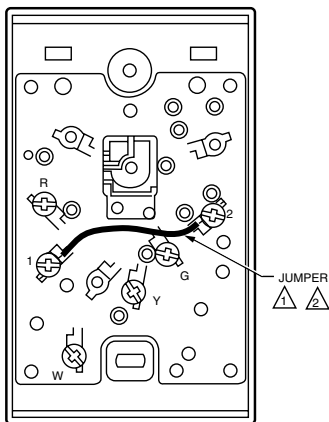


T834B; T834C; T834J Heating-Cooling Thermostats

INSTALLATION INSTRUCTIONS

APPLICATION

The T834B,C,J Heating-Cooling Thermostats provide 24 to 30 Vac control in heating-cooling systems. An spdt mercury switch makes R to W on a temperature fall for heating, and R to Y on a temperature rise for cooling. Integral switches control HEAT-OFF-COOL or COOL-OFF operation (fan switch on T834C,J only). In heat pump and some electric heat systems, fan operation is controlled by the thermostat during heating. Check the electric heat manufacturer specifications for fan control requirements. If fan control from the thermostat is necessary in an electric heat application, use the T834C Thermostat model (dual fuel) with optional fan control. Jumper terminals 1 and 2 to control fan operation from the thermostat during heating.



△ IN ELECTRIC HEAT AND HEAT PUMP APPLICATIONS, JUMPER TERMINALS 1 AND 2 FOR AUTOMATIC FAN CONTROL IN HEATING AND COOLING.

△ IN GAS-AND OIL-FIRED APPLICATIONS, JUMPER TERMINALS 1 AND Y FOR AUTOMATIC FAN CONTROL IN COOLING.

M8675

Fig. 1. Jumpering terminals for fan control.



RECYCLING NOTICE

This control contains mercury in a sealed tube. Do not place control in the trash at the end of its useful life.

If this control is replacing a control that contains mercury in a sealed tube, do not place your old control in the trash.

Contact your local waste management authority for instructions regarding recycling and the proper disposal of this control, or of an old control containing mercury in a sealed tube.

INSTALLATION

When Installing this Product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION

Damage to Heating/Cooling System Possible. Be careful when handling wires during installation.

Disconnect power at furnace or at main breaker/fuse before starting installation.

Location

Locate the thermostat about 5 ft (1.5m) above the floor on an inside wall in an area with good air circulation at average temperature.

Do not mount the thermostat where it may 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.



Wiring and Mounting

Disconnect power supply before beginning installation to prevent electrical shock or equipment damage.

All wiring must comply with local codes and ordinances.

The T834 may be mounted directly on a wall or vertical outlet box. Use Honeywell part no. 193121A Mounting Plate Assembly (ordered separately) to mount on horizontal outlet box or cover marks left by old thermostat. If mounting plate assembly is used, review instructions provided with assembly before wiring and mounting thermostat.

To wire and mount thermostat:

1. In replacement applications, check the existing thermostat wires for cracked or frayed insulation. Replace any wires in poor condition. If the wire is plastered into the wall, make a hole next to the wires and loosen the wires so they can be pushed back into the wall later.
2. In new installations, run wiring (if necessary) to the thermostat location.
3. Connect the wires to the terminals on the back of the thermostat. See Fig. 3 through 12 for internal schematic and typical hookup diagrams. If control of fan operation from the thermostat is required in a central electric heat application, jumper terminals 1 and 2. See Fig. 1.
4. Remove thermostat cover by pulling outward on bottom edge of the cover until it snaps free of the thermostat base. See Fig. 2. Carefully remove and discard the foam plastic shipping insert that protects the switch and bimetal assembly during shipping.
5. Set the adjustable heat anticipator indicator to match the current draw of the primary heating control (see Heat Anticipator Setting section).

6. Push excess wire back through the hole and plug any opening with insulation to prevent drafts that may affect thermostat performance.
7. Loosely fasten the thermostat to the wall or outlet box with a screw through the top mounting hole. Adjust the thermostat so that it is approximately level and start the second screw through the bottom mounting hole. Do not tighten.
8. Level the thermostat exactly using a spirit level or plumb line. Tighten the mounting screws.

IMPORTANT

An incorrectly leveled thermostat will cause the temperature control to deviate from setpoint.

9. Replace the thermostat cover.

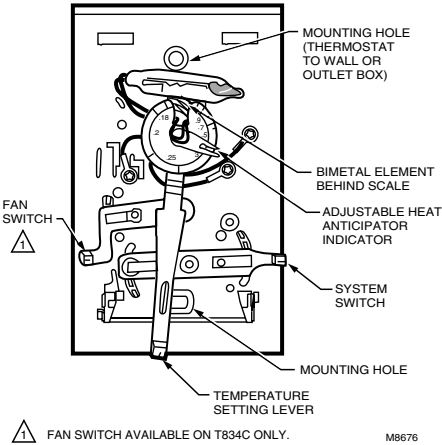


Fig. 2. Internal view of T834.

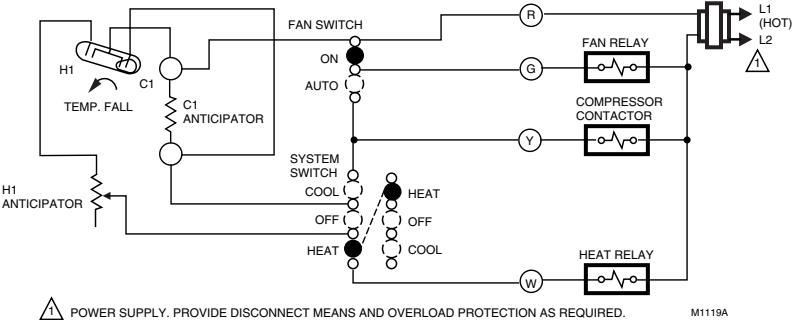


Fig. 3. Internal schematic and typical hookup diagram for T834C in standard heating-cooling system.

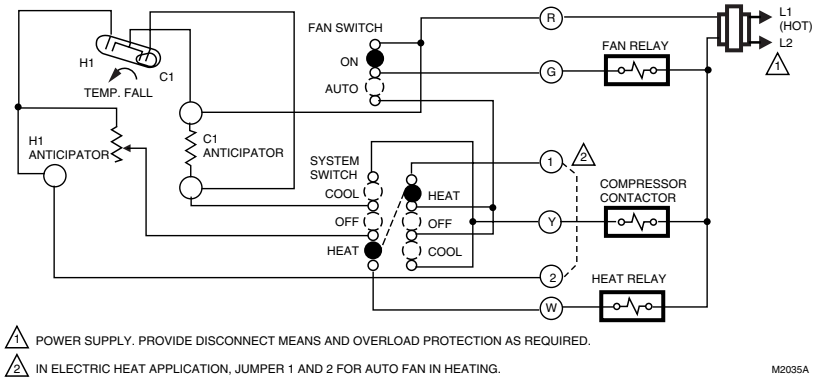


Fig. 4. Internal schematic and typical hookup for T834C dual fuel model in a gas- or oil-fired, or central electric heat system.

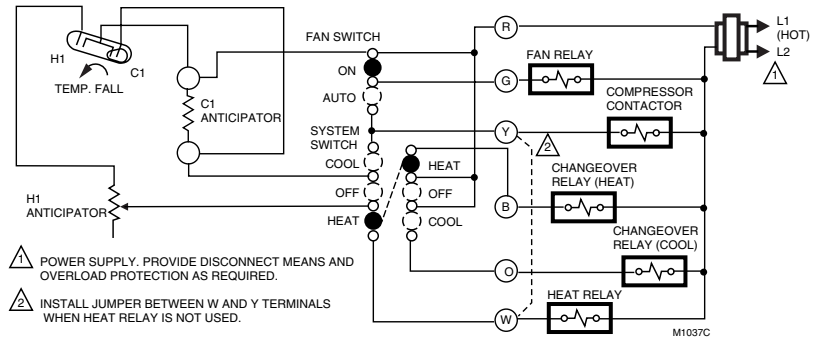


Fig. 5. Internal schematic and typical hookup for T834C in heat pump system with supplementary heat.

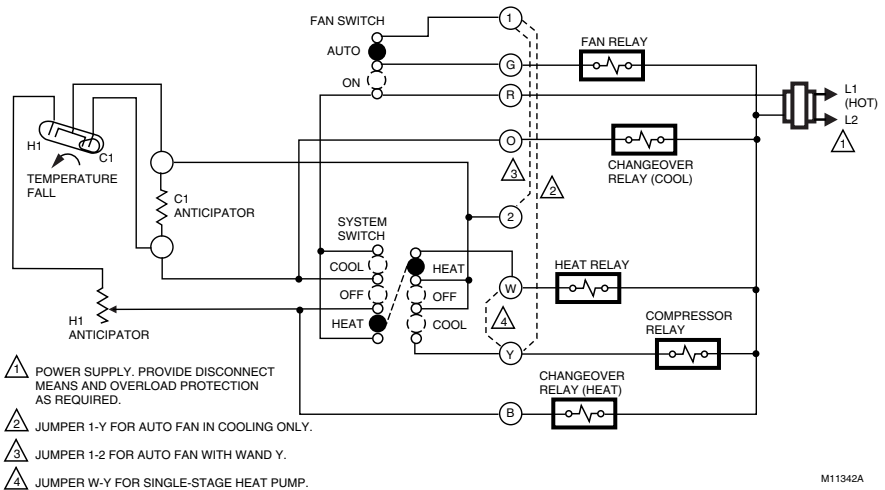


Fig. 6. Internal schematic and typical hookup for T834C gas or oil-fired systems and single-stage heat pump or central electric heat.

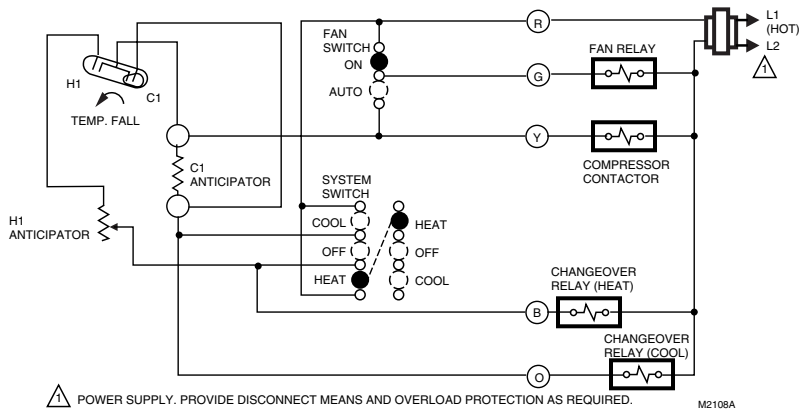


Fig. 7. Internal schematic and typical hookup for T834C in single-stage heat pump system.

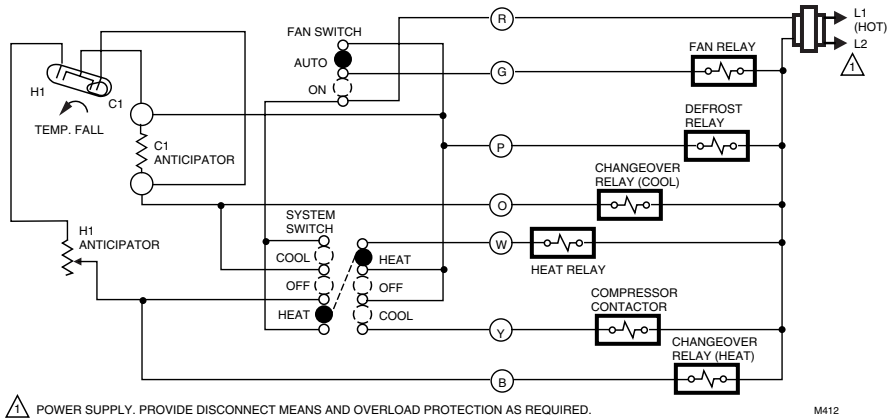


Fig. 8. Internal schematic and typical hookup for T834C with terminal for defrost relay in heat pump system.

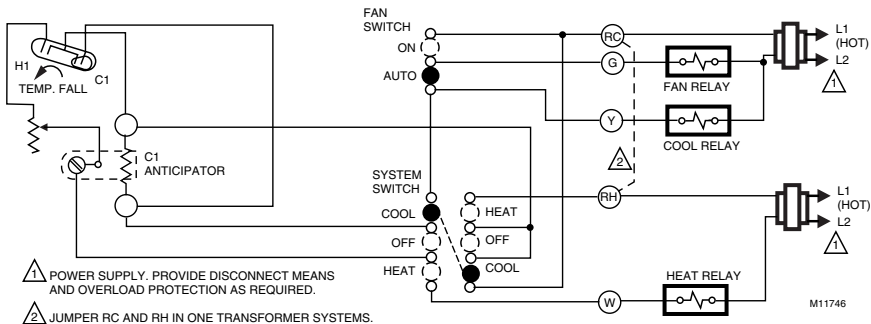


Fig. 9 . Internal schematic and typical hookup for T834C in two transformer system.

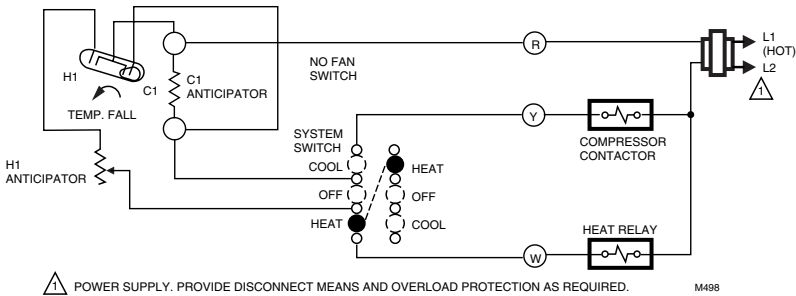


Fig. 10. Internal schematic and typical hookup for T834B in standard heating-cooling system with no fan switching.

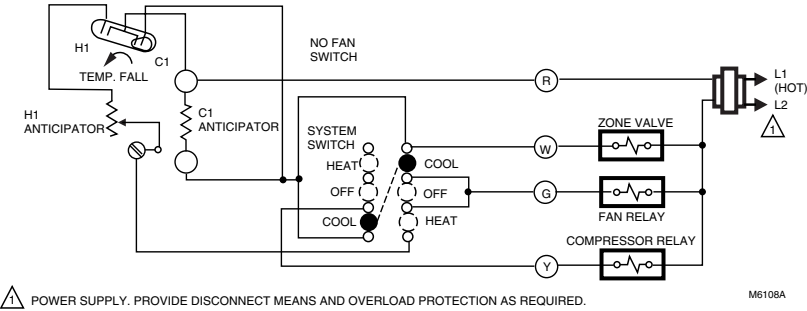


Fig. 11. Internal schematic and typical hookup for T834B in heating-cooling system with zone valve.

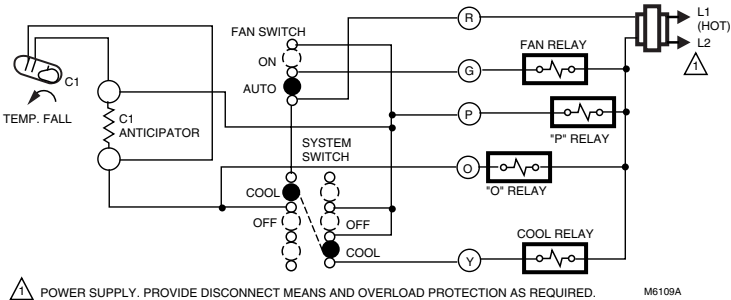


Fig. 12. Internal schematic and typical hookup for T834J cooling only system.

SETTINGS AND ADJUSTMENT

System and Fan Switching

T834B

The T834B features a SYSTEM switch for control of the heating-cooling system.

The SYSTEM switch controls system operation as follows:

- HEAT: Heating system only operates.
- OFF: Both heating and cooling control systems are disconnected.
- COOL: Cooling system only operates.

The fan operates in response to the plenum fan control in heating; fan operates with cooling equipment in cooling.

T834C

The T834C features SYSTEM and FAN switches for control of the heating-cooling and fan systems.

The SYSTEM switch controls system operation as follows:

- HEAT: Heating system only operates.
- OFF: Both heating and cooling control systems are disconnected.
- COOL: Cooling system only operates.

The FAN switch controls fan operation as follows:

- AUTO: for conventional (gas, oil or central electric heat) systems, the fan operates in response to the plenum fan control in heating; fan operates in response to the thermostat in cooling. For heat pump systems, the fan operates in response to the thermostat in both heating and cooling.
- ON: The fan runs continuously.

T834J

The T834J features SYSTEM and FAN switches for control of the cooling and fan systems.

The SYSTEM switch controls system operation as follows:

- OFF: Cooling control system is disconnected.
- COOL: Cooling system operates.

The FAN switch controls fan operation as follows:

- AUTO: Fan operates in response to the thermostat in cooling.
- ON: Fan runs continuously.

NOTE: Some electric heat systems require control of fan operation from the thermostat. These systems require a thermostat with control of fan operation in response to a call for heating or cooling.

To switch positions, use thumb and index finger to slide lever to desired position. Switch lever must stop directly over desired function indicator mark for proper circuit operation.

Temperature Setting

Push the temperature setting lever to the desired control point on the temperature scale. The same lever controls both heating and cooling. On models with temperature range stops, temperature setting lever can be moved only between the two temperature range stops.

HEAT ANTICIPATOR SETTING

IMPORTANT

The T834 Thermostat has an adjustable heat anticipator and will operate properly ONLY IF THE ANTICIPATOR IS ADJUSTED TO MATCH THE CURRENT DRAW OF THE PRIMARY CONTROL. Use this thermostat only on systems with current draws that fall within the range of the heat anticipator. Do not use this device on Powerpile® (millivolt) Systems.

Conventional Systems

A current rating is usually stamped on the nameplate of the primary control. Set the adjustable heat anticipator indicator to match the value given on the nameplate.

If the current rating is not available, proceed as follows to determine the rating:

1. Turn off power.
2. Wire thermostat, except for connection to W terminal, but do not mount it on the wall.
3. Connect ammeter between W wire and W terminal on the thermostat.
4. Prepare the system for operation.
5. Turn on power.
6. Turn system switch to heat.
7. Increase thermostat setpoint as necessary to get system operating.
8. With the system operating through the ammeter, wait one minute, then read the ammeter.
9. Turn the system switch to OFF, and turn off power.
10. Adjust the heat anticipator to match the reading on the ammeter.
11. Disconnect the ammeter, reconnect the W wire, and mount the thermostat. Continue with system checkout.

NOTE: The heat anticipator may require further adjustment for best performance. To lengthen burner-on time, move the indicator in the direction of the longer arrows but not more than one-half scale marking at a time. To shorten burner-on time, move indicator in opposite direction.

Heat Pump Systems (for about 3 cycles per hour)

Using B Terminal

Set adjustable anticipator to 130 percent of combined current draw of compressor and fan relays.

Using O Terminal

Set adjustable anticipator to maximum scale setting. Limit combined load current of compressor and fan relays to 0.8 amp, because cooling anticipator provides anticipation during heat cycle in these hookups.

Electric Systems (with auto fan in heat)

Set adjustable anticipator to combined current draw of heating and fan relays.

Other Systems (without auto fan in heat)

Set adjustable anticipator to current draw of heat relay or valve.

CHECKOUT



CAUTION

Damage To Heat Anticipator Possible.
Shorting across terminals of system controls may cause damage to the heat anticipator.
 Do not check operation by shorting across terminals of systems controls.

IMPORTANT

To assure accurate temperature control, do not touch or breathe on bimetal or thermometer.

Heating

With system switch set at HEAT and fan switch, if applicable, at AUTO, move the temperature setting lever about 10°F (6°C) above room temperature.

Conventional (gas, oil or central electric heat) systems: heating should start and fan should start after a short delay.

Heat pump systems: both heating and fan should start. Move temperature setting lever 10°F (6°C) below room temperature.

Conventional systems: heating should shut off and fan should shut off after a short delay.

Heat pump systems: heating and fan should shut off.

NOTE: Some electric heat systems require control of fan operation from the thermostat. These systems require a thermostat with control of fan operation in response to a call for heating or cooling.

Cooling



CAUTION

Damage to Compressor Possible.
Operating at too low of an outdoor temperature may cause compressor damage.
 Do not operate cooling if outdoor temperature is below 50°F (10°C). Refer to manufacturer recommendations.

NOTE: To prevent compressor short cycling, a minimum off-timer may be included to provide a five-minute time delay before activating the compressor after the thermostat last turned off the compressor, or after the system first received power. This delay protects the compressor.

With the system switch set at COOL and fan switch, if applicable, at AUTO, move the temperature setting lever about 10°F (6°C) below room temperature. Cooling and fan should start (see NOTE above). Move the temperature setting lever about 10°F (6°C) above room temperature. Cooling and fan should shut off.

Fan

T834B

Fan operates with the cooling equipment in cooling; fan operates in response to the plenum fan control in heating.

T834C

With the system switch set at OFF, and the fan switch at ON, the fan should run continuously. Move the fan switch to AUTO. In conventional systems, fan operation is controlled by the thermostat in cooling and by the plenum fan control in heating. In heat pump systems, fan operation is controlled by the thermostat in both heating and cooling.

T834J

With the system switch set at OFF, and the fan switch at ON, the fan should run continuously. Move the fan switch to AUTO. The fan operation is controlled by the thermostat.

RECALIBRATION

These thermostats are calibrated at the factory and should not need recalibration. If the thermostat seems out of adjustment, first check for accurate leveling. To check calibration, proceed as follows:

1. Move the temperature setting lever to the left (low) end of the temperature scale. Place system switch at OFF. Wait at least five minutes.
2. Remove the thermostat cover. Move the setting lever until the switch just makes contact. The mercury in the switch will roll to the left end of the tube.
3. Replace cover and wait five minutes for the cover and the thermostat to lose the heat it has gained from your hands. If the thermometer pointer and the setting lever indicator read approximately the same, no recalibration is needed.

If recalibration appears necessary, proceed as follows:

1. Place the temperature setting lever at the same setting as the thermometer. Remove cover.
2. Insert Honeywell part no. 104994A Calibration Wrench (order separately) onto the hex nut under the coil. See Fig. 13. Holding the setting lever so it does not move, turn the wrench clockwise  until the mercury rolls to the right end of the tube. Remove wrench and replace cover. To ensure accurate temperature control, do not touch or breathe on bimetal or thermometer.

3. Move the setting lever to a low setting. Wait at least five minutes for temperature to stabilize.
4. Slowly move the setting lever until it reads the same as the thermometer.
5. Remove cover. Holding the setting lever so it does not move, reinsert wrench and carefully turn counterclockwise  until the mercury rolls to the left end of the tube but no farther.
6. Recheck calibration. Set thermostat system switch for desired operation and replace cover.

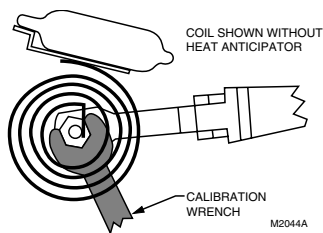


Fig. 13. Recalibration procedure.

Honeywell

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