



T498A,B Electric Heat Thermostats

PRODUCT DATA



GENERAL

The T498A,B Electric Heat Thermostats provide line voltage control of electric heating equipment. A snap action switch makes heating circuit on temperature fall.

FEATURES

- CSA Performance Certified at 16A.
- CSA Certified, Underwriters Laboratories Inc. Listed up to 5 kW at 277 Vac.
- Long life, industrial-grade Micro Switch™ mechanism.
- Rugged, engineering plastic mounting base with captive mounting screws.
- Replaces any standard wall-mounted electric heat thermostat.
- Classic beige styling.
- Range: 40°F to 80°F (5°C to 25°C).
- Locking cover and range stops are optional.
- Energy efficient and economical.

SPECIFICATIONS

IMPORTANT

The Specifications given in this publication do not include normal manufacturing tolerances. Therefore, this unit may not exactly match the listed specifications. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Models:

- T498A: Makes heating circuit on temperature fall. With setting knob on extreme counterclockwise position, provides single line break—spst (see Fig. 2).
- T498B: Makes heating circuit on temperature fall. With setting knob at OFF position, provides double line break for fuse protected 240V heating circuits (see Fig. 3). Remakes circuit no higher than -31°F (-35°C) in OFF position. Both models available with a thermometer located in the cover to indicate the actual room temperature.

Setting Range:

40°F to 80°F, markings every 5°F.

Type of Switching:

Fully enclosed snap acting Micro Switch™.

T498A: Single line break (spst).

T498B: Spst with double line break (dpst in OFF position).

Wiring Connections:

Six inch (150 mm) stranded copper leadwires suitable for connecting to aluminum wiring if approved special service CO/ALR connectors are used. Color-coded Black to L1 (T498A,B); Red to L2 (T498B only).

Electrical Rating (Noninductive (resistive) rating):

22A noninductive at 120/208/240 Vac.

19A noninductive at 277 Vac.

CSA Performance Certification:

16A at 208/240 Vac.

Setpoint Adjustment:

Control knob on face of thermostat.

Sensing Element:

Flat bimetallic blade.



Differential:

Approximately 3°F (2°C) nonadjustable.

Dimensions:

See Fig. 1 for nominal dimensions.

Thermometer:

Optional coil bimetal 50°F to 90°F (10°C to 30°C).

Mounting Means:

Direct mounting on NEMA standard vertical 2 x 4 inch (50 mm x 100 mm) switch box, or 4 x 4 inch (100 mm x 100 mm) box with mud ring adapter (not provided) using 6-32 slotted Robertson™ screws.

Approval:

Underwriters Laboratories Listed: File No. E47434, Guide No. XAPX.
CSA: File No. LR1322

Accessories (Not Included):

- 272804A Range Stop and Locking Screws Assembly: Includes locking cover screws, Tinnerman clips, wrench, and range stops—two plastic pins to insert inside cover for field-selection of minimum and maximum temperature settings.
- 272805H Replacement Cover Assembly: For T498B Fahrenheit beige models (manufactured after November, 1993—date coded after 9345).

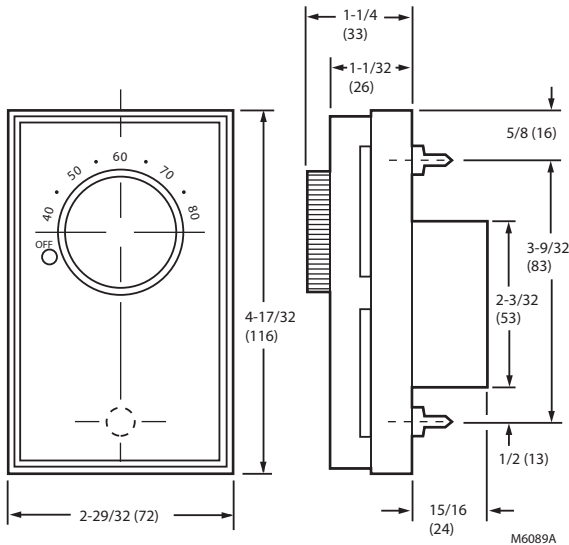


Fig. 1. Nominal dimensions in in. (mm).



RECYCLE NOTICE

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 any control containing mercury in a sealed tube.

INSTALLATION



WARNING

**HIGH VOLTAGE CONTROL.
ELECTRICAL SHOCK HAZARD.**

This thermostat is a line voltage (120 to 277 volt) control. Do not install this thermostat if you are not completely familiar and competent with electrical wiring. If improperly handled, there can be risk of 120 to 277 volt electric shock hazard that can cause serious injury or death.

Location

Install a vertical outlet box that is used to mount the T498, four to five feet (1.5m) above the floor on an inside wall where the thermostat will be subjected to average room temperature.

Mount the thermostat away from concealed warm or cold water pipes, warm air ducts, light switches and dimmers, refrigerators or drafts from hallways, fireplaces, stairways or fans.

Mounting and Wiring

When replacing an old line voltage electric heating thermostat, remove the old thermostat carefully to avoid damaging the insulation on the wiring.

Check the old insulation for cracks, nicks, or fraying and apply approved electrical tape where necessary to achieve adequate insulation, or replace the wires using approved methods.

1. Leave the cover on the thermostat while making connections.
2. Push the leadwires into the outlet box and insert the thermostat into the box for mounting by pushing against the cover.
3. Remove the thermostat cover by grasping the top and bottom edges and pulling outward.
4. Turn the dial so that the setpoint indicator is at the 12 o'clock position. This will prevent accidental damage to the dial stop during mounting.
5. Using a screwdriver, secure the thermostat to the outlet box by tightening the two mounting screws. Handle the thermostat with care; excessive pressure can damage the control knob or sensing element.



CAUTION

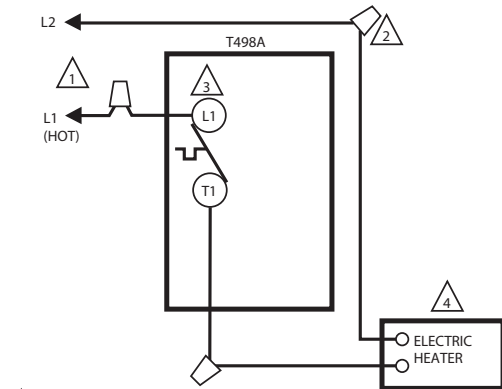
1. Disconnect power supply before making wiring connections to prevent electrical shock or equipment damage.
2. All wiring must comply with applicable codes and ordinances.
3. Thermostats are designed to be used with a separate limit control in the appliance.

6. Using wire connectors approved for No. 12 wires, make line voltage wiring connections directly to the leadwires installed on the thermostat.



CAUTION

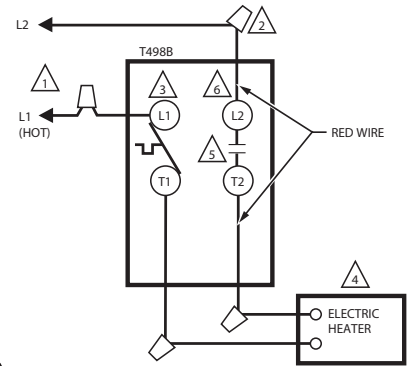
If connecting with aluminum conductors, use approved CO/ALR solderless wire connectors to avoid fire hazard.



- 1 POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- 2 USE SPECIAL SERVICE CO/ALR SOLDERLESS CONNECTORS WHEN CONNECTING ALUMINUM CONDUCTORS OR A FIRE HAZARD MAY RESULT.
- 3 BREAKS AND REMAKES BELOW -31°F(-35°C); NORMALLY THERMALLY ACTIVATED. BREAKS ON A TEMPERATURE RISE; MAKES ON A TEMPERATURE FALL.
- 4 USE A SEPARATE LIMIT CONTROL IN THE HEATING APPLIANCE.

M6091A

Fig. 2. Typical hookup for T498A Thermostat.



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- 3 BREAKS AND REMAKES BELOW -31°F(-35°C); NORMALLY THERMALLY ACTIVATED. BREAKS ON A TEMPERATURE RISE; MAKES ON A TEMPERATURE FALL.
- 4 USE A SEPARATE LIMIT CONTROL IN THE HEATING APPLIANCE.
- 5 BREAKS AT POSITIVE OFF ONLY; NOT THERMALLY ACTIVATED.
- 6 DO NOT CONNECT GROUNDED CONDUCTORS (NEUTRAL) ON 120V OR 277V CIRCUITS. INSULATE AND TAPE, OR CUT OFF RED WIRES IF UNUSED.

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Fig. 3. Typical hookup for T498B Thermostat.

SETTING AND CHECKOUT

IMPORTANT

Make sure all wiring connections are tight.

After the thermostat has been installed and wired, simulate normal operation as follows.

1. Turn the setting dial completely clockwise. The electric heater should start to heat.
2. Turn the dial completely counterclockwise. The power circuit should be broken and the electric heater should start to cool.
3. To determine the final setting, move the dial indicator to the 70°F (21°C) position on the scale. If the setting is not satisfactory after a minimum of two hours of thermostat operation, turn the dial indicator to raise or lower the temperature. Move the indicator only a few degrees each time an adjustment is necessary.

SECURITY FEATURES

Locking Cover

1. Remove cover by swinging up from the bottom edge of the thermostat.
2. Insert the Tinnerman Speed Nut® (included) into the slot on the lower back of thermostat base. See Fig. 4.
3. Insert the Allen screw into the Speed Nut until the screw head is flush with the lower edge of the thermostat base.
4. Replace the thermostat cover and lock by removing the Allen screw until screw body protrudes through the cover hole.
5. To unlock the cover, insert the Allen screw into the thermostat base until the screw body clears the cover.

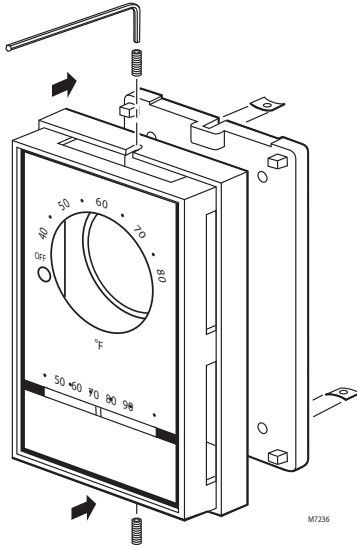


Fig. 4. Locking cover installation.

Range Stops

1. Set the thermostat to the desired setpoint. Remove the cover.
2. Install the plastic dowels (included) into the minimum and/or maximum range stop holes on the inside back of the cover. See Fig. 5.
3. Replace the cover. Check the operation of the range stops.

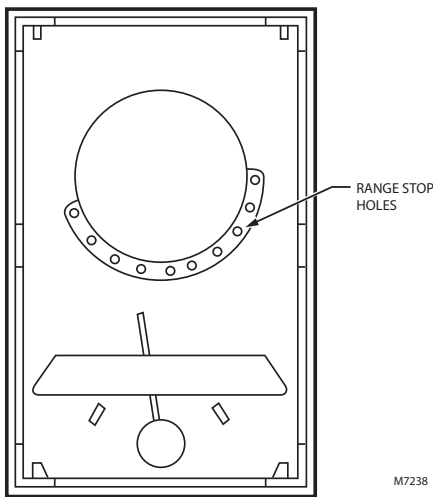


Fig. 5. Range stop installation.

CALIBRATION

The T498 Thermostats are calibrated at the factory using precise instruments under closely controlled conditions. Recalibration should not be necessary. Allow the thermostat to operate for several hours before checking calibration. Temperature deviations of 2°F (1°C) are normal. If the thermostat is mounted in a suitable location and still appears out of calibration, check calibration using the procedures that follow.

Check Calibration

1. Remove the thermostat cover and set it aside for several minutes. Radiant heat from your hands will affect the thermometer reading.
2. Turn the setting dial clockwise until the switch makes (clicking sound) and the heating equipment and fan start.
3. No recalibration is necessary if the thermostat switch makes with the thermostat setting at the same temperature as indicated on the thermostat cover thermometer.
4. If the thermostat setting differs from the thermometer, record the temperature difference and recalibrate as instructed in the Recalibration Procedure section.

Recalibration Procedure

1. Note the temperature difference between the thermostat setting and the thermometer.
2. Turn the setting dial clockwise until the switch makes (clicking sound).
3. Remove the adhesive backing of the indicator decal provided.
4. Carefully align the indicator mark on the decal with the correct temperature setting number on the cover. See Fig. 6.
5. Using finger pressure, secure the realigned decal on the center of the knob.
6. Wait five minutes and recheck the calibration.

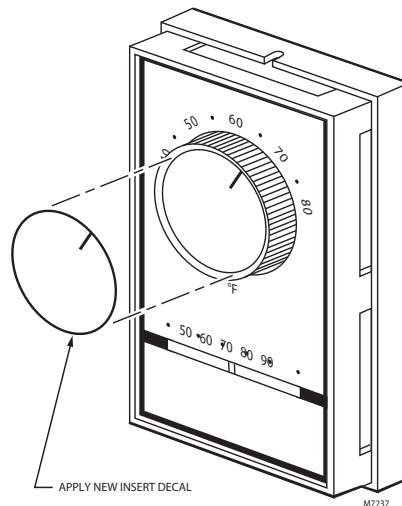


Fig. 6. Thermostat recalibration.



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