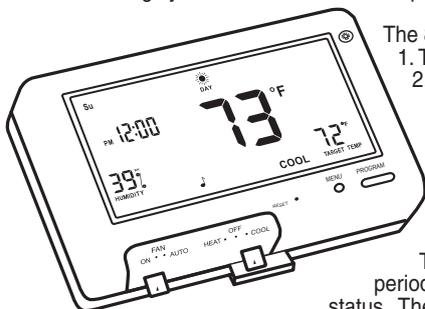


**ENGLISH**

## 8085C Features

The 8085C can be used with most 24 volt gas, oil or electric heating and air conditioning systems, heat pumps with or without auxiliary heat, gas millivolt heating systems, or zoned heating systems using air or water control valves. It cannot be used with 120 volt heating systems. Ask The Home Depot for other thermostats to control those systems.



The 8085c is a very versatile programmable thermostat:

1. The 8085c separately programs each weekday, Sat and Sun for both heat and cool.
2. There are 4 programming periods per day on program (A).
3. In addition, there are 2 or 6 programming periods per day on a 2nd program (B).
4. Each program (A and B) can be programmed separately and easily selected.
5. You can use the built in program for A or B or alter them to suit your life.
6. The programming display and function is so easy to use, it is almost intuitive.
7. You can easily override any program for as little as one period or as long as a vacation.

The large liquid crystal touch screen display shows: day of the week, time, present period, present room temperature, target temperature, humidity, and heating or cooling status. The word **FILTER** will come on to remind you when the air filter should be changed.

Built in Electro Luminescent backlight gives high visibility of the display in the dark. When using a compressor for heat pump and/or for air conditioning, a 5 minute delay time protects your compressor from stalling in heat and cool. Two AA batteries are used to retain your programs and run the thermostat. In addition, the thermostat may be run with AC power if the C wire is available. The accuracy of the 8085c is +/- 1°F with display resolution of .5°F. The room temperature can be changed (calibrated) to match another thermostat or to compensate for a location.

The 8085c has a humidistat built in to measure and display humidity. It also can be programmed to control high humidity, and/or low humidity (humidifier required). The 8085c changes the time display to daylight time (DST) by the push of a button.

The 8085c is compatible with dual stage heating systems and heat pumps (with or without auxiliary heat). It also displays the status of each stage of these systems. If using a heat pump with (expensive) electric auxiliary heat, the 8085c allows you to choose comfort vs efficiency depending on your location.

# Install guide 8085C

# ritētemp<sup>®</sup>

## Caution

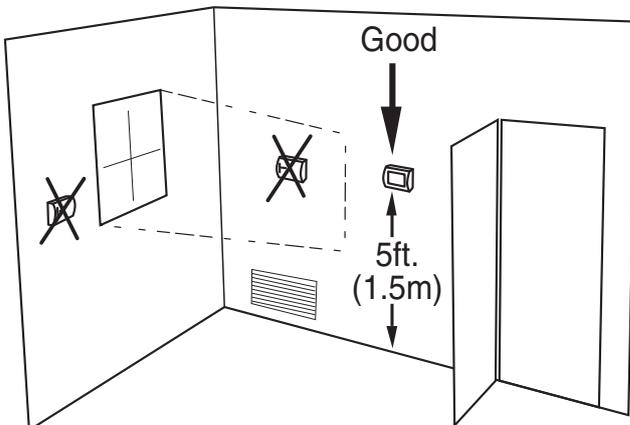
To avoid electrical shock and to prevent damage to the furnace, air conditioner, and thermostat, disconnect the power supply before beginning work. This can be done at the circuit breaker, or at the appliance.

## Tools

You will need #1 Phillips screwdriver (small) and Drill with 3/16-in. (4.8mm) bit for this installation.

## 1 Location

- On replacement installations, mount the new thermostat in place of the old one if possible.
- On new Installations, follow the guidelines listed below.
- Locate the thermostat on an inside wall, about 5 ft. (1.5m) above the floor, and in a room that is used often.
- Do not install it where there are unusual heating conditions, such as: in direct sunlight; near a lamp, radio, television, radiator register, or fireplace; near hot water pipes in a wall; near a stove on the other side of a wall.
- Do not locate in unusual cooling conditions, such as: on a wall separating an unheated room; or in a draft from a stairwell, door, or window.
- Do not locate in a damp area.  
This can lead to corrosion that will shorten thermostat life.
- Do not locate where air circulation is poor, such as: in a corner or an alcove; or behind an open door.
- Do not install the unit until all construction work and painting has been completed.
- This thermostat does not require leveling.



## C A U T I O N

- Your thermostat is a precise instrument.
- Please handle it with care.
- Turn off electricity to the appliance before installing or servicing thermostat or any part of the system. Do not turn electricity back on until work is completed.
- Do not short (jumper) across electric terminals at control on furnace or air conditioner to test the system.
- This will damage the thermostat and void your warranty.
- All wiring must conform to local codes and ordinances.
- This thermostat is designed for use with 24 volt AC and millivolt systems. The thermostat should be limited to a maximum of 1.0 amps; higher amperage may cause damage to the thermostat.

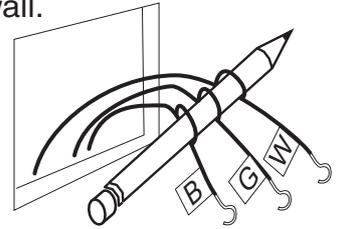
## 2 Remove old unit

- Switch electricity to the furnace and air conditioner OFF; then proceed with the following steps.
- Remove cover from old thermostat. Most are snap-on types and simply pull off. Some have locking screws on the side or front. These must be loosened. **Note the letters printed near the terminals.**
- **Attach labels (enclosed) to each wire for identification.**

### Caution

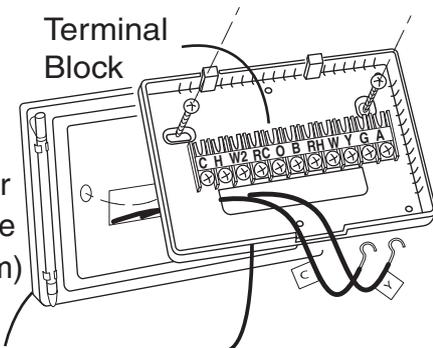
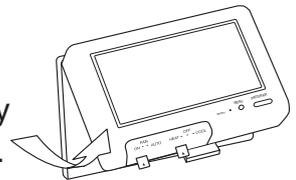
Read instructions carefully before removing any wiring from existing thermostat. Wires must be labeled before they are removed. **THERE IS NO STANDARD COLOR CODE.** When removing wires from their terminals, ignore the color of the wires since these may not follow the standard.

- Label the wires one at a time. **You must have all the wires labeled** before you proceed. **With all wires labeled**, remove them from the old unit.
- Make sure the wires do not fall back inside the wall.
- Wind them around a pencil to keep them from falling.
- Loosen all screws on the old thermostat and remove it from the wall.
- Fill wall opening with non-combustible insulation to prevent drafts.



## 3 Mount the 8085C

- Separate front from back of unit. Press up on the catch on bottom of thermostat and swing the body away from the base, lift up to remove the body from the base.
- Hold the base against the wall, with the wires coming through the opening below the terminal block.
- Position the base for best appearance. (If you chose to use the optional wall plate, hold the wall plate against the wall, with the wires coming through the opening. Then pull the wires through the opening in the base unit. Position the base unit for best appearance.)
- Attach the base to the wall with the two screws provided.
- If you are mounting the base to sheet rock or if you are using the old mounting holes, use the plastic anchors provided. Drill a 3/16-in.(4.8mm) hole for the insert at each screw location, then mount the base.



Wall Plate

Thermostat Base

## 4 Gas-Electric Selection

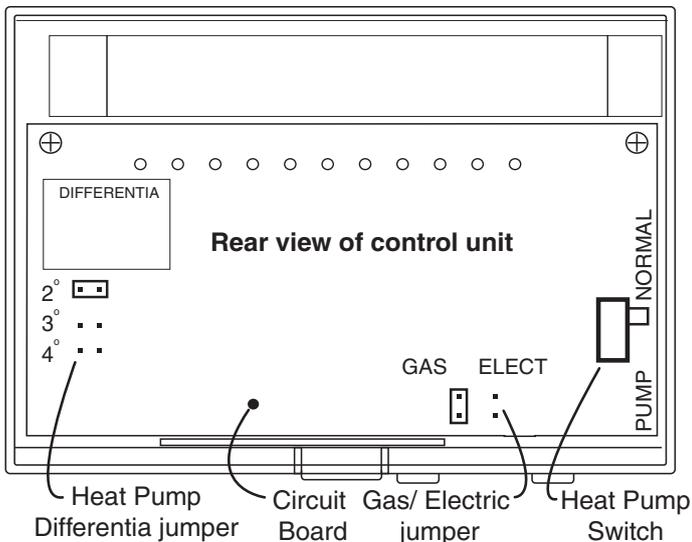
REFER to the back of the Control Unit:

- If you have Electric Heat or a Heat Pump you must place the Gas/Electric jumper in the ELECT position (thermostat controls the Fan).
- If you have Gas Heat the Gas/Electric Jumper should be in the GAS position (furnace controls the Fan).

## 5 Heat Pump Switch

NOTE: If you do not have a Heat Pump, go to step 7.

- If you have a HEAT PUMP switch the PUMP-NORMAL switch to the **PUMP** position. Reset the unit, the unit display appear **PUMP** word.
- Select the desired Temperature Differential jumper setting. This determines how much your AUX heat will come on. Select the 2°,3°,4°, remember reset the unit. 2° is for comfort or cool climates 4° is for efficiency or warm climates.

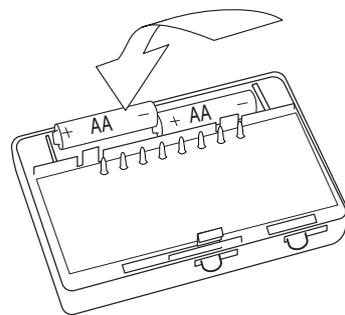


## 6 Install Batteries

The 8085C requires batteries to operate your furnace and retain its programming in memory. Switch MODE switch to OFF and the FAN switch to AUTO.

- Insert 2 AA alkaline batteries according to the polarity noted in the compartment.
- Press the **RESET** button to clear transient program memory. Initially, all LCD segments will go off.

NOTE: Replace the batteries when this LOW battery indicator appears on the display or once a year. When replacing batteries, you have approximately 1/2 minute before your custom program is lost.



## 7 Power Options

Please be aware of the following power options

1) The 8085C can run on batteries only. (2AA Alkaline)

The batteries will last well over 1 year. If the batteries are not replaced the thermostat will stop working.

2) The 8085C can run on the C wire if available.

24VAC ONLY

As shown in the wiring diagrams, The C wire is the other side of the 24VAC heating transformer. If the C wire is used, the batteries are then for AC power loss only and will last much longer. The thermostat will continue working if the batteries die.

**Make sure your wires are labeled.** This is necessary to determine which step-by-step wiring diagram you should use. This may require you to find the 'other end' connection for each wire on your heating or air conditioning equipment and read the label there. If you have a Zoned Heating/Cooling system with multiple thermostats, please refer to our website at [www.ritetemp-thermostats.com](http://www.ritetemp-thermostats.com) for installation notes or call 1-888-515-2585.

## Before you Connect Wires

Please refer back to these guidelines for safe and secure wire connections.

- Take care **not to damage the labels** for each wire in handling.
- Strip insulation 3/8 in. (9.5mm) from wire ends.
- Connect labeled wires only to a terminal with corresponding letter.
- Bend the wire slightly, insert the wire under the contact plate and tighten the screw down onto the wire.



**Caution** Do not allow wires to touch each other or parts on unit. Wires must be routed through the hole in the back plate, below the terminal block, or they will hit parts on the cover.

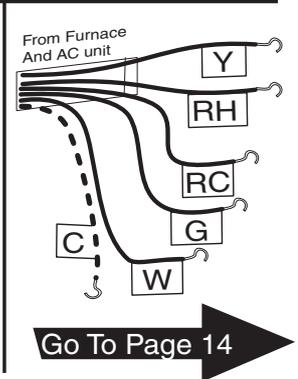
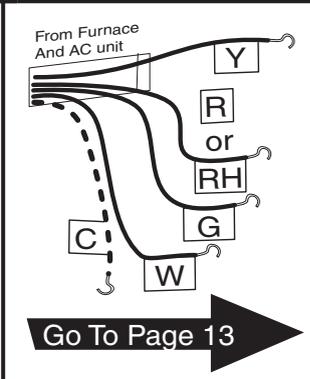
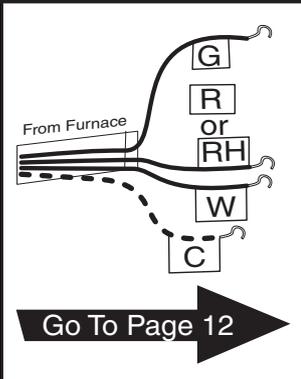
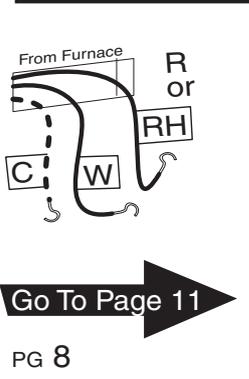
## WIRE LABEL LIST

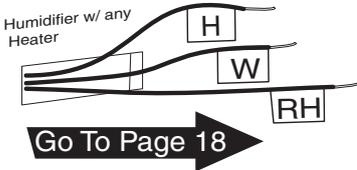
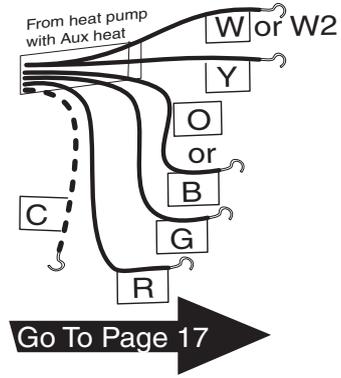
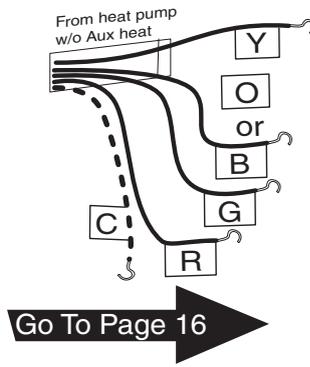
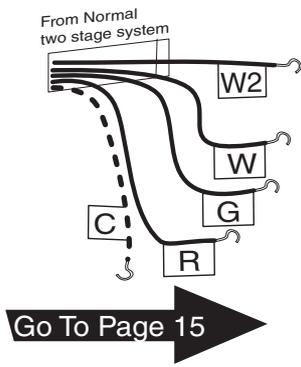
- R** - Single source power for heat/cool (R connected to RC and RH using the jumper wire)
- RH or R** - Heating Power
- RC** - Cooling Power
- W** - Heating return
- G** - Fan return
- Y** - Compressor return

## What Wires Do You Have?

The Wire Label List shows wire labels used on Ritetemp thermostats. Please determine what wires you have and select the correct wiring diagram to "go to" on pages 8-9. If you have a **HEAT PUMP** select a wiring diagram on pg 9. If you have a Humidifier select a diagram on pg9.

- H** - Humidifier (built into the furnace)
- W2** - 2nd stage heat in NORMAL, auxiliary heat in PUMP mode.
- A** - For 3 wire zoned heating systems
- C** - AC power for the thermostat if available
- O** - Damper control (Zoned heating) or heat pump changeover valve (powered in COOL)
- B** - Damper control (Zoned heating) or heat pump changeover valve (powered in HEAT) **NOTE: Do not connect both O and B on a heat pump. Connect O to O & tape off B.**
- X** - Tape off X
- E** - Tape off E

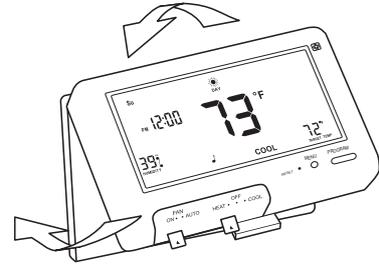




If you do not find the wiring information for your system try our website for more information.

## 8 Wire Connections cont

When you have finished connecting the wires, close cover and attach control unit to wall unit. Hook the top of the body onto the base, swing the body down, and snap the body onto the base.



## 9 Check Unit

Follow these procedures to verify you have correctly installed the unit.

### To check HEAT mode:

- Set the mode switch to HEAT. Set the fan switch AUTO.
- Touch the main temperature display then touch the TEMP UP arrow to raise the set point to 90°. Touch HOME. Wait 5 min.
- Verify that heat is blowing from the system.

### To check COOL mode:

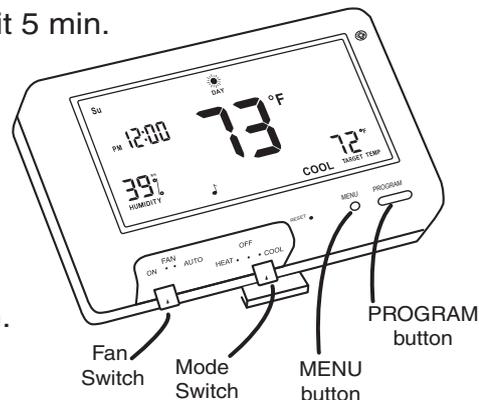
- Set the mode switch to COOL.
- Touch the main temperature display then touch the TEMP DOWN arrow to 5° below the room temperature.
- Touch HOME. Wait 5 min.
- Verify that cool air is blowing from the system.

### To check Fan: (If you connected the G wire)

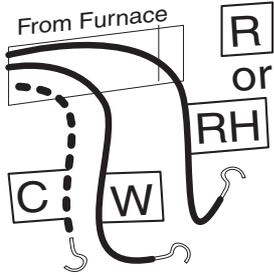
- Switch Mode to OFF during fan test.
- Switch the FAN switch to the ON position. Verify air is blowing from vents.
- After test, return to Fan switch to **AUTO**, and Mode to **HEAT** or **COOL**

**Congratulations**, you have successfully installed your unit. Please proceed to the OPERATING Guide to initialize the new thermostat.

**REMEMBER**, Mode Switch must be in HEAT or COOL to operate.



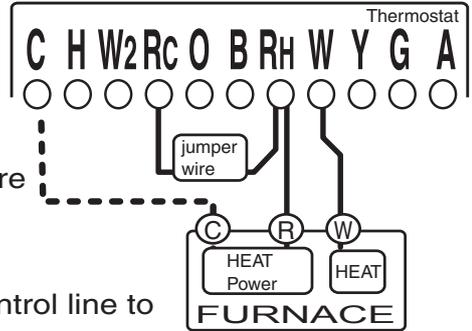
## 2 WIRE Heating (GAS MILLIVOLT or 24vac)



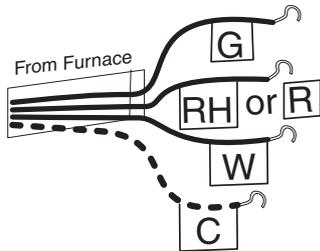
**STEP 1** - Connect the **R** (or RH) wire to the **RH** terminal on the thermostat.  
This connects the Heater Power to the thermostat.

**STEP 2** - Connect the **W** wire to the **W** terminal on the thermostat.  
This connects the heater control line to the thermostat.

Your Heater is now connected to the thermostat.



NOTE: Wires marked with the dotted line are optional.



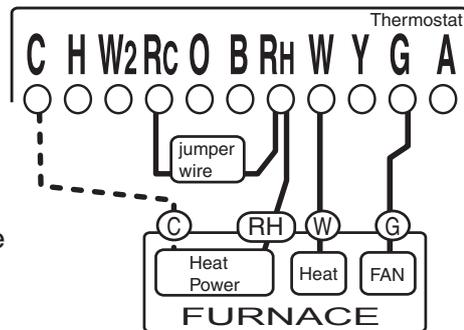
**STEP 1** - Connect the **R** (or RH) wire to the **RH** terminal on the thermostat. This connects to the Heater Power .

**STEP 2** - Connect the **W** wire to the **W** terminal on the thermostat.  
This connects the heater control line to the thermostat.

**STEP 3** - Connect the **G** wire to the **G** terminal on the thermostat.  
This connects the Fan to the thermostat.

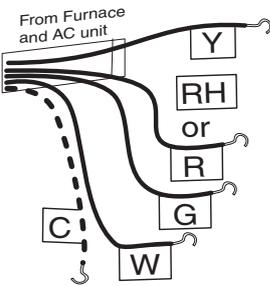
Your system is now connected to the thermostat.

## 3 WIRE



NOTE: Wires marked with the dotted line are optional.





**STEP 1** - Connect the **Y** wire to the **Y** terminal on the thermostat. This connects to the Cooler compressor.

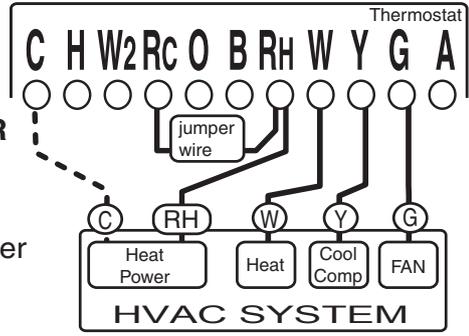
**STEP 2** - Connect the **RH** or **R** wire to the **RH** terminal on the thermostat. This connects the Heater/Cooler Power.

**STEP 3** - Connect the **W** wire to the **W** terminal on the thermostat. This connects to the heater control line.

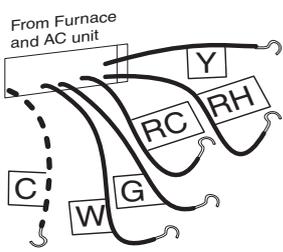
**STEP 4** - Connect the **G** wire to the **G** terminal on the Thermostat. This connects to the Fan.

Your HVAC system is now connected to the thermostat.

4 WIRE NON\_HEAT PUMP



NOTE: Wires marked with the dotted line are optional.



**STEP 1** - Remove the Jumper wire.  
**STEP 2** - Connect the **Y** wire to the **Y** terminal on the thermostat. This connects to the Cooler compressor.

**STEP 3** - Connect the **RH** wire to the **RH** terminal on the thermostat. This connects to the Heater Power .

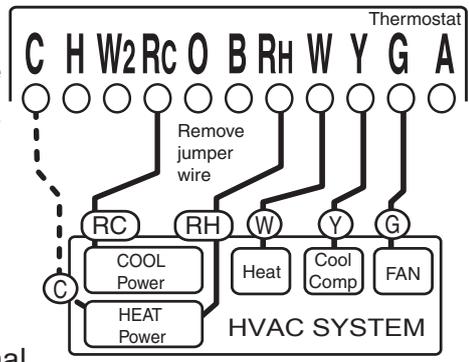
**STEP 4** - Connect the **RC** wire to the **RC** terminal on the thermostat. This connects to the Cooling Power .

**STEP 5** - Connect the **W** wire to the **W** terminal on the thermostat. This connects to the heater control line.

**STEP 6** - Connect the **G** wire to the **G** terminal on the Thermostat. This connects to the Fan.

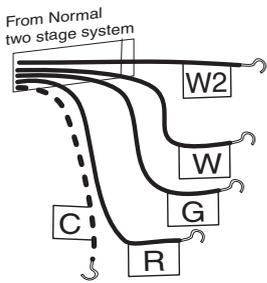
Your HVAC system is now connected to the thermostat.

5 WIRE NON\_HEAT PUMP



NOTE: Wires marked with the dotted line are optional.

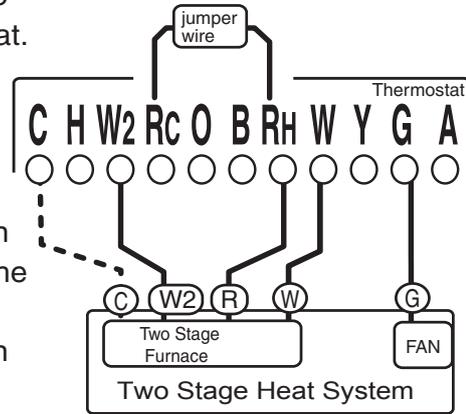




- STEP 1** - Connect the **G** wire to the **G** terminal on the thermostat. This connects the Fan.
- STEP 2** - Connect the between **W** wire to **W**. This connects the 1st stage heat.
- STEP 3** - Connect the between **W2** wire to **W2**. This connects the 2nd stage heat.

**STEP 4** - Connect the **R** wire to the **RH** terminal on the Thermostat. This connects to the 24vac power.

## NORMAL 2 Stage Heat System



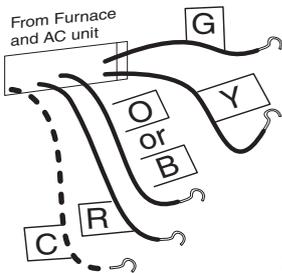
Your HVAC system is now connected to the thermostat.

(If the system also has AC, connect it per instructions for **RC** and **Y** on pg 14)



NOTE: Wires marked with the dotted line are optional.

PG 15



- STEP 1** - Connect the **G** wire to the **G** terminal on the thermostat. This connects the Fan.
- STEP 2** - Add a jumper wire between **W** and **Y**.
- STEP 3** - Connect the **Y** wire to the **Y** terminal on the thermostat. This connects the Compressor.
- STEP 4** - Connect the **O** or **B** wire to the **O** or **B** terminal on the

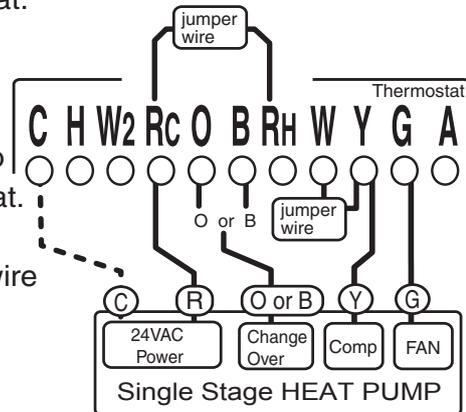
thermostat. (If you have *both* **O** and **B** contact Ritetemp or your local HVAC contractor for further help) This connects the change over valve.

**STEP 5** - Connect the **R** wire to the **RC** terminal on the Thermostat.

This connects to the 24vac power.

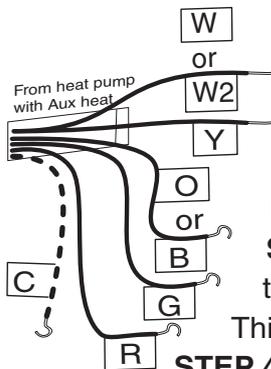
Your HVAC system is now connected to the thermostat.

## HEAT PUMP w/o Auxillary Heat



NOTE: Wires marked with the dotted line are optional.

PG 16



**STEP 1** - Connect the **G** wire to the **G** terminal on the thermostat. This connects the Fan.

**STEP 2** - Add a jumper wire between **W** and **Y**.

**STEP 3** - Connect the **Y** wire to the **Y** terminal on the thermostat. This connects the Compressor.

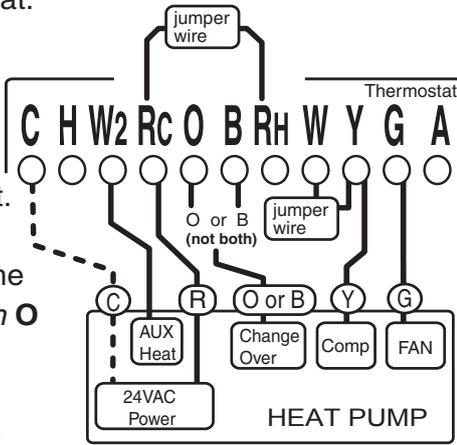
**STEP 4** - Connect the **O** or **B** wire to the **O** or **B** terminal on the thermostat. (If you have *both* **O** and **B** wires, use the **O** and tape off the **B**).

This connects the change over valve.

**STEP 5** - Connect the **R** wire to the **RC** terminal on the Thermostat. This connects to the 24vac power.

**STEP 6** - Connect **W** or **W2** to **W2** on the thermostat. This connects the AUX heat.

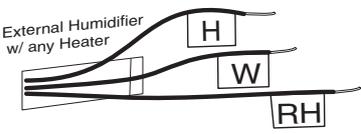
**HEAT PUMP with Auxillary Heat**



Your HVAC system is now connected to the thermostat.



PG 17 NOTE: Wires marked with the dotted line are optional.

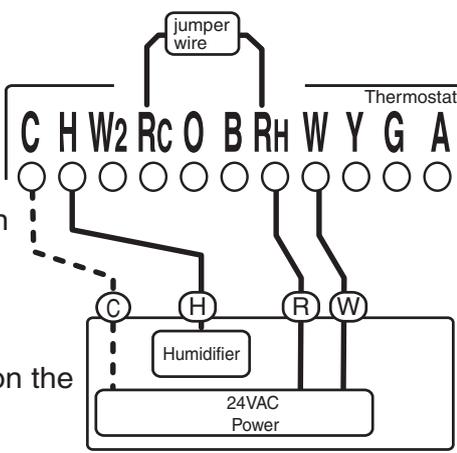


**STEP 1** - Connect the **H** wire to the **H** terminal on the thermostat. This connects the Humidifier.

**STEP 2** - Connect the **W** wire to the **W** terminal on the thermostat. This connects the Heat control line.

**STEP 3** - Connect the **R** wire to the **RH** terminal on the thermostat. This connects the Heater Power.

Your Humidifier and heater are now connected to the thermostat.



NOTE: Wires marked with the dotted line are optional.

