

Operations Manual

OM 1039-2

Group: **Controls**

Part Number: **OM 1039**

Date: **October 2026**

BACnet® VAV Actuator Room Sensor

Model 2508032



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Revision History

Publication	Date	Release Notes
OM 1039	March 2010	Initial Release
OM 1039-1	January 2011	Clarified BACnet VAV Actuator as the VAV box controller
OM 1039-2	October 2026	Added information on the AQM2200 Power Module

Reference Documents

Publication	Company	Title	Source
IM 1040	Daikin Applied	Start-up procedures for the BACnet VAV actuator	www.DaikinApplied.com
IM 1093	Daikin Applied	Single Duct VAV Terminal Box installation manual	www.DaikinApplied.com

Limited Warranty

Consult your local Daikin representative for warranty details. To find your local Daikin representative, go to www.DaikinApplied.com.

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General Information

This document relates to the set up and operation of the Daikin 2508032 Room Temperature Sensor. It explains the various operating modes available and describes procedure for programming the display, according to user preferences.

Table 1: Accessories

Description	Product Number
25-foot (7.6 m) cable with connections	2508041
50-foot (15.2 m) cable with connections	2508042
100-foot (30.5 m) cable with connections	2508043
Replacement Housing Base	2508044
Passkey	2508045

Hazard Identification Messages

CAUTION

Cautions indicate potentially hazardous situations, which can result in personal injury or equipment damage if not avoided.

WARNING

Warnings indicate potentially hazardous situations, which can result in property damage, severe personal injury, or death if not avoided.

DANGER

Dangers indicate a hazardous situation which will result in death or serious injury if not avoided.

NOTICE

Notices give important information concerning a process, procedure, special handling or equipment attributes.

DANGER

Electric shock hazard. Can cause personal injury or equipment damage.

This equipment must be properly grounded. Connections and service to the VAV Unit Controller must be performed only by personnel knowledgeable in the operation of the equipment being controlled.

CAUTION

Static sensitive components. Can cause equipment damage.

Discharge any static electrical charge by touching the bare metal inside the control panel before performing any service work. Never unplug cables, circuit board terminal blocks, or power plugs while power is applied to the panel.

NOTICE

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with this instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense. **Daikin Applied disclaims any liability resulting from any interference or for the correction thereof.**

Daikin-Branded ATEC VAV Room Sensor Setup

Required Tools

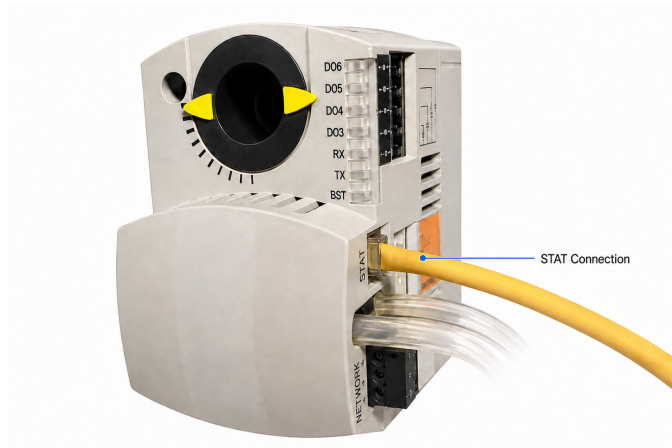
- Computer
- WCIS software
- WCIS cables
 - Daikin-branded WCIS cable
 - USB to serial adapter for the WCIS cable

NOTE: All software must be updated and all drivers must be installed.

Sensor Setup

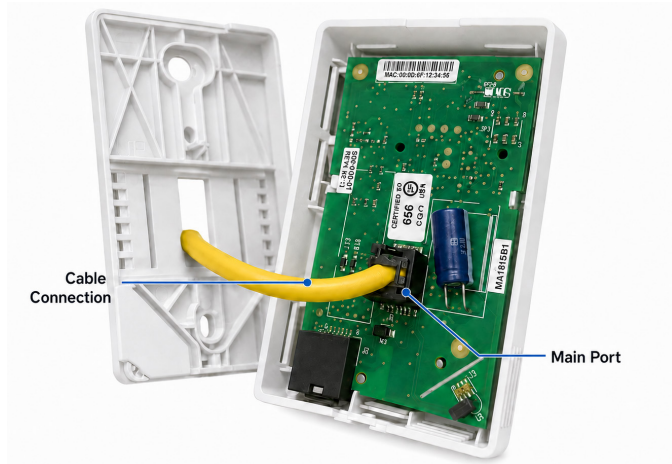
1. Ensure the RJ11 cable is securely connected to the sensor and the VAV controller.
 - a. ATEC controller: make sure the cable is connected to the STAT port.

Figure 1: ATEC STAT Port



- b. Sensor: internal to the sensor is the RJ11 port. Make sure this is firmly connected.

Figure 2: Sensor RJ11 Port



2. Connect the WCIS cable RJ11 to the port on the base of the sensor.

Figure 3: Sensor Connection



3. Once the connection is established to the computer the sensor will show "LAPTOP."

Figure 4: Established Connection



WCIS Setup

1. Navigate to point 124 for **SENSOR SEL**, and double-click to set up the point.

Figure 5: Point 124

{103}	ADV 1 OPEN	0.1	-N-	VOLTS	NONE
{124}	SENSOR SEL	0	-N-	PPM	NONE
{125}	RM CO2	100	-N-	PPM	NONE

- In the window that opens, click the magic wand on the bottom left.

Figure 6: Point Set-Up Wizard

Property	Value
Point Type	LAO
Slope	1
Intercept	0
Value Range	0 to 255

0

Help OK Cancel

- Sensor Selection will open. Select the options your sensor has.

Figure 7: Sensor Selection

Indicates the type of room unit is being used and how to handle loss of data. It also provides the ability to enable the optional RH and CO2 sensors and which thermistor type is connected.

☐ Select Digital Room Unit (for temperature sensing and setpoint dial)

☐ Relative Humidity (RH) sensing

☐ CO2 sensing

☐ Check to use 100K Ohms thermistor otherwise 10K is used

☐ Long board only: Check to use 100K Ohms thermistor on AI 4 otherwise 10K is used

Set point value to => 0

OK Cancel

-

- When you select just temperature, the value is 1. If you select more, the value increases as each item is selected. Each point is an additive value that tells the controller what type of sensor is attached to the controller. Once you have selected the options for your sensor, click OK.

Figure 8: Initial Value

Indicates the type of room unit is being used and how to handle loss of data. It also provides the ability to enable the optional RH and CO2 sensors and which thermistor type is connected.

☒ Select Digital Room Unit (for temperature sensing and setpoint dial)

☐ Relative Humidity (RH) sensing

☐ CO2 sensing

☐ Check to use 100K Ohms thermistor otherwise 10K is used

☐ Long board only: Check to use 100K Ohms thermistor on AI 4 otherwise 10K is used

Set point value to => 1

OK Cancel

Figure 9: Increasing Value

Indicates the type of room unit is being used and how to handle loss of data. It also provides the ability to enable the optional RH and CO2 sensors and which thermistor type is connected.

☒ Select Digital Room Unit (for temperature sensing and setpoint dial)

☒ Relative Humidity (RH) sensing

☒ CO2 sensing

☐ Check to use 100K Ohms thermistor otherwise 10K is used

☐ Long board only: Check to use 100K Ohms thermistor on AI 4 otherwise 10K is used

Set point value to => 7

OK Cancel

- The value from your sensor selection will populate into the value input. You can click OK and WCIS will write the setting to the controller.

Figure 10: Value Population

Property	Value
Point Type	LAO
Slope	1
Intercept	0
Value Range	0 to 255

7

Help OK Cancel

Table 2: Options for Sensor Select

SENSOR SEL (Additive)	Description (include values to enable feature)
1	Select Digital Room Unit (for temperature sensing and setpoint dial)
2	Relative Humidity (RH) sensing
4	CO ₂ sensing
8	100K Ω thermistor on AI 3 (or input is 10K Ω)
16	100K Ω thermistor on AI 4 (or input is 10K Ω)

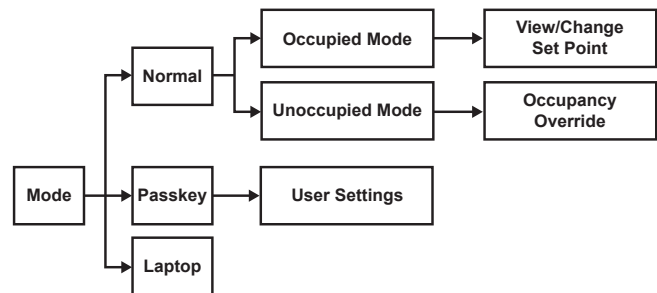
Examples:

- Temp (1) + RH (2) = a value of 3 for SS
- Temp (1) + RH (2) + CO₂ (4) = a value of 7 for SS

For questions about the procedure, please contact the Technical Response team at Ctltechsupport@daikinapplied.com or 866-462-7829.

Operation Modes

Figure 11: Operation Mode Diagram



Normal Mode

In Normal Mode, the display is updated with temperature, humidity and occupied status (all where applicable) on a set time cycle.

The display shows temperature in the desired units (as set by the jumper on the PCA). Depending on the model, the humidity will be displayed as well. When both of these variables need to be displayed (temperature, relative humidity) the display will cycle through the required values at a rate of one change every three to five seconds.

Occupied Mode

If the BACnet VAV Actuator is currently in Unoccupied Mode (Figure 12), pressing the override button (Figure 13) results in the display showing the word OCCUPIED and the request is sent to the actuator to override the unoccupied mode. If the BACnet VAV Actuator does not get overridden and stays in the unoccupied mode, the display on the sensor reverts back to the unoccupied symbol as soon as possible.

If the BACnet VAV Actuator is currently in occupied mode, pressing the override button flashes the word OCCUPIED and does nothing else. This functionality is intended solely to let the user know that the button press was recognized.

Figure 12: Unoccupied Icon



Unoccupied Mode

Figure 13: Occupied Icon



Occupied Mode

Setpoint Adjustment Mode

The temperature setpoint is adjusted by using the plus and minus buttons. The resulting changes in setpoint are shown on the display in 1.0°F or 0.5°C increments.

The setpoint adjustment will be displayed, and will stay on the screen for three seconds. If, during those three seconds, a setpoint button is pressed again, the setpoint will be adjusted accordingly and be displayed, and the three-second countdown will restart. If there is no user input for more than three seconds, the room unit will return to the Normal Mode.

Figure 14: Setpoint Icons



Settings

Set Pt Disp – determines how the user views the temperature setpoint adjustment. The default setting is NUMERIC, displayed in degrees. The user selects between a NUMERIC and a GRAPHIC setpoint display.

Set Pt Min – determines the minimum temperature setpoint value. The default setting is 55°F or 12.5°C. The user selects the minimum setpoint the room unit should request. The setpoint limit is ultimately defined in the controller. If the setpoint is displayed graphically as a sliding bar, this sets the right end of the slider bar. The limits are 55°F to the Set Pt Max value. The adjustment step size is 1°F or 0.5°C.

Set Pt Max – determines the maximum temperature setpoint value. The default setting is 95°F or 35°C. The user selects the maximum setpoint the sensor should request. The setpoint limit is ultimately defined in the controller. If the setpoint is displayed graphically as a sliding bar, this sets the right end of the slider bar. The limits are SET PT Max to 95°F. The adjustment step is 1°F or 0.5°C.

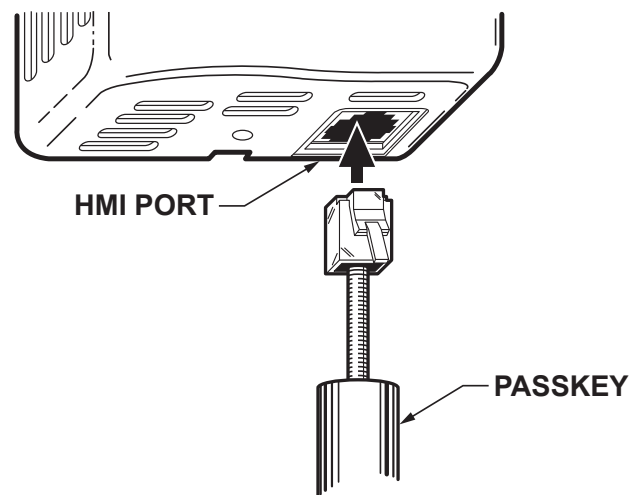
Disp. Temp? – determines whether the temperature value should be displayed. The default value is YES.

Passkey Mode

Insert the passkey into the sensor HMI (Human-Machine Interface) port to set up all of the user functionality identified in Settings. For each parameter, use the following sequence:

- Press the occupancy override button to edit the parameter
- Press the plus/minus buttons to scroll through the various options available for each parameter to display the desired option
- Press the occupancy override button again to move to the next user adjustable parameter
- When finished, remove the passkey from the HMI port carefully. User setting changes will be saved when the passkey is removed

Figure 15: Inserting the Passkey



Disp. RH? – determines whether the humidity value should be displayed. The default value is YES, if the device is a humidity room unit. (This option is conditional based on the presence of humidity measurement capability and only offered with QFA3x80.F types.)

Disp. Occ? – determines whether the occupancy status should be displayed. The default value is YES, if the device offers occupancy override capability.

NOTE: This does not enable/disable the Occupancy override button functionality, just the display of the occupancy status.

T Cal – allows the user to field calibrate the temperature display and output through a bias adjustment. The default value is +0°F. Adjustments may be made between -5°F and +5°F, in 0.5°F increments.

RH Cal – allows the user to field calibrate the humidity display and output through a bias adjustment. The default value is +0%. Adjustments may be made between -5% and +5%, in 0.5% increments

Brightness – allows the user to adjust the display brightness.

Allowable values are 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, with 1 being the dimmest and 10 being the brightest. The default setting is 5.

Scr. Saver – allows the user to activate/deactivate the display screen saver. Available options are: NONE, OFF and FADING. The default value is NONE. If set to NONE, the display operates at the programmed brightness level without any interruption.

OFF – The display will turn OFF after 30 seconds. Any button press will wake it up (without doing anything else), and then the device will operate in Normal Mode for 30 seconds until the display turns OFF again.

FADING – Within 30 second of no operator interaction, the entire display will fade to a display brightness of 1. The display will operate at this brightness until the user presses a button. At that time the programmed display brightness will be restored.

Factory Defaults – allows the user to reset all parameters to factory defaults. Available options for this parameter are YES or NO.

Laptop Pass-thru Mode

To communicate with the BACnet VAV Actuator using Datamate Base, Datamate Advanced, or Microsoft Windows™ Controller Interface Software (WCIS), connect a PC-compatible cable (see [Table 1 on page 2](#)) from a laptop to the sensor HMI port at the bottom of the room unit. This puts the room unit in laptop mode, which deactivates all buttons and shows LAPTOP on the display. In this mode the controller communicates with the laptop only. The room unit does not update measured values to the controller while in this mode. The room unit returns to the Normal Mode once the cable is disconnected.

Table 3: Error Messages

Message	Meaning
No TEC	No communication with BACnet VAV Actuator. This error will be displayed on the lower right (icon) section of the display, and the upper portion of the display should continue to display temperature and humidity values. NOTE: This error will appear whenever BACnet VAV Actuator subpoints are not available or the actuator (or its subpoints) are not responding to commands.
No Sensor	No temperature or humidity sensor detected on the PCA. This error will be displayed until the error is corrected. This message might also display if the wrong controller-to-room unit-cable is used or if the replacement sensor element is incorrectly installed on the PCA.
00x	Room unit firmware revision. This is visible upon power-up for a few seconds until communication is established with the BACnet VAV Actuator.

Set-up of Displayed Temperature Units

The factory default for displayed temperature units is °F. To change the display to °C mode, snip the wire jumper on the back of the PCB (the visible side when the unit is taken off the wall).

Figure 16: Jumper Location

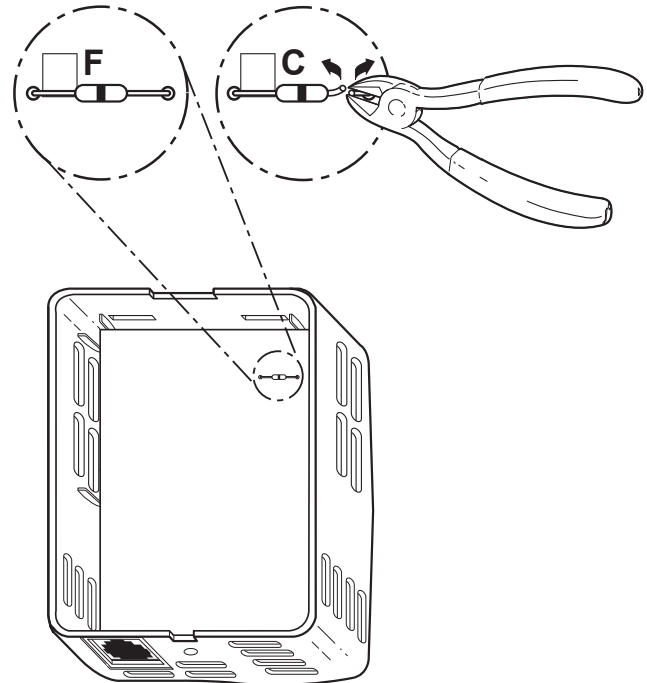
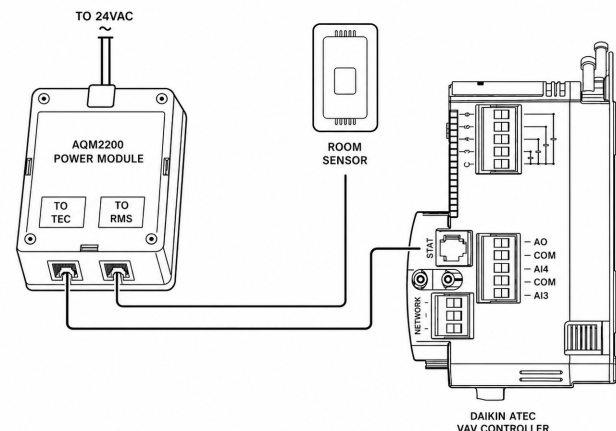


Figure 17: Power Module Diagram

AQM2200 Port Connection



AQM2200 Power Module

Product number: AQM2200

Expected installation time: 10 minutes

NOTE: The controller's DOs control 24 VAC loads only. The maximum rating is 12 VA for each DO. An external interposing relay is required for any of the following:

- VA requirements higher than the maximum
- 110 or 220 Vac requirements
- DC power requirements
- Separate transformers used to power the load

Contents

- AQM2200 Power Module
2.5" L × 3.0" H × 1.0" D
(63.5 mm × 76.2 mm × 25.4 mm)
- 550-201 RJ-11 18" cable

Required Tools

- Medium-duty drill with Phillips size 1 bit
- Small, flat-blade screwdriver

Prerequisites

Install the appropriate field wiring (standard six-conductor room unit cables, plenum or non-plenum as required) from the Room Unit (Room Temperature Sensor). The maximum recommended length is 100 feet (30 m).

Find the installation instructions [page 3](#).



CAUTION

Do not connect Series 1000 TEC Room Sensors (540-660B, 540-680FA, etc.) to the AQM2200 Power Module. Any attempt to do so will destroy the sensor.



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