DAIKIN

Installation and Maintenance Manual   IM 1038

BACnet® VAV Actuator
Room Sensor

Models 2508031 and 2508032

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Revision History

Publication	Date	Release Notes
IM 1038	March 2010	Initial Release

Reference Documents

Publication	Company	Title	Source
			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 manual contains the information you need to install the BACnet® VAV Actuator on a VAV box.

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.**

Getting Started

- Review these instructions before beginning.
- Confirm that appropriate field wiring is installed (standard six-conductor room sensor cables, plenum or non-plenum as required) within the maximum wiring run length for the individual equipment controller. The maximum recommended length is 100 feet (30 m).
- All wiring must comply with National Electric Code (NEC) and local regulations.

Description

These room sensors allow users to view and adjust points in the controller using the room sensor buttons and digital display.

Application

They work with McQuay BACnet VAV Actuator 2508021 and 2508021P10. These devices incorporate a solid state or 10K NTC sensing element to detect temperature. The effective sensing and setpoint range is 55 to 95°F (13 to 35°C). These room sensors can be mounted on electrical boxes, stud-type mounting brackets, or drywall. Obtain the necessary mounting hardware and follow the appropriate mounting procedures for the type of installation required.

Figure 1: Temperature Room Sensor

The following section describes how to field install a new BACnet VAV Actuator Room Sensor. Expected Install Time: 20 minutes

⚠ CAUTION
Electrostatic discharge hazard. Can cause equipment damage.
This equipment contains sensitive electronic components that may be damaged by electrostatic discharge from your hands. Before you handle a communications module, you need to touch a grounded object, such as the metal enclosure, in order to discharge the electrostatic potential in your body.

Required Tools and Materials

- Phillips sizes 1 and 2 screwdrivers
- Small and medium flat-blade screwdrivers
- 1/16-inch hex key
- Medium-duty electric drill
- 3/16-inch (4.8 mm) drill bit
- One-inch (25 mm) hole saw
- Small level
- Tape measure
- Marker or pencil

If using non-terminated or damaged cables, you also need:

- Room sensor connector tool (RJ-11 crimping tool)
- Room sensor connector kit (P/N 2508046)

Installing a new BACnet VAV Actuator Room Sensor

Mounting Information

Always mount the room sensor vertically, on a flat wall.

Locate the room sensor:

- According to design specifications and local regulations.
- Where the air circulates around it freely (not in recessed areas or behind doors).
- Allowing a minimum of 4 inches (10 cm) free space above and below for proper airflow, the hex bit or passkey tool, and the computer communication cable.
- Away from drafts caused by doors, windows, outside walls, air registers, pipes, return air plenums, etc.
- Away from heat sources such as strong lights, fireplaces, direct sunlight, etc.
- On an inside wall (preferably), about 5 feet (1.5 m) above the finished floor or per code (ANSI, ADA, or local regulation).
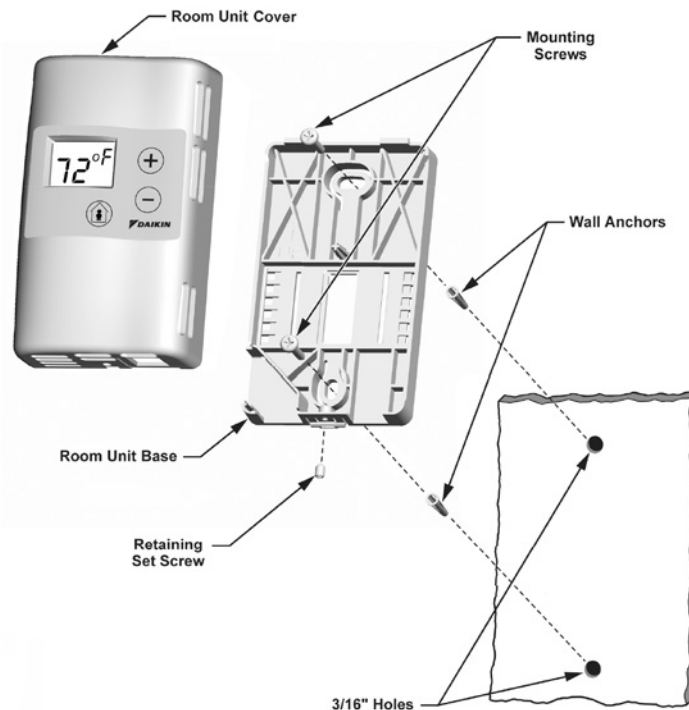
Drywall Mounting (No Rough-in), Typical

⚠ WARNING
For retrofits: Before cutting the cable, make sure it is disconnected from the Temperature Room Sensor port on the controller cable end.

1. Mark the center (cable) hole and the mounting hole locations, using the room sensor base plate as a template. See Figure 2.
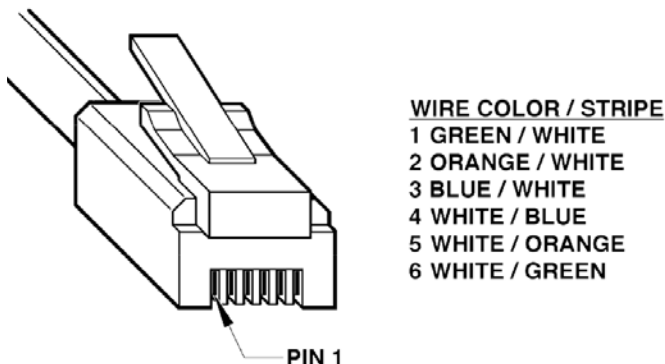
Figure 2: Drywall Mounting (No Rough-in), Typical

2. Drill two 3/16-inch (4.8 mm) mounting holes and mount the two plastic wall anchors flush to below the wall surface for stable mounting of the device.

3. Cut a 1-inch (25 mm) center hole with a hole saw.

4. Pull about three inches (75 mm) of the cable through the hole in the base plate.

5. Mount the room sensor base plate on the wall, noting the "UP" arrow:

    a. Install the two mounting screws provided, but do not tighten.

    b. Level the room sensor base plate for appearance.

    c. Tighten the two mounting screws to the room sensor base plate.

6. Do one of the following:

    a. If the cable is terminated: Inspect the RJ-11 connector for damage.

    b. If the cable is non-terminated or if the RJ-11 was damaged: Cut the cable, leaving about three inches (75 mm) on the room sensor side of the drywall, and attach an RJ-11 connector with an RJ-11 crimping tool. On the RJ-11 connectors, ensure that pin Number 1 connects to the same wire at each end of the cable. See Figure 3.

7. Plug the terminated cable into the RJ-11 connector on the back of the room sensor's printed circuit board (PCB).

8. Feed the extra cable back through the hole.

9. Snap the room sensor cover to the room sensor base plate by first hooking the room sensor front to the top latches, and then rotating the cover downward until it latches.

10. Loosen the safety set screw at the bottom of the base one or two revolutions to lock the cover to the base. Be careful not to loosen too far as the screws can be completely removed from the base.

11. Connect the room sensor to the Temperature Room Sensor port on the controller.

This installation is now complete.

Figure 3: Terminating the RJ-11 Connector

Electrical Box and Rough-in Mounting, Typical

> ⚠ **CAUTION**
>
> Over-tightening may cause the room sensor base plate to crack or bend.

1. If a locator is attached to the rough-in device, remove the locator by removing the two screws and lightly rocking the locator to pull it free.

2. Untie the twist tie and pull about three inches (75 mm) of the room sensor cable through the hole in the base plate.

3. Mount the room sensor base plate on the wall, noting the "UP" arrow:

    a. Install the two room sensor mounting screws provided, but do not tighten.

    b. Level the room sensor base plate for appearance only.

    c. Tighten the two mounting screws to the room sensor base plate.

4. Continue with Drywall Mounting (No Rough-in), Typical, Steps 7 through 11.

This installation is now complete.

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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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