary	-					
AHU Supply Fan Status	AHUSupFanStatus	binary	-					
AHU Supply Air Temperature Setpoint	AHUSATSp	analog	F					
AHU Supply Air Temperature	AHUSAT	analog	F					
Hot Water Plant Status	HWPlantStatus	binary	-					
Zone Group Mode	ZoneGrpMode	analog/ multistate	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
READABLE POINTS								
Cooling Loop Output	ZoneCoolLoop	analog	%					
Heating Loop Output	ZoneHeatLoop	analog	%					
CO2 Control Loop Output	ZoneCO2Loop	analog	%					
Active Heating Setpoint	ZoneActHeatSp	analog	F					
Active Cooling Setpoint	ZoneActCoolSp	analog	F					
Zone Active Airflow Setpoint (Vspt)	Vspt	analog	CFM					
Discharge Air Temperature Setpoint	DATSp	analog	F					
Zone High Temperature Alarm, Level 4	HighZnTemp4	binary	-					
Zone High Temperature Alarm, Level 3	HighZnTemp3	binary	-					
Zone Low Temperature Alarm, Level 4	LowZnTemp4	binary	-					
Zone Low Temperature Alarm, Level 3	LowZnTemp3	binary	-					
Open Window Alarm, Level 4	OpenWin4	binary	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
WRITABLE POINTS								
Zone Temperature Setpoint, Occupied Heating	OccHeatSp	analog	F					
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp	analog	F					
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp	analog	F					
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp	analog	F					
Zone CO2 Limit	ZoneCO2Limit	analog	PPM					
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax	analog	CFM					
Zone Minimum Airflow (Vmin)	Vmin	analog	CFM					
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax	analog	CFM					
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin	analog	CFM					
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT	analog	F					
VAV Box Controllable Minimum (Vm)	Vm	analog	CFM					
Zone Discharge Airflow	ZoneSupAirflow	analog	CFM					
Zone Discharge Air Temperature	ZoneDAT	analog	F					
Zone Temperature	ZoneTemp	analog	F					
Zone CO2 Level	ZoneCO2	analog	PPM					
Occupancy Sensor	ZoneOccSensor	binary	-					
Window Switch	ZoneWinSwitch	binary	-					
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT	analog	-					
Static Pressure Reset Requests Importance Multiplier	IM_DSP	analog	-					
Hot Water Supply Temperature Reset Requests Importance	IM_HWST	analog	-					
Hot Water Plant Requests Importance Multiplier	IM_HWP	analog	-					
AHU Supply Fan Status	AHUSupFanStatus	binary	-					
AHU Supply Air Temperature Setpoint	AHUSATSp	analog	F					
AHU Supply Air Temperature	AHUSAT	analog	F					
Hot Water Plant Status	HWPlantStatus	binary	-					
Zone Group Mode	ZoneGrpMode	analog/ multistate	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
READABLE POINTS								
Cooling Loop Output	ZoneCoolLoop	analog	%					
Heating Loop Output	ZoneHeatLoop	analog	%					
Active Heating Setpoint	ZoneActHeatSp	analog	F					
Active Cooling Setpoint	ZoneActCoolSp	analog	F					
Cooling Maximum Airflow Endpoint	CoolMaxAir	analog	CFM					
Cooling Minimum Airflow Endpoint	CoolMinAir	analog	CFM					
Deadband Minimum Airflow Endpoint	DbMinAir	analog	CFM					
Heating Minimum Airflow Endpoint	HeatMinAir	analog	CFM					
Heating Maximum Airflow Endpoint	HeatMaxAir	analog	CFM					
Occupied Minimum Airflow (vmin*)	Vmin*	analog	CFM					
Zone Active Airflow Setpoint (Vspt)	Vspt	analog	CFM					
Discharge Air Temperature Setpoint	DATSp	analog	F					
VAV Box Damper Command	VAVDmprCmd	analog	%					
Reheat Command	RhCommand	analog	%					
Cooling SAT Reset Requests	CoolSATReq	analog	-					
Static Pressure Reset Requests	StatPresReq	analog	-					
Hot Water Reset Requests	HWSTReq	analog	-					
Hot Water Plant Requests	HWPlantReq	analog	-					
Zone Low Airflow Alarm, Level 4	LowAirflow4	binary	-					
Zone Low Airflow Alarm, Level 3	LowAirflow3	binary	-					
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	binary	-					
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	binary	-					
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	binary	-					
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	binary	-					
VAV Leaking Valve Alarm, Level 4	LeakVlv4	binary	-					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
WRITABLE POINTS								
Zone Temperature Setpoint, Occupied Heating	OccHeatSp	analog	F	*129.6.172.112*	*1*	*occ_ht_stpt*	*AV 9*	
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp	analog	F	*129.6.172.112*	*1*	*occ_cl_stpt*	*AV 10*	
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp	analog	F	*129.6.172.112*	*1*	*unocc_hsp*	*AV 71*	
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp	analog	F	*129.6.172.112*	*1*	*unocc_csp*	*AV 70*	
Zone CO2 Limit	ZoneCO2Limit	analog	PPM	*129.6.172.112*	*1*	*zn_co2_setpt*	*AV 16*	
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax	analog	CFM	*129.6.172.112*	*1*	*cmax_min*	*AV 1*	
Zone Minimum Airflow (Vmin)	Vmin	analog	CFM	*129.6.172.112*	*1*	*vmin*	*AV 72*	
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax	analog	CFM	*129.6.172.112*	*1*	*hmax_min*	*AV 2*	
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin	analog	CFM	*129.6.172.112*	*1*	*h_min*	*AV 4*	
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT	analog	F	*129.6.172.112*	*1*	*max_delta_t*	*AV 5*	
VAV Box Controllable Minimum (Vm)	Vm	analog	CFM	*129.6.172.112*	*1*	*vm*	*AV 6*	
Zone Discharge Airflow	ZoneSupAirflow	analog	CFM	*129.6.172.112*	*1*	*airflow*	*AV 15*	
Zone Discharge Air Temperature	ZoneDAT	analog	F	*129.6.172.112*	*1*	*da_temp*	*AI 14*	
Zone Temperature	ZoneTemp	analog	F	*129.6.172.112*	*1*	*zone_temp*	*AI 13*	
Zone CO2 Level	ZoneCO2	analog	PPM	*129.6.172.112*	*1*	*zone_co2*	*AI 17*	
Occupancy Sensor	ZoneOccSensor	binary	-	*129.6.172.112*	*1*	*occ_status*	*BV 21*	
Window Switch	ZoneWinSwitch	binary	-	*129.6.172.112*	*1*	*window_switch*	*BI 19*	
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT	analog	-	*129.6.172.112*	*1*	*cool_request_x*	*AV 25*	
Static Pressure Reset Requests Importance Multiplier	IM_DSP	analog	-	*129.6.172.112*	*1*	*static_request_x*	*AV 26*	
Hot Water Supply Temperature Reset Requests Importance	IM_HWST	analog	-	*129.6.172.112*	*1*	*heat_request_x*	*AV 58*	
Hot Water Plant Requests Importance Multiplier	IM_HWP	analog	-	*129.6.172.112*	*1*	*hw_request_x*	*AV 28*	
AHU Supply Fan Status	AHUSupFanStatus	binary	-	*129.6.172.112*	*1*	*ahu_status*	*BV 20*	
AHU Supply Air Temperature Setpoint	AHUSATSp	analog	F	*129.6.172.112*	*1*	*m2113*	*AV 21*	
AHU Supply Air Temperature	AHUSAT	analog	F	*129.6.172.112*	*1*	*m2095*	*AV 22*	
Hot Water Plant Status	HWPlantStatus	binary	-	*129.6.172.112*	*1*	*m2084*	*BV 55*	
Zone Group Mode	ZoneGrpMode	analog/ multistate	-	*129.6.172.112*	*1*	*zg_mode*	*AV 24*	

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
READABLE POINTS								
Cooling Loop Output	ZoneCoolLoop	analog	%	*129.6.172.112*	*1*	*m737*	*AV 29*	
Heating Loop Output	ZoneHeatLoop	analog	%	*129.6.172.112*	*1*	*m736*	*AO 30*	
Active Heating Setpoint	ZoneActHeatSp	analog	F	*129.6.172.112*	*1*	*effective_ht_stpt*	*AV 43*	
Active Cooling Setpoint	ZoneActCoolSp	analog	F	*129.6.172.112*	*1*	*effective_cl_stpt*	*AV 44*	
Cooling Maximum Airflow Endpoint	CoolMaxAir	analog	CFM	*129.6.172.112*	*1*	*vcool-max*	*AV 32*	
Cooling Minimum Airflow Endpoint	CoolMinAir	analog	CFM	*129.6.172.112*	*1*	*cool_min*	*AV 33*	
Deadband Minimum Airflow Endpoint	DbMinAir	analog	CFM	*129.6.172.112*	*1*	*min*	*AV 34*	
Heating Minimum Airflow Endpoint	HeatMinAir	analog	CFM	*129.6.172.112*	*1*	*vheat-min*	*AV 35*	
Heating Maximum Airflow Endpoint	HeatMaxAir	analog	CFM	*129.6.172.112*	*1*	*vheat-max*	*AV 36*	
Occupied Minimum Airflow (vmin*)	Vmin*	analog	CFM	*129.6.172.112*	*1*	*vmin_eff*	*AV 37*	
Zone Active Airflow Setpoint (Vspt)	Vspt	analog	CFM	*129.6.172.112*	*1*	*vmin_eff*	*AV 37*	
Discharge Air Temperature Setpoint	DATSp	analog	F	*129.6.172.112*	*1*	*sat_hesp*	*AV 40*	
VAV Box Damper Command	VAVDmprCmd	analog	%	*129.6.172.112*	*1*	*dmpr_pos*	*AV 41*	
Reheat Command	RhCommand	analog	%	*129.6.172.112*	*1*	*hw_valve*	*AO 42*	
Cooling SAT Reset Requests	CoolSATReq	analog	-	*129.6.172.112*	*1*	*cool_request*	*AV 45*	
Static Pressure Reset Requests	StatPresReq	analog	-	*129.6.172.112*	*1*	*air_request*	*AV 18*	
Hot Water Reset Requests	HWSTReq	analog	-	*129.6.172.112*	*1*	*heat_request*	*AV 47*	
Hot Water Plant Requests	HWPlantReq	analog	-	*129.6.172.112*	*1*	*boiler_run_req*	*AV 48*	
Zone Low Airflow Alarm, Level 4	LowAirflow4	binary	-	*129.6.172.112*	*1*	*low_airflow_alm2*	*BV 9*	
Zone Low Airflow Alarm, Level 3	LowAirflow3	binary	-	*129.6.172.112*	*1*	*low_airflow_alm1*	*BV 8*	
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	binary	-	*129.6.172.112*	*1*	*dat_low2*	*BV 11*	
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	binary	-	*129.6.172.112*	*1*	*dat_low1*	*BV 10*	
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	binary	-	*129.6.172.112*	*1*	*airflow_sensor_alm*	*BV 12*	
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	binary	-	*129.6.172.112*	*1*	*leaking_dmpr*	*BV 13*	
VAV Leaking Valve Alarm, Level 4	LeakVlv4	binary	-	*129.6.172.112*	*1*	*valve_leak*	*BV 15*	

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
WRITABLE POINTS								
AHU Supply Fan Status	AHU_SFstatus	binary	-					
Supply Air Temperature	AHU_SAT	analog	F					
Return Air Temperature	AHU_RAT	analog	F					
Mixed Air Temperature	AHU_MAT	analog	F					
Outdoor Air Temperature	OAT	analog	F					
Duct Static Pressure Requests	DSP_Req	analog	-					
Cooling SAT Requests	CoolSAT_Req	analog	-					
Duct Static Pressure	AHU_DSP	analog	inWG					
Filter Pressure Drop	FilterDP	analog	inWG					
AHU System Mode	AHUMode	analog/ multistate	-					
Building Static Pressure, Instantaneous	BldDP	analog	inWG					

Control Point Description	Control Point Name	Type	Units	Device Network Address	BACnet Device Instance Number	BACnet Object Name	BACnet Object ID	Binary/MSV Mapping Override
READABLE POINTS								
AHU Supply Fan Start/Stop	SF_SS	binary	-					
Supply Fan Speed	SF_Speed	analog	%					
Duct Static Pressure Setpoint	AHU_DSPsp	analog	inWG					
Supply Air Temperature Setpoint	AHU_SATsp	analog	F					
Economizer Outdoor Air Damper Command	AHUDamperEconOA	analog	%					
Supply Fan Alarm, Level 4	SupFanAl4	binary	-					
Supply Fan Alarm, Level 2	SupFanAl2	binary	-					
Filter Pressure Drop Alarm	FilterDpAl	binary	-					
High Building Pressure Alarm	HighBpAl	binary	-					
Low Building Pressure Alarm	LowBpAl	binary	-					

NORMATIVE APPENDIX C – TEST SCRIPTS

Generic Ventilation Zones (Title 24)

Generic Thermal Zones

Variable Air Volume Reheat Terminal

Multiple Zone VAV Air Handling Unit – Common Equipment

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Zone OA Variable Calculation Test	Zone OA Variable Calculation Test
Test Definition Package Version	DRAFT 6	SOO Reference	N/A	5.2.1.4	5.2.1.4
Test Script Revision Date	March 3, 2026	Intervention	• This test assumes CO2 sensor is installed. • Initialize inputs to the values below. • Test starts with zone in Occupied Mode.	• Window switch is closed. • Occupancy sensor indicates presence. • Vmin is as scheduled (equals Varea-min).	• Set Vocc-min < Varea-min.
		Expected Response	• No expectations. Wait 5 minutes to allow controller to initialize.	• Zone-Abs-OA-min is equal to Varea-min. • Zone-Des-OA-min is equal to Vocc-min (> Varea-min). • Vmin* equals Vmin. • Zone airflow setpoint Vspt equals deadband endpoint DbMinAir. • DbMinAir equals Vmin*. • CoolMinAir equals Vmin*.	• Zone-Des-OA-min is equal to Zone-Abs-OA-min is equal to Varea-min, because Vocc-min < Varea-min.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	1	2	3
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	50
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		0	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	=ANY	0	0
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=ANY	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=ANY	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=ANY	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=ANY	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=ANY	=VHeatMax	=VHeatMax
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	=ANY	=Vmin	=Vmin
Zone Airflow Setpoint (Vspt)	Vspt	5	=ANY	=DbMinAir	=DbMinAir
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	=ANY	=VAreaMin	=VAreaMin
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	=ANY	=VOccMin	=VAreaMin
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	=ANY	0	0
High CO2 Concentration Alarm, Level 3	HiCO23	0	=ANY	0	0

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Zone OA Variable Calculation Test	Window Switch & Occupancy Sensor Tests	Window Switch & Occupancy Sensor Tests
Test Definition Package Version	DRAFT 6	SOO Reference	5.2.1.4	5.2.1.4	5.2.1.4
Test Script Revision Date	March 3, 2026	Intervention	• Restore original value of Vocc-min.	• Set window switch to OPEN.	• Set window switch to CLOSED.
		Expected Response	• Zone-Abs-OA-min is equal to Varea-min. • Zone-Des-OA-min is equal to Vocc-min (> Varea-min).	• Zone-Abs-OA-min equals 0. • Zone-Des-OA-min equals 0. • Vmin* equals 0. • Vspt equals 0. • CoolMinAir equals 0. • DbMinAir equals 0.	• Zone-Abs-OA-min is equal to Varea-min. • Zone-Des-OA-min is equal to Vocc-min. • Vmin* equals Vmin. • Vspt equals DbMinAir. • CoolMinAir equals Vmin*. • DbMinAir equals Vmin*.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	4	5	6
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	120
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	OPEN	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	0	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	0	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	=Vmin	0	=Vmin
Zone Airflow Setpoint (Vspt)	Vspt	5	=DbMinAir	0	=DbMinAir
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	=VAreaMin	0	=VAreaMin
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	=VOccMin	0	=VOccMin
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	0	0	0
High CO2 Concentration Alarm, Level 3	HiCO23	0	0	0	0

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints	Zone CO2 DCV Response and CO2 Sensor Alarm Tests FOR 2021
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Window Switch & Occupancy Sensor Tests	Window Switch & Occupancy Sensor Tests	Initialization
Test Definition Package Version	DRAFT 6	SOO Reference	5.2.1.4	5.2.1.4	N/A
Test Script Revision Date	March 3, 2026	Intervention	• Set occupancy sensor to UNPOPULATED.	• Set occupancy sensor to PRESENT.	• Initialize inputs to the values below.
		Expected Response	• Zone-Abs-OA-min equals 0. • Zone-Des-OA-min equals 0. • Vmin* equals 0. • Vspt equals 0. • CoolMinAir equals 0. • DbMinAir equals 0.	• Zone-Abs-OA-min is equal to Varea-min. • Zone-Des-OA-min is equal to Vocc-min. • Vmin* equals Vmin. • Vspt equals DbMinAir. • CoolMinAir equals Vmin*. • DbMinAir equals Vmin*.	• No expectations. Wait 5 minutes to allow for initialization
Control Point Description	Control Point Name	Test Block	A	A	B
BACnet Inputs	TestInputs	Test Step	7	8	1
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	120
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		UNPOPULATED	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:30:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=ANY
Cooling Minimum Airflow Endpoint	CoolMinAir	5	0	=Vmin*	=ANY
Deadband Minimum Airflow Endpoint	DbMinAir	5	0	=Vmin*	=ANY
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=ANY
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=ANY
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	0	=Vmin	=ANY
Zone Airflow Setpoint (Vspt)	Vspt	5	0	=DbMinAir	=ANY
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	0	=VAreaMin	=ANY
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	0	=VOccMin	=ANY
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	0	0	=ANY
High CO2 Concentration Alarm, Level 3	HiCO23	0	0	0	=ANY

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	CO2 Sensor Calibration Alarm Test	CO2 DCV Response Test
Test Definition Package Version	DRAFT 6	SOO Reference	N/A	5.2.2.3	5.2.1.4.d.3
Test Script Revision Date	March 3, 2026	Intervention	• No change.	• Set Zone CO2 to 290 PPM.	• Set Zone CO2 to 800 PPM.
		Expected Response	• Zone is in deadband. • Zone-Abs-OA-min is equal to Varea-min. • Zone-Des-OA-min is equal to Vocc-min (> Varea-min). • Vmin* equals Vmin. • Zone airflow setpoint Vspt equals deadband endpoint DbMinAir. • DbMinAir equals Vmin*. • CoolMinAir equals Vmin*.	• CO2 sensor calibration alarm.	• CO2 sensor calibration alarm clears. • No DCV response as CO2 level below DCV range.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	2	3	4
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	120
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	290	800
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Airflow Setpoint (Vspt)	Vspt	5	=DbMinAir	=DbMinAir	=DbMinAir
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	=VAreaMin	=VAreaMin	=VAreaMin
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	=VOccMin	=VOccMin	=VOccMin
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	0	1	0
High CO2 Concentration Alarm, Level 3	HiCO23	0	0	0	0

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	CO2 DCV Response Test	CO2 DCV Response Test	CO2 DCV Response Test
Test Definition Package Version	DRAFT 6	SOO Reference	5.2.1.4.d.3	5.2.1.4.d.3	5.2.1.4.d.3
Test Script Revision Date	March 3, 2026	Intervention	• Set Zone CO2 to 825 PPM.	• Set Zone CO2 to 850 PPM.	• Set Zone CO2 to 900 PPM.
		Expected Response	• CO2 Loop is 12.5%. • Vmin* is reset one quarter of the way between minimum and maximum endpoints. • HeatMinAir = Vmin* because Vmin* > Vheat-min.	• CO2 Loop is 25%. • Vmin* is reset halfway between minimum and maximum endpoints. • HeatMinAir = Vmin* because Vmin* > Vheat-min. • HeatMaxAir = Vmin* because Vmin* > Vheat-max.	• CO2 Loop is 50%. • Vmin* is reset to maximum cooling endpoint. • HeatMinAir = HeatMaxAir = Vmin* = VCoolMax.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	5	6	7
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	120
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		825	850	900
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	12.5	25	50
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=Vmin*	=Vmin*	=VCoolMax
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=Vmin*	=VCoolMax
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	=INTERPOLATE(ZoneCO2Loop; 0; 50; Vmin; CoolMaxAir)	=INTERPOLATE(ZoneCO2Loop; 0; 50; Vmin; CoolMaxAir)	=VCoolMax
Zone Airflow Setpoint (Vspt)	Vspt	5	=DbMinAir	=DbMinAir	=DbMinAir
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	=VAreaMin	=VAreaMin	=VAreaMin
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	=VOccMin	=VOccMin	=VOccMin
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	0	0	0
High CO2 Concentration Alarm, Level 3	HiCO23	0	0	0	0

Equipment Configuration	Generic Ventilation Zones VAV-RH with CO2 Sensor	Test Block Description	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests	Zone CO2 DCV Response and CO2 Sensor Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	CO2 DCV Response Test	CO2 Conentration Alarm	CO2 DCV Response Test
Test Definition Package Version	DRAFT 6	SOO Reference	5.2.1.4.d.3	5.2.2.3	5.2.1.4.d.3
Test Script Revision Date	March 3, 2026	Intervention	• Set Zone CO2 to 1,000 PPM.	• Set Zone CO2 to 1,100 PPM. • Wait 10 minutes.	• Set Zone CO2 to 400 PPM.
		Expected Response	• CO2 Loop is 100% • No other effect as zone-level DCV response already at maximum.	• Level 3 CO2 concentration alarm.	• CO2 Loop is 0%. • Vmin* is reset to Vmin. • Level 3 CO2 concentration alarm clears.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	8	9	10
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone Minimum Outdoor Airflow for Building Area (Varea-min)	VAreaMin		60	60	60
Zone Minimum Outdoor Airflow for Occupants (Vocc-min)	VOccMin		120	120	120
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		=VAreaMin	=VAreaMin	=VAreaMin
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		1000	1100	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:10:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
CO2 Control Loop Output	ZoneCO2Loop	0.5	100	100	0
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VCoolMax	=VCoolMax	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VCoolMax	=VCoolMax	=VHeatMax
Zone Active Airflow Setpoint (Vspt)	Vmin*	5	=VCoolMax	=VCoolMax	=Vmin
Zone Airflow Setpoint (Vspt)	Vspt	5	=DbMinAir	=DbMinAir	=DbMinAir
Zone Absolute Minimum Outside Airflow	ZoneAbsOAmin	5	=VAreaMin	=VAreaMin	=VAreaMin
Zone Design Minimum Outside Airflow	ZoneDesOAmin	5	=VOccMin	=VOccMin	=VOccMin
CO2 Sensor Calibration Alarm, Level 3	CO2SensCal3	0	0	0	0
High CO2 Concentration Alarm, Level 3	HiCO23	0	0	1	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Occupied Mode Setpoint Test	Setup Mode Setpoint Test
Test Definition Package Version	DRAFT 4	SOO Reference	N/A	5.3.2.3	5.3.2.3
Test Script Revision Date	March 3, 2026	Intervention	• Initialize inputs to the values below.	• Put zone in Occupied Mode	• Put zone in Setup Mode
		Expected Response	• No expectations. Wait 5 minutes to allow controller to initialize.	• Active zone temperature setpoints are Occupied setpoints	• Active zone temperature setpoints are Unoccupied setpoints.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	1	2	3
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	0
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		UNOCCUPIED	OCCUPIED	SETUP
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	=ANY	0	0
Heating Loop Output	ZoneHeatLoop	5	=ANY	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	=ANY	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY	=OccHeatSp	=UnoccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY	=OccCoolSp	=UnoccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	=ANY	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	=ANY	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	=ANY	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	=ANY	0	0
Open Window Alarm, Level 4	OpenWin4	0	=ANY	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Setup Mode Window Switch Alarm Test	Occupied Mode Window Switch Alarm Test	Setback Mode Window Switch Alarm Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.3 & 5.3.2.8	5.3.2.3 & 5.3.2.8	5.3.2.3 & 5.3.2.8
Test Script Revision Date	March 3, 2026	Intervention	• Set window switch to OPEN	• Put zone in Occupied Mode	• Put zone in Setback Mode.
		Expected Response	• Active zone temperature setpoints are 40F/120F due to window switch. • Open Window Alarm generated.	• Active zone temperature setpoints are 40F/120F due to window switch. • Window alarm clears.	• Active zone temperature setpoints are 40F/120F due to window switch. • Open Window Alarm resumes.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	4	5	6
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		0	=Vspt	0
Zone Discharge Air Temperature	ZoneDAT		55	=DATSp	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		OPEN	OPEN	OPEN
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		SETUP	OCCUPIED	SETBACK
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	40	40	40
Active Cooling Setpoint	ZoneActCoolSp	0.1	120	120	120
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	1	0	1

Equipment Configuration	Generic Thermal Zones	Test Block Description	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Setback Mode Setpoint Test	Occupied Mode Window Switch Alarm Test	Cooldown Mode Setpoint Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.3	5.3.2.3 & 5.3.2.8	5.3.2.3
Test Script Revision Date	March 3, 2026	Intervention	• Set Window Switch to CLOSED	• Put zone in Occupied Mode	• Put zone in Cooldown Mode.
		Expected Response	• Active zone temperature setpoints are Unoccupied setpoints. • Open Window Alarm clears.	• Active zone temperature setpoints are Occupied setpoints	• Active zone temperature setpoints are Unoccupied setpoints.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	7	8	9
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		0	=Vspt	0
Zone Discharge Air Temperature	ZoneDAT		55	=DATSp	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		SETBACK	OCCUPIED	COOLDOWN
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=UnoccHeatSp	=OccHeatSp	=UnoccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=UnoccCoolSp	=OccCoolSp	=UnoccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Zone Mode Setpoint Tests	Zone Mode Setpoint Tests	High Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Mode Setpoint Test	Warmup Mode Setpoint Test	Initialization
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.3	5.3.2.3	N/A
Test Script Revision Date	March 3, 2026	Intervention	• Put zone in Occupied Mode	• Put zone in Warmup Mode	• Initialize inputs to the values below.
		Expected Response	• Active zone temperature setpoints are Occupied setpoints	• Active zone temperature setpoints are Unoccupied setpoints.	• No expectations. Wait 5 minutes to allow controller to initialize.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**B**
BACnet Inputs	TestInputs	Test Step	10	11	1
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	0	=RAMP(0;Vmin;120)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	55	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	WARMUP	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:30:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	=ANY
Heating Loop Output	ZoneHeatLoop	5	0	0	=ANY
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	=ANY
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=UnoccHeatSp	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=UnoccCoolSp	=ANY
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	=ANY
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	=ANY
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	=ANY
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	=ANY
Open Window Alarm, Level 4	OpenWin4	0	0	0	=ANY

Equipment Configuration	Generic Thermal Zones	Test Block Description	High Temperature Zone Alarm	High Temperature Zone Alarm	High Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	High Temperature Alarm	High Temperature Alarm	High Temperature Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1a	5.3.6.1a	5.3.6.1a
Test Script Revision Date	March 3, 2026	Intervention	• Test starts with zone in Occupied Mode, in deadband.	• Set zone temperature to 4°F above cooling setpoint. • Wait 9 minutes	• Wait 2 additional minutes
		Expected Response	• Active zone temperature setpoints are Occupied setpoints. • Zone airflow setpoint is Vmin. • DATSp is AHU supply air temperature. • Heating Loop and Cooling Loop signals are zero.	• Cooling Loop and airflow setpoint respond to elevated zone temperature. • No alarm as 10 minute timer has not expired.	• Level 4 High Zone Temperature alarm is set.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	2	3	4
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vmin	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	=ADD(OccCoolSp;4)	=ADD(OccCoolSp;4)
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:05:00	0:09:00	0:02:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	>0	>=LAST
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin	>LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSAT	=AHUSAT	=AHUSAT
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	1
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	High Temperature Zone Alarm	High Temperature Zone Alarm	High Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	High Temperature Alarm	High Temperature Alarm	High Temperature Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1a	5.3.6.1a	5.3.6.1c
Test Script Revision Date	March 3, 2026	Intervention	• Set zone temperature to 6°F above cooling setpoint. • Wait 9 minutes	• Wait 2 additional minutes	• Put zone in Cooldown Mode.
		Expected Response	• Cooling Loop and airflow setpoint respond to elevated zone temperature if not already at max. • No new alarm as 10 minute timer has not expired.	• Level 3 High Zone Temperature alarm is set.	• High Zone Temperature alarm is suppressed by Mode. • Cooling Loop and airflow remain elevated.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	5	6	7
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;6)	=ADD(OccCoolSp;6)	=ADD(OccCoolSp;6)
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	COOLDOWN
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:09:00	0:02:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	>=LAST	>=LAST	>=LAST
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSAT	=AHUSAT	=AHUSAT
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	1	1	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	1	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	High Temperature Zone Alarm	High Temperature Zone Alarm	Low Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	High Temperature Alarm	High Temperature Alarm	Initialization
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1c	5.3.6.1c	N/A
Test Script Revision Date	March 3, 2026	Intervention	• Put zone in Occupied Mode.	• Restore zone temperature to deadband. • Wait 5 minutes.	• Initialize inputs to the values below.
		Expected Response	• High Zone Temperature alarms are restored by Mode change.	• Cooling Loop and zone airflow start to decrease. • High Zone Temperature alarms clear.	• No expectations. Wait 5 minutes to allow controller to initialize.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**C**
BACnet Inputs	TestInputs	Test Step	8	9	1
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=RAMP(0;Vmin;120)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;6)	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:10:00	0:05:00	0:30:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	>=LAST	<LAST	=ANY
Heating Loop Output	ZoneHeatLoop	5	0	0	=ANY
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	=ANY
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=ANY
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	<LAST	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSAT	=AHUSAT	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	1	0	=ANY
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	1	0	=ANY
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	=ANY
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	=ANY
Open Window Alarm, Level 4	OpenWin4	0	0	0	=ANY

Equipment Configuration	Generic Thermal Zones	Test Block Description	Low Temperature Zone Alarm	Low Temperature Zone Alarm	Low Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Low Temperature Alarm	Low Temperature Alarm	Low Temperature Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1c	5.3.6.1c	5.3.6.1c
Test Script Revision Date	March 3, 2026	Intervention	• Test starts with zone in Occupied Mode, in deadband.	• Set zone temperature to 4F below heating setpoint. • Wait 9 minutes	• Wait 2 additional minutes
		Expected Response	• Active zone temperature setpoints are Occupied setpoints. • Zone airflow setpoint is Vmin. • DATSp is AHU supply air temperature. • Heating Loop and Cooling Loop signals are zero.	• Heating Loop and DAT setpoint respond to elevated zone temperature. Airflow setpoint may or may not respond as well. • No alarm as 10 minute timer has not expired.	• Level 4 Low Zone Temperature alarm is set.
Control Point Description	Control Point Name	Test Block	**C**	**C**	**C**
BACnet Inputs	TestInputs	Test Step	2	3	4
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vmin	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	=SUB(OccHeatSp;4)	=SUB(OccHeatSp;4)
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:05:00	0:09:00	0:02:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	>0	>=LAST
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSAT	>LAST	>=LAST
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	1
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Low Temperature Zone Alarm	Low Temperature Zone Alarm	Low Temperature Zone Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Low Temperature Alarm	Low Temperature Alarm	Low Temperature Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1c	5.3.6.1c	5.3.6.1c
Test Script Revision Date	March 3, 2026	Intervention	• Set zone temperature to 6F below heating setpoint. • Wait 9 minutes	• Wait 2 additional minutes	• Put zone in Warmup Mode.
		Expected Response	• Heating Loop, DAT setpoint and airflow setpoint respond to elevated zone temperature if not already at max. • No new alarm as 10 minute timer has not expired.	• Level 3 Low Zone Temperature alarm is set.	• Low Zone Temperature alarms are suppressed by Mode. • Heatng Loop and, DAT setpoint and airflow setpoint remain elevated.
Control Point Description	Control Point Name	Test Block	**C**	**C**	**C**
BACnet Inputs	TestInputs	Test Step	5	6	7
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		=SUB(OccHeatSp;6)	=SUB(OccHeatSp;6)	=SUB(OccHeatSp;6)
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	WARMUP
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:09:00	0:02:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=LAST	>=LAST	>=LAST
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	>=LAST	>=LAST	>=LAST
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	1	1	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	1	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Low Temperature Zone Alarm	Low Temperature Zone Alarm	Occupancy Sensor, Demand Limits & Setpoint Hierarchy
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Low Temperature Alarm	Low Temperature Alarm	Initialization
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.6.1c	5.3.6.1c	N/A
Test Script Revision Date	March 3, 2026	Intervention	• Put zone in Occupied Mode.	• Restore zone temperature to deadband. • Wait 5 minutes.	• Initialize inputs to the values below.
		Expected Response	• Low Zone Temperature alarms are restored by Mode change.	• Heating Loop, DAT setpoint, and zone airflow setpoint start to decrease. • Low Zone Temperature alarms clear.	• No expectations. Wait 5 minutes to allow controller to initialize.
Control Point Description	Control Point Name	Test Block	C	C	D
BACnet Inputs	TestInputs	Test Step	8	9	1
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		=SUB(OccHeatSp;6)	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:10:00	0:05:00	0:30:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	=ANY
Heating Loop Output	ZoneHeatLoop	5	>=LAST	<LAST	=ANY
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	=ANY
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=ANY
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	<LAST	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	>=LAST	<=LAST	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	=ANY
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	=ANY
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	1	0	=ANY
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	1	0	=ANY
Open Window Alarm, Level 4	OpenWin4	0	0	0	=ANY

Equipment Configuration	Generic Thermal Zones	Test Block Description	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupancy Sensor Test	Occupancy Sensor Test	Demand Limit Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.9	5.3.2.9	5.3.2.6/7
Test Script Revision Date	March 3, 2026	Intervention	• Set occupany sensor to UNPOPULATED. • Wait 3 minutes.	• Wait additional 3 minutes.	• Set Demand Limit Level 1
		Expected Response	• No change in setpoint because 5 minute timer has not expired.	• Active heating setpoint decreases by 1°F and active cooling setpoint increases by 1°F due to occupancy sensor signal.	• Active heating setpoint decreases by 1°F and active cooling setpoint increases by 1°F due to Demand Limit, cumulative with the offset from the occupany sensor.
Control Point Description	Control Point Name	Test Block	**D**	**D**	**D**
BACnet Inputs	TestInputs	Test Step	2	3	4
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	1
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		UNPOPULATED	UNPOPULATED	UNPOPULATED
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:03:00	0:03:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=SUB(OccHeatSp;1)	=SUB(OccHeatSp;2)
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=ADD(OccCoolSp; 1)	=ADD(OccCoolSp;2)
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Demand Limit Test	Demand Limit Test	Setpoint Hierarchy Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.6/7	5.3.2.6/7	5.3.2.10
Test Script Revision Date	March 3, 2026	Intervention	• Set Demand Limit Level 2	• Set Demand Limit Level 3	• Set window switch to OPEN.
		Expected Response	• Active heating setpoint decreases by 2°F and active cooling setpoint increases by 2°F due to Demand Limit, cumulative with the offset from the occupany sensor.	• Active heating setpoint decreases by 4°F and active cooling setpoint increases by 4°F due to Demand Limit, cumulative with the offset from the occupany sensor.	• Active zone temperature setpoints are 40F/120F due to window switch. • No Open Window Alarm because zone is Occupied.
Control Point Description	Control Point Name	Test Block	**D**	**D**	**D**
BACnet Inputs	TestInputs	Test Step	5	6	7
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		2	3	3
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		UNPOPULATED	UNPOPULATED	UNPOPULATED
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	OPEN
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=SUB(OccHeatSp;3)	=SUB(OccHeatSp;5)	40
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ADD(OccCoolSp;3)	=ADD(OccCoolSp;5)	120
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Occupancy Sensor, Demand Limits & Setpoint Hierarchy
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Setpoint Hierarchy Test	Occupancy Sensor Test	Occupancy Sensor Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.10	5.3.2.9	5.3.2.9
Test Script Revision Date	March 3, 2026	Intervention	• Set window switch to CLOSED.	• Set occupancy sensor to PRESENT. • Wait 30 seconds.	• Wait additional 1 minute.
		Expected Response	• Active setpoint values revert to demand-limited values as window is CLOSED.	• No change as 1 minute timer has not expired.	• Occupancy sensor setback is removed from active setpoints as timer has elapsed.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	8	9	10
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		3	3	3
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		UNPOPULATED	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:00:30	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=SUB(OccHeatSp;5)	=SUB(OccHeatSp;5)	=SUB(OccHeatSp;4)
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ADD(OccCoolSp;5)	=ADD(OccCoolSp;5)	=ADD(OccCoolSp;4)
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=ANY
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Occupancy Sensor, Demand Limits & Setpoint Hierarchy	Zone Setpoint Overlap Restrictions	Zone Setpoint Overlap Restrictions
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Demand Limit Test, Setpoint Hierarchy Test	Initialization	Unoccupied Setpoint Mode Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.6/7, 5.3.2.10		5.3.2.3f
Test Script Revision Date	March 3, 2026	Intervention	• Release Demand Limit.	• Initialize inputs to the values below.	• Test starts with zone in Unoccupied Mode.
		Expected Response	• Demand Limit is removed from active setpoints. • Setpoints return to default values.	• No expectations. Wait 5 minutes to allow controller to initialize.	• Active zone temperature setpoints are Unoccupied setpoints.
Control Point Description	Control Point Name	Test Block	D	E	E
BACnet Inputs	TestInputs	Test Step	11	1	2
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	UNOCCUPIED	UNOCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:30:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	=ANY	0
Heating Loop Output	ZoneHeatLoop	5	0	=ANY	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	=ANY	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=ANY	=UnoccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=ANY	=UnoccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=ANY	0
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=ANY	=AHUSAT
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	=ANY	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	=ANY	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	=ANY	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	=ANY	0
Open Window Alarm, Level 4	OpenWin4	0	0	=ANY	0

Equipment Configuration	Generic Thermal Zones	Test Block Description	Zone Setpoint Overlap Restrictions	Zone Setpoint Overlap Restrictions	Zone Setpoint Overlap Restrictions
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Setpoint Anti-Overlap Logic Test	Setpoint Anti-Overlap Logic Test	Occupied Setpoint Mode Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.3.2.4b, 5.3.2.4c	5.3.2.4a	5.3.2.3a
Test Script Revision Date	March 3, 2026	Intervention	• Set Unoccupied cooling setpoint equal to the Occupied heating setpoint. • Set Unoccupied heating setpoint equal to the Occupied cooling setpoint.	• Restore original Unoccupied setpoints. • Set Mode to Occupied. • Set BOTH Occupied heating setpoint and Occupied cooling setpoint equal to 72F.	• Restore original Occupied setpoints.
		Expected Response	• Active zone heating setpoint is Occupied heating setpoint. • Active zone cooling setpoint is Occupied cooling setpoint.	• Active zone cooling setpoint is 72.5. • Active zone heating setpoint is 71.5. • Zone airflow setpoint equals Vmin. Heating and cooling loops are zero because zone is in deadband.	• Active zone temperature setpoints are Occupied setpoints.
Control Point Description	Control Point Name	Test Block	**E**	**E**	**E**
BACnet Inputs	TestInputs	Test Step	3	4	5
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	72.5	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	72.5	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		=OccCoolSp	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		=OccHeatSp	90	90
Demand Limit Level	DemandLimit		0	0	0
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		=DATSp	=DATSp	=DATSp
Zone Temperature	ZoneTemp		72	72	72
Zone CO2	ZoneCO2		400	400	400
Local Override	ZoneOverSwitch		OFF	OFF	OFF
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		UNOCCUPIED	OCCUPIED	OCCUPIED
#Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
#BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
CO2 Control Loop Output	ZoneCO2Loop	0.5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=SUB(OccCoolSp;1)	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Zone Active Airflow Setpoint (Vspt)	Vspt	5	0	=Vmin	=Vmin
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSAT	=AHUSAT	=AHUSAT
Zone High Temperature Alarm, Level 4	HighZnTemp4	0	0	0	0
Zone High Temperature Alarm, Level 3	HighZnTemp3	0	0	0	0
Zone Low Temperature Alarm, Level 4	LowZnTemp4	0	0	0	0
Zone Low Temperature Alarm, Level 3	LowZnTemp3	0	0	0	0
Open Window Alarm, Level 4	OpenWin4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Occupied Setpoints	Occupied Cooling
Test Definition Package Version	DRAFT 20	SOO Reference	N/A	N/A	5.6.5.1
Test Script Revision Date	March 3, 2026	Intervention	• Initialize inputs to the values below. • Zone airflow is overridden above airflow setpoint to drive damper closed, to ensure there are no static pressure requests.	• No change	• Set the zone temperature feedback to 0.5°F above the occupied cooling setpoint. • Set the airflow feedback to dynamically reset to equal the setpoint so that damper does not move. • Record controller outputs when cooling PID loop output reaches 50.
		Expected Response	• First initialization step is complete when damper is less than half open. • No expectations. Allow time for controller to initialize.	• Zone setpoints are Occupied setpoints. • Damper is less than half open.	• Cooling loop output begins increasing. • Airflow setpoint increases, potentially up to 50 (but at least 25) of the way between the cooling minimum and the cooling maximum.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	1	2	3
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		150	150	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	=ADD(OccCoolSp;0.5)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:05:00	0:20:00
Variable Name	VariableName			VAVDmprCmd	ZoneCoolLoop
Variable Value	VariableValue			<=40	>=50
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	=ANY	0	>=50
Heating Loop Output	ZoneHeatLoop	5	=ANY	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=ANY	500	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=ANY	100	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=ANY	100	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=ANY	120	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=ANY	200	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=ANY	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=Vmin*	=INTERPOLATE(ZoneCoolLoop; 0; 100; CoolMinAir; CoolMaxAir)
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	<=50	=ANY
Reheat Command	RhCommand	0.5	=ANY	0	0
Cooling SAT Reset Requests	CoolSATReq	0	=ANY	0	0
Static Pressure Reset Requests	StatPresReq	0	=ANY	0	0
Hot Water Reset Requests	HWSTReq	0	=ANY	0	0
Hot Water Plant Requests	HWPlantReq	0	=ANY	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	=ANY	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	=ANY	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	=ANY	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	=ANY	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	=ANY	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	=ANY	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	=ANY	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Cooling	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.1.a	5.6.5.1, 5.6.8.1	5.6.5.1, 5.6.8.1
Test Script Revision Date	March 3, 2026	Intervention	• Set the zone temperature feedback to 0.5°F above the occupied cooling setpoint. • Set the airflow feedback to dynamically reset to equal the setpoint so that damper does not move. • Set AHU SAT and SATsp above room temp, to limit airflow setpoint to minimum. • Record controller outputs when airflow setpoint reaches minimum.	• Restore AHU SAT and SATsp to 55°F to release zone airflow setpoint. • Record controller outputs when cooling PID loop output reaches 94	• Record controller outputs when cooling PID loop output reaches 96
		Expected Response	• Cooling loop output continues to increase. • Airflow setpoint goes to minimum, due to elevated AHU SAT.	• Cooling loop output continues increasing. • Airflow setpoint resets to 94% of the way between the cooling minimum and the cooling maximum. • 0 cooling SAT requests.	• Cooling loop output continues increasing. • Airflow setpoint resets to 96% of the way between the cooling minimum and the cooling maximum. • 1 cooling SAT request since cooling loop output exceeds 95.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	4	5	6
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;0.5)	=ADD(OccCoolSp;0.5)	=ADD(OccCoolSp;0.5)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		=ADD(ZoneTemp;1)	55	55
AHU Supply Air Temperature	AHUSAT		=ADD(ZoneTemp;1)	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:05:00	0:30:00	0:10:00
Variable Name	VariableName		Vspt	ZoneCoolLoop	ZoneCoolLoop
Variable Value	VariableValue		CoolMinAir	>=94	>=96
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	>=50	>=94	>=96
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=CoolMinAir	=INTERPOLATE(ZoneCoolLoop; 0; 100; CoolMinAir; CoolMaxAir)	=INTERPOLATE(ZoneCoolLoop; 0; 100; CoolMinAir; CoolMaxAir)
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	1
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.1, 5.6.8.1	5.6.8.1	5.6.8.1
Test Script Revision Date	March 3, 2026	Intervention	• Record controller outputs when cooling PID loop output reaches 100	• Override zone temperature to 3.1°F above the occupied cooling setpoint. • Record result 1m:40s after the override.	• Record result 0m:30s after the end of the preceding step.
		Expected Response	• Cooling loop reaches maximum value. • Airflow setpoint resets to cooling maximum. • 1 cooling SAT request	• Cooling loop output remains pegged at 100. • No additional cooling SAT requests generated yet since the zone temperature has not been >=3°F above setpoint for 2 minutes.	• Cooling loop output remains pegged at 100. • 2 total cooling SAT requests generated since the zone temperature has been >=3°F above setpoint for 2 minutes.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	7	8	9
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;0.5)	=ADD(OccCoolSp;3.1)	=ADD(OccCoolSp;3.1)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:10:00	0:01:40	0:00:30
Variable Name	VariableName		ZoneCoolLoop		
Variable Value	VariableValue		100		
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	100	100	100
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=CoolMaxAir	=CoolMaxAir	=CoolMaxAir
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	1	1	2
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.1	5.6.8.1	5.6.8.1
Test Script Revision Date	March 3, 2026	Intervention	• Override zone temperature to 5.1°F above the occupied cooling setpoint. • Record results 1m:40s after the override.	• Record result 0m:30s after the end of the preceding step.	• Override the zone temperature to 4.9°F above the occupied cooling setpoint.
		Expected Response	• Cooling loop output remains pegged at 100. • No additional cooling SAT requests since the zone temperature has not been >=5°F above setpoint for 2 minutes.	• Cooling loop output remains pegged at 100. • 3 total cooling requests generated since the zone temperature has been >=5°F above setpoint for 2 minutes.	• Cooling loop output remains pegged at 100. • 2 total cooling requests generated since zone temp is no longer >= 5°F above setpoint.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	10	11	12
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;5.1)	=ADD(OccCoolSp;5.1)	=ADD(OccCoolSp;4.9)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:40	0:00:30	0:00:30
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	100	100	100
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=CoolMaxAir	=CoolMaxAir	=CoolMaxAir
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	2	3	2
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.1	5.6.8.1	5.6.8.1
Test Script Revision Date	March 3, 2026	Intervention	• Set Cooling SAT Request Importance to 3. • Record result 0m:30s after the end of the preceding step.	• Set Cooling SAT Request Importance to 0. • Record result 0m:30s after the end of the preceding step.	• Set Cooling SAT Request Importance to 1. • Override the zone temperature to 3.1°F above the occupied cooling setpoint.
		Expected Response	• Cooling loop output remains pegged at 100. • 6 total cooling requests due to importance multiplier.	• Cooling loop output remains pegged at 100. • 0 total cooling requests due to importance multiplier.	• Cooling loop output remains pegged at 100. • 2 total cooling SAT requests remain active because zone temperature is still >=3°F above setpoint.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	13	14	15
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;5.1)	=ADD(OccCoolSp;5.1)	=ADD(OccCoolSp;3.1)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		3	0	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:00:30	0:00:30	0:00:30
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	100	100	100
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=CoolMaxAir	=CoolMaxAir	=CoolMaxAir
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	6	0	2
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests	Cooling Airflow Setpoint & SAT Reset Requests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets	Occupied Cooling & Cooling SAT Reset Requets
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.1	5.6.5.1, 5.6.8.1	5.6.5.1, 5.6.8.1
Test Script Revision Date	March 3, 2026	Intervention	• Override the zone temperature to 2.9°F above the occupied cooling setpoint.	• =RAMP the zone temperature feedback down from 2.9°F above the occupied cooling setpoint to the deadband over a span of approx 6 minutes. • Record results when the cooling PID loop reaches 90.	• Continue zone temperature =RAMP started in preceding test. • Record results from preceding step when the cooling PID loop reaches 84.
		Expected Response	• Cooling loop output remains pegged at 100. • Decrease to 1 cooling SAT request since zone temp is no longer >= 3°F above setpoint.	• Cooling loop output begins decreasing as zone temperature drops. • Airflow setpoint begins decreasing from the cooling maximum to the cooling minimum. • 1 cooling SAT request since loop output is still >=85.	• Cooling loop output continues decreasing as zone temperature drops. • Airflow setpoint continues decreasing from the cooling maximum to the active minimum. • 0 cooling SAT requests since loop output is <85.
Control Point Description	Control Point Name	Test Block	A	A	A
BACnet Inputs	TestInputs	Test Step	16	17	18
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		=ADD(OccCoolSp;2.9)	=RAMP(LAST; 72; 360)	=RAMP(LAST; 72; 300)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:00:30	0:30:00	0:05:00
Variable Name	VariableName			ZoneCoolLoop	ZoneCoolLoop
Variable Value	VariableValue			<=90	<=84
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	100	>=85	<=84
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=CoolMaxAir	=INTERPOLATE(ZoneCoolLoop; 0; 100; CoolMinAir; CoolMaxAir)	=INTERPOLATE(ZoneCoolLoop; 0; 100; CoolMinAir; CoolMaxAir)
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	1	1	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

		Test Block Description	Cooling Airflow Setpoint & SAT Reset Requests	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Equipment Configuration	VAV Reheat Terminal Unit	Test Step Purpose	Occupied Cooling & Cooling SAT Reset Requets	Initialization	Occupied Setpoints
Sequences Under Test	Guideline 36-2021	SOO Reference	5.6.5.1	N/A	N/A
Test Definition Package Version	DRAFT 20				
Test Script Revision Date	March 3, 2026				
		Intervention	• Set zone temperature to mid-deadband if not there already • Record results when cooling loop is fully unwound.	• Zone airflow is set above airflow setpoint to drive damper fully. closed, to prepare for the test.	• Zone airflow is set above airflow setpoint to drive damper fully. closed, to prepare for the test.
		Expected Response	• Cooling loop output continues decreasing to zero. • Airflow setpoint continues decreasing from the cooling maximum to the cooling minimum.	• No expectations. Allow time for controller to initialize.	• Zone setpoints are Occupied setpoints. • Zone damper is closed.
Control Point Description	Control Point Name	Test Block	A	B	B
BACnet Inputs	TestInputs	Test Step	19	1	2
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=MULT(Vspt; 1.5)	=MULT(Vspt; 1.5)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:30:00	0:05:00
Variable Name	VariableName		Vspt		VAVDmprCmd
Variable Value	VariableValue		CoolMinAir		0
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	=ANY	0
Heating Loop Output	ZoneHeatLoop	5	0	=ANY	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=ANY	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=ANY	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=ANY	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=ANY	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=ANY	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=ANY	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=ANY	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=ANY	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=ANY	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=ANY	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	0
Reheat Command	RhCommand	0.5	0	=ANY	0
Cooling SAT Reset Requests	CoolSATReq	0	0	=ANY	0
Static Pressure Reset Requests	StatPresReq	0	0	=ANY	0
Hot Water Reset Requests	HWSTReq	0	0	=ANY	0
Hot Water Plant Requests	HWPlantReq	0	0	=ANY	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	=ANY	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	=ANY	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	=ANY	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	=ANY	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	=ANY	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	=ANY	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	=ANY	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Airflow Sensor Calibration Alarm, Leaking Valve Alarm	Airflow Sensor Calibration Alarm, Leaking Valve Alarm	Airflow Sensor Calibration Alarm
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.6.3, 5.6.6.5	5.6.6.3, 5.6.6.5	5.6.6.3
Test Script Revision Date	March 3, 2026	Intervention	• Set zone to Unoccupied, to make airflow setpoint 0. • Set zone airflow feedback to 55 CFM to stimulate calibration alarm. • Set zone DAT to 60F to stimulate leaking valve alarm. • Record controller outputs after 12 minutes.	• Maintain conditions. • Record controller outputs after additional 4 minutes	• Set AHU fan to off. • Restore zone DAT to 55F. • Maintain other conditions. • Record controller outputs after additional 15 minutes.
		Expected Response	• Damper stays closed. • Reheat valve stays closed. • No alarms because timers have not elapsed. • Vmin* and all Airflow Endpoints are zero due to Unoccupied Mode.	• Damper stays closed. • Reheat valve stays closed. • Leaking valve alarm is triggered when timer expires. • No airflow sensor calibration alarm because 30 minute timer has not elapsed.	• Leaking valve alarm clears. • Airflow sensor calibration alarm is triggered when timer expires.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	3	4	5
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		55	55	55
Zone Discharge Air Temperature	ZoneDAT		60	60	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	OFF
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		UNOCCUPIED	UNOCCUPIED	UNOCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:12:00	0:04:00	0:15:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=UnoccHeatSp	=UnoccHeatSp	=UnoccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=UnoccCoolSp	=UnoccCoolSp	=UnoccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	0	0	0
Cooling Minimum Airflow Endpoint	CoolMinAir	5	0	0	0
Deadband Minimum Airflow Endpoint	DbMinAir	5	0	0	0
Heating Minimum Airflow Endpoint	HeatMinAir	5	0	0	0
Heating Maximum Airflow Endpoint	HeatMaxAir	5	0	0	0
Occupied Minimum Airflow (vmin*)	Vmin*	5	0	0	0
Zone Active Airflow Setpoint (Vspt)	Vspt	5	0	0	0
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	0	0	0
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	1
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	1	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Leaking Damper Alarm	Leaking Damper Alarm	Leaking Damper Alarm
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.6.4	5.6.6.4	5.6.6.4
Test Script Revision Date	March 3, 2026	Intervention	• Turn on AHU fan. • Record controller outputs after 8 minutes.	• Maintain conditions. • Record controller outputs after additional 3 minutes.	• Set zone to Occupied. • RAMP zone airflow feedback from 50 CFM to setpoint over 2 minutes, allowing damper to open somewhat but not too much. • Record controller outputs after 4 minutes or when damper is partly open.
		Expected Response	• Airflow sensor calibration alarm clears due to fan start. • Leaking damper alarm is not triggered because 10 minute timer has not elapsed.	• Leaking damper alarm is triggered when timer expires.	• Leaking damper alarm is cleared by damper opening. • Vmin* and all Airflow Endpoints return to default Occupied values due to Mode change.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	6	7	8
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		55	55	=RAMP(50; Vspt; 120)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		UNOCCUPIED	UNOCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:08:00	0:03:00	0:04:00
Variable Name	VariableName				VAVDmprCmd
Variable Value	VariableValue				>=20
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=UnoccHeatSp	=UnoccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=UnoccCoolSp	=UnoccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	0	0	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	0	0	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	0	0	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	0	0	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	0	0	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	0	0	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	0	0	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	0	0	>LAST
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	1	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Damper Modulation	Damper Modulation & Static Pressure Reset Request	Static Pressure Reset Request & Low Airflow Alarm
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.5	5.6.5.5, 5.6.8.2	5.6.8.2, 5.6.6.1
Test Script Revision Date	March 3, 2026	Intervention	• Reset zone airflow to 10 below setpoint, to drive open damper • Record controller outputs when damper is 85% open or when timer expires.	• Continue to drive damper open • Record controller outputs when damper is 96 open.	• Reset zone airflow to 35 below setpoint • Continue to drive damper open • Record controller outputs after 30 seconds
		Expected Response	• Damper continues to open. • No pressure reset requests because damper is less than 95% open.	• Damper opens more than 95. • One pressure reset request generated based on damper position.	• Damper continues to open, until maximum. • No additional pressure reset requests because 1 minute timer has not expired.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	9	10	11
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=MULT(Vspt; 0.9)	=MULT(Vspt; 0.9)	=MULT(Vspt; 0.65)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:10:00	0:00:30
Variable Name	VariableName		VAVDmprCmd	VAVDmprCmd	
Variable Value	VariableValue		>=85	>=96	
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=Vmin*	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	>LAST	>=95	>LAST
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	1	1
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Static Pressure Reset Request & Low Airflow Alarm	Static Pressure Reset Request & Low Airflow Alarm	Static Pressure Reset Request & Low Airflow Alarm
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.2, 5.6.6.1	5.6.8.2, 5.6.6.1	5.6.8.2, 5.6.6.1
Test Script Revision Date	March 3, 2026	Intervention	• Maintain conditions. • Record controller outputs after 1 minute.	• Maintain conditions. • Record controller outputs after 10 minutes.	• Set Static Pressure Reset Request importance to 3. • Record controller outputs after 10 minutes.
		Expected Response	• Damper continues to open, until maximum. • One additional pressure reset requests because 1 minute timer has expired. • No low airflow alarm because 10 minute timer has not expired.	• Damper continues to open, until maximum. • No additional pressure requests. • Level 4 low airflow alarm triggers because 10 minute timer has expired.	• Damper continues to open, until maximum. • 6 pressure requests due to importance multiplier. • Level 4 low airflow alarm.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	12	13	14
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=MULT(Vspt; 0.65)	=MULT(Vspt; 0.65)	=MULT(Vspt; 0.65)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	3
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:10:00	0:10:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=Vmin*	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	>LAST	>LAST	>LAST
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	2	2	6
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	1	1
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Static Pressure Reset Request & Low Airflow Alarm	Static Pressure Reset Request & Low Airflow Alarm	Static Pressure Reset Request & Low Airflow Alarm
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.2, 5.6.6.1	5.6.8.2, 5.6.6.1	5.6.8.2, 5.6.6.1
Test Script Revision Date	March 3, 2026	Intervention	• Reset zone airflow to 55 below setpoint • Set Static Pressure Reset Request importance to 1. • Record controller outputs after 30 seconds	• Maintain conditions. • Record controller outputs after 1 minute.	• Maintain conditions. • Record controller outputs after 10 minutes.
		Expected Response	• No additional pressure reset requests because 1 minute timer has not expired.	• One additional pressure reset requests because 1 minute timer has expired. • No new low airflow alarm because 10 minute timer has not expired.	• Pressure reset requests remain unchanged. • Level 3 low airflow alarm triggers because 10 minute timer has expired.
Control Point Description	Control Point Name	Test Block	B	B	B
BACnet Inputs	TestInputs	Test Step	15	16	17
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=MULT(Vspt; 0.45)	=MULT(Vspt; 0.45)	=MULT(Vspt; 0.45)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:00:30	0:01:00	0:10:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=Vmin*	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	>LAST	>LAST	>LAST
Reheat Command	RhCommand	0.5	0	0	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	2	3	3
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	1	1	1
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	1
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms	Heating Airflow Setpoint	Heating Airflow Setpoint
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Importance Factor Test	Initialization	Initialization
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.8.2, 5.6.6.1	N/A	N/A
Test Script Revision Date	March 3, 2026				
		Intervention	• Maintain conditions. • Set zone importance factor to 0. • Record controller outputs.	• Initialize inputs to the values below. • Zone airflow is overridden above airflow setpoint to drive damper closed, to ensure there are no static pressure requests.	• No change
		Expected Response	• All pressure reset requests and low airflow alarms are suppressed by zero importance factor.	• No expectations. Allow time for controller to initialize.	• Zone setpoints are Occupied setpoints. • Damper is less than half open.
Control Point Description	Control Point Name	Test Block	B	C	C
BACnet Inputs	TestInputs	Test Step	18	1	2
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=MULT(Vspt; 0.45)	=MULT(Vspt; 1.5)	=MULT(Vspt; 1.5)
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		0	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:00:10	0:30:00	0:05:00
Variable Name	VariableName				VAVDmprCmd
Variable Value	VariableValue				<=40
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	=ANY	0
Heating Loop Output	ZoneHeatLoop	5	0	=ANY	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=ANY	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=ANY	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=ANY	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=ANY	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=ANY	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=ANY	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=ANY	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=ANY	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=ANY	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=ANY	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	>LAST	=ANY	<=50
Reheat Command	RhCommand	0.5	0	=ANY	0
Cooling SAT Reset Requests	CoolSATReq	0	0	=ANY	0
Static Pressure Reset Requests	StatPresReq	0	0	=ANY	0
Hot Water Reset Requests	HWSTReq	0	0	=ANY	0
Hot Water Plant Requests	HWPlantReq	0	0	=ANY	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	=ANY	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	=ANY	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	=ANY	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	=ANY	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	=ANY	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	=ANY	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	=ANY	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Heating Airflow Setpoint	Heating Airflow Setpoint	Heating Airflow Setpoint
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Deadband	Occupied Heating	Occupied Heating
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.2	5.6.5.3	5.6.5.3
Test Script Revision Date	March 3, 2026	Intervention	• Zone airflow is equal to airflow setpoint to allow the damper position to stabilize • Record controller outputs with zone in deadband	• Set the zone temperature feedback to 0.5°F below the occupied heating setpoint. • Set the airflow feedback to dynamically reset to equal the setpoint so that damper does not move. • Set the discharge air temperature feedback to dynamically reset to equal the zone temperature - too low for heating. • Record controller outputs when heating PID loop output reaches 25.	• Maintain conditions and record controller outputs when heating PID loop output reaches 50
		Expected Response	• Damper stops moving • Airflow setpoint is at active minimum because zone temperature is in deadband	• Heating loop output begins increasing. • Airflow setpoint increases to heating minimum then stop increasing. • DAT setpoint increases, potentially up to 50 (but at least 25) of the way the to max DAT. • Ignore HW valve position and heating plant/reset requests. HW valve is wild due to manipulation of zone DAT.	• Heating loop output reaches 50. • Airflow setpoint remains at heating minimum. • DAT setpoint increases to maximum.
Control Point Description	Control Point Name	Test Block	C	C	C
BACnet Inputs	TestInputs	Test Step	3	4	5
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=PERIODIC(Vspt)	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	=PERIODIC(ZoneTemp)	=PERIODIC(ZoneTemp)
Zone Temperature	ZoneTemp		72	=SUB(OccHeatSp;0.5)	=SUB(OccHeatSp;0.5)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:30:00	0:30:00
Variable Name	VariableName			ZoneHeatLoop	ZoneHeatLoop
Variable Value	VariableValue			>=25	>=50
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	>=25	>=50
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=HeatMinAir	=HeatMinAir
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=ADD(OccHeatSp; MaxDeltaT)
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	0	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	=ANY	=ANY
Hot Water Plant Requests	HWPlantReq	0	0	=ANY	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Heating Airflow Setpoint	Heating Airflow Setpoint	Heating Airflow Setpoint
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Heating	Occupied Heating	Occupied Heating
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3	5.6.5.3	5.6.5.3
Test Script Revision Date	March 3, 2026	Intervention	• Maintain conditions and record controller outputs when heating PID loop output reaches 65.	• Set the discharge air temperature feedback to the DAT setpoint, to allow heating. • Maintain conditions and record controller outputs when heating PID loop output reaches 75.	• Maintain conditions and record controller outputs when heating PID loop output reaches 100.
		Expected Response	• Heating loop output continues increasing. • Airflow setpoint remains at heating minimum due to low DAT. • DAT setpoint remains at maximum.	• Heating loop output continues increasing. • Airflow setpoint increases, potentially up to 50 (but at least 25) of the way to heating maximum. • DAT setpoint remains at maximum.	• Heating loop output reaches 100. • Airflow setpoint increases to heating maximum. • DAT setpoint remains at maximum.
Control Point Description	Control Point Name	Test Block	C	C	C
BACnet Inputs	TestInputs	Test Step	6	7	8
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=PERIODIC(ZoneTemp)	=DATSp	=DATSp
Zone Temperature	ZoneTemp		=SUB(OccHeatSp;0.5)	=SUB(OccHeatSp;0.5)	=SUB(OccHeatSp;0.5)
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:30:00	0:30:00
Variable Name	VariableName		ZoneHeatLoop	ZoneHeatLoop	ZoneHeatLoop
Variable Value	VariableValue		>=65	>=75	100
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=65	>=75	100
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=HeatMinAir	=INTERPOLATE(ZoneHeatLoop; 50; 100; HeatMinAir; HeatMaxAir; HeatMinAir; HeatMaxAir)	=HeatMaxAir
Discharge Air Temperature Setpoint	DATSp	0.5	=ADD(OccHeatSp; MaxDeltaT)	=ADD(OccHeatSp; MaxDeltaT)	=ADD(OccHeatSp; MaxDeltaT)
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	=ANY	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	=ANY	=ANY	=ANY
Hot Water Plant Requests	HWPlantReq	0	=ANY	=ANY	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Heating Airflow Setpoint	Heating Airflow Setpoint	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Heating	Occupied Heating	Initialization
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3	5.6.5.3	N/A
Test Script Revision Date	March 3, 2026	Intervention	• =RAMP zone temperature from 0.5°F below the occupied heating setpoint to the deadband over a span of 5 minutes. • Record controller outputs when heating loop output decays to 50.	• Continue zone temperature =RAMP from previous step. • Record controller outputs when heating loop output decays to 0	• Initialize inputs to the values below. • Zone airflow is overridden above airflow setpoint to drive damper closed, to ensure there are no static pressure requests.
		Expected Response	• Heating loop output reaches 50. • Airflow setpoint decreases to heating minimum. • DAT setpoint may decrease but remains near maximum. • Heating plant/reset requests should be zero, but HW valve position remains unknown.	• Heating loop output reaches 0. • Airflow setpoint decreases to cooling minimum. • DAT setpoint decreases to minimum.	• No expectations. Allow time for controller to initialize.
Control Point Description	Control Point Name	Test Block	C	C	D
BACnet Inputs	TestInputs	Test Step	9	10	1
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=Vspt	=MULT(Vspt; 1.5)
Zone Discharge Air Temperature	ZoneDAT		=PERIODIC(DATSp)	=PERIODIC(DATSp)	55
Zone Temperature	ZoneTemp		=RAMP(LAST; 72; 300)	=RAMP(LAST; 72; 300)	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:30:00	0:30:00
Variable Name	VariableName		ZoneHeatLoop	ZoneHeatLoop	
Variable Value	VariableValue		<=50	0	
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	=ANY
Heating Loop Output	ZoneHeatLoop	5	<=50	0	=ANY
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=ANY
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=ANY
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=ANY
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=ANY
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=ANY
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=ANY
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=HeatMinAir	=Vmin*	=ANY
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=AHUSATSp	=ANY
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=ANY
Reheat Command	RhCommand	0.5	=ANY	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	0	0	=ANY
Static Pressure Reset Requests	StatPresReq	0	0	0	=ANY
Hot Water Reset Requests	HWSTReq	0	0	0	=ANY
Hot Water Plant Requests	HWPlantReq	0	0	0	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	=ANY
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	=ANY
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	=ANY
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	=ANY
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	=ANY
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	=ANY
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	=ANY

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Minimum DAT in Occupied Deadband	Minimum DAT in Occupied Deadband
Test Definition Package Version	DRAFT 20	SOO Reference	N/A	5.6.5.4	5.6.5.2
Test Script Revision Date	March 3, 2026	Intervention	• No change	• Zone airflow is equal to airflow setpoint to allow the damper position to stabilize. • Override discharge air temperature to 45°F to trigger reheat valve for minimum DAT control. • Record controller outputs when reheat valve starts to open or timer expires.	• Override discharge air temperature to 51°F to release minimum DAT control. • Record controller outputs when reheat valve closes or timer expires.
		Expected Response	• Zone setpoints are Occupied setpoints. • Damper is less than half open.	• Damper stops moving. • Airflow setpoint is at active minimum because zone temperature is in deadband. • Reheat valve opens to maintain minimum DAT.	• Reheat valve closes because discharge air temperature is above 50°F minmum even though it is below DAT setpoint.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	2	3	4
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=MULT(Vspt; 1.5)	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	45	51
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:05:00	0:05:00	0:10:00
Variable Name	VariableName		VAVDmprCmd	RhCommand	RhCommand
Variable Value	VariableValue		<=40	>=20	0
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	=Vmin*	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	<=50	=LAST	=LAST
Reheat Command	RhCommand	0.5	0	>=10	0
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	0
Hot Water Plant Requests	HWPlantReq	0	0	0	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Heating Valve Modulation	Heating Valve Modulation	Heating Valve Modulation
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4
Test Script Revision Date	March 3, 2026	Intervention	• =RAMP the zone temperature feedback to 2°F below the occupied heating setpoint over a span of 10 minutes to trigger heating. • Set the airflow feedback to dynamically reset to equal the setpoint so that damper does not move. • Set the discharge air temperature feedback to 5°F less than the setpoint to drive open reheat valve. • Record controller outputs when reheat valve is 94 open.	• =RAMP zone temperature to just below heating setpoint over a span of 3 minutes, to stablize non-zero heating loop signal. • Maintain discharge air temperature feedback at 5°F less than the setpoint to drive open reheat valve. • Record controller outputs when reheat valve is 85% open.	• Maintain zone temperature slightly below heating setpoint. • Maintain discharge air temperature feedback at 5°F less than the setpoint to drive open reheat valve. • Record controller outputs when reheat valve is 96% open.
		Expected Response	• Heating loop output begins increasing. • DAT setpoint increases. • Airflow setpoint goes to heating minimum. • Reheat valve opens. • No HHW request. • No heating plant request.	• Heating loop output mostly stabilizes. • DAT setpoint increases. • Airflow setpoint may increase but probably not. • Reheat valve continues to open. • No HHW request. • No heating plant request.	• Heating loop output mostly stabilizes. • DAT setpoint stabilizes. • Airflow setpoint may increase but probably not. • Reheat valve continues to open. • 1 HHW request. • 1 heating plant request.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	5	6	7
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=SUB(DATSp; 5)	=SUB(DATSp; 5)	=SUB(DATSp; 5)
Zone Temperature	ZoneTemp		=RAMP(LAST; 68; 600)	=RAMP(LAST;69.5;180)	69.5
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:30:00	0:10:00
Variable Name	VariableName		ZoneHeatLoop	RhCommand	RhCommand
Variable Value	VariableValue		>=20	>=85	>=96
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=20	>LAST	>=LAST
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=HeatMinAir	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	>=LAST	>=94	>=96
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	0	1
Hot Water Plant Requests	HWPlantReq	0	0	0	1
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Heating Valve Modulation	Heating Valve Modulation	Heating Valve Modulation
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4
Test Script Revision Date	March 3, 2026	Intervention	• Maintain zone temperature slightly below heating setpoint. • Reduce discharge air temperature feedback to 16°F beow setpoint. • Record controller outputs after 4 minutes.	• Maintain conditions. • Record controller outputs after 2 minutes.	• Maintain conditions. • Record controller outputs after 5 minutes.
		Expected Response	• DAT setpoint remains elevated. • Reheat valve opens to maximum. • 1 HHW request. No additional requests because 5 minute timer has not expired. • 1 heating plant request.	• DAT setpoint remains elevated. • Reheat valve opens to maximum. • 2 HHW requests. • 1 heating plant request. • No low DAT alarm because 10 minute timer has not expired.	• DAT setpoint remains elevated. • Reheat valve opens to maximum. • 2 HHW requests. • 1 heating plant request. • Level 4 Low DAT alarm.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	8	9	10
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=SUB(DATSp; 16)	=SUB(DATSp; 16)	=SUB(DATSp; 16)
Zone Temperature	ZoneTemp		69.5	69.5	69.5
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:04:00	0:02:00	0:05:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=LAST	>=LAST	>=LAST
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	>=96	>=96	>=96
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	1	2	2
Hot Water Plant Requests	HWPlantReq	0	1	1	1
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	1
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Heating Valve Modulation	Heating Valve Modulation	Heating Valve Modulation
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4
Test Script Revision Date	March 3, 2026	Intervention	• Reduce discharge air temperature feedback to 31°F beow setpoint. • Record controller outputs after 4 minutes.	• Maintain conditions. • Record controller outputs after 2 minutes.	• Set Heating Reset and Heating Plant Request Importances to 2. • Record controller outputs after 5 minutes.
		Expected Response	• Reheat valve opens to maximum. • 2 HHW requests. No additional requests because 5 minute timer has not expired. • 1 heating plant request. • Level 4 Low DAT alarm.	• Reheat valve opens to maximum. • 3 HHW requests. • 1 heating plant request. • Level 4 Low DAT alarm. No additional alarms because 10 minute timer has not expired.	• Reheat valve opens to maximum. • 6 HHW requests due to multiplier. • 2 heating plant request due to multiplier. • Level 4 Low DAT alarm. • Level 3 Low DAT alarm.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	11	12	13
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=SUB(DATSp; 31)	=SUB(DATSp; 31)	=SUB(DATSp; 31)
Zone Temperature	ZoneTemp		69.5	69.5	69.5
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	2
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	2
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:04:00	0:02:00	0:05:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=LAST	>=LAST	>=LAST
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	>=96	>=96	>=96
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	2	3	6
Hot Water Plant Requests	HWPlantReq	0	1	1	2
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	1	1	1
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	1
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Heating Valve Modulation	Heating Valve Modulation	Heating Valve Modulation
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4
Test Script Revision Date	March 3, 2026	Intervention	• Set Heating Reset and Heating Plant Request Importances to 0.	• Set Heating Reset and Heating Plant Request Importances to 1.	• Increase discharge air temperature feedback to 29°F beow setpoint. • Record controller outputs after 1 minute.
		Expected Response	• Reheat valve opens to maximum. • 0 HHW requests or heating plant requests, due to multiplier. • Low DAT alarms suppressed by 0 Importance Factor.	• Reheat valve opens to maximum. • 3 HHW requests. • 1 heating plant request. • Level 4 Low DAT alarm. • Level 3 Low DAT alarm.	• Reheat valve opens to maximum. • 2 HHW requests. 1 request clears due to increased DAT. • 1 heating plant request. • Level 4 Low DAT alarm. Level 3 alarm clears due to increased DAT.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	14	15	16
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=SUB(DATSp; 31)	=SUB(DATSp; 31)	=SUB(DATSp; 29)
Zone Temperature	ZoneTemp		69.5	69.5	69.5
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		0	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		0	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:00:30	0:00:30	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=LAST	>=LAST	>=LAST
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	>=LAST	>=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	>=96	>=96	>=96
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	0	3	2
Hot Water Plant Requests	HWPlantReq	0	0	1	1
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	1	1
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	1	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm	Reheat Valve Control, Heating Hot Water Reset Request, & Low DAT Alarm
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Heating Valve Modulation	Heating Valve Modulation	Heating Valve Modulation
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4	5.6.5.3, 5.6.8.3, 5.6.8.4
Test Script Revision Date	March 3, 2026	Intervention	• Increase discharge air temperature feedback to 5°F beow setpoint. • Record controller outputs after 1 minute.	• =RAMP zone temperature to deadband over a span of 10 minutes to allow heating loop to relax. • Set discharge air temperature to 5°F above setpoint to drive reheat valve closed. • Record controller outputs after valve is less than 85 open.	• Maintain conditions. • Record controller outputs after valve is less than 10 open.
		Expected Response	• Reheat valve opens to maximum. • 1 HHW requests. 1 request clears due to increased DAT. • 1 heating plant request. • Level 4 DAT alarm clears due to increased DAT.	• Heating loop value decreases. • Airflow setpoint decreases if elevated. • DAT setpoint decreases. • Reheat valve starts to close. • Final HHW request clears due to valve position. • 1 heating plant request.	• Airflow setpoint decreases if elevated. • DAT setpoint decreases. • Reheat valve continues to close. • Heating plant request clears due to valve position.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	17	18	19
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=PERIODIC(Vspt)	=PERIODIC(Vspt)	=PERIODIC(Vspt)
Zone Discharge Air Temperature	ZoneDAT		=SUB(DATSp; 14)	=ADD(DATSp; 5)	=ADD(DATSp; 5)
Zone Temperature	ZoneTemp		69.5	=RAMP(LAST; 72; 600)	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:30:00	0:30:00
Variable Name	VariableName			RhCommand	RhCommand
Variable Value	VariableValue			<=84	<=9
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	>=LAST	<=LAST	<=LAST
Active Heating Setpoint	ZoneActHeatSp	0.1	=OccHeatSp	=OccHeatSp	=OccHeatSp
Active Cooling Setpoint	ZoneActCoolSp	0.1	=OccCoolSp	=OccCoolSp	=OccCoolSp
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	=Vmin*	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	=Vmin*	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	=Vmin	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	>=LAST	<=LAST	<=LAST
Discharge Air Temperature Setpoint	DATSp	0.5	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))	=INTERPOLATE(ZoneHeatLoop; 0; 50; AHUSATSp; ADD(OccHeatSp; MaxDeltaT); AHUSATSp; ADD(OccHeatSp; MaxDeltaT))
VAV Box Damper Command	VAVDmprCmd	0.5	=LAST	=LAST	=LAST
Reheat Command	RhCommand	0.5	>=96	<=84	<=9
Cooling SAT Reset Requests	CoolSATReq	0	0	0	0
Static Pressure Reset Requests	StatPresReq	0	0	0	0
Hot Water Reset Requests	HWSTReq	0	1	0	0
Hot Water Plant Requests	HWPlantReq	0	1	1	0
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Zone Mode	Zone Mode	Zone Mode
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Occupied Mode Airflow Endpoints and Setpoint	Warmup Mode Airflow Endpoints and Setpoint
Test Definition Package Version	DRAFT 20	SOO Reference	N/A	5.6.4, 5.4.6.1	5.6.4, 5.4.6.2
Test Script Revision Date	March 3, 2026	Intervention	• Initialize inputs to the values below. • Zone starts in Occupied Mode.	• Record controller outputs with zone in deadband	• Set Zone Mode to Warmup.
		Expected Response	• No expectations. Allow time for controller to initialize.	• Zone airflow endpoints are default Occupied values.	• Zone airflow endpoints are Warmup values.
Control Point Description	Control Point Name	Test Block	E	E	E
BACnet Inputs	TestInputs	Test Step	1	2	3
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	OCCUPIED	WARMUP
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	=ANY	0	0
Heating Loop Output	ZoneHeatLoop	5	=ANY	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY	=ANY	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY	=ANY	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=ANY	=VCoolMax	0
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=ANY	=Vmin*	0
Deadband Minimum Airflow Endpoint	DbMinAir	5	=ANY	=Vmin*	0
Heating Minimum Airflow Endpoint	HeatMinAir	5	=ANY	=VHeatMin	=VHeatMax
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=ANY	=VHeatMax	=VCoolMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=ANY	=Vmin	0
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=ANY	=Vmin*	0
Discharge Air Temperature Setpoint	DATSp	0.5	=ANY	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	=ANY	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	=ANY	=ANY	=ANY
Static Pressure Reset Requests	StatPresReq	0	=ANY	=ANY	=ANY
Hot Water Reset Requests	HWSTReq	0	=ANY	=ANY	=ANY
Hot Water Plant Requests	HWPlantReq	0	=ANY	=ANY	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	=ANY	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	=ANY	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	=ANY	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	=ANY	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	=ANY	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	=ANY	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	=ANY	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Zone Mode	Zone Mode	Zone Mode
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Mode Airflow Endpoints and Setpoint	Cooldown Mode Airflow Endpoints and Setpoint	Occupied Mode Airflow Endpoints and Setpoint
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.4, 5.4.6.1	5.6.4, 5.4.6.2	5.6.4, 5.4.6.1
Test Script Revision Date	March 3, 2026				
		Intervention	• Set Zone Mode to Occupied.	• Set Zone Mode to Cooldown.	• Set Zone Mode to Occupied.
		Expected Response	• Zone airflow endpoints are default Occupied values.	• Zone airflow endpoints are Cooldown values.	• Zone airflow endpoints are default Occupied values.
Control Point Description	Control Point Name	Test Block	E	E	E
BACnet Inputs	TestInputs	Test Step	4	5	6
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		OCCUPIED	COOLDOWN	OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY	=ANY	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY	=ANY	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*	0	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*	0	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin	=VHeatMin	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax	=VHeatMax	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin	0	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*	0	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	=ANY	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	=ANY	=ANY	=ANY
Static Pressure Reset Requests	StatPresReq	0	=ANY	=ANY	=ANY
Hot Water Reset Requests	HWSTReq	0	=ANY	=ANY	=ANY
Hot Water Plant Requests	HWPlantReq	0	=ANY	=ANY	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Zone Mode	Zone Mode	Zone Mode
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Setback Mode Airflow Endpoints and Setpoint	Occupied Mode Airflow Endpoints and Setpoint	Setup Mode Airflow Endpoints and Setpoint
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.4, 5.4.6.2	5.6.4, 5.4.6.1	5.6.4, 5.4.6.2
Test Script Revision Date	March 3, 2026				
		Intervention	• Set Zone Mode to Setback.	• Set Zone Mode to Occupied.	• Set Zone Mode to Setup.
		Expected Response	• Zone airflow endpoints are Setback values.	• Zone airflow endpoints are default Occupied values.	• Zone airflow endpoints are Setup values.
Control Point Description	Control Point Name	Test Block	E	E	E
BACnet Inputs	TestInputs	Test Step	7	8	9
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70	70	70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75	75	75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60	60	60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90	90	90
Zone CO2 Limit	ZoneCO2Limit		1000	1000	1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500	500	500
Zone Minimum Airflow (Vmin)	Vmin		100	100	100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200	200	200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120	120	120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20	20	20
VAV Box Controllable Minimum (Vm)	Vm		40	40	40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt	=Vspt	=Vspt
Zone Discharge Air Temperature	ZoneDAT		55	55	55
Zone Temperature	ZoneTemp		72	72	72
Zone CO2 Level	ZoneCO2		400	400	400
Occupancy Sensor	ZoneOccSensor		PRESENT	PRESENT	PRESENT
Window Switch	ZoneWinSwitch		CLOSED	CLOSED	CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1	1	1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1	1	1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1	1	1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1	1	1
AHU Supply Fan Status	AHUSupFanStatus		ON	ON	ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55	55	55
AHU Supply Air Temperature	AHUSAT		55	55	55
Hot Water Plant Status	HWPlantStatus		ON	ON	ON
Zone Group Mode	ZoneGrpMode		SETBACK	OCCUPIED	SETUP
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
Cooling Loop Output	ZoneCoolLoop	5	0	0	0
Heating Loop Output	ZoneHeatLoop	5	0	0	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY	=ANY	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY	=ANY	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	0	=VCoolMax	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	0	=Vmin*	0
Deadband Minimum Airflow Endpoint	DbMinAir	5	0	=Vmin*	0
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMax	=VHeatMin	0
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VCoolMax	=VHeatMax	0
Occupied Minimum Airflow (vmin*)	Vmin*	5	0	=Vmin	0
Zone Active Airflow Setpoint (Vspt)	Vspt	5	0	=Vmin*	0
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp	=AHUSATSp	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY	=ANY	=ANY
Reheat Command	RhCommand	0.5	=ANY	=ANY	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	=ANY	=ANY	=ANY
Static Pressure Reset Requests	StatPresReq	0	=ANY	=ANY	=ANY
Hot Water Reset Requests	HWSTReq	0	=ANY	=ANY	=ANY
Hot Water Plant Requests	HWPlantReq	0	=ANY	=ANY	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0	0	0

Equipment Configuration	VAV Reheat Terminal Unit	Test Block Description	Zone Mode
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Occupied Mode Airflow Endpoints and Setpoint
Test Definition Package Version	DRAFT 20	SOO Reference	5.6.4, 5.4.6.1
Test Script Revision Date	March 3, 2026		
		Intervention	• Set Zone Mode to Occupied.
		Expected Response	• Zone airflow endpoints are default Occupied values.

Control Point Description	Control Point Name	Test Block	E
BACnet Inputs	TestInputs	Test Step	10
Zone Temperature Setpoint, Occupied Heating	OccHeatSp		70
Zone Temperature Setpoint, Occupied Cooling	OccCoolSp		75
Zone Temperature Setpoint, Unoccupied Heating	UnoccHeatSp		60
Zone Temperature Setpoint, Unoccupied Cooling	UnoccCoolSp		90
Zone CO2 Limit	ZoneCO2Limit		1000
Zone Maximum Cooling Airflow (Vcool-max)	VCoolMax		500
Zone Minimum Airflow (Vmin)	Vmin		100
Zone Maximum Heating Airflow (Vheat-max)	VHeatMax		200
Zone Minimum Heating Airflow (Vheat-min)	VHeatMin		120
Zone Maximum DAT Above Heating (MaxΔT)	MaxDeltaT		20
VAV Box Controllable Minimum (Vm)	Vm		40
Zone Discharge Airflow	ZoneSupAirflow		=Vspt
Zone Discharge Air Temperature	ZoneDAT		55
Zone Temperature	ZoneTemp		72
Zone CO2 Level	ZoneCO2		400
Occupancy Sensor	ZoneOccSensor		PRESENT
Window Switch	ZoneWinSwitch		CLOSED
Cooling SAT Reset Requests Importance Multiplier	IM_CoolSAT		1
Static Pressure Reset Requests Importance Multiplier	IM_DSP		1
Hot Water Supply Temperature Reset Requests Importance Multiplier	IM_HWST		1
Hot Water Plant Requests Importance Multiplier	IM_HWP		1
AHU Supply Fan Status	AHUSupFanStatus		ON
AHU Supply Air Temperature Setpoint	AHUSATSp		55
AHU Supply Air Temperature	AHUSAT		55
Hot Water Plant Status	HWPlantStatus		ON
Zone Group Mode	ZoneGrpMode		OCCUPIED
Conditions for Evaluation of Test Step	EvaluationConditions		
Clock Time	ClockTime		0:01:00
Variable Name	VariableName		
Variable Value	VariableValue		
BACnet Expected Outputs	TestOutputs	OutputTolerance	
Cooling Loop Output	ZoneCoolLoop	5	0
Heating Loop Output	ZoneHeatLoop	5	0
Active Heating Setpoint	ZoneActHeatSp	0.1	=ANY
Active Cooling Setpoint	ZoneActCoolSp	0.1	=ANY
Cooling Maximum Airflow Endpoint	CoolMaxAir	5	=VCoolMax
Cooling Minimum Airflow Endpoint	CoolMinAir	5	=Vmin*
Deadband Minimum Airflow Endpoint	DbMinAir	5	=Vmin*
Heating Minimum Airflow Endpoint	HeatMinAir	5	=VHeatMin
Heating Maximum Airflow Endpoint	HeatMaxAir	5	=VHeatMax
Occupied Minimum Airflow (vmin*)	Vmin*	5	=Vmin
Zone Active Airflow Setpoint (Vspt)	Vspt	5	=Vmin*
Discharge Air Temperature Setpoint	DATSp	0.5	=AHUSATSp
VAV Box Damper Command	VAVDmprCmd	0.5	=ANY
Reheat Command	RhCommand	0.5	=ANY
Cooling SAT Reset Requests	CoolSATReq	0	=ANY
Static Pressure Reset Requests	StatPresReq	0	=ANY
Hot Water Reset Requests	HWSTReq	0	=ANY
Hot Water Plant Requests	HWPlantReq	0	=ANY
Zone Low Airflow Alarm, Level 4	LowAirflow4	0	0
Zone Low Airflow Alarm, Level 3	LowAirflow3	0	0
VAV Low Discharge Air Temperature Alarm, Level 4	LowDAT4	0	0
VAV Low Discharge Air Temperature Alarm, Level 3	LowDAT3	0	0
VAV Airflow Sensor Calibration, Level 3	AirflowSensCal3	0	0
VAV Leaking Damper Alarm, Level 4	LeakDmpr4	0	0
VAV Leaking Valve Alarm, Level 4	LeakVlv4	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	AHU System Mode Tests	AHU System Mode Tests	AHU System Mode Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	Fan Start and SAT setpoint	Test Fan Start and SAT setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	N/A	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d
Test Script Revision Date	March 3, 2026	Intervention	• This test assumes AHU is configured to serve perimeter VAV boxes. • Initialize inputs to the values below. • Test starts with system in Unoccupied Mode.	• No change. AHU is in Unoccupied Mode	• Set AHU to SETUP Mode
		Expected Response	• No expectations. Wait 5 minutes to allow controller to initialize.	• Fan remains off (S/S point is OFF). • SAT setpoint and DSP setpoint are null or undefined. • Outdoor air damper is shut due to system Mode.	• Supply fan starts. • SAT setpoint is 65°F (Max_ClgSAT) because fan has been on for less than Td minutes. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes. • Outdoor air damper opens for cooling because AHU_SAT > 65°F (Max_ClgSAT) and OAT is below lockout.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	1	2	3
AHU Supply Fan Status	AHU_SFstatus		OFF	OFF	ON
Supply Air Temperature	AHU_SAT		70	70	70
Return Air Temperature	AHU_RAT		70	70	70
Mixed Air Temperature	AHU_MAT		70	70	70
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		0.00	0.00	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.00	0.00	0.25
AHU System Mode	AHUMode		UNOCCUPIED	UNOCCUPIED	SETUP
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:05:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	=ANY	OFF	ON
Supply Fan Speed	SF_Speed	5	=ANY	0	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	0.5
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	65
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	0	>0
Supply Fan Alarm, Level 4	SupFanAl4	N/A	=ANY	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	=ANY	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	=ANY	0	0
High Building Pressure Alarm	HighBpAl	N/A	=ANY	0	0
Low Building Pressure Alarm	LowBpAl	N/A	=ANY	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	AHU System Mode Tests	AHU System Mode Tests	AHU System Mode Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Test Fan Start and SAT setpoint	Test Fan Start and SAT setpoint	Test Fan Start and SAT setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d
Test Script Revision Date	March 3, 2026	Intervention	• Set AHU to SETBACK Mode	• Set AHU to UNOCCUPIED Mode	• Set AHU to COOLDOWN Mode
		Expected Response	• Supply fan remains on. • SAT setpoint is 95°F because system is in SETBACK Mode. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes. • Outdoor air damper is shut due to system Mode.	• Fan stops (S/S point is OFF). • SAT setpoint and DSP setpoint are null or undefined. • Outdoor air damper is shut due to system Mode.	• Supply fan starts. • SAT setpoint is 55°F (Min_ClgSAT) because system is in COOLDOWN Mode. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes. • Outdoor air damper opens for cooling because AHU_SAT > 65°F (Max_ClgSAT) and OAT is below lockout.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	4	5	6
AHU Supply Fan Status	AHU_SFstatus		ON	OFF	ON
Supply Air Temperature	AHU_SAT		70	70	70
Return Air Temperature	AHU_RAT		70	70	70
Mixed Air Temperature	AHU_MAT		70	70	70
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	0.00	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.00	0.25
AHU System Mode	AHUMode		SETBACK	UNOCCUPIED	COOLDOWN
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:04:00	0:10:00	0:03:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	OFF	ON
Supply Fan Speed	SF_Speed	5	=ANY	0	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	0.5	=ANY	0.5
Supply Air Temperature Setpoint	AHU_SATsp	0.5	95	=ANY	55
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	0	0	>0
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	AHU System Mode Tests	AHU System Mode Tests	AHU System Mode Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Test Fan Start and SAT setpoint	Test Fan Start and SAT setpoint	Test Fan Start and SAT setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d	5.16.1.1, 5.16.2.2.c & 5.16.2.2.d
Test Script Revision Date	March 3, 2026	Intervention	• Set OAT to 60°F. • Set AHU to WARMUP Mode.	• Set AHU to UNOCCUPIED Mode	• Set AHU to OCCUPIED Mode
		Expected Response	• Supply fan remains on. • SAT setpoint is 95°F because system is in Warmup Mode. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes. • Outdoor air damper is shut due to system Mode.	• Fan stops (S/S point is OFF). • SAT setpoint and DSP setpoint are null or undefined. • Outdoor air damper is shut due to system Mode.	• Supply fan starts. • SAT setpoint is 65°F (Max_ClgSAT) because fan has been on for less than Td minutes. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes. • Outdoor air damper opens for cooling because AHU_SAT > 65°F (Max_ClgSAT) and OAT is below lockout.
Control Point Description	Control Point Name	Test Block	**A**	**A**	**A**
BACnet Inputs	TestInputs	Test Step	7	8	9
AHU Supply Fan Status	AHU_SFstatus		ON	OFF	ON
Supply Air Temperature	AHU_SAT		70	70	70
Return Air Temperature	AHU_RAT		70	70	70
Mixed Air Temperature	AHU_MAT		70	70	70
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	0.00	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.00	0.25
AHU System Mode	AHUMode		WARMUP	UNOCCUPIED	SETUP
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:03:00	0:10:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	OFF	ON
Supply Fan Speed	SF_Speed	5	=ANY	0	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	0.5	=ANY	0.5
Supply Air Temperature Setpoint	AHU_SATsp	0.5	95	=ANY	65
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	0	0	>0
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	N/A	5.16.1.2	5.16.1.2
Test Script Revision Date	March 3, 2026	Intervention	• Initialize inputs to the values below. • Test starts with system in Unoccupied Mode.	• Set system to Occupied Mode.	• Wait
		Expected Response	• No expectations. Wait 5 minutes to allow controller to initialize. • SAT setpoint is ignored - out of scope for this test. • Economizer Outdoor Air Damper position is ignored - out of scope for this test.	• Supply fan starts. • DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes.	• DSP setpoint is 0.5in.wc. (DSP SPo) because fan has been on for less than Td minutes.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	1	2	3
AHU Supply Fan Status	AHU_SFstatus		OFF	ON	ON
Supply Air Temperature	AHU_SAT		70	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		70	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		70	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		0.00	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.00	0.25	0.25
AHU System Mode	AHUMode		UNOCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:01:00	0:08:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	=ANY	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	0.5	0.5
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	=ANY	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	=ANY	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	=ANY	0	0
High Building Pressure Alarm	HighBpAl	N/A	=ANY	0	0
Low Building Pressure Alarm	LowBpAl	N/A	=ANY	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.1.2	5.16.1.2	5.16.1.2
Test Script Revision Date	March 3, 2026	Intervention	• Wait.	• Set 2 Static Pressure Requests. • Wait.	• Set 2 Static Pressure Requests. • Wait.
		Expected Response	• DSP Setpoint decreases by 0.2in.wc. because there have been four trim cycles since the reset loop became active and no requests.	• DSP Setpoint decreases by 0.1in.wc. because there have been two additional trim cycles and R = I.	• DSP Setpoint decreases to 0.1in.wc. (DSP SPmin) because there have been two additional trim cycles and R = I.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	4	5	6
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	2	2
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:09:00	0:04:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=SUB(LAST;0.2)	=SUB(LAST;0.1)	0.1
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.1.2	5.16.1.2	5.16.1.2
Test Script Revision Date	March 3, 2026	Intervention	• Set 3 Static Pressure Requests. • Wait.	• Set 4 Static Pressure Requests. • Wait.	• Set 8 Static Pressure Requests. • Wait.
		Expected Response	• DSP Setpoint increases by 0.12in.wc. because two cycles have passed with R = I +1.	• DSP Setpoint increases by 0.24in.wc. because two cycles have passed with R = I +2.	• DSP Setpoint increases by 0.26in.wc. because two cycles have passed with R = I + 6, but maximum response is limited to +0.13in.wc. Per cycle.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	7	8	9
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		3	4	8
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:04:00	0:04:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ADD(LAST;0.12)	=ADD(LAST;0.24)	=ADD(LAST;0.26)
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test	Duct Static Pressure Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint	AHU Duct Static Pressure Setpoint
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.1.2	5.16.1.2	5.16.1.2
Test Script Revision Date	March 3, 2026	Intervention	• Wait.	• Set 2 Static Pressure Requests. • Wait.	• Wait.
		Expected Response	• DSP Setpoint increases to 1.0in.wc. (DSP SPmax) because six cycles have passed with maximum response of +0.13in.wc.	• DSP Setpoint decreases by 0.2in.wc. because four cycles have passed with R=I.	• DSP Setpoint decreases to 0.1in.wc. (DSP SPmin) because 16 cycles have passed with R=I.
Control Point Description	Control Point Name	Test Block	**B**	**B**	**B**
BACnet Inputs	TestInputs	Test Step	10	11	12
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		8	2	2
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:06:00	0:08:00	0:32:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	1	=SUB(LAST;0.2)	0.1
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	SAT Setpoint Reset Test	SAT Setpoint Reset Test	SAT Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Initialization	AHU SAT Setpoint Reset	AHU SAT Setpoint Reset
Test Definition Package Version	DRAFT 4	SOO Reference	N/A	5.16.2.2	5.16.2.2
Test Script Revision Date	March 3, 2026	Intervention	• Initialize inputs to the values below. • Test starts with system in Unoccupied Mode.	• Set system to Occupied Mode.	• Set 4 Cooling Requests • Wait
		Expected Response	• No expectations. Wait 5 minutes to allow controller to initialize. • DSP setpoint is ignored - out of scope for this test. • Economizer Outdoor Air Damper position is ignored - out of scope for this test.	• Supply fan starts. • SAT is 65°F (SAT SPo = Max_ClgSAT) because fan has been on for less than Td minutes.	• SAT is 65°F (SAT SPo = Max_ClgSAT) because fan has been on for less than Td minutes.
Control Point Description	Control Point Name	Test Block	C	C	C
BACnet Inputs	TestInputs	Test Step	1	2	3
AHU Supply Fan Status	AHU_SFstatus		OFF	ON	ON
Supply Air Temperature	AHU_SAT		70	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		70	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		70	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	4
Duct Static Pressure	AHU_DSP		0.00	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.00	0.25	0.25
AHU System Mode	AHUMode		UNOCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:01:00	0:08:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	=ANY	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	65	65
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	=ANY	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	=ANY	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	=ANY	0	0
High Building Pressure Alarm	HighBpAl	N/A	=ANY	0	0
Low Building Pressure Alarm	LowBpAl	N/A	=ANY	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	SAT Setpoint Reset Test	SAT Setpoint Reset Test	SAT Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU SAT Setpoint Reset	AHU SAT Setpoint Reset	AHU SAT Setpoint Reset
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.2.2	5.16.2.2	5.16.2.2
Test Script Revision Date	March 3, 2026	Intervention	• Wait.	• Set 8 Cooling Requests • Wait	• Wait
		Expected Response	• SAT Setpoint decreases by 2.4°F because there have been four trim cycles since the reset loop became active and R = I + 2.	• SAT Setpoint decreases by 4°F because because four cycles have passed with R = I + 6, but maximum response is limited to -1.0°F.	• SAT Setpoint decreases to 55°F (Min_ClgSAT) minimum because there have been four additional trim cycles and R = I + 6.
Control Point Description	Control Point Name	Test Block	C	C	C
BACnet Inputs	TestInputs	Test Step	4	5	6
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		4	8	8
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:07:00	0:08:00	0:08:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=SUB(LAST;2.4)	=SUB(LAST;4)	55
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	SAT Setpoint Reset Test	SAT Setpoint Reset Test	SAT Setpoint Reset Test
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU SAT Setpoint Reset	AHU SAT Setpoint Reset	AHU SAT Setpoint Reset
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.2.2	5.16.2.2	5.16.2.2
Test Script Revision Date	March 3, 2026	Intervention	• Set 0 Cooling Requests • Wait	• Set 2 Cooling Requests • Wait	• Wait
		Expected Response	• SAT Setpoint increases by 2.0°F because there have been ten trim cycles with R = 0.	• SAT Setpoint increases by 4.0°F because there have been twenty trim cycles with R = I.	• SAT Setpoint increases to 65°F (Max_ClgSAT) because there have been twenty trim cycles with R = I.
Control Point Description	Control Point Name	Test Block	C	C	C
BACnet Inputs	TestInputs	Test Step	7	8	9
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	2	2
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:20:00	0:40:00	0:40:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ADD(LAST;2)	=ADD(LAST;4)	65
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	SAT Setpoint Reset Test	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	AHU SAT Setpoint Reset	Initialization	Fan Status Alarms
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.2.2	N/A	5.16.13.2
Test Script Revision Date	March 3, 2026	Intervention	• Set 3 Cooling Requests • Wait	• Initialize inputs to the values below. • Test starts with system in Unoccupied Mode.	• Set Fan Status to ON
		Expected Response	• SAT Setpoint decreases by 3.0°F because there have been ten cycles and R = I + 1.	• No expectations. Wait 5 minutes to allow controller to initialize. • SAT setpoint and DSP setpoint are ignored - out of scope for this test. • Economizer Outdoor Air Damper position is ignored - out of scope for this test.	• Fan Alarm Level 4
Control Point Description	Control Point Name	Test Block	C	D	D
BACnet Inputs	TestInputs	Test Step	10	1	2
AHU Supply Fan Status	AHU_SFstatus		ON	OFF	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	70	70
Return Air Temperature	AHU_RAT		=AHU_SATsp	70	70
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	70	70
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		3	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	0.00	0.00
Filter Pressure Drop	FilterDP		0.25	0.00	0.00
AHU System Mode	AHUMode		OCCUPIED	UNOCCUPIED	UNOCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:20:00	0:30:00	0:01:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	=ANY	OFF
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	0
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=SUB(LAST;3)	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	=ANY	1
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	=ANY	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	=ANY	0
High Building Pressure Alarm	HighBpAl	N/A	0	=ANY	0
Low Building Pressure Alarm	LowBpAl	N/A	0	=ANY	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Alarm Tests	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Fan Status Alarms	Fan Status Alarms	High Building Pressure Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.13.2	5.16.13.2	5.16.13.4
Test Script Revision Date	March 3, 2026	Intervention	• Set system to Occupied Mode. • Set Fan Status to OFF.	• Set Fan Status to ON.	• Set Building Pressure to 0.12in.wc. • Wait 4 minutes.
		Expected Response	• Supply fan starts. • Fan Alarm Level 2.	• Fan alarm clears	• No Building Pressure Alarm yet because timer has not expired.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	3	4	5
AHU Supply Fan Status	AHU_SFstatus		OFF	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.12
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:01:00	0:01:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	1	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Alarm Tests	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	High Building Pressure Alarm	High Building Pressure Alarm	Low Building Pressure Alarm
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.13.4	5.16.13.4	5.16.13.5
Test Script Revision Date	March 3, 2026	Intervention	• Wait 2 minutes.	• Set Building Pressure to 0.05in.wc.	• Set Building Pressure to -0.05in.wc.
		Expected Response	• High Building Pressure Alarm set.	• High Building Pressure Alarm clears.	• No Building Pressure Alarm yet because timer has not expired.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	6	7	8
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.12	0.05	-0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:02:00	0:01:00	0:04:00
Variable Name	VariableName				
Variable Value	VariableValue				
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	1	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Alarm Tests	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Low Building Pressure Alarm	Low Building Pressure Alarm	Filter DP Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.13.5	5.16.13.5	5.16.13.3
Test Script Revision Date	March 3, 2026	Intervention	• Wait	• Set Building Pressure to 0.05in.wc.	• Set static pressure to 0.5in.wc. above setpoint.
		Expected Response	• Low Building Pressure Alarm set.	• Low Building Pressure Alarm clears.	• Fan slows to minimum speed. (setup for next test)
Control Point Description	Control Point Name	Test Block	**D**	**D**	**D**
BACnet Inputs	TestInputs	Test Step	9	10	10
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=AHU_DSPsp	=AHU_DSPsp	=ADD(AHU_DSPsp;0.5)
Filter Pressure Drop	FilterDP		0.25	0.25	0.25
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		-0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:02:00	0:01:00	0:30:00
Variable Name	VariableName				SF_Speed
Variable Value	VariableValue				<30
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	=ANY	=ANY	<30
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	1	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Alarm Tests	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Filter DP Test	Filter DP Test	Filter DP Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.13.3	5.16.13.3	5.16.13.3
Test Script Revision Date	March 3, 2026	Intervention	• Set static pressure to 0.1in.wc. below setpoint.	• Set static pressure equal to setpoint, to stabilize fan speed. • Set filter dP to 1.5 in.wc. (75% of DP100). • Wait 9 minutes.	• Wait 2 minutes
		Expected Response	• Fan speeds up to 60%	• No alarm because 10 minute timer has not expired.	• Filter Pressure Drop Alarm is set.
Control Point Description	Control Point Name	Test Block	D	D	D
BACnet Inputs	TestInputs	Test Step	11	12	13
AHU Supply Fan Status	AHU_SFstatus		ON	ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60	60
Duct Static Pressure Requests	DSP_Req		0	0	0
Cooling SAT Requests	CoolSAT_Req		0	0	0
Duct Static Pressure	AHU_DSP		=SUB(AHU_DSPsp;0.1)	=AHU_DSPsp	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.25	1.50	1.50
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions				
Clock Time	ClockTime		0:30:00	0:09:00	0:01:00
Variable Name	VariableName		SF_Speed		
Variable Value	VariableValue		=60		
BACnet Expected Outputs	TestOutputs	OutputTolerance			
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON	ON
Supply Fan Speed	SF_Speed	5	>=60	=LAST	=LAST
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0	1
High Building Pressure Alarm	HighBpAl	N/A	0	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0	0

Equipment Configuration	AHU Common Equipment Tests	Test Block Description	Alarm Tests	Alarm Tests
Sequences Under Test	Guideline 36-2021	Test Step Purpose	Filter DP Test	Filter DP Test
Test Definition Package Version	DRAFT 4	SOO Reference	5.16.13.3	5.16.13.3
Test Script Revision Date	March 3, 2026	Intervention	• Set static pressure to 0.1" below setpoint.	• Set Fan Speed to 20%
		Expected Response	• Fan speeds up to 100%. • Filter Pressure Drop Alarm clears because FilterDP is below high limit for this fan speed.	• Filter Pressure Drop Alarm clears because alarm is disabled by low fan speed.
Control Point Description	Control Point Name	Test Block	**D**	**D**
BACnet Inputs	TestInputs	Test Step	14	15
AHU Supply Fan Status	AHU_SFstatus		ON	ON
Supply Air Temperature	AHU_SAT		=AHU_SATsp	=AHU_SATsp
Return Air Temperature	AHU_RAT		=AHU_SATsp	=AHU_SATsp
Mixed Air Temperature	AHU_MAT		=AHU_SATsp	=AHU_SATsp
Outdoor Air Temperature	OAT		60	60
Duct Static Pressure Requests	DSP_Req		0	0
Cooling SAT Requests	CoolSAT_Req		0	0
Duct Static Pressure	AHU_DSP		=SUB(AHU_DSPsp;0.1)	=AHU_DSPsp
Filter Pressure Drop	FilterDP		0.40	0.40
AHU System Mode	AHUMode		OCCUPIED	OCCUPIED
Building Static Pressure, Instantaneous	BldDP		0.05	0.05
Conditions for Evaluation of Test Step	EvaluationConditions			
Clock Time	ClockTime		0:30:00	0:01:00
Variable Name	VariableName		SF_Speed	
Variable Value	VariableValue		100	
BACnet Expected Outputs	TestOutputs	OutputTolerance		
AHU Supply Fan Start/Stop	SF_SS	N/A	ON	ON
Supply Fan Speed	SF_Speed	5	100	=ANY
Duct Static Pressure Setpoint	AHU_DSPsp	0.05	=ANY	=ANY
Supply Air Temperature Setpoint	AHU_SATsp	0.5	=ANY	=ANY
Economizer Outdoor Air Damper Command	AHUDamperEconOA	5	=ANY	=ANY
Supply Fan Alarm, Level 4	SupFanAl4	N/A	0	0
Supply Fan Alarm, Level 2	SupFanAl2	N/A	0	0
Filter Pressure Drop Alarm	FilterDpAl	N/A	0	0
High Building Pressure Alarm	HighBpAl	N/A	0	0
Low Building Pressure Alarm	LowBpAl	N/A	0	0

NORMATIVE APPENDIX D – TEST CONFIGURATION FILES

VAV Reheat Terminal

VAV Reheat Terminal (populated example)

Cooling-Only VAV Terminal

Multiple Zone VAV Air Handling Unit

Organization:	
Product Line:	
Control Program Version:	
Contact Person Name:	
Contact Person Phone:	
Contact Person Email:	

Control Sequence Version:	

Test Series #1

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
	Generic Ventilation Zones	Std 62.1 - Other terminal		n/a	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
					B - Zone CO2 DCV Response and Alarms
	Generic Thermal Zones	General		4	A - Zone Mode Setpoint Tests
	Terminal: VAV Reheat	General		19	A - Cooling Airflow Setpoints & SAT Reset Requests
					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
					C - Heating Airflow Setpoint
					D - Reheat Valve Control, Heating Hot Water Reset Request & Low DAT Alarm
					E - Zone Mode

Test Series #2

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
	Generic Ventilation Zones	Title 24 - Other terminal		6	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
					B - Zone CO2 DCV Response and Alarms
	Generic Thermal Zones	General		4	A - Zone Mode Setpoint Tests
	Terminal: VAV Reheat	General		19	A - Cooling Airflow Setpoints & SAT Reset Requests
					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
					C - Heating Airflow Setpoint
					D - Reheat Valve Control, Heating Hot Water Reset Request & Low DAT Alarm
					E - Zone Mode

Organization:	*Best Controls Corporation*
Product Line:	*Superia*
Control Program Version:	*4.3*
Contact Person Name:	*John Doe*
Contact Person Phone:	*123-456-7890*
Contact Person Email:	*jdoe@bestcontrols.com*

Control Sequence Version:	*G36-2021*

Test Series #1

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
X	**Generic Ventilation Zones**	Std 62.1 - Other terminal	G36-2021	n/a	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
X					B - Zone CO2 DCV Response and Alarms
X	**Generic Thermal Zones**	General	G36-2021	4	A - Zone Mode Setpoint Tests
X	**Terminal: VAV Reheat**	General	G36-2021	18	A - Cooling Airflow Setpoints & SAT Reset Requests
X					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
X					C - Heating Airflow Setpoint
X					D - Reheat Valve Control, Heating Hot Water Reset Request & Low DAT Alarm
X					E - Zone Mode

Test Series #2

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
X	**Generic Ventilation Zones**	Title 24 - Other terminal	G36-2021	6	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
X					B - Zone CO2 DCV Response and Alarms
X	**Generic Thermal Zones**	General	G36-2021	4	A - Zone Mode Setpoint Tests
X	**Terminal: VAV Reheat**	General	G36-2021	19	A - Cooling Airflow Setpoints & SAT Reset Requests
X					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
X					C - Heating Airflow Setpoint
X					D - Reheat Valve Control, Heating Hot Water Reset Request & Low DAT Alarm
X					E - Zone Mode

Organization:	
Product Line:	
Control Program Version:	
Contact Person Name:	
Contact Person Phone:	
Contact Person Email:	

Control Sequence Version:	

Test Series #1

Run?	Test Definition Package	Equipment Instance	Sequence Version	Test Version	Test Block
X	**Generic Ventilation Zones**	Std 62.1 - Other terminal		n/a	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
					B - Zone CO2 DCV Response and Alarms
X	**Generic Thermal Zones**	General		4	A - Zone Mode Setpoint Tests
X	**Terminal: VAV Cooling Only**	General		n/a	A - Cooling Airflow Setpoints & SAT Reset Requests
					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
					C - Heating Airflow Setpoint
					D - Zone Mode

Test Series #2

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
	Generic Ventilation Zones	Title 24 - Other terminal		6	A - Zone Minimum Outdoor Airflow and Minimum Airflow Setpoints
					B - Zone CO2 DCV Response and Alarms
X	**Generic Thermal Zones**	General		4	A - Zone Mode Setpoint Tests
X	**Terminal: VAV Cooling Only**	General		n/a	A - Cooling Airflow Setpoints & SAT Reset Requests
					B - Damper Control, Pressure Reset Requests, Airflow Alarms & Damper Alarms
					C - Heating Airflow Setpoint
					D - Zone Mode

Organization:	
Product Line:	
Control Program Version:	
Contact Person Name:	
Contact Person Phone:	
Contact Person Email:	

Control Sequence Version:	

Test Series #1

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Ret. Fan Tracking - Sep. OA Damper - DP - Std 62.1		n/a	Fan speed control
					SAT Control - Sep. OA damper - Ret. Fan Tracking
					Ventilation - Std 62.1
					OA Control - DP
					BSP - Return Fan w/ Tracking
					Freeze Protection
					Alarms
					Requests

Test Series #2

	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Return Fan w/ Tracking - Single OA Damper - AFMS - T24		n/a	Fan speed control
					SAT Control - Single OA damper - Return Fan w/ Tracking
					Ventilation - Title 24
					OA Control - AFMS
					BSP - Return Fan w/ Tracking
					Freeze Protection
					Alarms
					Requests

Test Series #3

	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Return Fan w/ Direct Building Pressure Control - Separat		n/a	Fan speed control
					SAT Control - Separate OA damper - Return Fan w/ Direct Building Pressure Control
					Ventilation - Title 24
					OA Control - DP
					BSP - Return Fan w/ Direct Building Pressure Control
					Freeze Protection
					Alarms
					Requests

Test Series #4

	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Relief Fan (single fan) - Single OA Damper - AFMS - T24		n/a	Fan speed control
					SAT Control - Single OA damper - Relief Fan
					Ventilation - Title 24
					OA Control - AFMS
					BSP - Relief Fan (single fan)
					Freeze Protection
					Alarms
					Requests

Test Series #5

	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Relief Fan (multiple relief fans, common inlet) - Separat		n/a	Fan speed control
					SAT Control - Separate OA damper - Relief Fan
					Ventilation - Std 62.1
					OA Control - DP
					BSP - Relief Fan (multiple relief fans, common inlet)
					Freeze Protection
					Alarms
					Requests

Run?	Equipment	Equipment Instance	Sequence Version	Test Version	Test Block
Test Series #6					
	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Relief Fan (multiple relief fans, separate inlets) - Separa		n/a	Fan speed control
					SAT Control - Separate OA damper - Relief Fan
					Ventilation - Title 24
					OA Control - AFMS
					BSP - Relief Fan (multiple relief fans, separate inlets)
					Freeze Protection
					Alarms
					Requests
Test Series #7					
	MZVAV	AHU Common Equipment Tests		4	A - AHU System Mode Tests
					B - Duct Static Pressure Setpoint Reset Test
					C - SAT Setpoint Reset Test
					D - Alarm Tests
		Actuated Relief w/o fan - Single OA Damper - DP - Std 62		n/a	Fan speed control
					Single OA damper - Relief
					Ventilation - Std 62.1
					OA Control - DP
					BSP - Actuated Relief w/o fan
					Freeze Protection
					Alarms
					Requests