

Operations Manual

OM 1039-1

Group: **Controls**
Part Number: **OM 1039**
Date: **January 2011**

BACnet® VAV Actuator Room Sensor

Models 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 |

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.

Notice

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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.

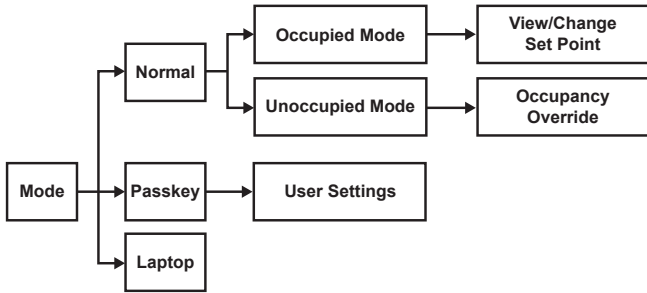
⚠ DANGER
Electric shock hazard. Can cause personal injury or equipment damage.
 This equipment must be properly grounded. Connections and service to the MicroTech III Chiller Unit Controller must be performed only by personnel knowledgeable in the operation of the equipment being controlled.

⚠ 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.**

Operation Modes

Figure 1: 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 2), pressing the override button (Figure 3) 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 2: Unoccupied Icon



Unoccupied Mode

Figure 3: 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 4: Setpoint Icons

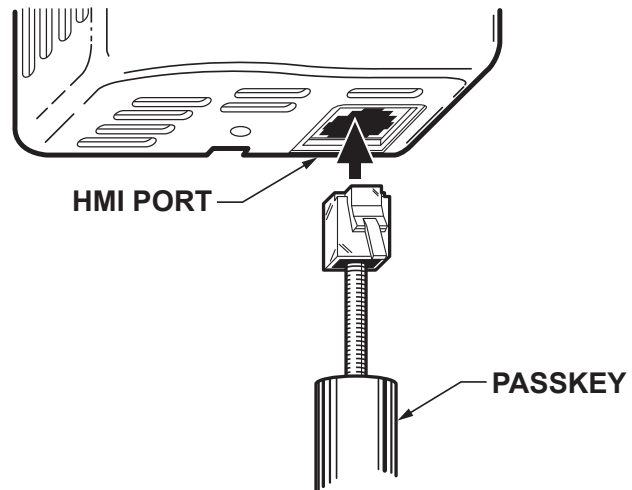


Passkey Mode

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 5: Inserting the Passkey



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.

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.

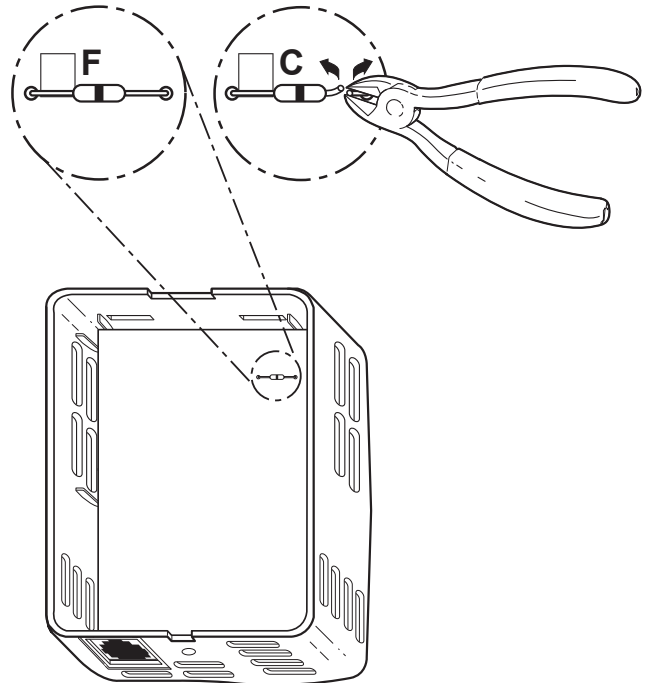
Table 2: Error Messages

| 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 6: Jumper Location





Daikin Applied Training and Development

Now that you have made an investment in modern, efficient Daikin equipment, its care should be a high priority. For training information on all Daikin HVAC products, please visit us at www.DaikinApplied.com and click on Training, or call 540-248-9646 and ask for the Training Department.

Warranty

All Daikin equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local Daikin Applied Representative for warranty details. To find your local Daikin Applied Representative, go to www.DaikinApplied.com.

Aftermarket Services

To find your local parts office, visit www.DaikinApplied.com or call 800-37PARTS (800-377-2787). To find your local service office, visit www.DaikinApplied.com or call 800-432-1342.

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