



SC2010 N/L

1 Heat/1 Cool
Manual Changeover
Battery or Hardwire
Non-Programmable Electronic Thermostat

- Configurable
- Single Stage Heat/Cool Systems
- Single Stage Heat Pump Systems
- Large Display With Backlight (SC2010L)
- Selectable Fahrenheit or Celsius
- Compatible with Gas, Oil, or Electric
- SimpleSet™ Field Programming
- Relay Outputs (minimum voltage drop in thermostat)
- Ideally Suited for:
 - Residential (New Construction/Replacement)
 - Light Commercial

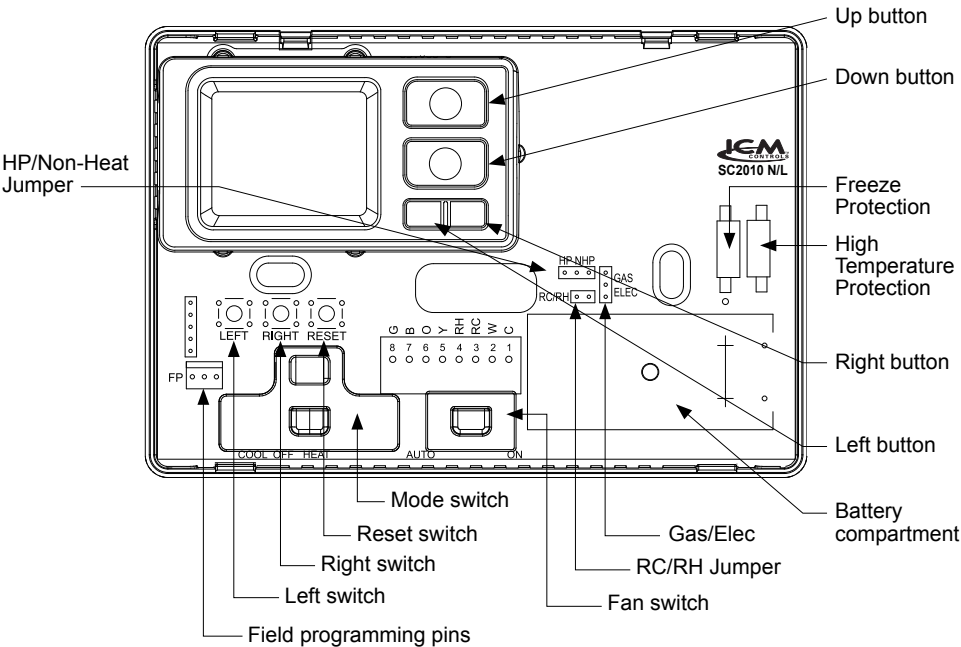


Installation, Operation & Application Guide

For more information on our complete range of American-made products – plus wiring diagrams, troubleshooting tips and more, visit us at www.icmcontrols.com



Parts Diagram



Specifications

Electrical rating:

- 24 VAC (18-30 VAC)
- 3.0 VDC (2 “AAA” batteries)
- 1 amp maximum per terminal
- 3 amp maximum total load

Temperature control range: 45°F to 90°F (7°C to 32°C) **Accuracy:** ± 1°F (± 0.5°C)

System configurations: 1-stage heat, 1-stage cool, heat pump, gas, oil, electric

Timing: Anti-short Cycle: 4 minutes

Backlight Operation (**Note:** with SC2010L only)

Terminations: G, B, O, Y, RH, RC, W, C

Important Safety Information

WARNING!: Always turn off power at the main power supply before installing, cleaning, or removing thermostat.

- This thermostat is for 24 VAC applications only; do not use on voltages over 30 VAC
- Do not short across terminals of gas valve or system control to test operation; this will damage your thermostat and void your warranty
- All wiring must conform to local and national electrical and building codes
- Do not use air conditioning when the outdoor temperature is below 50 degrees; this can damage your A/C system and cause personal injuries
- Use this thermostat only as described in this manual

Package Contents/Tools Required

Package includes: SC2010 N/L thermostat on base, thermostat cover, wiring labels, screws and wall anchors, 2 “AAA” batteries, Installation, Operation and Application Guide

Tools required for installation: Drill with 3/16” bit, hammer, screwdriver

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 the appropriate circuit breaker off.
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 the appropriate circuit breaker off.
2. To remove cover, pull gently at the seam at the top.
3. 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).
4. Mark the placement of the mounting holes.
5. Set thermostat base and cover away from working area.
6. Using a 3/16” drill bit, drill holes in the places you have marked for mounting.
7. Use a hammer to tap supplied anchors in mounting holes.
8. Align thermostat base with mounting holes and feed the control wires through slit in thermal intrusion barrier and into wire opening.
9. Use supplied screws to mount thermostat base to wall.
10. Insert stripped, labeled wires in matching wire terminals.

CAUTION!: Be sure exposed portion of wires does not touch other wires.

11. Gently tug wire to be sure of proper connection. Double check that each wire is connected to the proper terminal.

12. Place gas/elec jumper in correct position.

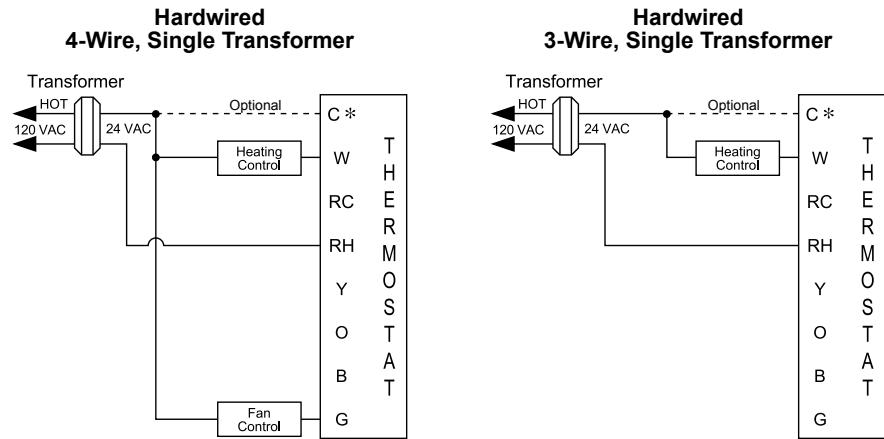
gas = gas/oil systems

elec = electric heat or heat pump systems

13. Remove RC/RH jumper for 2-transformer systems.
14. Non-heat pump jumper must be in Non-HP unless the system is a heat pump.
15. Insert 2 “AAA” batteries into battery holder. Orient them in the proper direction.
16. Turn on power to the system at the main service panel.
17. Configure thermostat (see Configuration Mode Settings) to match the type of system you have.
18. Replace cover on thermostat by snapping it in place.
19. Test thermostat operation as described in “Testing the Thermostat”.

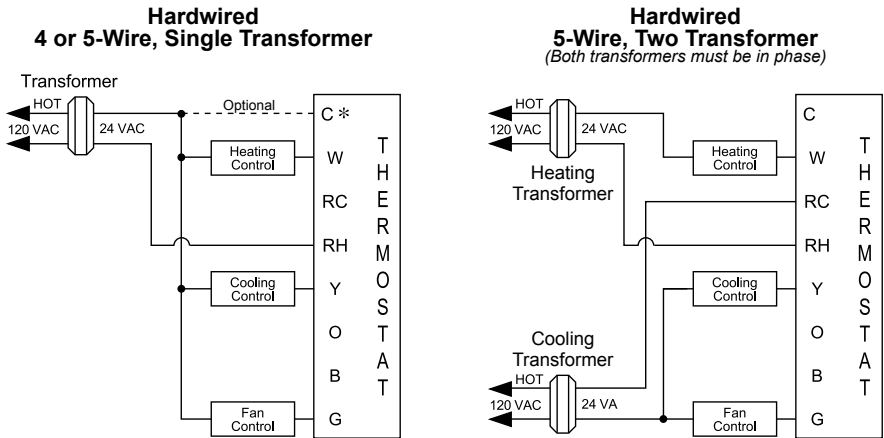
Wiring Diagrams

Heating Only



* Common wire connection optional with batteries installed.

Heating/Cooling

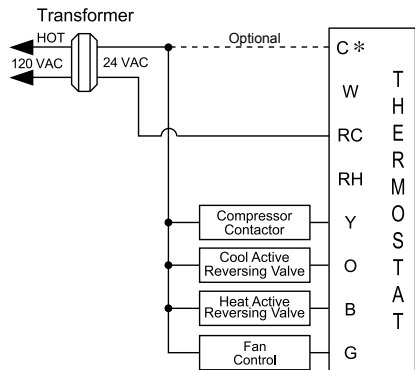


* Common wire connection optional with batteries installed.

IMPORTANT: Before wiring, remove pre-installed RC/RH jumper.

Heat Pump

Hardwired Cool or Heat Active Reversing Valve

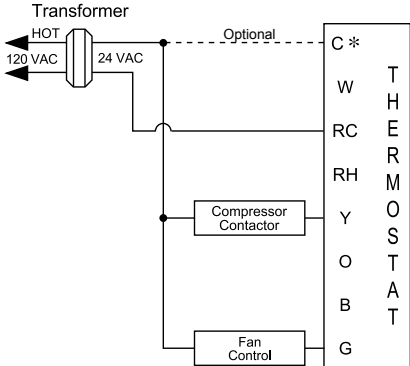


* Common wire connection optional with batteries installed.

**** Note:** Non-HP jumper must be installed on the HP pin for heat pump systems

Cooling Only

Hardwired 4-Wire, Single Transformer



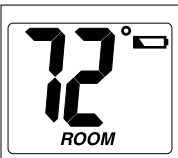
* Common wire connection optional with batteries installed.

Installing and Changing Batteries

For Battery Thermostat Operation

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.

Remove the cover, and install the two “AAA” 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.



For Hardwired Thermostat Operation

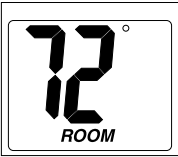
Batteries are not required when a common wire is connected to the C terminal of the **SC2010 N/L** thermostat.

Configuration Mode

The configuration mode is used to set the **SC2010 N/L** to match your system.

To configure the **SC2010 N/L**, perform the following steps:

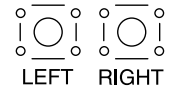
- 1. Verify the **SC2010 N/L** is in the **OFF** mode. Slide the system switch to the center position until off mode displays.



- 2. Remove the cover of the thermostat by gently pulling near one of the corners at the top of the thermostat.

- 3. Press both the **LEFT** and **RIGHT** switches for 1 second while the **SC2010 N/L** is in **OFF** mode.

Press the **up** or **down** button to change settings within each screen.



Press the **RIGHT** switch to advance to the next screen.

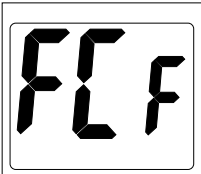
**** Note:** Pressing the **LEFT** switch will return you to the previous screen.

To exit configuration mode, press both the **LEFT** and **RIGHT** switches for 1 second or slide the mode switch to heat or cool.

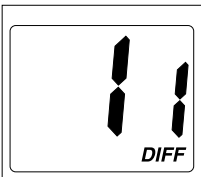
Configuration Mode Settings

The setup screens for Configuration Mode are as follows:

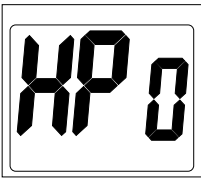
- 1. **Temperature Scale** (F or C) – Choose Fahrenheit or Celsius. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



- 2. **Temperature Differential** (1°F to 5°F) (1°C to 3°C) – Set the number of degrees between your “setpoint” temperature and your “turn on” temperature. Press the **up** or **down** button to set differential value. Press the **RIGHT** switch to advance to the next screen.



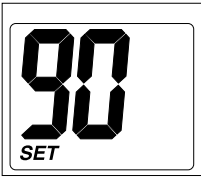
- 3. **Heat Pump** and **Non-Heat Pump** – Set to heat pump, or non-heat pump system. For heat pumps, there will be a compressor time delay for heating and cooling.
 - 1 = Heat pump system
 - 0 = Non-heat pump systemPress the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



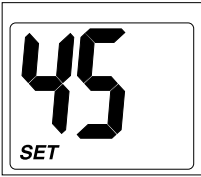
- 4. **Lockout** (0°F-8°F) (0°C-8°C) – Select the number of degrees set temperature can be changed during keypad lockout. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



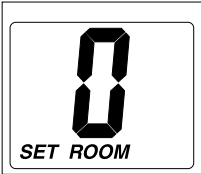
- 5. **Maximum Heat Setpoint** (45°F to 90°F) (7°C to 32°C) Adjust to control the maximum heat set temperature allowed. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



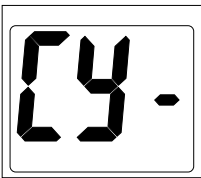
- 6. **Minimum Cool Setpoint** (45°F to 90°F) (7°C to 32°C) Adjust to control the minimum cool set temperature allowed. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



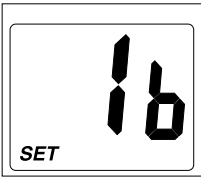
- 7. **Room Temperature Offset** (+9°F to -9°F) (+5°C to -5°C) Adjust to calibrate displayed room temperature to match actual room temperature. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



- 8. **Maximum Cycles Allowed Per Hour** (- -, 2-6) - - = as many as needed, 2-6 = maximum cycles/hour. Press the **up** or **down** button to select. Press the **RIGHT** switch to advance to the next screen.



- 9. **Back Light** (0 or 1) (**Note:** For SC2010L only) 0 = Back light never on (best for long battery life) 1 = Back light on when button pressed. Press the **up** or **down** button to select.



To exit configuration mode, press both the **LEFT** and **RIGHT** switches for 2 seconds or slide the mode switch to heat or cool.

Operating Modes

OFF Mode

- In this mode, the thermostat will not turn on the heating or cooling devices (manual fan can operate)
- **OFF** mode is also used to access the configuration screens

Cool Mode

- In this mode, the thermostat controls the cooling system

Heat Mode

- In this mode, the thermostat controls the heating system

Lockout Feature

The **SC2010 N/L** has a button lockout feature so the temperature adjustment is prohibited or limited. Select the appropriate lockout from Configuration Mode Settings (Step 4) of this guide.



To activate the LOC feature:

1. Simultaneously press the **LEFT**, **RIGHT** and **UP** buttons for 10 seconds.
2. LOC will display and the lockout function will be enabled.

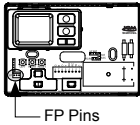
To deactivate the LOC feature, repeat steps 1 and 2 above.

SimpleSet™ Field Programming

This feature is used for transferring the configuration settings from the master to the target thermostat. All thermostats for a job can be mounted and powered up. Configure one thermostat. This will be the master. The master will be used to copy the configuration to the rest of the thermostats.

Preparing the master to Send:

1. The master must be powered by 24 VAC or batteries.
2. Verify the master thermostat is in **OFF** mode. Slide system switch to center position.
3. Remove cover of the master thermostat by gently pulling near one of the corners at the top of the thermostat.
4. Press the **up** and **down** buttons and **RIGHT** switch simultaneously for 5 seconds.
5. The **OUT** screen displays indicating the master thermostat is ready to transfer data.
 - ** Note:** Press the **up** and **down** buttons and **RIGHT** switch simultaneously for 5 seconds to exit from data transfer mode and to return the master to the **OFF** mode.



6. Connect the master to the target using the 3 wire connector. Attach one end to the Master's FP pins and the other end to the Target's FP pins.
 - ** Note:** Target thermostat must be powered by 24 VAC or batteries for field programming to occur.

When the connection has been made correctly, the master thermostat will power up and the target will count from 6 down to 1. It will then display **LOC** confirming the data has been saved in memory.

When all target thermostats have been completed, reinstall the master thermostat.

Press the **up** and **down** buttons and the **RIGHT** switch simultaneously for 5 seconds to exit from the data transfer mode and to return the master thermostat to the **OFF** mode.

Troubleshooting

Symptom	Remedy
No display	Check for 24 VAC at thermostat; display is blank when 24 VAC is not present or if batteries are completely discharged
System fan does not come on properly	Verify wiring is correct, check Gas/Electric jumper position (see Parts Diagram)
All thermostat buttons are inoperative	Verify 24 VAC is present; unit locks out when 24 VAC is not present with no batteries installed
No response with first button press	First button press activates backlight only when back light is configured “ON”
Heat or Cool not working	RC/RH jumper must be installed on single transformer systems For heat pumps, Non-HP jumper must be on HP pins
Thermostat turns on and off too frequently	Adjust temperature differential (see Configuration Mode Setting)
Fan runs continuously	Slide FAN switch to auto to turn fan off
Room temperature is not correct	Calibrate thermostat (see Configuration Mode Setting 7)
LOC displays when any button is pressed	Thermostat has the button lockout function activated (see Lockout Feature and Configuration Mode Setting 4)
Heat or Cool not coming on	Verify wiring is correct, verify RC/RH jumper is in place (for single transformer system)
on display	Replace batteries with two fresh “AAA” alkaline batteries
Problem not listed above	Press Reset button once*

* **Reset Button Function:** Configuration settings are unchanged.

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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