

SERVICE INSTRUCTIONS CALIBRATION

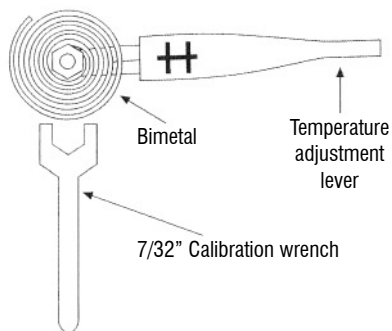


FIGURE 6 CALIBRATING THERMOSTAT

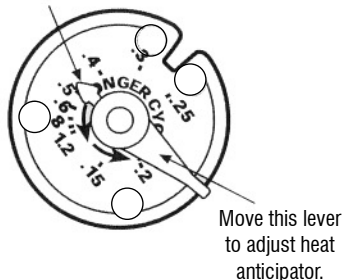
The thermostat is accurately calibrated before leaving the factory and no further calibration should be necessary. If the thermostat appears to be out of calibration, or for any reason fails to function properly, a qualified service person should proceed as follows.

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° above room temperature.

3. Remove thermostat cover. Slip 7/32" wrench onto hex nut beneath bimetal. While holding temperature adjustment lever stationary, turn hex nut clockwise until the switch opens.
4. Move temperature adjustment lever to lowest setting.
5. Replace thermostat cover. Wait 10 min. 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 7/32" wrench onto hex nut. While holding temperature adjustment lever stationary, turn hex nut counter-clockwise until switch closes.
8. Replace thermostat cover and set temperature adjustment lever to desired temperature. Turn on electrical power to system.

HEAT ANTIICIPATION ADJUSTMENT

Arrow points to the matched current rating of the primary control.



Some heating installations require longer or shorter "ON", "OFF" periods to maintain even temperatures. For average conditions, set the heat anticipator indicator to match the current rating of the primary heating control. Move indicator approximately 1/2 division in direction indicated by the arrows on the thermostat for longer "ON" cycles, or move lever in opposite direction for shorter "ON" cycles. Allow at least 24 hours to determine if setting provides satisfactory operation before making any further adjustments.



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MECHANICAL THERMOSTAT

43004A/43005A

CTC thermostats regulate 24 to 30 VAC single-stage heating-cooling systems. See the chart below for specific models and applications.

THERMOSTAT MODELS AND APPLICATIONS

PART NUMBER	APPLICATION	ORIENTATION	SWITCHING	
			SYSTEM	FAN
43004A	Use in standard heating/cooling systems	Horizontal	Heat-Off-Cool	On-Auto
43005A	Use in standard heating/cooling systems	Vertical	Heat-Off-Cool	On-Auto

SPECIFICATIONS

ELECTRICAL DATA

Switch Rating: 24 VAC (30 VAC max.)
Heating - 0.15 to 1.2 amps
Cooling - 0 to 15 amps

Switch Action: Sealed Mechanical Switch

Anticipator Rating:

Heating - Adjustable from 0.15 to 1.2 amps
Cooling - 0 to 1.5 amps

THERMAL DATA

Temperature Range: 50°F - 90°F (10°C - 32°C)

APPLICATIONS

This thermostat is designed for use with:

- Standard heating and cooling systems
- Electric heating and cooling systems
- Single stage heat pump systems
- Two-transformer systems
- Electronic air cleaners
- Humidifiers
- Zone Dampers

This thermostat **cannot be used** with:

- Millivolt systems
- Multi-stage applications



WARNING!

To avoid electrical shock or equipment damage, make sure power is disconnected before installation.

INSTALLATION

When installing this product:

- Read these instructions thoroughly. Failure to follow them could damage the product or produce an unsafe condition.
- Check the rating in these instructions and on the product to make sure the product is compatible with your application.
- Installation must be performed by a trained, experienced service technician.
- Upon completion of the installation, verify the correct operation of the product as detailed in these instructions.

LOCATION

When installing this product:

The thermostat should be located in an area with good air circulation at average temperature. It should be on an inside wall.

DO NOT place the thermostat where it can be affected by:

- drafts or dead spots behind doors or in corners.
- hot or cold air from ducts.
- radiant heat from the sun, fireplaces, or appliances
- unheated (uncooled) areas behind the thermostat, such as outside walls.

This thermostat is a precision instrument and was carefully adjusted at the factory. Handle it carefully.

ATTACH SUB-BASE TO WALL

Disconnect the power supply before beginning installation to prevent electric shock or equipment damage. All wiring must comply with local codes and ordinances.

To wire and mount the thermostat:

1. Pull wire through opening near center of sub-base and connect wires beneath terminal screws (See figure 2 for typical wiring for each application. Also refer to the following subsections for special system configurations).
2. Push excess wiring into wall and plug hole with fire-resistant material (such as fiberglass insulation) to prevent drafts from affecting thermostat operation.
3. Position sub-base over hole in wall and mark mounting hole locations on wall.
4. Drill mounting holes.
5. Fasten sub-base loosely to wall, using two mounting screws to secure sub-base. Use a level or plumb line to adjust until level. If using a plumb line, use the indicator triangles on the sub-base to level the unit. If holes in wall are too large and do not allow you to tighten sub-base snugly, use plastic screw anchors to secure sub-base.

ATTACH THERMOSTAT TO SUB-BASE

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 protective packing.
3. Attach thermostat base to sub-base, being sure that all captive screws are tightened snugly, since they serve as electrical connections between thermostat and sub-base.
4. Snap cover on thermostat and set switches and temperature lever to desired setpoint.
5. Turn on power to the system.

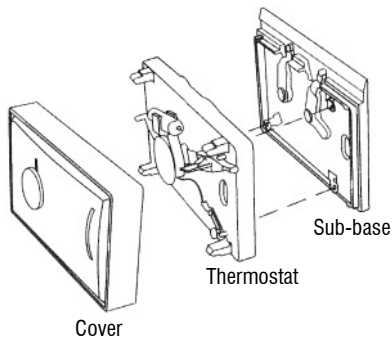


FIGURE 1 ATTACH THERMOSTAT TO SUB-BASE

SPECIAL APPLICATIONS

Electric Heat Furnaces (Single Transformer Systems Only)

The sub-base, as supplied, may not operate the fan correctly. If both the heating and the cooling system must operate the fan relay, remove the factory-installed jumper wire from the **Y** terminal and connect it to the **A** terminal. The fan should now cycle when the thermostat calls for either heat or cool.

Two-Transformer Systems



If two transformers are used, they must be in phase. Failure to do so may result in personal injury and/or property damage.

NOTE: Wire color does not indicate polarity. Polarity is obtained from an oscilloscope or voltmeter.

Heat Pump Applications

This sub-base **WILL NOT** provide multi-stage heating or cooling operation. For single stage heat pump applications, install a short jumper wire across terminals **W** and **Y**. If the old thermostat has a terminal that is continuously energized, disconnect the wire from the old thermostat's terminal and connect it **either** to the 1) **B** terminal, if the reversing valve is energized on a call for heat; or to the 2) **O** terminal, if the reversing valve is energized on a call for cool. If the system heats on a call for cool, or visa versa, this wire has been connected to the wrong terminal.

NOTE: **RH** and **RC** must be jumped for single transformer heat pump systems.

Special Application Terminals

The **B** and **O** terminals can provide switching for special functions other than heat pump operation. When the system switch is in the **HEAT** position, the **B** terminal is energized. When the system switch is in the **COOL** position, the **O** terminal is energized.

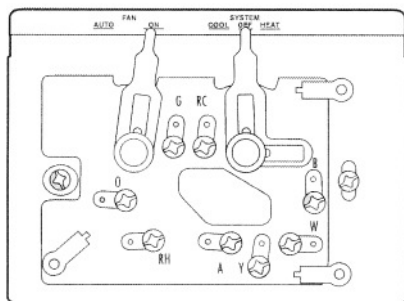


FIGURE 2 THERMOSTAT SUB-BASE

TYPICAL WIRING DIAGRAMS

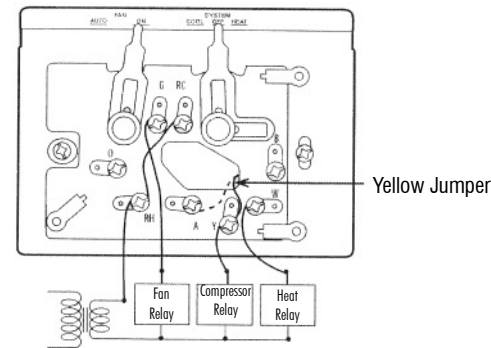


FIGURE 3 SINGLE TRANSFORMER H/C SYSTEM

For electric heat-fan to cycle with either heat or cool, move yellow jumper from **Y** terminal to **A** terminal (see dotted line at terminal **A** in illustration).

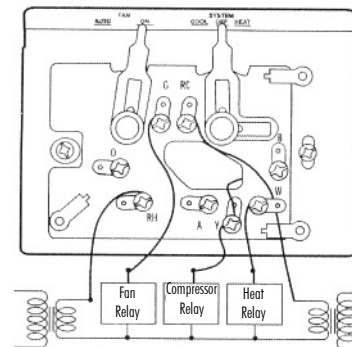


FIGURE 4 TWO TRANSFORMER H/C SYSTEM

For electric heat-fan to cycle with either heat or cool, move yellow jumper from **Y** terminal to **A** terminal (see dotted line at terminal **A** in illustration).



IMPORTANT: Remove factory-installed jumper between **RC** and **RH** terminals for this application.

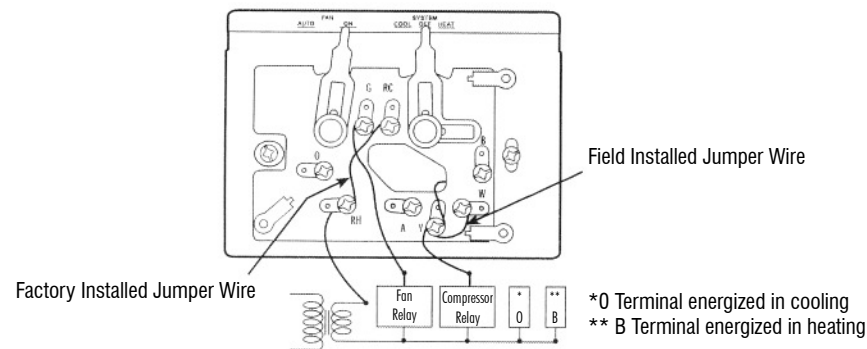


FIGURE 5 SINGLE TRANSFORMER, SINGLE STAGE HEAT PUMP SYSTEM

Install jumper between **W** and **Y** terminals. (See illustration).

* **O** Terminal energized in cooling
** **B** Terminal energized in heating