

Group: WSHP

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MicroTech™ III Water Source Heat Pump Wall-Mounted Room Temperature Sensors

Sensor Kit P/N 669529101, 669529201 & 669529001



Sensor 669529101



Sensor 669529201



Sensor 669529001

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Introduction

Microtech III Wall Mounted Room Temperature Sensors provide electronic sensing of room temperatures at wall locations. All sensor models feature a thermistor (10kΩ), a green LED for unit status and tenant override button. Setpoint adjustment potentiometer, heat and fan mode switches are optional features (see [Table 1](#)).

This manual includes installation instructions and general information for a Microtech III Wall Mounted Room Temperature Sensor.

For installation and commissioning instructions and general information on a particular unit, refer to its model-specific installation manual.

Sensor Specifications

- Thermistor resistance (10kΩ)
(Conforms to Advance Thermal Products curve 2)
- Ambient Temperature Limits:
- Shipping and Storage: 40°F to 160°F (–40°C to 71°C)
- Operating: 40°F to 140°F (4°C to 60°C)
- Humidity: 5 to 95% RH, noncondensing
- Locations: NEMA Type 1, Indoor only
- Connections: Color Coded Leads

Table 1: MicroTech III Sensor Kits – Water Source Heat Pump (10 kW)

Sensor Kit P/N	Tenant Override Button	SPT Adj. Pot	Status LED	Fan and Mode Switches
669529001	Yes	No	Yes	No
669529101	Yes	Yes	Yes	Yes 55° to 95°F (12° to 35°C)
669529201	Yes	Yes	Yes	Yes -3° to +3°F (-1.5° to +1.5°C)

Pre-Installation

Inspection

Visually inspect the carton for damages. If it is damaged, notify the appropriate carrier immediately.

Open the carton and visually inspect the device for obvious defects. Return damaged or defective products.

Required Installation Items:

- Wiring diagram for MicroTech III Unit Controller

Tools

- Appropriate screwdriver(s) for cover, terminals, and mounting screws
- Wire stripper/cutter

The following only if wallboard mounting:

- Appropriate drill and drill bits
- Appropriate mounting screws and plastic anchors

Wiring

3-lead NEC Class II low voltage wiring for temperature sensor 669529001, 5-lead for sensor 669529101 and 669529201.

Notes: 1. Do not install the wire cables in the same conduit with power wiring.

2. Never apply external voltage of any type to any terminal or damage will result.

3. Do not exceed ratings of the device. This is a low voltage device:

4. Always use 22-gauge wire and never locate the room temperature sensor more than 250' from the unit.

Wiring must be installed in accordance with the National Electrical Code and all local codes and ordinances, which can require the use of plenum rated cable or conduit.

Mounting Location

Locate the sensor on a wall where exposure to unrestricted air circulation represents the average temperature of the space. A common mistake is to mount the sensor too close to the supply air diffuser in a room. This causes short cycling of the air conditioning unit and large room temperature swings.

Installation

DANGER



Hazardous Voltage!

This equipment presents hazards of electricity. Failure to read and follow these instructions can result in property damage, severe personal injury or death.

1. Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position.
2. Remove the sensor cover by inserting a screwdriver and gently twisting it in the slots on the sides of the wall temperature sensor (669529101 & 669529201 only). To remove the cover on sensor 669529001, loosen two allen-wrench set screws located on the underside of the cover.

Note: Mount the sensor five feet above the floor. Do not mount the sensor on an outside wall, in direct sunlight, behind a door, or in an area affected by a vent or duct.

3. Place the wall sensor mounting base against the wall where the sensor will be located. Using the base as a template trace the mounting holes onto the wall.
4. Drill a 3/16" hole at each mounting hole mark.
5. Insert wall anchors into mounting holes and tap in to the wall surface.
6. Feed wires through the back of the sensor mounting base and align sensor mounting holes with wall anchors.
7. Use supplied screws to secure sensor base to wall.

CAUTION

Be certain that exposed portions of wires do not come in contact with each other.

8. Connect stripped, labeled wires to matching terminals on the temperature sensor. Refer to either [Figure 1](#) or [Figure 2 on page 4](#) for wiring details.
9. Tighten screws on terminal connections. Gently tug wire to check for secure connections. Confirm that each wire is connected to the proper terminal.
10. Seal the hole where the wire enters through the wall behind the temperature sensor, with non-flammable insulation or putty.
11. Replace cover on wall temperature sensor by snapping it in place.
12. Turn on power to the system at the main service panel.
13. Test wall temperature sensor operation as described in "[Testing](#)" on page 4.

Note: Sensor 669529001 has two allen wrench set-screws on the underside of the sensor cover to secure it in place. Do not overtighten.

Utility Box Mounting of Sensor 669529001

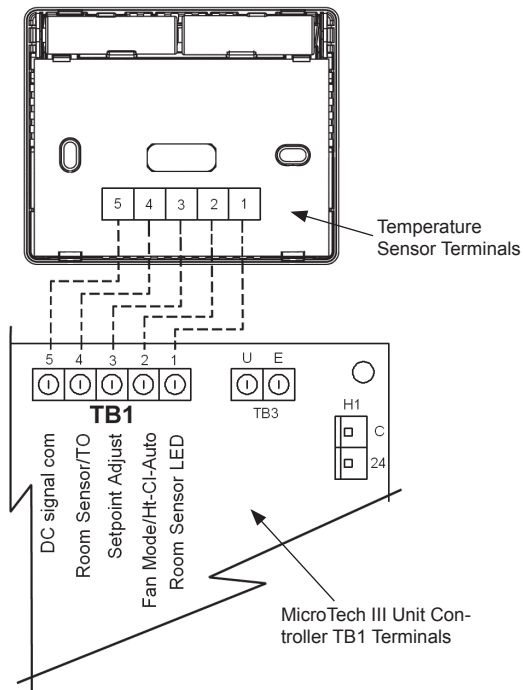
1. Feed the cable from the utility box.
2. Strip 1/4-inch of insulation from the end of the wires.
3. Connect stripped, labeled wires to matching terminals on the temperature sensor base. See [Figure 2](#).
4. Tighten screws on terminal connections. Gently tug wire to check for secure connections. Confirm that each wire is connected to the proper terminal.
5. Neatly store excess wire back inside the utility box.
6. Mount the sensor base to the utility box using two 6-32 × 5/8-inch flat head sheet metal screws provided with the sensor.
7. Replace cover on wall temperature sensor by attaching the catches at the top of the cover to the top tabs on the sensor base. Secure the cover to the base by tightening the two allen wrench set-screws on the bottom of the sensor cover. Do not overtighten.

Wiring

Temperature Sensors 669529101 & 669529201

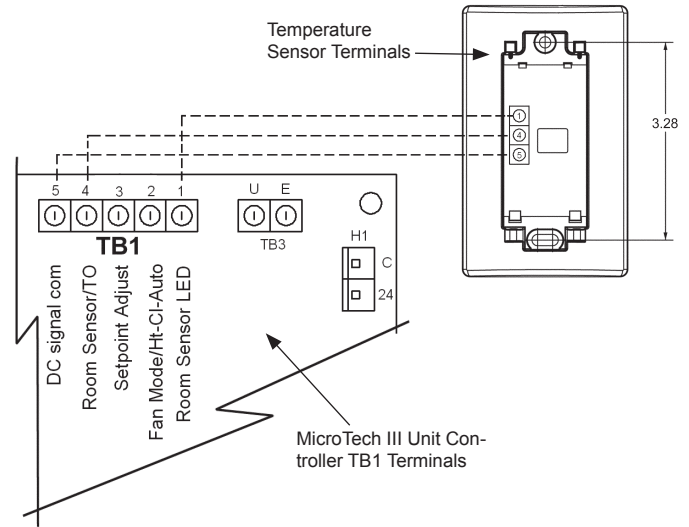
Note: All sensors have black (common), white (thermistor), and red (LED) wires. With the tenant override and/or set point adjustment option, a green wire is provided. The optional thermometer does not affect wiring.

Figure 1: Temperature Sensor Wiring to MicroTech III Unit Controller



Temperature Sensor 669529001

Figure 2: Temperature Sensor Wiring to MicroTech III Unit Controller



Testing

Temperature Sensors 669529101 & 669529201

Cool Test

1. Slide Mode switch to Cool mode.
2. Adjust set temperature so it is 5 degrees below room temperature.
3. Air conditioning should come on within five (5) minutes. Status indicator may come on.
4. Adjust the set temperature 2 degrees above the room temperature and the A/C should turn off. There may be a fan delay on your system.

Heat Test

1. Slide Mode switch to Heat mode.
2. Adjust the set temperature so it is 5 degrees above the room temperature.
3. Heat should come on within five (5) minutes. Status indicator may come on.
4. Adjust the set temperature so it is 2 degrees below the room temperature and the heat should turn off. There may be a fan delay on your system.

Fan Test

1. Set room temperature so that unit is no longer heating or cooling the space. Wait for unit to cycle off.
2. Slide Fan switch to On position.
3. Indoor fan turns on.
4. Slide Fan switch to Auto position.
5. Indoor fan turns off.

Timed Override Button Test

1. Using the BMS, change the room settings so the unit is in Unoccupied mode.
2. Press the room sensor mounted override push button for more than 3 seconds and less than 10 seconds.
3. Unit will resume Occupied operation until the override time expires (as programmed in BMS).
4. Using the BMS, return the unit to regular schedule.

Figure 3: MicroTech III Wall Sensor 669529101 (669529201 - Similar)

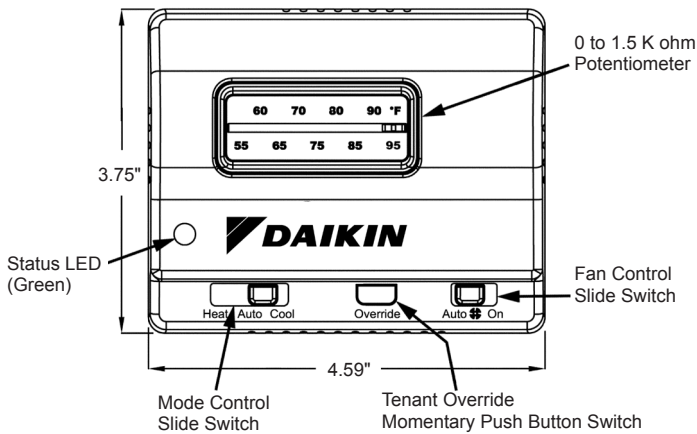
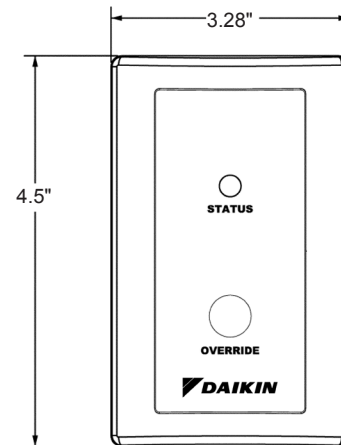


Table 2: WSHP Unit Status LED Definitions

Status LED		Unit Status	Unit Operation
ON	OFF		
0.5 seconds	0.5 seconds	Controller Off (or Network "Wink" operation active)	"Alarm"
0.0 seconds	Continuous	Unit running in Night Setback Override Mode or no power to the sensor	"Override"
0.5 seconds	5.5 seconds	Unoccupied Mode	"Unoccupied"
5.5 seconds	0.5 seconds	Standby Mode	"Energy Save" or "Load Shed" command from Energy Management System
Continuous	0.0 seconds	Occupied Mode	"Occupied"

Figure 4: MicroTech III Wall Sensor



Temperature Sensor – 669529001

Cool Test

1. Using the building automation system (BMS), adjust room cooling setpoint to 5 degrees below room temperature.
2. Air conditioning should come on within five (5) minutes. Status indicator may come on.
3. Using the BMS, adjust the set temperature 2 degrees above the room temperature and the A/C should turn off. There may be a fan delay on your system.

Heat Test

1. Using the building automation system (BMS), adjust room heating setpoint to 5 degrees above room temperature.
2. Heating should come on within five (5) minutes. Status indicator may come on.
3. Using the BMS, adjust the set temperature 2 degrees above the room temperature and the A/C should turn off. There may be a fan delay on your system.

Operating Modes

Temperature Sensors 669529101 & 669529201

Cool Mode

- In cool mode the MicroTech III wall-mounted temperature sensor controls the cooling system

Heat Mode

- In heat mode, the Microtech III wall-mounted Room Temperature Sensors controls the heating system.

Auto-changeover Mode

- In this mode the Microtech III wall-mounted Room Temperature Sensors will automatically change from heat mode to cool mode, or vice versa.

All Temperature Sensors

Timed Override

- Press Override button for more than 3 but less than 10 seconds and Unit will return to Occupied operation until the override time expires (as programmed in BMS).

Troubleshooting

Symptom	Remedy
No LED illuminated	Check for 5 VDC at sensor, LED is dark when 5 VDC is not present
Unit turns on and off too frequently	Sensor must be located as described in "Mounting Location" on page 3 .
For Sensors 669529101 and 669529201 Only	
System fan does not come on properly	Verify wiring is correct. See "Fan Test" on page 4 .
Fan runs continuously	Check fan On/Off switch, ON position runs indoor fan continuously.

Daikin Training and Development

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