

T8034C Heating and Cooling Thermostat

INSTALLATION INSTRUCTIONS

APPLICATION

The T8034C Thermostat (see Fig. 1) controls 24 to 30 Vac single-stage heating-cooling systems. See Table 1 for application information. An spdt mercury switch makes R to W on a temperature fall for heating, and R to Y on a temperature rise for cooling.

Table 1. T8034C Specifications.

| Model No. | Application | Heat Anticipation | Switching | | Comments | See Fig. No. |
|------------|---|----------------------------|---------------|---------|------------|--------------|
| | | | System | Fan | | |
| T8034C1085 | For use in gas- or oil-fired heating systems. | 0.18A to 1.0A, adjustable. | Heat-Off-Cool | On-Auto | TRADELINE® | 3 |

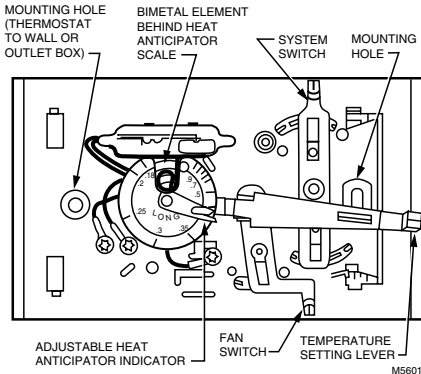


Fig. 1. T8034C internal view.



MERCURY NOTICE

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

Contact your local waste management authority for instructions regarding recycling and the proper disposal of an old control.

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 the product operation as provided in these instructions.



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 can be affected by:

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

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

Wiring and Mounting



CAUTION

Electrical Shock Hazard.
Can cause personal electrical shock and equipment damage.

Disconnect power supply before beginning installation.

IMPORTANT

All wiring must comply with local codes and ordinances.

The T8034C can be mounted directly on a wall or horizontal outlet box:

- Use the 200581 (beige) or 202895A (gray) Horizontal Wallplate to cover mounting marks from an old thermostat.
- Use the 19312A (beige) or 202689A (gray) Mounting Plate Assembly to mount on vertical outlet box or to cover wall marks where larger plate is needed.

The SUPER TRADELINE® T8034C includes the 200581 Horizontal Wallplate. For other T8043C models, order the horizontal wallplate or mounting plate assembly.

If the horizontal wallplate is used, align the thermostat and wallplate. See Fig. 2. Press firmly together until wallplate snaps in place, then wire and mount the thermostat.

If the mounting plate assembly is used, review the instructions provided with the assembly before wiring and mounting the thermostat.

To wire and mount the 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 for internal schematic and typical hookup diagram.
4. Remove thermostat cover by pulling outward on right edge of cover until it snaps free of the thermostat base. 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 can affect thermostat performance.
7. Loosely fasten the thermostat (with wallplate, if applicable) to the wall or outlet box with a screw through the left mounting hole. Adjust the thermostat so it is approximately level and fasten the second screw through the right mounting hole. Do not tighten.
8. For optimum performance, level the thermostat using a spirit level or plumb line. Tighten the mounting screws.
9. Adjust temperature setting lever so mercury bulb is in horizontal position as shown in Fig. 2.
10. Carefully replace the thermostat cover.

IMPORTANT

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

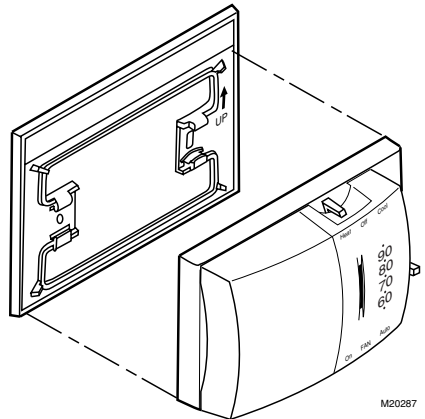


Fig. 2. Mounting T8034C Thermostat on wallplate.

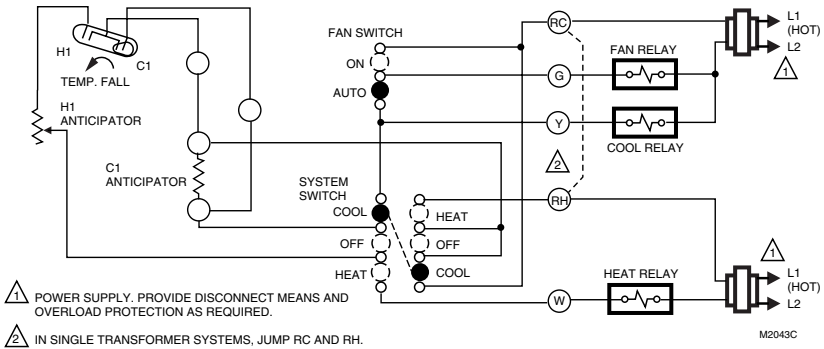


Fig. 3. Internal schematic and typical hookup for T8034C1085 in dual-transformer heating-cooling systems.

SETTINGS AND ADJUSTMENTS

Temperature Setting

Push the temperature setting lever to the desired control point on the temperature scale. The same lever controls the temperature setting for either heating or cooling.

System and Fan Switching

The T8034C has System and Fan switches to control the heating-cooling systems and fan.

The System switch controls system operation:

- Heat: Operates only heating system.
- Off: Both heating and cooling systems are disconnected.
- Cool: Operates only cooling system.

The Fan switch controls fan operation:

- Auto: For gas-or oil-fired systems; the fan operates in response to the thermostat in cooling and in response to the plenum fan control in heating. For electric heat or heat pump systems, the fan operates in response to the thermostat in both heating and cooling.
- On: The fan runs continuously.

To switch positions, use thumb and index finger to slide lever to desired position. Stop switch lever in detent directly over desired position. Stop switch lever in detent directly over desired function indicator mark for correct circuit operation.

Heat Anticipator Setting

IMPORTANT

The T8034C Thermostat has an adjustable heat anticipator and operates correctly only if the anticipator is adjusted to match the current draw of the primary control. Use this thermostat only on systems with current draw that falls within the range of the heat anticipator. Do not use this device on Powerpile® Systems (millivolt).

Look for the current rating stamped on the nameplate of the primary control. Set the adjustable heat anticipator indicator to match the value shown on the nameplate.

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

1. Turn off the power.
2. Wire the thermostat, but do not mount it on the wall.
3. Connect the ammeter between the W wire and the W terminal on the thermostat (in series with the primary control).
4. Prepare the system for operation.
5. Turn on the power.
6. Turn the System switch to Heat.
7. Increase the thermostat setpoint, as necessary, to begin operating the system.
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 the power.
10. Adjust the heat anticipator to match the ammeter reading.
11. Disconnect the ammeter, reconnect the W wire, and mount the thermostat.

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

CHECKOUT

! CAUTION

Equipment Damage Hazard.
Heat anticipator can be damaged.
Do not check operation by shorting across system control terminals.

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 set at Auto, move the temperature setting lever about 10°F (6°C) above room temperature:

Gas or oil-fired systems: heating should start; fan should start after a short delay.

Central electric heat or heat pump systems: both heating and fan should start.

Move the temperature setting lever about 10°F (6°C) below room temperature:

Gas or oil-fired systems: heating should shut off and fan should shut off after a short delay.

Electric heat or heat pump systems: heating and fan should shut off.

Cooling



CAUTION

Equipment Damage Hazard.

Air conditioning equipment (compressor) can be damaged.

Do not operate cooling when outdoor temperature is below 50°F (10°C). Refer to manufacturer's recommendations.

IMPORTANT

To prevent compressor short cycling, some manufacturer's equipment includes a minimum-off timer to provide a five-minute time delay from when the thermostat last turned off the compressor, or from when the system first received power. This delay protects the compressor.

With the System switch set at Cool and the Fan switch set to Auto, move the temperature setting lever about 10°F (6°C) below room temperature. Cooling and fan should start (see Important above). Move the temperature setting lever about 10°F (6°C) above room temperature. Cooling and fan should shut off.

Fan

With the System switch set to Off and the Fan switch set to On, the fan should run continuously. Move the Fan switch to Auto. In gas- or oil-fired systems, fan operation is controlled by the plenum fan control in heating and by the thermostat in cooling. In central electric heat and heat pump systems, fan operation is controlled by the thermostat in both heating and cooling.

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:

1. Move the temperature setting lever to the lower end of the temperature scale. Place the System switch to the Off position. 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 rolls to the left end of the tube.)
3. Replace the 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:

1. Place the temperature setting lever at the same setting as the thermometer. Remove the cover by pulling out on the right edge of the cover until it snaps free of the thermostat base.
2. Insert the 104994A Calibration Wrench (ordered separately) onto the hex nut under the coil. (See Fig. 4.) 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 the wrench and replace the cover.

IMPORTANT

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

3. Move the setting lever to a lower setting. Wait at least five minutes for the temperature to stabilize.
4. Slowly move the setting lever until it reads the same as the thermometer.
5. Remove the cover. Holding the setting lever so it does not move, reinsert the wrench and carefully turn it counterclockwise just until the mercury rolls to the left end of the tube *but no farther*.
6. Recheck the calibration. Set the thermostat System switch for the desired operation.
7. Adjust the temperature setting lever so the mercury bulb is in position as shown in Fig. 4.
8. Carefully replace the thermostat cover.

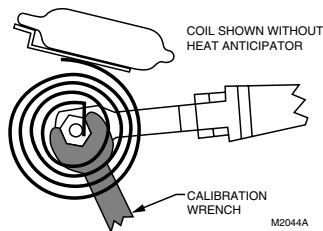


Fig. 4. Recalibrating the thermostat.

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