



# SC2000/SC2001

## Non-Programmable Electronic Thermostats



- Controls Single Stage Heating/Cooling Systems
- Single Stage Heat Pump Systems
- Compatible with Gas, Oil or Electric Systems
- Millivolt and Hydronic (water or steam) System Compatible – SC2000 only
- Mercury-Free, Environmentally Safe

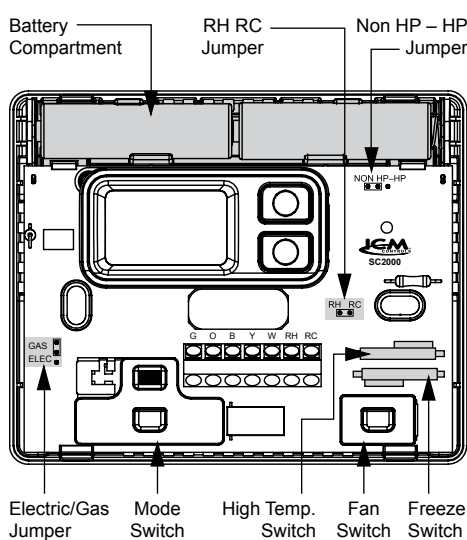
### Installation, Operation & Application Guide

For more information on our complete range of American-made products – plus wiring diagrams, troubleshooting tips and more, visit us at [www.icmcontrols.com](http://www.icmcontrols.com)

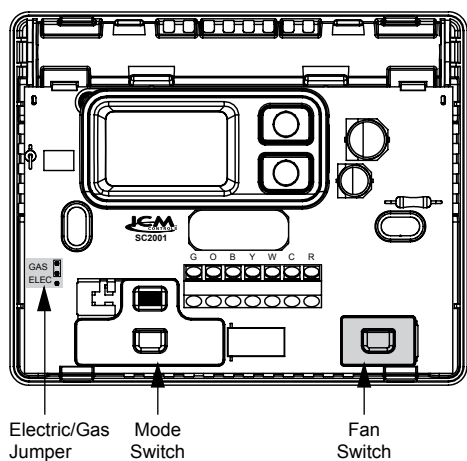


### Parts Diagrams

#### SC2000



#### SC2001



### Specifications

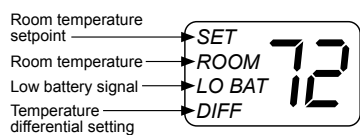
#### SC2000

- Input:**
- **Voltage:** Millivolt to 30 VAC/VDC
  - **DC Power:** 3 volts (2 "AA" alkaline batteries included)

- Output:**
- **Maximum:** 1 amp per terminal (3 amp total for all terminals)
  - **Temperature control ranges:** 45°F to 90°F (7°C to 32°C) **Accuracy:** ± 1°F (± 0.5°C)
  - **Differential range:** 1°F to 5°F (0.5°C to 2.5°C)
  - **System configurations:** Single-stage heat, single-stage cool or single-stage heat pump, gas, oil, electric
  - **Terminations (SC2000):** RC, RH, W, Y, O, B, G
  - **Terminations (SC2001):** R, W, Y, O, B, G, C

#### SC2001

- Input:**
- **Voltage:** 18-30 VAC



### Important Safety Information

- Always turn off the thermostat before installing, removing, cleaning, or servicing; turn off the power at the main power source by unscrewing fuse or switching off circuit breaker
- Do not switch to "Cool" if room temperature is below 50°F (10°C); this could damage your A/C system and cause injury
- Do not install on voltages higher than 30 VAC
- All wiring must conform to local and national building and electrical codes and ordinances
- While cleaning, do not get soap directly on thermostat switches or LCD readout; only use a damp cloth with a mild soap to wipe outside of thermostat cover

### Package Contents/Tools Required

**Package includes:** SimpleComfort® non-programmable thermostat on base, thermostat cover, wiring labels, screws and wall anchors, batteries (if applicable), Installation, Operation and Application Guide.

**Tools required for installation:** Drill with 3/16" bit, hammer, screwdriver.

### General Description

- The SimpleComfort® thermostat is a **digital, mercury-free, non-programmable, electronic thermostat**
- Compatible with single-stage **heating systems, heating/cooling systems, and heat pump systems**; works with **gas, oil, or electric** systems
- Compatible as a **master thermostat** in zoned system applications
- **Freeze Protection Feature (SC2000 only):** Protects pipes from freezing! If the room temperature drops to 40°F, the thermostat automatically turns on the heat; the thermostat must be in the Heat position; works even if the batteries are dead
- **Built-in Compressor Protection for Air Conditioners:** To protect the A/C's compressor, there is a 4-minute delay between the system turning off and the A/C starting
- **System Customization:** Choose **Fahrenheit** or **Celsius** display; five available **temperature differential settings, select heat pump or non heat pump operation.**

### To Remove Existing Thermostat

**ELECTRICAL SHOCK HAZARD – Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.**

1. Turn off power to the heating and cooling system by removing the fuse or switching off the appropriate circuit breaker.
2. Remove cover of old thermostat. This should expose the wires.
3. Label the existing wires with the enclosed wire labels before removing wires.
4. After labeling wires, remove wires from wire terminals.
5. Remove existing thermostat base from wall.
6. Refer to the following section for instructions on how to install this thermostat.

### To Install Thermostat



**ELECTRICAL SHOCK HAZARD – Turn off power at the main service panel by removing the fuse or switching the appropriate circuit breaker to the OFF position before removing the existing thermostat.**

**IMPORTANT:** Thermostat installation must conform to local and national building and electrical codes and ordinances.

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

1. Turn off power to the heating and cooling system by removing the fuse or switching off the appropriate circuit breaker. Move the **Cool/OFF/Heat** switch to **OFF**.
  2. Move the **FAN AUTO/ON** switch to **AUTO**.
  3. To remove cover, insert and twist a coin or screwdriver in the slots on the top of the thermostat.
  4. Put thermostat base against the wall where you plan to mount it (Be sure wires will feed through the wire opening in the base of the thermostat).
  5. Mark the placement of the mounting holes.
  6. Set thermostat base and cover away from working area.
  7. Using a 3/16" drill bit, drill holes in the places you have marked for mounting.
  8. Use a hammer to tap supplied anchors into mounting holes.
  9. Align thermostat base with mounting holes and feed the control wires through wire opening.
  10. Use supplied screws to mount thermostat base to wall.
- CAUTION!:** Be sure exposed portion of wires does not touch other wires.
11. Tighten screws on terminal block. Gently tug wire to be sure of proper connection. Double check that each wire is connected to the proper terminal.
- CAUTION!:** Remove RH/RC jumper for 2 transformer system (SC2000 only).
12. Set the fan jumper to **electric** or **gas/oil**.
  13. Install two "AA" alkaline batteries (SC2000 only).
  14. Replace cover on thermostat by snapping it in place.
  15. Turn on power to the system at the main service panel.

### Installing and Changing Batteries (SC2000 only)

If your LCD is blank, or displaying **LO BAT**, the batteries are not installed or need to be changed. We suggest you change the batteries at least once a year, or whenever the **LO BAT** warning displays.

**\*Note:** After installing new batteries, you have to reset the room temperature setting and the differential setting.

**Step 1:** Move the **Cool/Off/Heat** switch into the **Off** position.

**Step 2:** Move the **Fan Auto/On** switch into the **Auto** position.

**Step 3:** Remove the cover, and install the two "AA" alkaline batteries into the battery compartment. Proper battery installation is important! Make sure the positive ends of the batteries match the positive terminals in the battery compartment.

If the display is on, the batteries are installed properly.

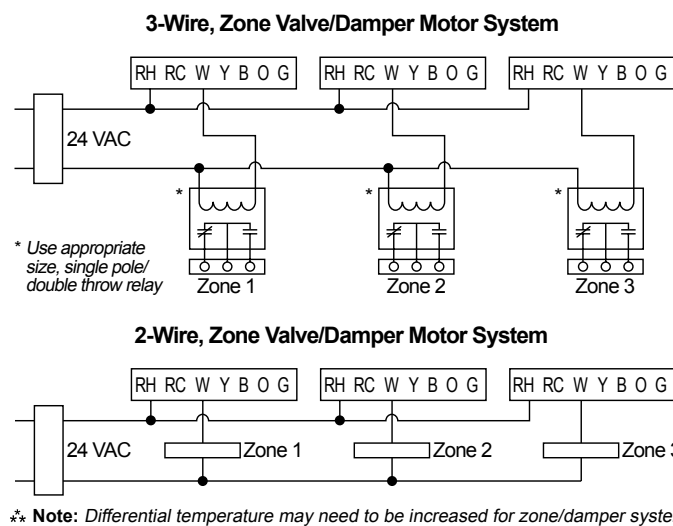
### Replacing Wiring Labels

Replace the old labels with the enclosed new labels:

Old	New	Type
F, G	G	Fan control relay
O	O	Cool active reversing valve
B	B	Heat active reversing valve
Y, Y6	Y	Cooling control
H, W, 4	W	Heating control
	C	Transformer, common side
M, 4, RH, RS, R	R	Transformer, hot side
C	Y or C	If the C terminal is the cooling control, connect to Y terminal; if it is the common side of the transformer, connect to C terminal

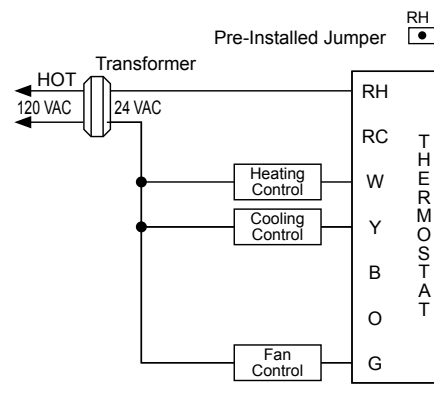
### Wiring Diagrams

#### SC2000 – Zone Valve/Damper Motor Systems

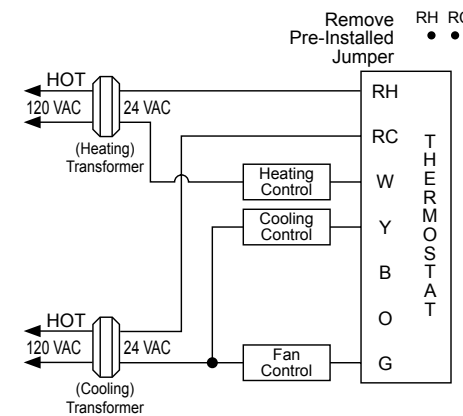


#### SC2000 – Heating/Cooling

##### 4-Wire, Single Transformer



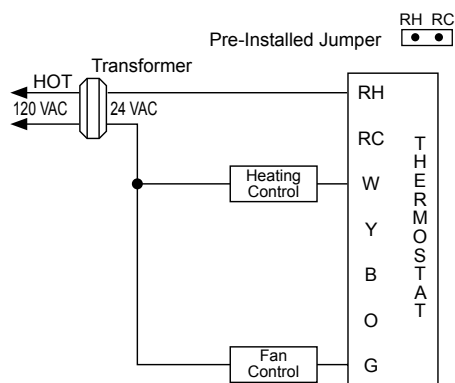
##### 5-Wire, Two Transformer



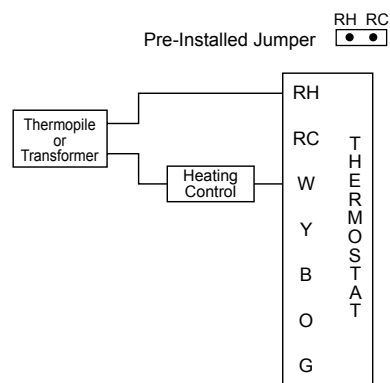
**\*\*Note:** Both transformers must be in phase

**SC2000 – Heating Only**

**3-Wire, Single Transformer**

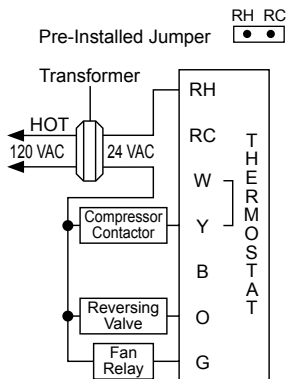


**2-Wire, Single Transformer or Millivolt**

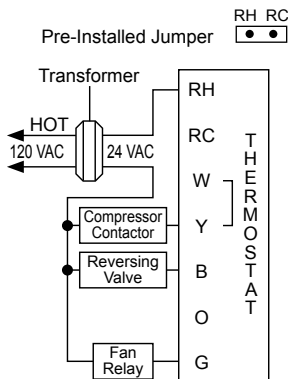


**SC2000 – Heat Pump**

**Cool Active Reversing Valve**

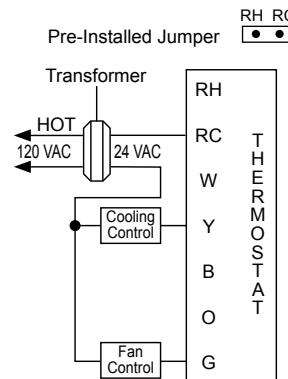


**Heat Active Reversing Valve**



**SC2000 – Cool Only**

**3-Wire, Single Transformer**

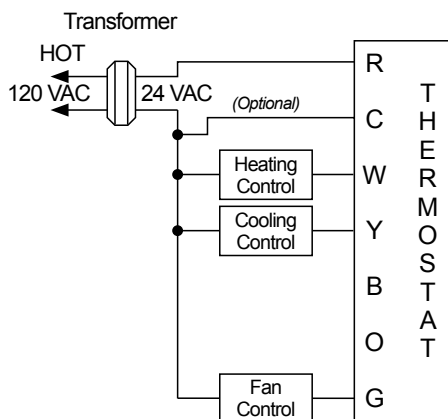


\*\* Note: Place jumper between "W" and "Y" terminals.

\*\* Note: Millivolt system may require a transformer and/or an isolation relay to operate properly

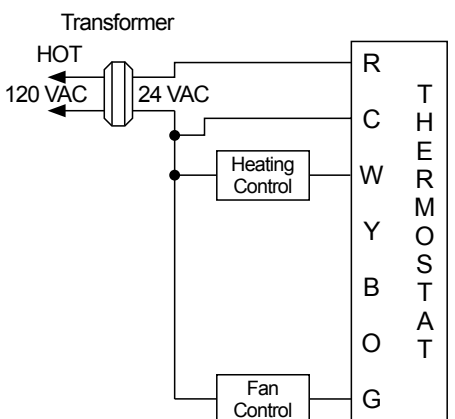
**SC2001 – Heating and Cooling**

**4 or 5-Wire, Single Transformer**

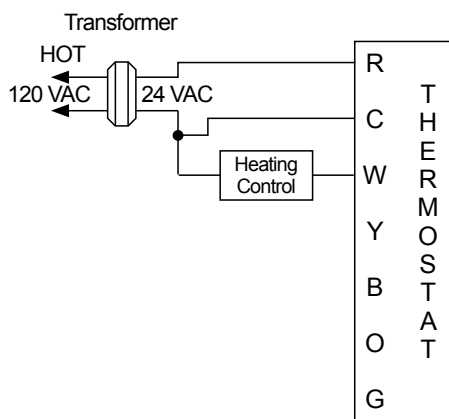


**SC2001 – Heating Only**

**4-Wire, Single Transformer**

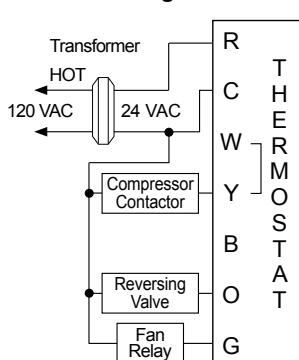


**3-Wire, Single Transformer**



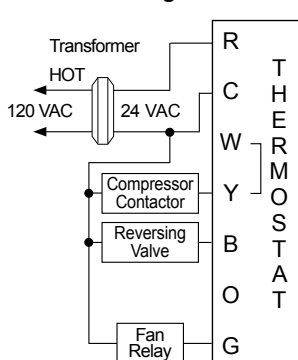
**SC2001 – Heat Pump**

**Cool Active Reversing Valve**



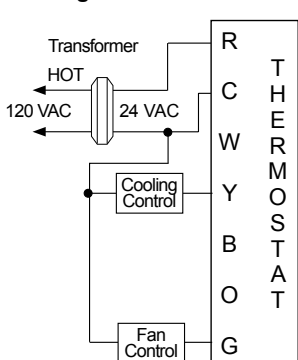
Place jumper between "W" and "Y" terminals.

**Heat Active Reversing Valve**



**SC2001 – Cool Only**

**4-Wire Single Transformer**



Millivolt systems may require a transformer and/or an isolation relay to operate properly.

**A Quick Test**

**CAUTION!** Do not switch system to cool if the temperature is below 50°F (10°C). This can damage the air conditioning system and may cause personal injury.

Do not short jumper across terminals on the gas valve or at the system control to test installation.

**Action:** Set the Cool/Off/Heat switch to Cool. Press the down button until the temperature setting is 3°F below the room temperature.

**Result:** The A/C system and fan should turn on.

**Action:** Set the Cool/Off/Heat switch to Off.

**Result:** The A/C should turn off (There may be a fan delay).

**Action:** Set the Cool/Off/Heat switch to Heat. Press the up button until the temperature setting is 3°F above the room temperature.

**Result:** The heating system and fan should turn on (There may be a time delay depending on your system).

**Action:** Set the Cool/Off/Heat switch to Off.

**Result:** The heating system should turn off (There may be a fan delay).

**Action:** Set the Fan Auto/On switch to On.

**Result:** The blower fan should turn on.

**Action:** Set the Fan Auto/On switch to Auto.

**Result:** The blower fan should turn off.

If the above test was successful, you have a proper installation.

**If not:** Double check that wires are securely connected and are connected to the proper terminals. Consult the troubleshooting section.

**Operation**

**Starting the Thermostat**

**Step 1:** Move the Fan Auto/On switch into the Auto position.

**Step 2:** Move the Cool/Off/Heat switch to Cool or Heat, depending on the season.

**Setting the Room Temperature (Setpoint Temperature)**

**Step 1:** Press one of the arrow buttons; the current temperature setting displays.

**Step 2:** Press the up or down arrow button until the desired temperature setting displays.

The new temperature setting is automatically saved. After 5 seconds, the display returns to showing the current room temperature.

**Configuration**

Enter configuration by simultaneously pressing both the up and down buttons for 1 second while in OFF mode. Use the up and down buttons to change the setting. Press both the up and down to advance to the next configuration screen. Exit configuration by sliding the mode switch to Heat or Cool mode.

- **F/C** – select to operate in Fahrenheit or Celsius
- **Differential 1-5:** Default set to 1 degree. When heating or cooling turn on too frequently you can increase the temperature differential. A larger differential results in longer run times.
- **Heat time delay** – Heat pumps require a time delay in heat to protect the compressor.
  - H0 = non-heat pump system, no time delay between heat calls
  - H1 = heat pump system, 4 minute time delay between heat calls

**Troubleshooting**

Symptom	Remedy
The system isn't turning on	Check the wiring (see Installation) Check the batteries (SC2000 only)
LCD is blank, or displaying "LO BAT"	SC2000: Replace batteries, or make sure the existing ones are properly installed (see Installing and Changing Batteries) SC2001: Verify 24 VAC is at thermostat.
Thermostat is not properly controlling the fan	Check that the Gas/Electric jumper setting matches your system (gas or electric)
Thermostat is continuously turning on and off	Increase the temperature differential (see Setting a New Temperature Differential)
Temperature displayed is not accurate	Plug the hole for wiring behind the thermostat with non-flammable insulation to prevent airflow into the thermostat

**ONE-YEAR LIMITED WARRANTY**

The Seller warrants its products against defects in material or workmanship for a period of one (1) year from the date of manufacture. The liability of the Seller is limited, at its option, to repair, replace or issue a non-case credit for the purchase prices of the goods which are provided to be defective. The warranty and remedies set forth herein do not apply to any goods or parts thereof which have been subjected to misuse including any use or application in violation of the Seller's instructions, neglect, tampering, improper storage, incorrect installation or servicing not performed by the Seller. In order to permit the Seller to properly administer the warranty, the Buyer shall: 1) Notify the Seller promptly of any claim, submitting date code information or any other pertinent data as requested by the Seller. 2) Permit the Seller to inspect and test the product claimed to be defective. Items claimed to be defective and are determined by Seller to be non-defective are subject to a \$30.00 per hour inspection fee. This warranty constitutes the Seller's sole liability hereunder and is in lieu of any other warranty expressed, implied or statutory. Unless otherwise stated in writing, Seller makes no warranty that the goods depicted or described herein are fit for any particular purpose.



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