



**WHITE-RODGERS**

# TYPE 1E56

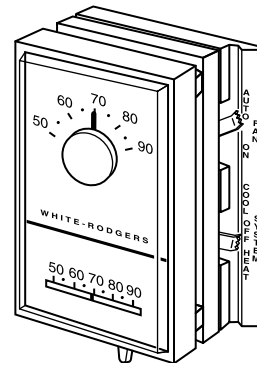
Low Voltage Heating/Cooling Thermostat  
**INSTALLATION INSTRUCTIONS**

**Operator: Save these instructions for future use!**

**FAILURE TO READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLING OR OPERATING THIS CONTROL COULD CAUSE PERSONAL INJURY AND/OR PROPERTY DAMAGE.**

## DESCRIPTION

This low voltage thermostat is designed to provide convenient control of the heating/cooling system. To provide greater room comfort, the sensitive spiral bimetal is combined with an adjustable heating anticipator and a fixed cooling anticipator to provide maximum comfort.



## PRECAUTIONS

If in doubt about whether your wiring is millivolt, line, or low voltage, have it inspected by a qualified heating and air conditioning contractor, electrician, or someone familiar with basic electricity and wiring.

Do not exceed the specification ratings.

All wiring must conform to local and national electrical codes and ordinances.

This control is a precision instrument, and should be handled carefully. Rough handling or distorting components could cause the control to malfunction.

### **⚠ CAUTION**

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

Do not short out terminals on gas valve or primary control to test. Short or incorrect wiring will burn out heat anticipator and could cause personal injury and/or property damage.

### **⚠ WARNING**

Do not use on circuits exceeding 30 volts. Higher voltage will damage control and could cause shock or fire hazard.

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9509

# INSTALLATION

## SELECT THERMOSTAT LOCATION

Proper location insures that the thermostat will provide a comfortable home temperature. Observe the following general rules when selecting a location:

1. Locate thermostat about 5 ft. above the floor.
2. Install thermostat on a partitioning wall, not on an outside wall.
3. Never expose thermostat to direct light from lamps, sun, fireplaces or any temperature radiating equipment.
4. Avoid locations close to windows, adjoining outside walls, or doors that lead outside.
5. Avoid locations close to air registers or in the direct path of air from them.
6. Make sure there are no pipes or duct work in that part of the wall chosen for the thermostat location.
7. Never locate thermostat in a room that is warmer or cooler than the rest of the home, such as the kitchen.
8. Avoid locations with poor air circulation, such as behind doors or in alcoves.
9. The living or dining room is normally a good location, provided there is no cooking range or refrigerator on opposite side of wall.

## ROUTE WIRES TO LOCATION

### NOTE

All wiring must conform with local and national electrical codes and ordinances.

1. If an old thermostat being replaced is in a satisfactory location, and the wiring appears to be in good condition, use existing wiring. If in doubt, re-wire.
2. If a new location is chosen or if this is a new installation, thermostat wiring must first be run to the location selected.
3. Probe for obstructions in partition before drilling  $\frac{1}{2}$ " hole in wall at selected location. Take up quarter round and drill a small guide hole for sighting (see fig. 1). From basement, drill  $\frac{3}{4}$ " hole in partition floor next to guide hole. In houses without basements, drill  $\frac{1}{2}$ " hole through ceiling and into partition from above (see fig. 1).
4. Through this hole drop a light chain, or 6" chain attached to a strong cord. Snag cord in basement with hooked wire. In houses without basements, drop cord through hole in ceiling and down partitioning; snag cord at the thermostat location.
5. Attach thermostat wires to cord and pull thermostat wires through hole in wall so that 6" of wire protrudes.

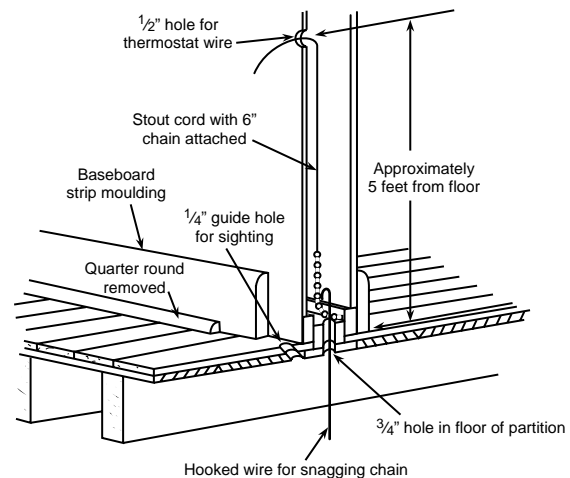


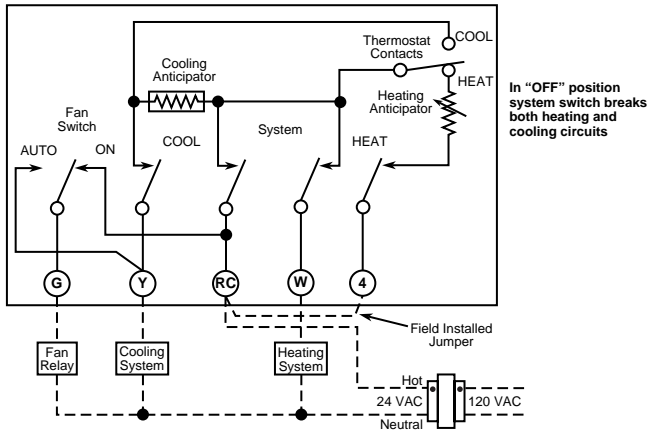
Figure 1. Routing thermostat wires

## ATTACH SUBBASE TO WALL

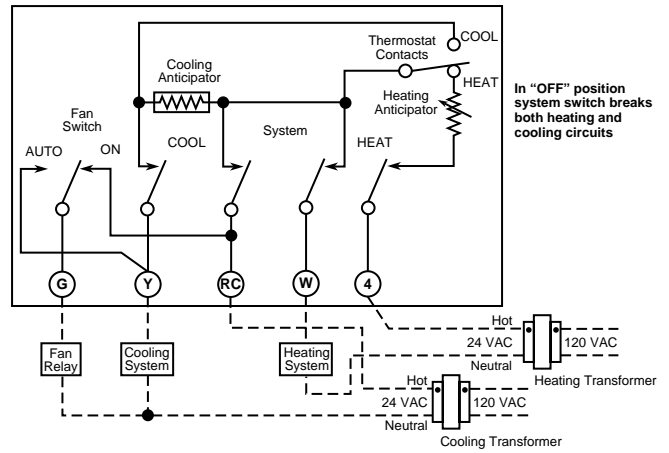
### CAUTION

To prevent electrical shock and/or equipment damage, disconnect electric power to system at main fuse or circuit breaker box until installation is complete.

1. Disconnect electrical power at main fuse or circuit breaker.
2. Pull wires through opening near center of subbase and connect wires beneath terminal screws (see figs. 2 and 3 for typical wiring for each application).
3. Push excess wiring into wall and plug hole with fire-resistant material (such as fiberglass insulation) to prevent drafts from affecting thermostat operation.
4. Position subbase over hole in wall and mark mounting hole locations on wall.
5. Drill mounting holes.
6. Fasten subbase loosely to wall, as shown, using two mounting screws. Place a level against bottom of subbase, adjust until level, and then tighten mounting screws to secure subbase. If holes in wall are too large and do not allow you to tighten subbase snugly, use plastic screw anchors to secure subbase.



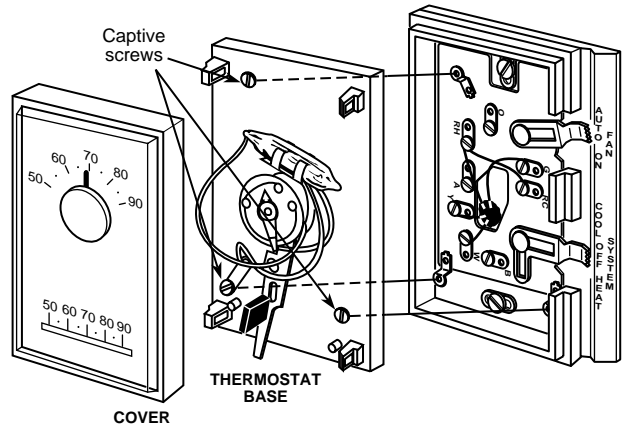
**Figure 2. For installations where heating and cooling systems are powered by the same transformer**



**Figure 3. For installations where heating system is powered by a separate transformer**

### ATTACH THERMOSTAT TO SUBBASE

1. Remove cover from thermostat base by gripping the base in one hand. Use the other hand to pull gently at the top or bottom of the cover.
2. Carefully remove the shipping protective packing from the switch.
3. Attach thermostat base to subbase, being sure that all captive screws are tightened snugly, since they serve as electrical connections between thermostat and subbase (see fig. 4).
4. Snap cover on thermostat and set switches and temperature lever to desired setpoint (see **OPERATION** section).
5. Turn on power to the system.



**Figure 4. Attach thermostat to subbase**

## OPERATION & MAINTENANCE

This thermostat is easy to operate. Fig. 5 shows how the heating/cooling system and fan operate when the switches are in various positions. Use the system switch to select either heating or cooling, or to turn the heating/cooling system off. Use the fan switch to control fan operation. When the fan switch is in the **AUTO** position, the fan will cycle with the heating or cooling system (the fan will not run if the system switch is in the **OFF** position and the fan switch is in the **AUTO** position). When the fan switch is in the **ON** position, the fan will run continuously, regardless of system switch position (even if the system switch is set to **OFF**, the fan will run if the fan switch is in the **ON** position).

■ Shows switch position		OPERATION
FAN	SYSTEM	
<input type="checkbox"/> AUTO	<input type="checkbox"/> COOL	
<input type="checkbox"/> ON	<input type="checkbox"/> OFF	
<input type="checkbox"/> ON	<input type="checkbox"/> HEAT	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	No heating; no cooling; no fan
<input type="checkbox"/>	<input checked="" type="checkbox"/>	No heating; no cooling; fan runs continuously
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Cooling system cycles from thermostat; fan runs continuously
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cooling system and fan cycle from thermostat
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Heating system cycles from thermostat; fan cycles from fan control on furnace
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Heating system cycles from thermostat; fan runs continuously

**Figure 5. Subbase switching and thermostat/system operation**

## ADJUSTING HEAT ANTICIPATOR

### **CAUTION**

The adjustable heat anticipator **WILL BURN OUT** if 25 VAC is applied directly to the thermostat by shorting out the primary control during testing. This may cause personal injury and/or property damage.

This thermostat is equipped with an adjustable heat anticipator and was preset at the factory to provide satisfactory operation of the heating system under normal conditions. If additional adjustments are necessary, they may be made as follows (see fig. 6):

1. Remove thermostat cover.
2. If heat cycle is too long, set heat anticipator to a slightly lower dial setting ( $\frac{1}{2}$  division).
3. If heat cycle is too short, set heat anticipator to a slightly higher dial setting ( $\frac{1}{2}$  division).
4. Replace thermostat cover.

## CALIBRATING THERMOSTAT

This thermostat has been carefully adjusted at the factory and should not require recalibration.

Due to environmental conditions, during normal operation there may be a few degrees of difference between the indicator setting of the thermostat and actual room temperature. If the disagreement is appreciable, however, first make sure that the thermostat is properly located and leveled. Then, if recalibration still seems necessary, proceed as follows:

### **CAUTION**

To prevent electrical shock and/or equipment damage, disconnect electrical power to the system until recalibration is complete.

1. The anticipator's heat may adversely affect thermostat recalibration. To prevent this, disconnect electrical power to the thermostat at the furnace, main fuse, or breaker box.
2. Move temperature adjustment lever to a setting about  $5^{\circ}$  above room temperature.
3. Remove thermostat cover. Slip  $\frac{7}{32}$ " wrench onto hex nut beneath bimetal. While holding temperature adjustment lever stationary, turn hex nut clockwise until mercury shifts to the right end of the tube (see fig. 7).
4. Move temperature adjustment lever to lowest setting.

5. Replace thermostat cover. Wait 10 minutes for bimetal temperature to stabilize. Do not stand near the thermostat during this period, as your breath and body heat will affect bimetal temperature.
6. Move temperature adjustment lever to correspond to actual room temperature. Then remove thermostat cover.
7. Slip  $\frac{7}{32}$ " wrench onto hex nut. While holding temperature adjustment lever stationary, turn hex nut counter-clockwise until mercury just barely shifts to the left end of the tube (see fig. 7).
8. Replace thermostat cover and set temperature adjustment lever to desired temperature. Turn on electrical power to system.

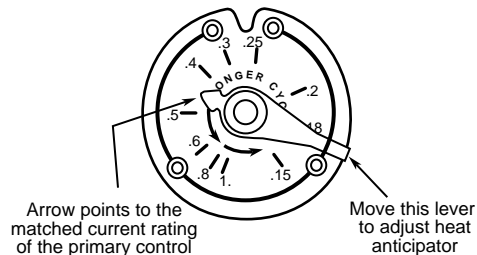


Figure 6. Anticipator adjustment

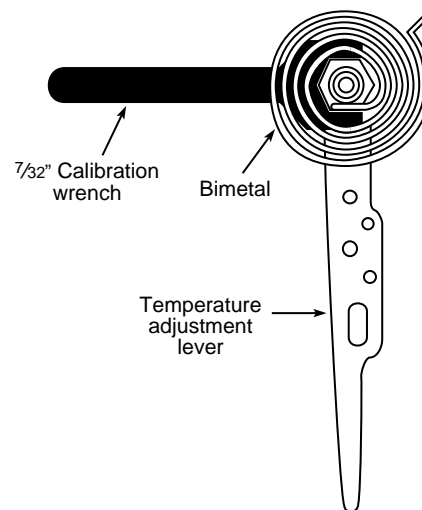


Figure 7. Calibrating thermostat