White-Rodgers™

Single-Stage Thermostat Install Guide

Model # NP110
Made in China

37-7581

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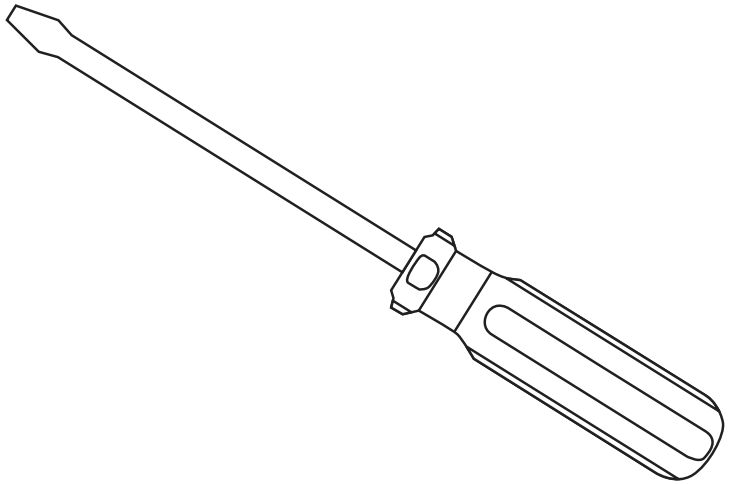
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⚠ WARNING

Failure to follow and read all instructions carefully before installing or operating this control could cause personal injury and/or property damage.

1. PREPARATIONS

1.1 Check package contents



This package should contain the following items:

- Thermostat
- Mounting screws and wall anchors (x2)
- 2 AAA batteries
- Terminal wire label stickers
- Installation instructions

1.2 Gather tools

Required tools:

□ Flat-head Screwdriver □ Small pliers (needle-nose) □ Drill with 3/16” (4 mm) bit

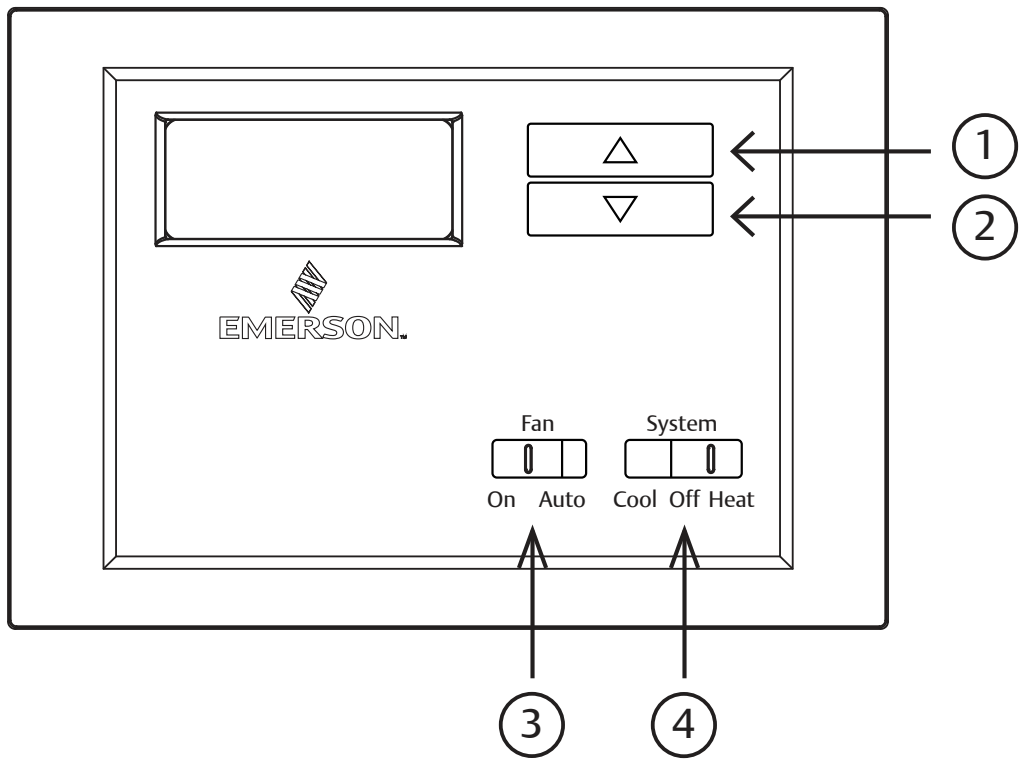
Optional tools:

□ Wire cutters/stripper □ Hammer

2. THERMOSTAT DETAILS

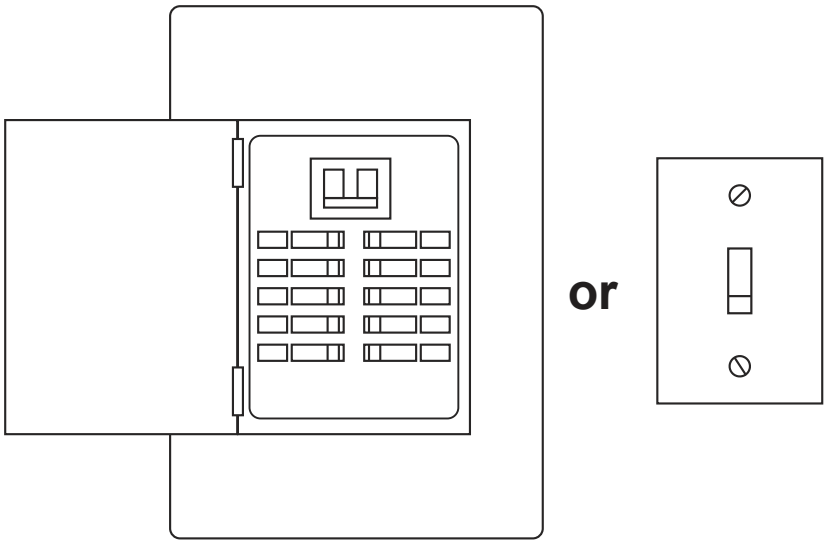
The thermostat buttons and switches

1. (Up arrow) Raises temperature setting.
2. (Down arrow) Lowers temperature setting.
3. FAN switch (ON, AUTO).
4. SYSTEM switch (COOL, OFF, HEAT).



3. REMOVING OLD THERMOSTAT

3.1 Turn off power



⚠ WARNING

To prevent electrical shock and/or equipment damage, disconnect electrical power to the system at the main fuse or circuit breaker box, or by flipping a switch at the air handler. Do not restore power until installation is complete.

To ensure the power to your heating and cooling system has been turned off, try to turn on heating or cooling by changing the temperature on your old thermostat.

3.2 Remove the old thermostat cover

Remove the old thermostat's front cover from the wall base. Some covers pull off easily, while others may need to be released by using a screwdriver.

⚠ CAUTION

Your old thermostat may have a sealed glass tube containing mercury. Be careful not to damage the tube or dispose of the tube in your trash. For safe disposal information, please see Mercury Notice on page 27.

3.3 Label wires

Tip: Taking a picture with a camera or smartphone can help you not only remember how wires are connected to the terminals, but can also ensure that you label your wires correctly. Mislabeling the wires may result in a high energy bill or damage to your heating and cooling system.

Using your screwdriver, carefully unscrew one wire at a time from the terminal block and attach the corresponding wire label sticker.

Please note that not all terminals may be used, and that there's no standard color code for thermostat wires, so your wire colors may vary. For your reference, we've included a terminal label reference chart to help you connect the wires in your old thermostat to your new thermostat in case you get stuck.

Terminal labeling reference chart

If your current terminal has the following letter	Label the wires with the following letters	Terminal function
RH, R, R5, 5	RH	24V Power (Heating)
RC	RC	24V Power (Cooling)
W, W1, 4	W	Heating Relay
Y, Y1	Y	Cooling Relay
G	G	Fan Relay
O	O	Reversing Valve (for heat pump applications energized in Cool mode)
B	B	Reversing Valve (for heat pump applications energized in Heat mode)

3.4 Identify jumper wire

For terminal RC and RH:

On your old thermostat, if…	Then, on your new thermostat…
Terminal RC and RH are connected with a jumper wire	Leave the jumper wire in its place
There's only one R wire (RC, RH, R or R5) coming out of the wall	Leave the jumper wire in its place
Terminal RC and RH (or 5 or R5) are NOT connected by a jumper wire	Remove the jumper wire between RC and RH

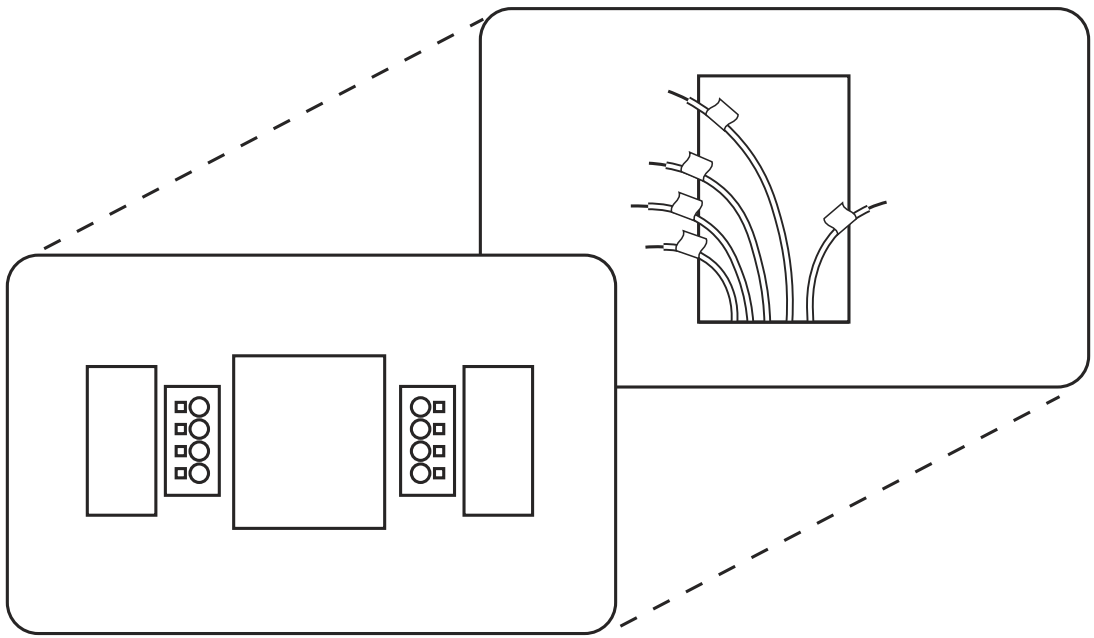
For terminal Y and W:

If you have a heat pump with reversing valve, connect Y and W with a jumper wire on your new thermostat.

If you need help with labeling and wiring, please contact Customer Support at 877.654.9394 or email wr.techsupport@emerson.com — we're here to help!

3.5 Remove old thermostat base

With all of your wires disconnected and properly labeled, you may now safely remove the thermostat base from your wall.



Tip: Worried about having your wires falling into your wall? Keep the wires secure by wrapping the them around a pencil.

4. MOUNTING AND WIRING YOUR NEW THERMOSTAT

4.1 Install new thermostat base

Mount your new thermostat base using the supplied screws. Drill holes and insert wall anchors to secure the thermostat base to the wall, if necessary.

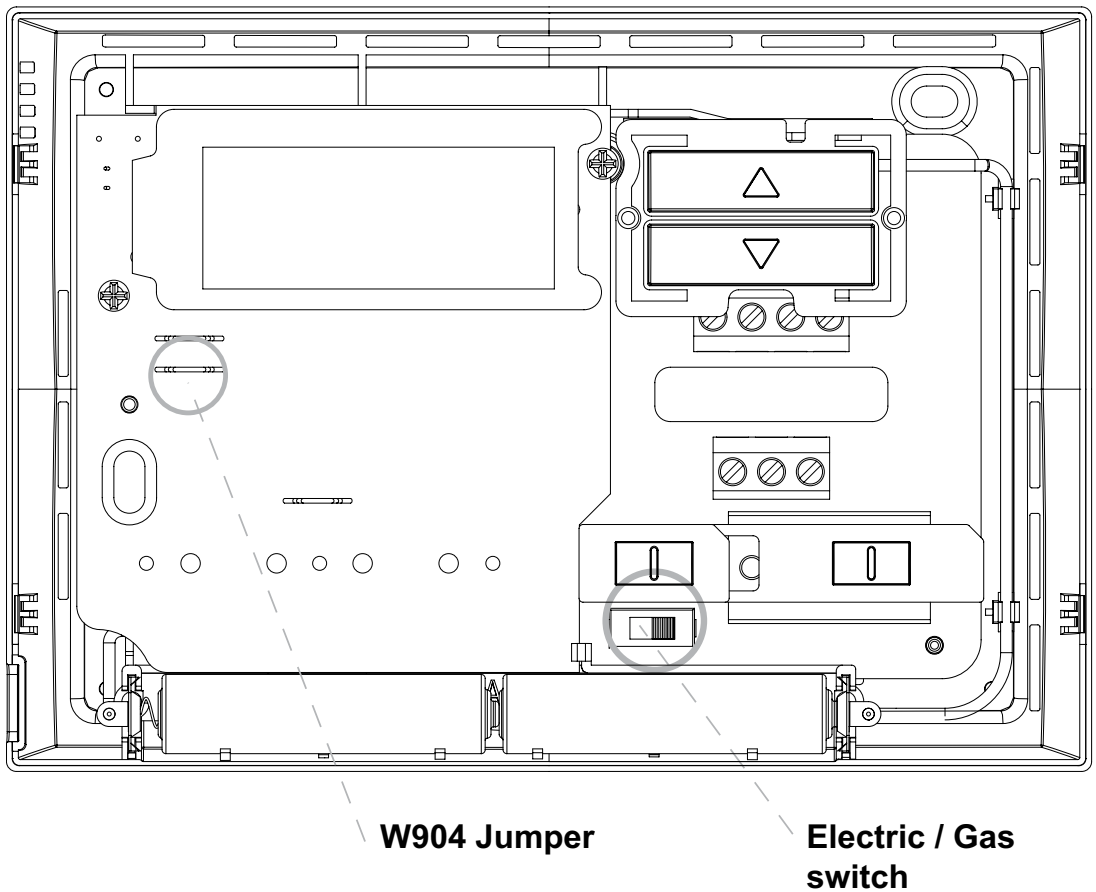
4.2 Connect wires to corresponding terminal blocks

Match each labeled wire to it's corresponding terminal on the mounted thermostat base. Insert each labeled wire into the hole of it's matching terminal, and using the screwdriver, tighten the screw on the terminal block securely.

⚠ CAUTION

Take care when securing and routing wires so they do not short to adjacent terminals or rear of thermostat. Personal injury and/or property damage may occur.

4.3 Set switch and advanced wiring



If you have either a gas or oil furnace, set the switch to GAS. If you have an electric furnace, set the switch to ELEC.

4.4 Install the batteries and attach front cover

Install the included AAA alkaline batteries and push the front cover on to the thermostat base until it's secure.

4.5 Turn on power

Turn on your power at the source.

Congratulations! You've completed the thermostat installation process

5. CHECK THERMOSTAT OPERATION

Tip: If at any time during testing your system does not operate properly, please contact Customer Support at 877.654.9394 or email wr.techsupport@emerson.com

Note: To prevent static discharge problems, touch side of thermostat to release static build-up before touching any keys.

If at any time during testing your system does not operate properly, contact a qualified service person.

5.1 Fan operation

If your system **does not** have a **G** terminal connection, skip to **Heating System.**

1. Turn on the power system
2. Move FAN switch to ON position. The blower should begin to operate.
3. Move FAN switch to AUTO position. The blower should stop immediately.

5.2 Cooling system

⚠ CAUTION

To prevent compressor and/or property damage, if the outdoor temperature is below 50°, DO NOT operate the cooling system

This thermostat has a time delay between cooling cycles to allow the head pressure in the compressor to stabilize. If the temperature is adjusted to call for cool within 5 minutes of the last cycle the snowflake icon will blink indicating the thermostat is locked out. After 3 to 5 minutes, the compressor will start and the snowflake icon will stop flashing. This helps prevent the compressor from cycling too quickly and is normal operation for the thermostat.

1. Mose SYSTEM switch to **COOL** position.
2. Press ⊖ to adjust thermostat setting below room temperature. The blower should come on immediately on high speed, followed by bold air circulation
3. Press ⊕ to adjust temperature setting above room temperature. The cooling system should stop operating.

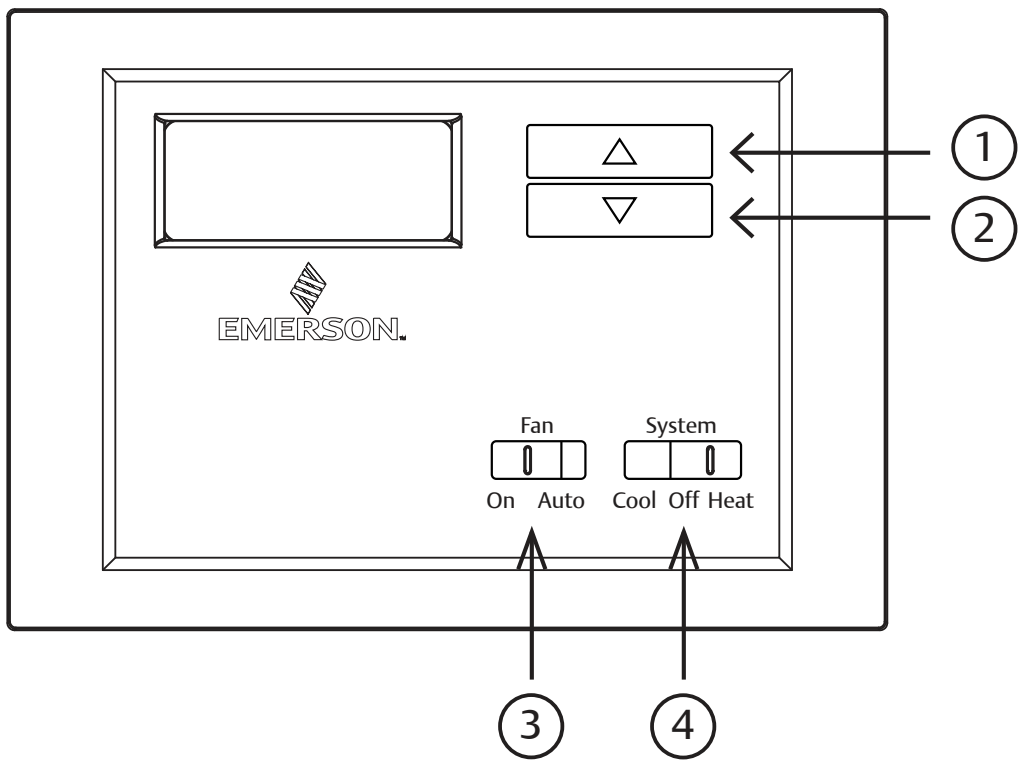
5.3 Heating system

1. Move SYSTEM switch to **HEAT** position. If the heating system has a standing pilot, be sure to light it.
2. Press ⊕ to adjust thermostat setting room temperature. The heating system should begin to operate.
3. Press ⊖ to adjust temperature setting below room temperature. The heating system should stop operating.

Before you begin using your thermostat, you should be familiar with its features and with the display and the location and operation of the thermostat buttons. Your thermostat consists of two parts: the **thermostat cover** and the **base**. To remove the cover, gently pull it straight out from the base. To replace the cover, line up the cover with the base and press gently until the cover snaps onto the base.

5.4 The thermostat buttons and switches

1. (Up arrow) Raises temperature setting.
2. (Down arrow) Lowers temperature setting.
3. FAN switch (ON, AUTO).
4. SYSTEM switch (COOL, OFF, HEAT).



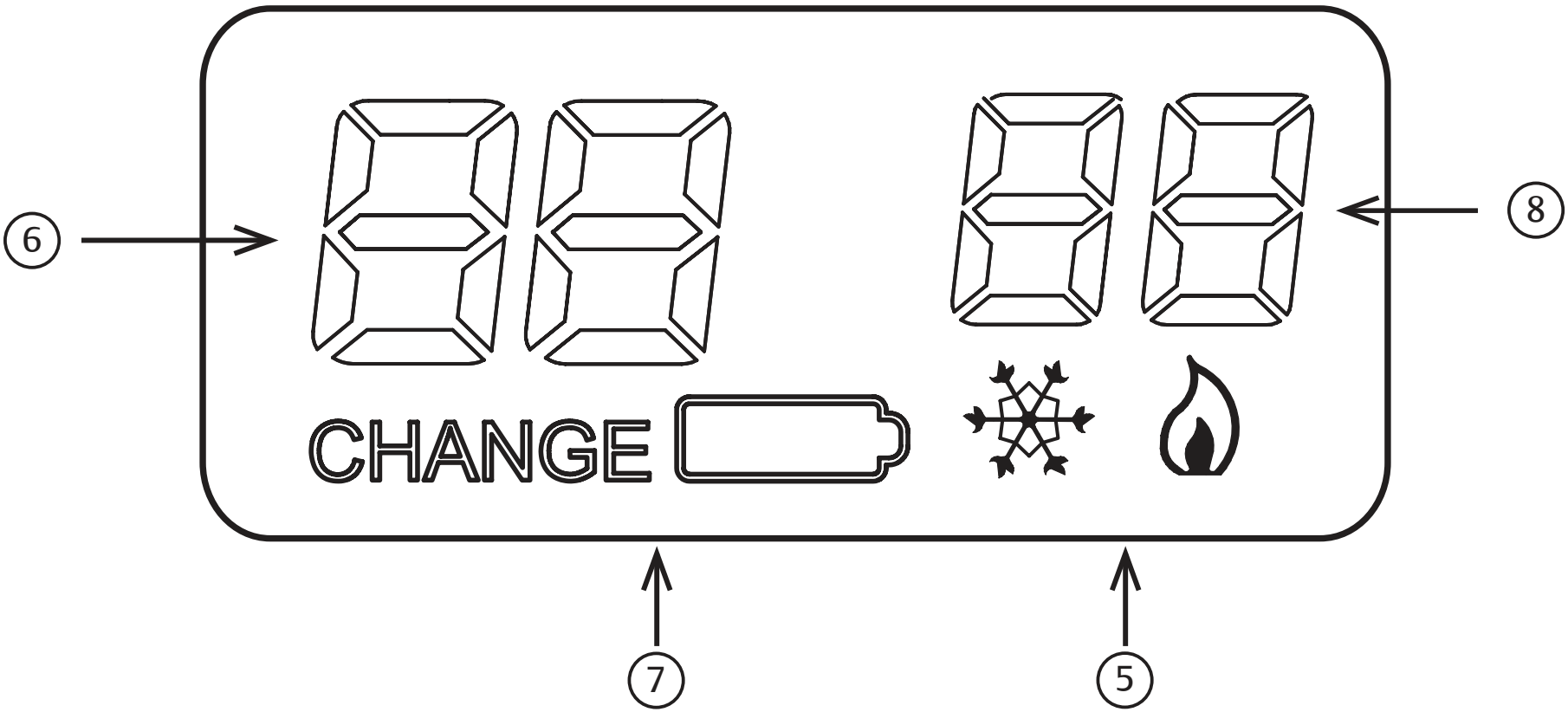
5.5 The display

5  is displayed when the SYSTEM switch is in the **HEAT** position.  is displayed (non-flashing) when the SYSTEM switch is in the **COOL** position.  is displayed (flashing) when the compressor is in lockout mode.

6 Displays current temperature.

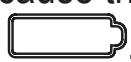
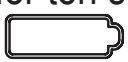
7 CHANGE  is displayed when the 2 “AAA” batteries are low and should be replaced. Nothing else will be displayed.

8 Displays currently set temperature (this is blank when SYSTEM switch is in the **OFF** position).


6
8
CHANGE
7
5

5.6 Operating features

Now that you are familiar with the thermostat buttons and display, read the following information to learn about the many features of the thermostat.

- **SIMULTANEOUS HEATING/COOLING SETPOINT STORAGE** — You can enter both your heating and cooling setpoints at the same time. There is no need to re-enter the thermostat at the beginning of each season.
- **TEMPERATURE SETTING** — Press  or  until the display shows the temperature you want. The thermostat will keep the room temperature at the selected temperature.
- **°F/°C CONVERTIBILITY** — The factory default setting is Fahrenheit. Clipping W904 jumper on the circuit board will alter this feature to Celsius temperature setting. See diagram on page 11.
- **LOW BATTERY INDICATOR** — If the 2 “AAA” alkaline batteries are low and should be replaced, the display will be blank except for CHANGE . When the batteries are low, pressing any button will cause the display to operate for ten seconds. After ten seconds, the display will be blank except for CHANGE . After CHANGE  has been displayed for 4 weeks, the thermostat will raise the temperature 10° above your setpoint in **COOL** mode and drop the temperature 10° below your setpoint in **HEAT** mode. You cannot program with low batteries, but you can override setpoint temperature.

- **TEMPERATURE DISPLAY ADJUSTMENT** — Your new thermostat has been accurately set in our factory. However, if you wish, you may adjust your new thermostat temperature display to match your old thermostat. This can be accomplished (within a ±3° range) as follows:

1. Press  or  at the same time for two seconds with the SYSTEM switch in **OFF** position.
2. Press  or  to adjust the displayed temperature to your desired setting.
3. Move SYSTEM switch from **OFF** to exit the feature.

- **DISPLAY BACKLIGHT** — (Not available on earlier models.) The display backlight improves display contrast in low lighting conditions. Selecting backlight ON will turn the light on for a short period of time after any button is pressed. Selecting backlight OFF (default) will keep the light off. Turn the display backlight feature ON as follows:

1. Press  and  at the same time for two seconds with the SYSTEM switch in HEAT position. The display will alternately show “-L” AND “FF” (off).
2. Press  or  to change “FF” to “ON”.
3. Move SYSTEM switch to OFF to exit the feature.

6. THERMOSTAT SPECIFICATIONS

ELECTRICAL DATA

Electrical Rating:

0 to 30 VAC 50/60 Hz. or D.C.

0.05 to 1.0 Amps (Load per terminal)

1.5 Amps Maximum Total Load (All terminals combined)

THERMAL DATA

Setpoint Temperature Range:
45°F to 90°F (7°C to 32°C)

Operating Ambient Temperature Range:
32°F to 105°F (0°C to 41°C)

Operating Humidity Range:
0 to 90% RH (non-condensing)

Shipping Temperature Range:
-40°F to 150°F (-40°C to 66°C)

7. TROUBLESHOOTING

Reset Operation

If a voltage spike or static discharge blanks out the display or causes erratic thermostat operation you can reset the thermostat by pressing  and  at the same time while moving the SYSTEM switch from **OFF** to **HEAT**. This also resets the factory defaults. If the thermostat has power, has been reset and still does not function correctly contact your heating/cooling service person or place of purchase.

Batteries

For best results, replace batteries once a year with new premium brand alkaline batteries such as Duracell® or Energizer®.

Symptom	Possible Cause	Corrective Action
No Heat/No Cool/No Fan (common problems)	1. Blown fuse or tripped circuit breaker. 2. Furnace power switch to OFF. 3. Furnace blower compartment door or panel loose or not properly installed.	Replace fuse or reset breaker. Turn switch to ON. Replace door panel in proper position to engage safety interlock or door switch.
No Cool	1. SYSTEM Switch not set to Cool. 2. Loose connection to thermostat or system. 3. Cooling system requires service or thermostat requires replacement.	Set SYSTEM Switch to COOL and lower setpoint temperature below room temperature. Verify thermostat and system wires are securely attached. Same procedure as diagnostic for No Heat condition except set the thermostat to COOL and lower the setpoint below the room temperature. There may be up to a five minute delay before the thermostat clicks in Cooling.

Symptom	Possible Cause	Corrective Action
No Heat	1. Pilot light not lit.	Re-light pilot.
	2. SYSTEM Switch not set to HEAT.	Set SYSTEM Switch to HEAT and raise setpoint temperature above room temperature.
	3. Loose connection to thermostat or system.	Verify thermostat and system wires are securely attached.
	4. Furnace Lock-Out Condition. Heat may also be intermittent.	Many furnaces have safety devices that shutdown when a lock-out condition occurs. If the heat works intermittently contact the furnace manufacturer or local service person for assistance.
	5. Heating system requires service or thermostat requires replacement..	Diagnostic: Set SYSTEM Switch to HEAT and raise the setpoint above room temperature. Within a few seconds the thermostat should make a soft click sound. This sound usually indicates the thermostat is operating properly. If the thermostat does not click, try the reset operation listed below. If the thermostat does not click after being reset contact your heating and cooling service person or place of purchase for a replacement. If the thermostat clicks, contact the furnace manufacturer or a service person to verify the heating is operating correctly.

Symptom	Possible Cause	Corrective Action
Heat, Cool or Fan Runs Constantly.	1. Possible short in wiring. 2. Possible short in thermostat. 3. Possible short in heat/cool/ fan system. 4. FAN Switch set to Fan ON.	Check each wire connection to verify they are not shorted or touching together. No bare wire should stick out from under terminal screws. Try resetting the thermostat as described above. If the condition persists the manufacturer of your system or service person can instruct you on how to test the Heat/ Cool system for correct operation. If the system operates correctly, replace the thermostat.
Furnace Cycles Too Fast or Too Slow (narrow or wide temperature swing)	1. The location of the thermostat and/or the size of the Heating System may be influencing the cycle rate.	Digital thermostats normally provide precise temperature control and may cycle faster than some older mechanical models. A faster cycle rate means the unit turns on and off more frequently but runs for a shorter time so there is no increase in energy use. If you would like to increase the cycle time, clip Jumper W-905 as for Hydronic Heating Systems. It is not possible to shorten the cycle time. If an acceptable cycle rate is not achieved as received or by clipping W-905 contact a local service person for additional suggestions.

Symptom	Possible Cause	Corrective Action
Cooling Cycles Too Fast or Too Slow (narrow or wide temperature swing)	1. The location of the thermostat and the size of the Cooling System can influence the cycle rate.	The cycle rate for cooling is fixed and can not be adjusted. Contact a local service person for suggestions.
Thermostat Setting and Thermostat Thermometer Disagree	1. Thermostat thermometer setting requires adjustment.	The thermometer can be adjusted +/- 3 degrees. See Temperature Display Adjustment in the Operation section.
Blank Display and/or Keypad Not Responding	1. Voltage spike or static discharge. 2. Battery change required.	Replace batteries and check heat/cool system for proper operation. If a voltage spike occurs use the Reset Operation listed above.

CONTACT US

Customer support: 877.654.9394 or wr.techsupport@emerson.com

MERCURY NOTICE

This product does not contain mercury. However, this product may replace a product that contains mercury.

Mercury and products containing mercury must not be discarded in household trash.

Refer to thermostat-recycle.org for location to send product containing mercury.

FOR CALIFORNIA RESIDENTS

Warning: This product contains a chemical known to the state of California to cause cancer and birth defects and other reproductive harm.