

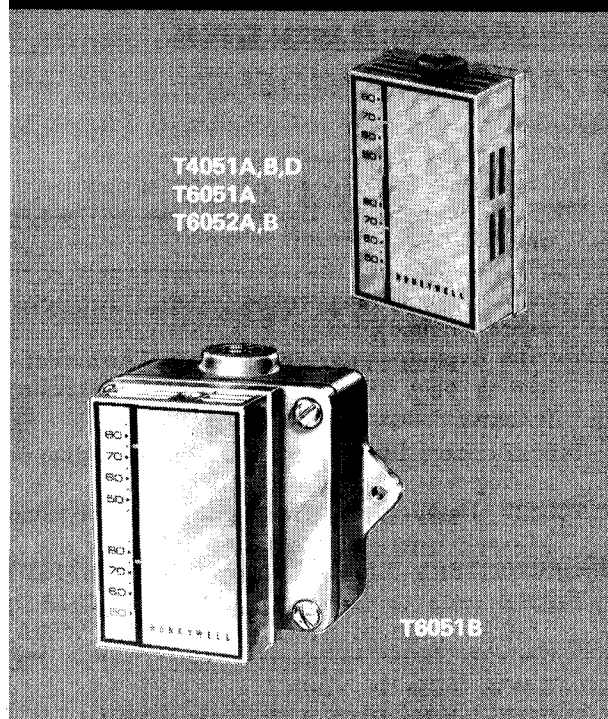
Honeywell

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.

- ☐ T4051A is for heating control.
- ☐ T4051B is for cooling control.
- ☐ T4051D is for electric heat applications.
- ☐ T6051A and B may be used in heating systems, cooling systems, combination heat-cool systems (changeover must be provided), or as a series 60 controller for valves and motors.
- ☐ T6051B has special explosion-proof housing.
- ☐ T6052A is for 2-stage heating or 2-stage cooling systems.
- ☐ T6052B is for 1-stage heating-cooling systems with automatic changeover.
- ☐ Q651 Subbases are available to provide system and fan switching from the thermostat location.
- ☐ A locking cover is standard on all models.
- ☐ The set point knob locks in the desired setting and may be removed to prevent tampering.
- ☐ TRADELINE models may be vertically or horizontally mounted.

R.R.
REV. 5-79 (.14)

HEAVY DUTY THERMOSTATS



**T4051A, B, D;
T6051A, B;
T6052A, B**

Form Number

60-2008-2

SPECIFICATIONS

IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. 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.

TRADELINE MODELS

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling, and maximum replacement value. TRADELINE model specifications are the same as those of standard models except as noted below.

TRADELINE MODELS AVAILABLE: T6051A, T6052A,B Heavy Duty Thermostats.

MOUNTING: Mount either vertically or horizontally on a standard outlet box. T6051A, T6052B can be mounted on a Q651 Subbase (see Accessories) to provide manual switching at thermostat.

RESISTIVE CURRENT (ELECTRIC HEAT APPLICATIONS) FOR T6051A (without Q651): 22 amp at 120/240V ac; 19 amp at 277V ac.

SCALE RANGE: 46 to 84 F; scale marked 50, 60, 70, and 80 [8 to 29 C; scale marked 10, 15, 20, 25].

ADDITIONAL FEATURES:

- Extra cover plate for horizontal mounting.
- T6051A may be used in electric heat systems (without Q651 Subbase).
- TRADELINE pack with cross reference label and special instruction sheet.

STANDARD MODELS

MODELS:

T4051A Heavy Duty Thermostat—heating only.

T4051B Heavy Duty Thermostat—cooling only.

T4051D Heavy Duty Thermostat—electric heating only.

T6051A Heavy Duty Thermostat—heating only, cooling only, or heating/cooling (external changeover switch required).

T6051B Explosion-proof, Heavy Duty Thermostat—heating only, cooling only, or heating/cooling (external changeover switch required).

T6052A Heavy Duty Thermostat—2-stage heating or cooling.

T6052B Heavy Duty Thermostat—heating/cooling with automatic changeover.

UNDERWRITERS LABORATORIES INC. LISTED:

T4051A (with or without Q651A,B,C), T4051B,D; T6051A (with or without Q651A,B); T6052A, T6052B (with or without Q651C)—File No. E4436, Guide No. XAPX.

T6051B—File No. E12842, Guide No. XBDV.

Explosion-proof Enclosure—Class I, Groups C and

D and Class 2, Groups E, F, and G.

CANADIAN STANDARDS ASSOCIATION CERTIFIED:

T4051A,B,D; T6051A; T6052A,B—File No. LR1620. T6051B—File No. LR30676-L.

ELECTRICAL RATINGS (AMPERES):

Voltage and Frequency—120/240V ac, 50/60 Hz. (T4051B—120 or 240V ac, 50/60 Hz.)

All models except T6051B—

		120V AC	240V AC
T4051A,B,D ^a T6051A (heat) T6052A (N.C. contacts)	Full Load	16.0	8.0
T6052B (auto changeover heat and cool)	Locked Rotor	96.0	48.0
T6051A (cool) T6052A (N.O. contacts)	Full Load	8.0	4.0
	Locked Rotor	48.0	24.0

(continued on page 3)

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. Order number (TRADELINE, if desired).
2. Optional specifications, if desired. (Specify 120 or 240V ac when ordering T4051B.)
3. Accessories, if required.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL DIVISION SALES OFFICE (CHECK WHITE PAGES OF PHONE DIRECTORY).
2. RESIDENTIAL DIVISION CUSTOMER SERVICE
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH
MINNEAPOLIS, MINNESOTA 55422 (612) 542-7500

(IN CANADA—HONEYWELL CONTROLS LIMITED, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9)
INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

T6051B Only—

		120V AC	240V AC
Heating	Full Load	10.2	6.5
	Locked Rotor	61.2	39.0
Cooling	Full Load	7.4	4.0
	Locked Rotor	44.4	24.0

aT4051D also has resistive rating—22 amp at 120/240V ac; 19 amp at 277V ac.

Pilot Duty Rating (all models)—125 VA.

DIFFERENTIAL:

T4051, T6051—1 F [0.6 C].

T6052A—

—stage 1 heat, stage 2 cool—2.5 F [1.4 C] (nominal).

—stage 2 heat, stage 1 cool—3.2 F [1.8 C] (nominal).

T6052B—

—stage 1 heat—2.5 F [1.4 C] (nominal).

—stage 2 cool—3.2 F [1.8 C] (nominal).

SWITCHING: Snap-acting switch makes on temperature fall for heating and on temperature rise for cooling. On T6052A, two switches make in sequence for 2-stage heating or cooling. On T6052B, two switches make in sequence for auto changeover.

SCALE RANGE:

Fahrenheit—46 to 84 F; scale marked 50, 60, 70, 80.

Celsius—8 to 29 C; scale marked 10, 15, 20, 25.

MOUNTING: All models except T6051B mount directly on standard outlet box. T6051B cast housing serves as outlet box.

COVER: Molded cover.

DIMENSIONS, IN INCHES [MILLIMETRES IN BRACKETS]: All models except T6051B—5 [127] high, 3-1/8 [79.4] wide, 1-5/8 [41.3] deep. Switches and wiring terminals protrude into outlet box 7/8 inch [22.2 mm]. T6051B—see Fig. 1.

OPTIONAL SPECIFICATIONS:

1. T6051A with WARMER-COOLER scale; moisture-fungus treated.
2. T6051A, 46 to 84 Fahrenheit scale, for horizontal mounting.
3. T6051A with Celsius scale. Mounts either horizontally or vertically.
4. T6052A with Celsius scale. Mounts either horizontally or vertically.
5. T6052B with Celsius scale. Mounts either horizontally or vertically.
6. T4051, T6051A, or T6052 with metal cover.
7. T4051, T6051A, or T6052 without thermometer.

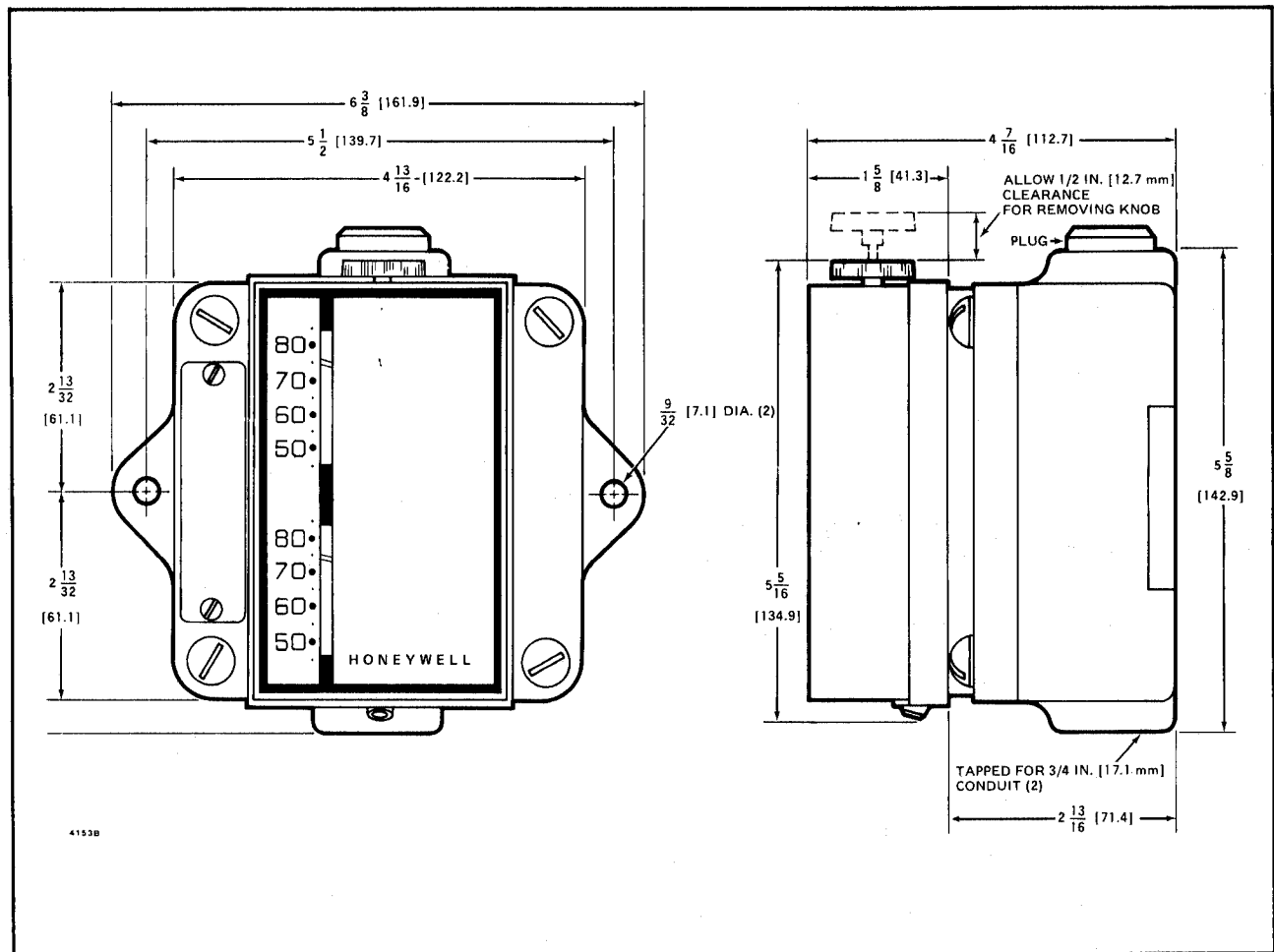


FIG. 1—MOUNTING DIMENSIONS FOR T6051B IN INCHES [MILLIMETRES SHOWN IN BRACKETS].

ACCESSORIES:

Q651 Subbase to provide switching at the thermostat location. Q651A,B are suitable for use with T4051A and T6051A thermostats. Q651C can be used with T4051A, T6051A, and T6052B thermostats. Q651 Subbase may be used with T6052A 2-stage thermostat but the T6052A-Q651 combination is not Underwriters Laboratories Inc. approved. Subbases mount either horizontally or vertically on a standard outlet box.

- Q651A provides HEAT-OFF-COOL; AUTO-OFF-ON or HEAT-OFF-FAN switching.

- Q651B provides AUTO-OFF-FAN switching.

- Q651C provides AUTO-OFF or HEAT-OFF switching.

133722D or 133723B Universal Thermostat Guards or 23394B Locking Guard. See thermostat guards specification sheet.

Explosion-proof Changeover Switches^a (T6051B);

- SPDT EFS Selector Switch—hub size 3/4 in.; Catalog No. EFS21271.

- DPDT EFS Selector Switch—hub size 3/4 in.; Catalog No. EFS21273.

^aWhen ordering, specify hub size and catalog num-

ber. Order explosion-proof changeover switches directly from:

Crouse-Hinds Co.

P.O. Box 131

Syracuse, New York 13201.

135653AB Blank Metal Cover (without set point scale, without thermometer). Polished chrome, T6051, T6052.

135653AA Metal Cover with thermometer and set point scale. Polished chrome. T6051, T6052.

135654AC Blank Metal Cover (without set point scale, without thermometer). Silver bronze. T6051, T6052.

135654AA Metal Cover with thermometer and set point scale. Silver bronze. T6051, T6052.

135654AB Metal Cover with set point scale, without thermometer. Silver bronze. T6051, T6052.

135652AA Blank Faceplate (without set point scale, without thermometer). T6051.

135651A Faceplate with set point scale, without thermometer. T6051.

135531D Horizontal Faceplate with set point scale and thermometer. T6051, T6052.

135499 Setting Knob.

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

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

LOCATION

Install the thermostat in a location where it will sense the average room temperature. Mount the thermostat about 5 feet [1.5 metres] above the floor on an inside wall. Standard models must be mounted vertically unless supplied with a horizontal scaleplate. TRADELINE models may be mounted either horizontally or vertically.

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

MOUNTING

TRADELINE ONLY

The T6051A and the T6052A,B may either be mounted horizontally or vertically. If mounting horizontally, the cover plate must be changed. To remove vertical cover plate, bend 4 corner tabs to outside and push out cover. Place horizontal cover plate on frame and bend 4 corner tabs to inside (Fig. 2).

CAUTION

The T6052A has two-stage capability. Each stage's output contacts have a current rating of 16 amps at 120V ac (for a total of 32). The Q651 Subbase total contact rating is 16 amps at 120V ac. For this reason, the Q651/T6052A combination is not Underwriters Laboratories Inc. approved. If the T6052A is used with a Q651 Subbase, ensure that the actual contact current does not exceed the total (16 amps) contact rating of the Q651.

ALL STANDARD MODELS EXCEPT T6051B

1. Mount a 2 x 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 6 inches [152 millimetres] 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 2 furnished mounting screws, leaving them loose enough to move the mounting plate for leveling.

4. Precisely level the mounting plate and tighten the mounting screws.

5. Connect the heating and/or cooling system wires of the series 60 equipment wires to the back terminals of the thermostat (Figs. 5 through 15).

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 base on mounting plate tabs (Fig. 3).

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

9. Insert setting knob into socket-head screw and tighten. This fastens cover and thermostat to the mounting plate previously attached to outlet box. Remove knob and replace at top of thermostat.

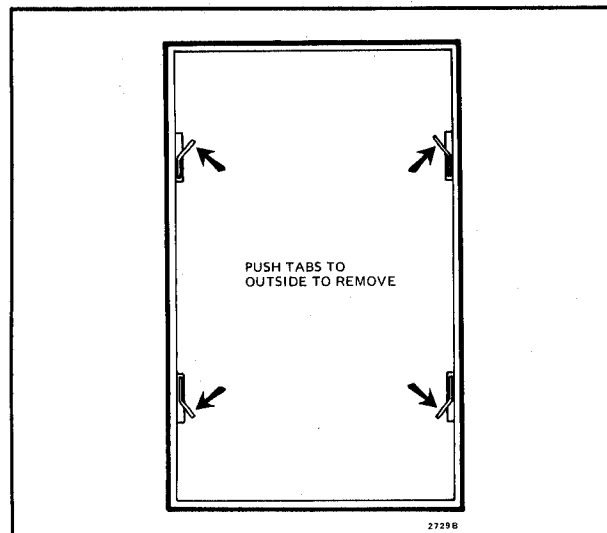


FIG. 2—CHANGING COVER PLATE FOR HORIZONTAL MOUNTING.

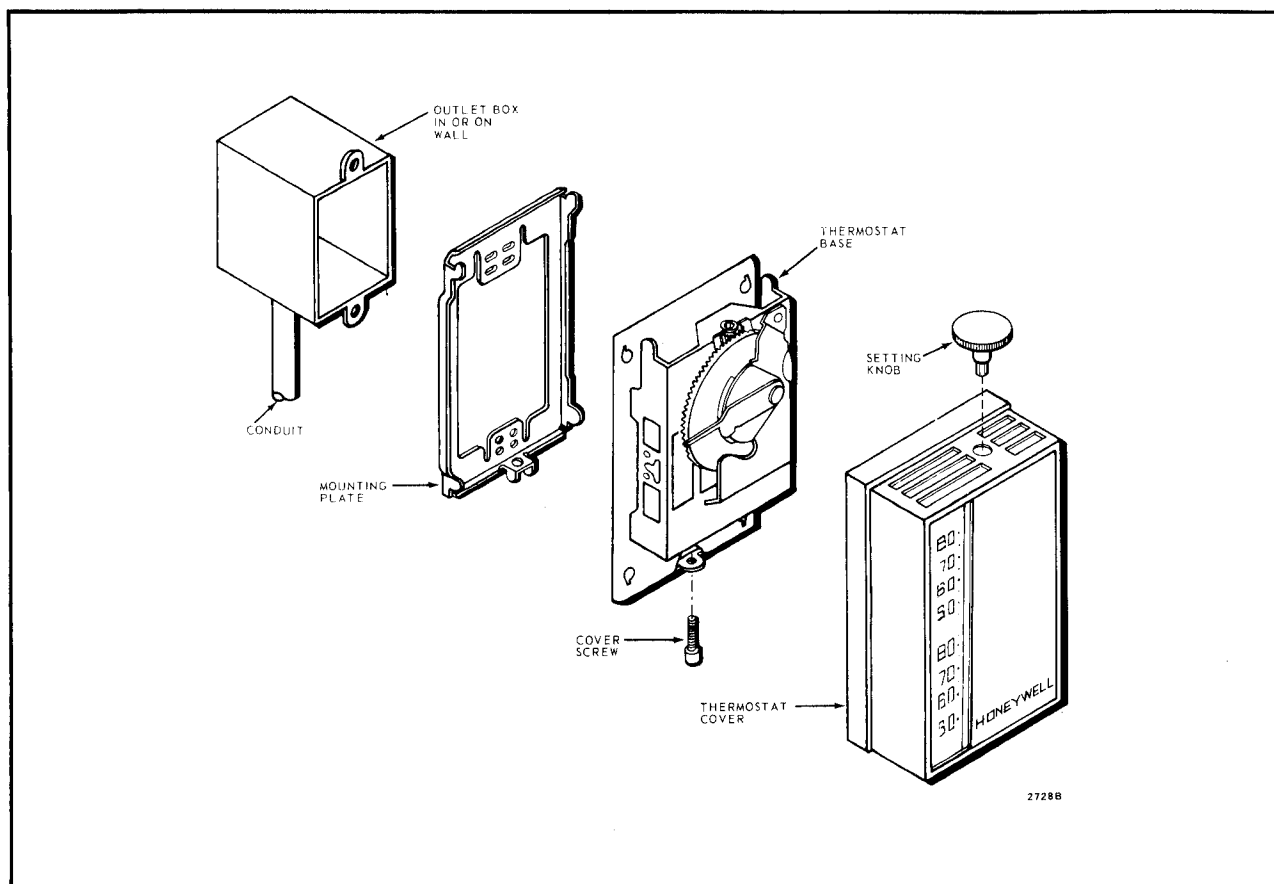


FIG. 3—MOUNTING THE THERMOSTAT TO VERTICAL OUTLET BOX.

T6051B EXPLOSION-PROOF THERMOSTAT

CAUTION

1. Use faceplate supplied with T6051B only.
2. When servicing T6051B controlled equipment, the power *MUST* be disconnected before opening the explosion-proof box.

1. Loosen the 4 explosion-proof housing cover screws and remove the cover and thermostat combination.

2. After selecting a location, mount the explosion-proof housing on the wall (Figs. 1 and 4).

3. The explosion-proof housing is tapped for 3/4 inch conduit. Run the conduit between the explosion-proof housing, the power source, and the controlled equipment. Leave 6 inches [152 millimetres] of wire in the box to make thermostat connections.

4. Connect heating and/or cooling wires or series 60 equipment wires to the T6051B terminals.

5. Replace T6051B explosion-proof housing cover, and tighten the 4 housing cover screws.

WIRING

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.

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 (not approved by Underwriters Laboratories Inc.).

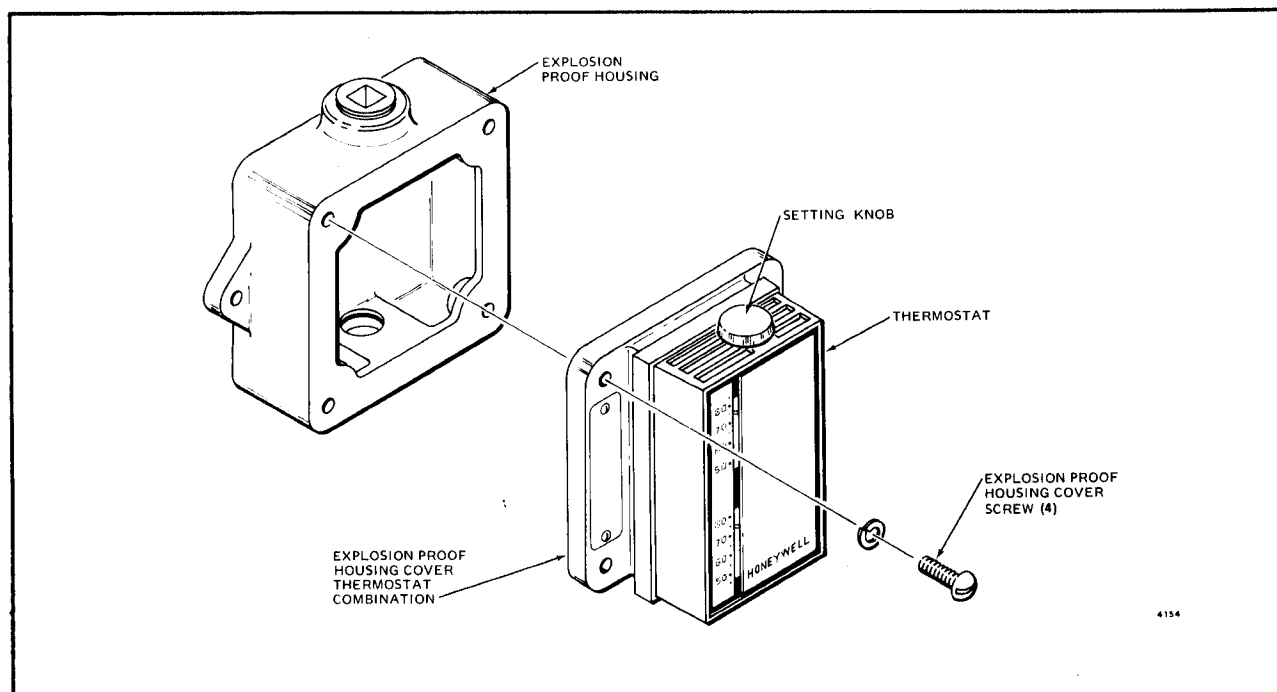


FIG. 4—MOUNTING T6051B.

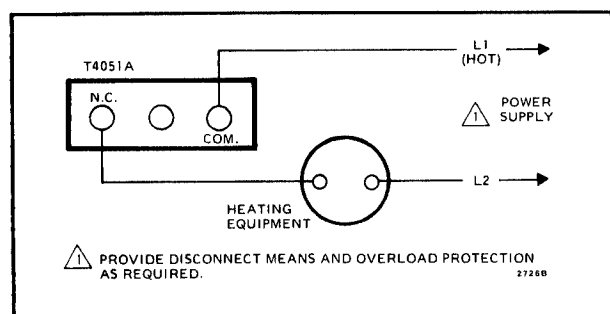


FIG. 5—T4051A HEATING CONTROL.

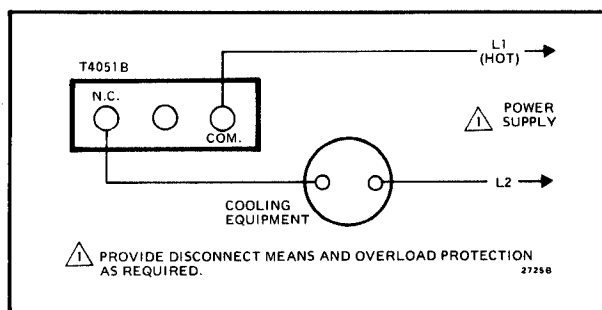


FIG. 6—T4051B COOLING CONTROL.

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.

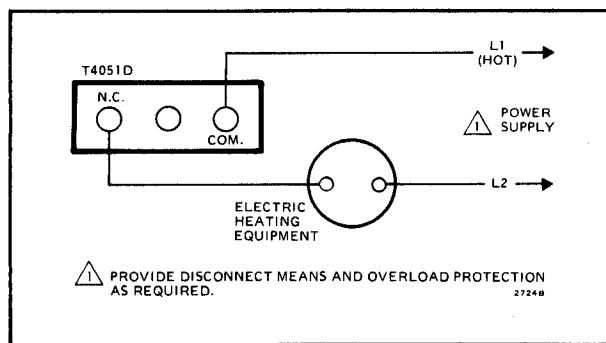


FIG. 7—T4051D ELECTRIC HEATING CONTROL.

The T6051A or B is for heating only, cooling only, or heating-cooling systems with external changeover. It may also be used as a series 60 controller. Switch makes N.C. contacts on temperature fall, N.O. contacts on temperature rise.

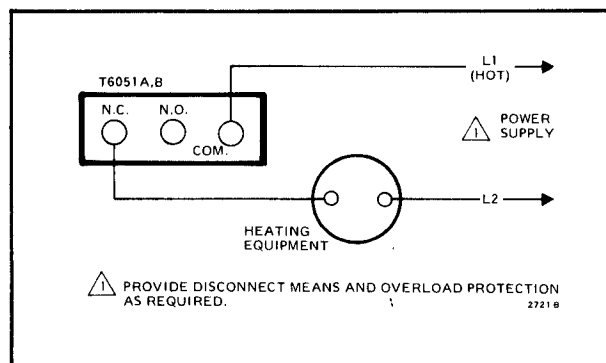


FIG. 8—T6051A OR B IN HEATING ONLY APPLICATION.

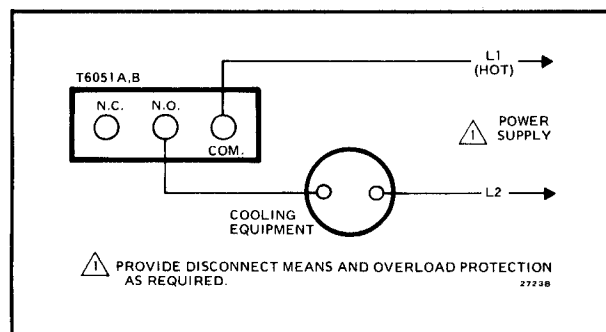


FIG. 9—T6051A OR B IN COOLING ONLY APPLICATION.

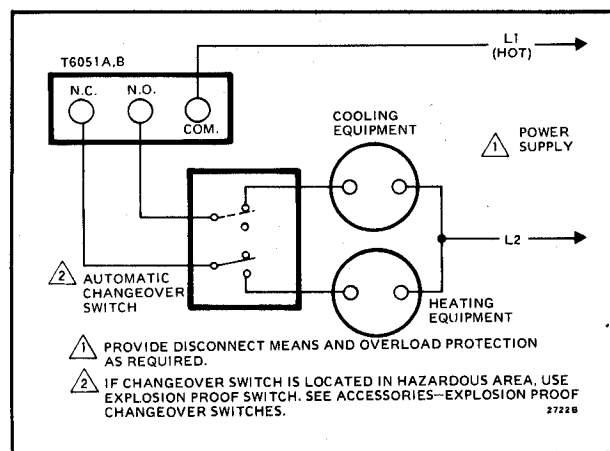


FIG. 10—T6051A,B HEAT-COOL CONTROL FOR HEATING/COOLING EQUIPMENT WITH EXTERNAL AUTOMATIC CHANGEOVER SWITCH.

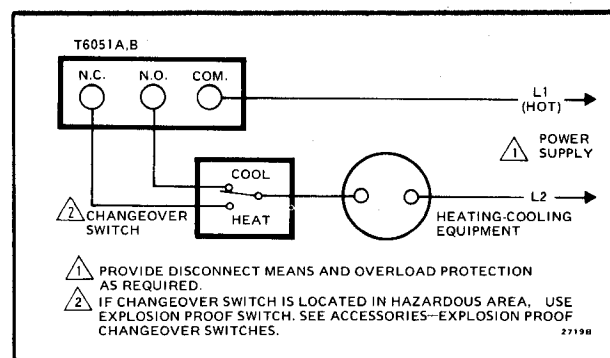


FIG. 11—T6051A,B HEAT-COOL CONTROL FOR HEATING/COOLING EQUIPMENT WITH MANUAL CHANGEOVER SWITCH.

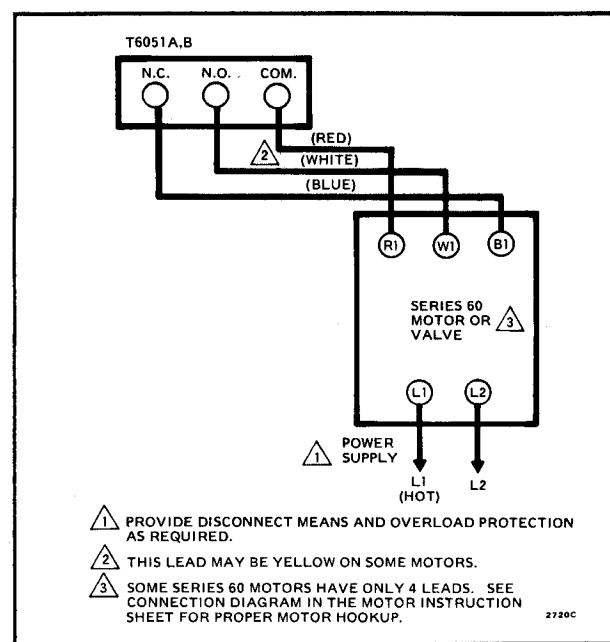


FIG. 12—T6051A,B USED AS A LINE VOLTAGE, SERIES 60 CONTROLLER.

The T6052A is for 2-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.

CAUTION

The T6052A has two stage capability. Each stage's output contacts have a current rating of 16 amps at 120V ac (for a total of 32). The Q651 Subbase total contact rating is 16 amps at 120V ac. For this reason, the Q651/T6052A combination is not Underwriters Laboratories Inc. approved. If the T6052A is used with a Q651 Subbase, ensure that the actual contact current does not exceed the total (16 amps) contact rating of the Q651.

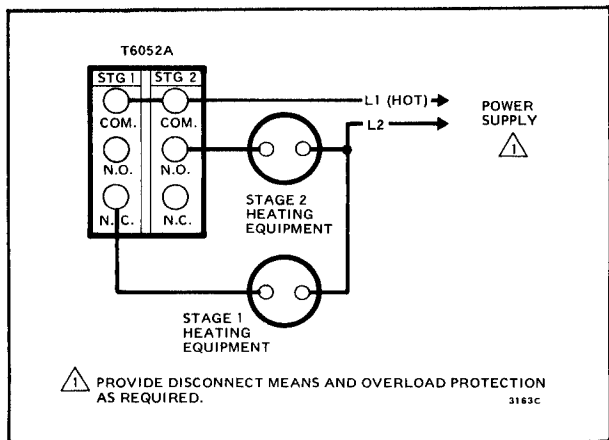


FIG. 13—TYPICAL HOOKUP OF T6052A TO CONTROL 2-STAGE HEATING SYSTEM.

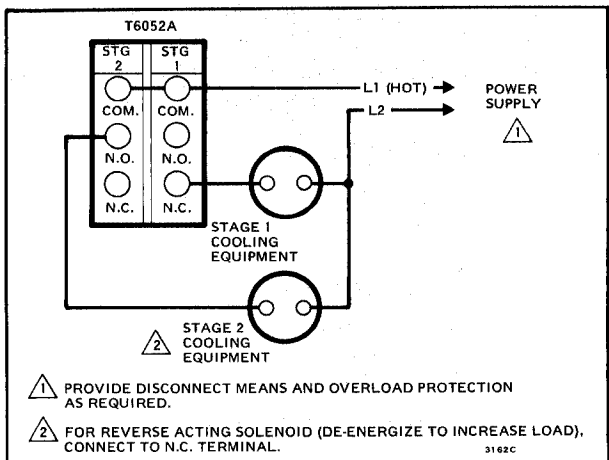


FIG. 14—TYPICAL HOOKUP OF T6052A TO CONTROL 2-STAGE COOLING SYSTEM.

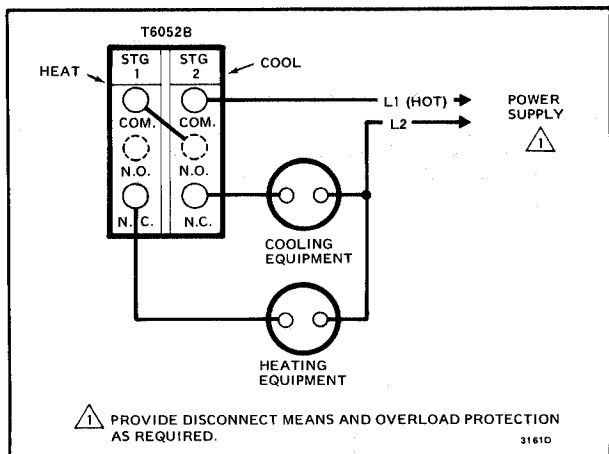


FIG. 15—TYPICAL HOOKUP OF T6052B TO CONTROL HEATING-COOLING SYSTEM WITH AUTO CHANGEOVER.

SETTING AND CHECKOUT

ALTITUDE CALIBRATION

This thermostat was calibrated at the factory for accuracy at 1,000 feet [304.8 metres] 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.

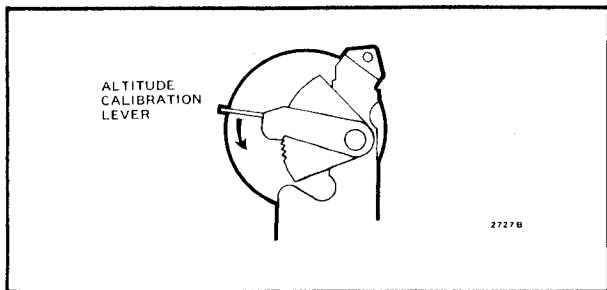


FIG. 16—ALTITUDE CALIBRATION.

Each notch on the calibration mechanism represents 2,000 feet [609.6 metres]. If you are above sea level, use the chart to determine how far to move the indicator.

ELEVATION		INDICATOR
FEET	METRES	
0 to 2,000	0 to 610	Leave as is.
2,000 to 4,000	610 to 1220	Move counterclockwise 1 notch.
4,000 to 6,000	1220 to 1830	Move counterclockwise 2 notches.
6,000 and above	1830 and above	Move counterclockwise 3 notches.

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.

CHECKOUT

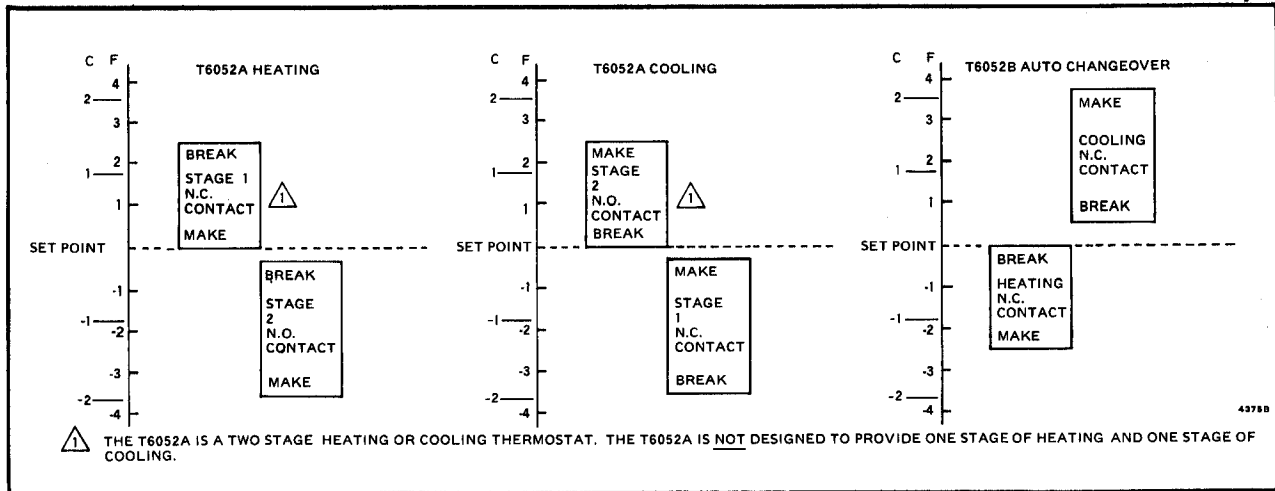
After the thermostat is installed and wired, operate it manually to make certain it is connected properly. Checkout will depend on type of hookup and controlled equipment.

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 T6051 and make sure it functions as intended.

CAUTION

If the thermostat is controlling a compressor, allow at least 2 minutes between on-cycles to equalize internal pressure. Rapid cycling might damage compressor and overload electrical circuit.



Dear Customer,

We welcome your comments and suggestions for improving this publication. Your assistance is greatly appreciated and will enable us to provide better technical information for you.

Please send your comments and suggestions to:

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