

APPLICATION

The T4051, T6051, and T6052 are heavy duty, line voltage thermostats used to control fan coils, fans, motor starters, valves, contactors, and circulator motors in heating and/or cooling systems.

The T4051A is for heating only control. The T4051B is for cooling only control. The T4051D is for electric heat applications and is used without a subbase.

The T6051A may be used in heating only systems, cooling only systems, combination heat-cool systems (changeover must be provided), or as a series 60 controller for valves and motors.

The T6052A is for two stage heating or two stage cooling systems. The T6052B is for one stage heating-cooling systems with automatic changeover.

The Q651 Subbase may be used with the thermostats to provide system switching at the thermostat location. Refer to applicable specification sheet for additional information.

Electrical ratings for the heavy duty thermostats are given in Table 1.

TABLE 1—ELECTRICAL RATINGS (AMPS)

		120V AC	240V AC
T4051A,B,D ^a	Full load	16	8
T6051A (heat) ^b			
T6052A (stage 1)	Locked rotor	96	48
T6052B (Auto changeover heat and cool)			
T6051A (cool)	Full load	8	4
T6052A (stage 2)	Locked rotor	48	24

^aT4051D also has non-inductive rating: 19 amps at 277v ac; 22 amps at 120/240v ac.

^bT6051D may be used without subbase for 22 amp non-inductive load switching.

Pilot duty rating (all models): 125 va.

INSTALLATION

CAUTION

1. Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.
2. Installer must be a trained, experienced serviceman.
3. Always conduct a thorough checkout when installation is complete.

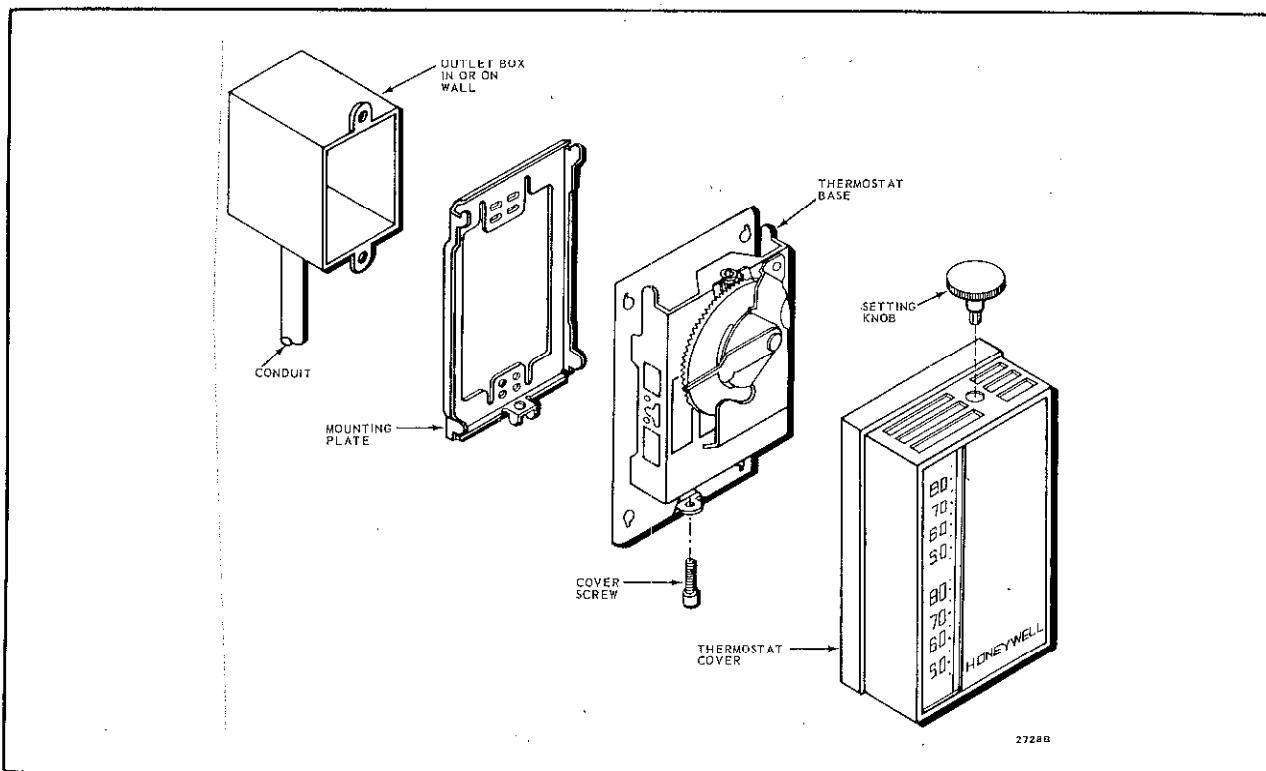


Fig. 1—Mounting thermostat to outlet box.

LOCATION

Locate the thermostat about five feet above the floor on an inside wall where it will be affected only by the average temperature of the room. These thermostats are mounted vertically.

If using a Q651 Subbase, refer to the instructions packed with the subbase.

MOUNTING

1. Mount a 2 by 4 inch outlet box either vertically or horizontally depending on the model used. Models with vertical faceplate mount on vertical outlet box; models with horizontal faceplate mount on horizontal outlet box.

2. Run conduit between the outlet box, power source, and the unit being controlled. Leave about six inches of wire in the box for connections. (Refer to the WIRING section for the number of wires required.)

3. Place the mounting plate on the outlet box. Insert the two furnished mounting screws, leaving them loose enough to move the mounting plate for leveling.

4. Level the mounting plate and tighten the mounting screws. (See Fig. 1.)

5. Connect the heating and/or cooling system wires to the back terminals of the thermostat. (See Figs. 2 through 12.)

6. When wiring is complete, secure the fiber insulator on all models except the T4051B by snapping the holes in the flap over the switch rivet heads. When the normally open switch terminal is used, clip the flap to allow it to pass around the wire. On the T4051B, secure the flap by snapping it over a projection on the molded resistor cover.

7. Hang thermostat on mounting plate tabs. (See Fig. 1.)

8. Take socket-head cover mounting screw (furnished) and insert it into tab at bottom of base. Do not tighten. Replace cover.

9. Insert set point knob into socket-head screw and tighten. This fastens cover and thermostat to the mounting plate previously attached to outlet box. Remove knob.

WIRING

CAUTION

Disconnect power supply before making wiring connections to prevent electrical shock and equipment damage.

All wiring must comply with applicable electrical codes and ordinances. Refer to the wiring diagrams below, instructions packed with the subbase, and heating and/or cooling equipment manufacturer's instructions.

The T4051A is used to control heating equipment. Switch makes on temperature fall and breaks on temperature rise. Subbase is available.

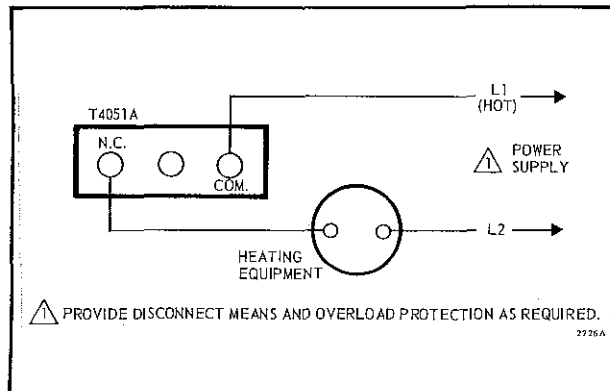


Fig. 2—T4051A Heating Control.

The T4051B is for cooling equipment control. The switch makes on a rise in temperature and breaks on a fall in temperature. Subbase is available.

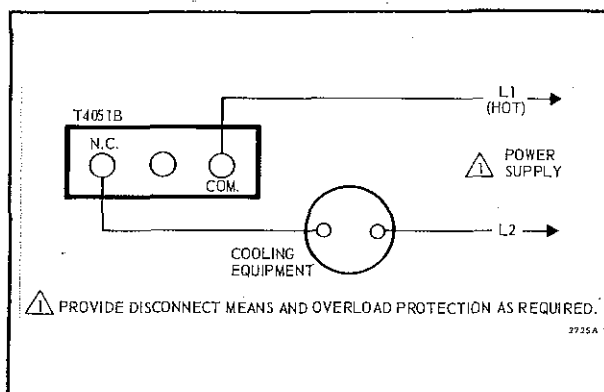


Fig. 3—T4051B Cooling Control.

The T4051D is used to control electric heating equipment. It makes on temperature fall and breaks on temperature rise. Because it has a higher load rating, the T4051D should NOT be used with a subbase.

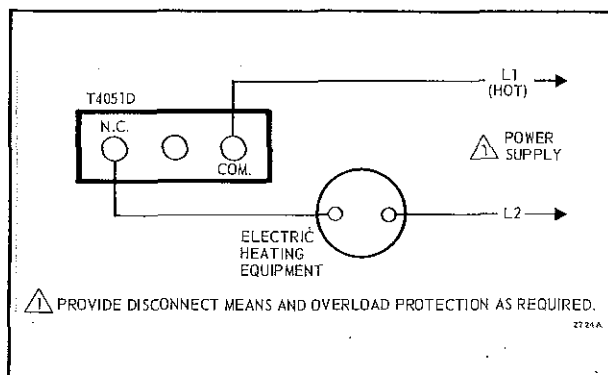


Fig. 4—T4051D Electric Heating Control.

The T6051A is for heating and/or cooling systems with manual changeover. Switch makes n.c. contacts on temperature fall, n.o. contacts on temperature rise.

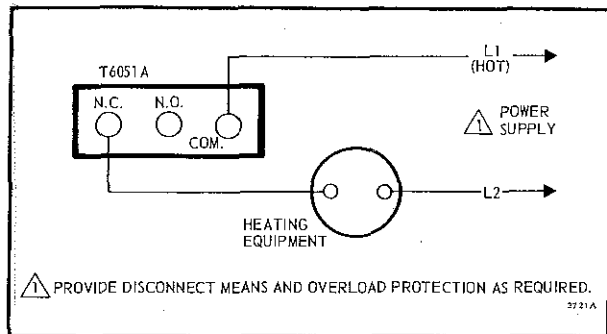


Fig. 5—T6051A in heating only application.

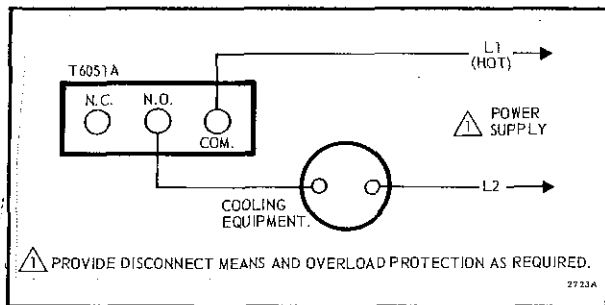


Fig. 6—T6051A in cooling only application.

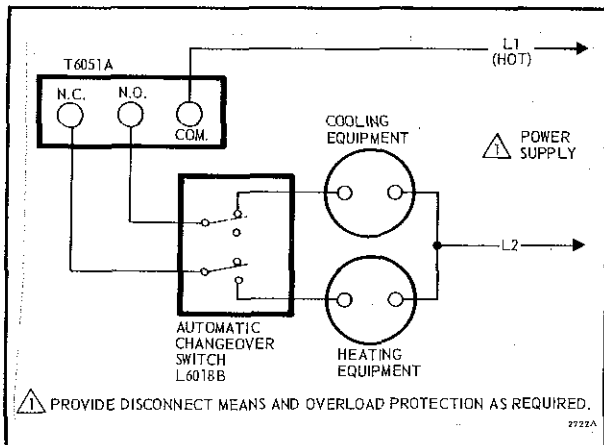


Fig. 7—T6051A in heat-cool control for separate heating and cooling equipment.

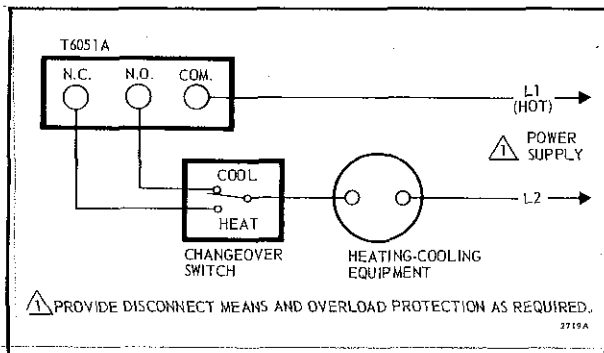


Fig. 8—T6051A Heat-Cool Control for combination heating-cooling equipment.

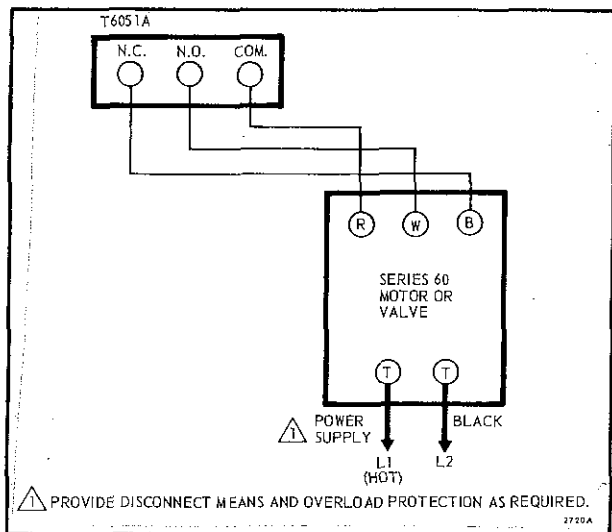


Fig. 9—T6051A used as a series 60 controller, 3-wire, line voltage, two position control.

The T6052A is for two stage heating or cooling systems. Switches make stages 1 and 2 in sequence. The T6052B is for heating-cooling with auto changeover; stage 1 makes on temperature fall; stage 2 makes on temperature rise.

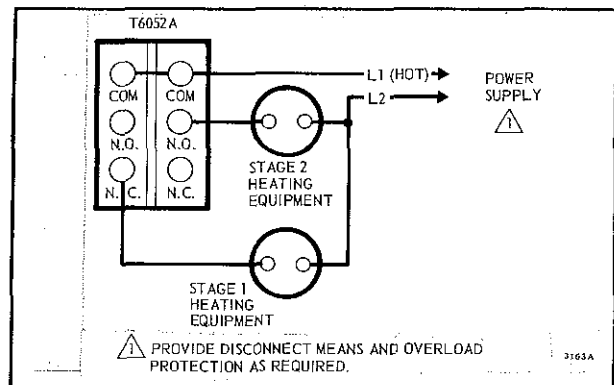


Fig. 10—Typical hookup of T6052A to control two stage heating system.

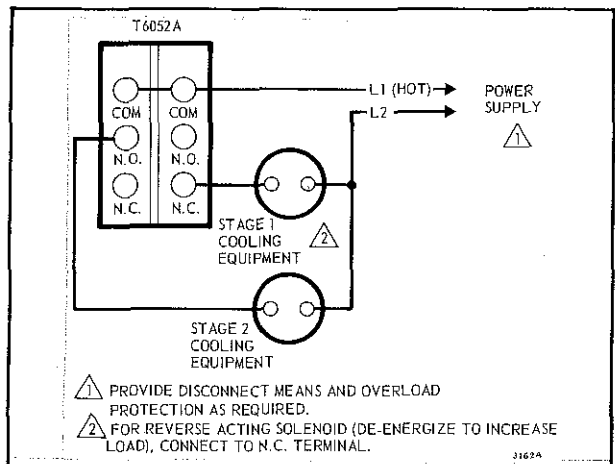


Fig. 11—Typical hookup of T6052A to control two stage cooling system.

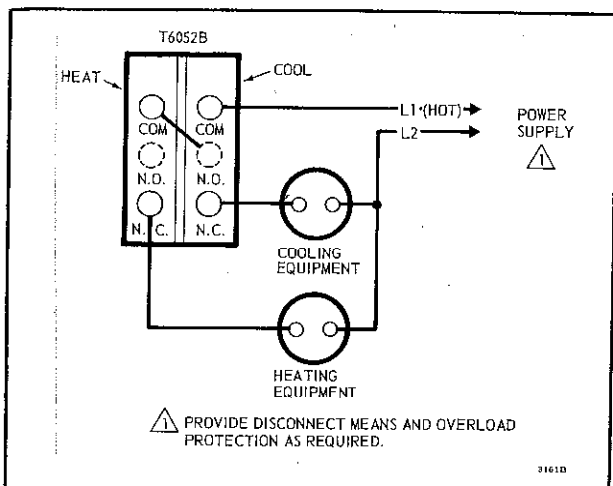


Fig. 12—Typical hookup of T6052B to control heating-cooling system with auto changeover.

ALTITUDE CALIBRATION

This thermostat was calibrated at the factory for accuracy at 1,000 feet above sea level. It may be necessary to reset the thermostat for the altitude of your locality. If you do not know your altitude, consult your local U.S. Weather Bureau or Public Library.

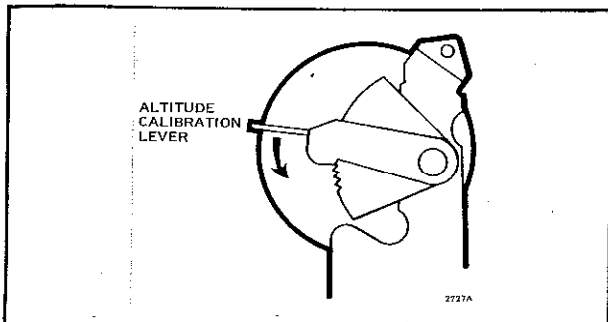


Fig. 13—Altitude calibration.

Each notch on the calibration mechanism represents 2,000 feet. If you are above sea level use the chart to determine how far to move the indicator.

ELEVATION (IN FEET)	INDICATOR
0 to 2,000	Leave as is
2,000 to 4,000	Move counterclockwise 1 notch
4,000 to 6,000	Move counterclockwise 2 notches
6,000 and above	Move counterclockwise 3 notches

TO LOCK

After altitude adjustment is complete, replace the cover and cover setscrew. Move the set point indicator to the desired temperature setting. Remove the set point knob to lock the set point.

OPERATION AND CHECKOUT

After the thermostat is installed and wired, operate it manually to make certain it is connected properly. Checkout will depend on type of hookup and controlled equipment.

For cooling control check, turn the setting knob to move the indicator down the scale. This initiates a call for cooling, and the cooling equipment should respond. For heating control check, turn the setting knob to move the indicator up the scale. This initiates a call for heat, and the heating equipment should respond. For heating/cooling control, check both heating and cooling as described above. For series 60 control check, cycle the equipment through the T6051A and make sure it functions as intended.

CAUTION

If the thermostat is controlling a compressor, allow at least two minutes between on cycles to equalize internal pressure. Rapid cycling might damage compressor and overload electrical circuit.

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1. Equipment which is received transportation prepaid at the factory originating shipment (1) within twelve months after date of manufacture, or (2) with a certification by the installer to be within twelve months after date of installation, and found by the Company's inspection to be defective in workmanship or materials within the guarantee, will be repaired or replaced at the Company's option, free of charge and returned lowest cost transportation prepaid. Premium transportation will be used at customer's request and expense;
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