



CONTROLS COMPANY

Temperature Controls Marketing Group
100 W. Victoria Street, Long Beach, CA 90805

INSTALLATION INSTRUCTIONS

ROOM THERMOSTAT

CM60 24 VOLT & CM68 MILLIVOLT HEATING THERMOSTATS

FALLBROOK DIVISION

DESCRIPTION

The CM60, CM68 Room Thermostats control a heating system, either gas, oil or electric. They sense the room temperature and automatically open or close an electrical circuit to a valve or a relay in a heating appliance.

There are two main assemblies, a cover and a base. The cover has a decorative face plate, and comes with or without thermometer. The temperature scales are Fahrenheit and Celsius. There are three internal ribs which fit into guides in the base for centering and to provide gripping to hold the cover to the base.

The base mounts to the wall with two #8 screws. Leveling is not required. The system wiring is connected to two screw terminals on the back. On the front is the bimetal coil, a magnet, contacts, adjustable anticipator (CM 60 model only), a temperature setting lever and an optional "OFF" switch. The anticipator adjusts the thermostat to the heating system, and can be used to change the system cycles per hour for more even heating. The lever sets the temperature at which the thermostat turns the system ON.

SPECIFICATIONS

ELECTRICAL RATING:

CM60-24 volt nominal, (30 VAC, 1.0 ampere max.)

CM68-Millivolt, 250 to 750 millivolt

APPLICATION: Two wire heating

ANTICIPATOR: .18-1.0 ampere, adjustable. (CM60 only)

TEMPERATURE RANGE: 60°F to 90°F, 10°C to 30°C.

TEMPERATURE DIFFERENTIAL: 2°F, 1°C.

SIZE: 3 x 3-1/4 x 1-1/2 inches.

OPTIONAL FEATURES: OFF switch, thermometer, customized cover face plate, HI-LO temperature setting stops.

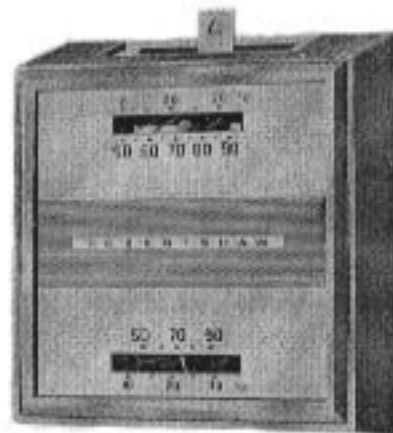
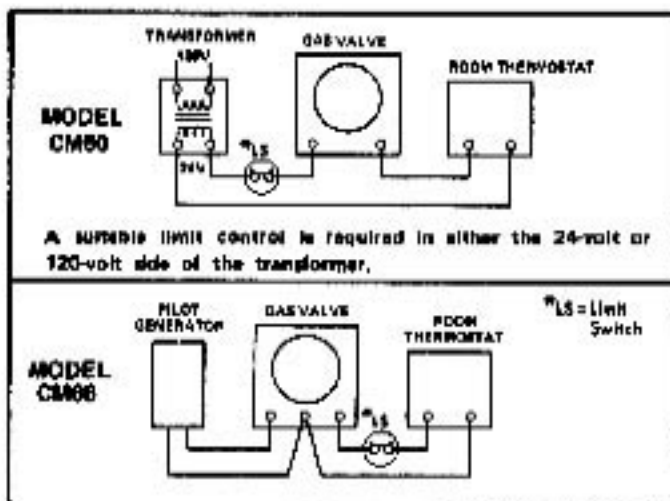


FIGURE 1

LOCATION

- Locate on an inside wall about five feet off the floor accessible to wiring, service and adjustment, in a frequently used room, such as a living room, etc. . .
- Do not locate in unusual heating conditions such as in sunlight, close to lamps, TV sets, radiators, registers or other heat producing appliances.
- Do not locate in unusual cooling conditions such as on an outside wall, or one separating an unheated room, or in drafts from stairwells, doors, windows, etc. . .
- Do not locate where air circulation is poor such as in a corner, alcove, over furniture, or behind an open door.

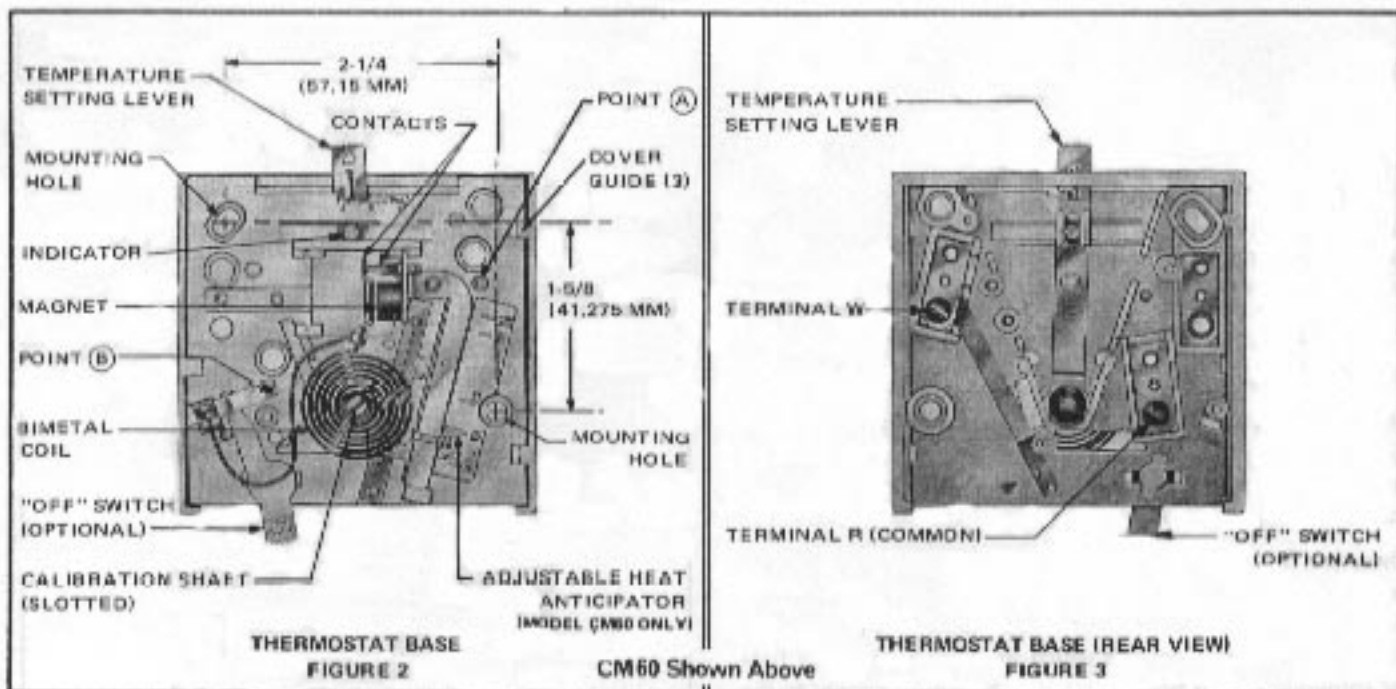


WARNING

READ CAREFULLY BEFORE PROCEEDING.

This is a precision instrument, handle carefully. Only the procedures outlined in this bulletin are approved by the Manufacturer. Replace thermostat if other service is required.

1. Disconnect electricity to the appliance before installation or service. Reconnect when through.
2. **DO NOT** short control terminals at appliance to test system. Room thermostat will be damaged.
3. **DO NOT** locate thermostat in a humid area. The life expectancy will be reduced.
4. Wiring must conform to local codes and ordinances.
5. When appliances have time delay control, the system operation will lag behind thermostat.



INSTALLATION

1. Disconnect electricity (warning note 1).
2. Grip cover at top and bottom and pull off.
3. Drill mounting holes in wall (fig. 2)
4. Pull about 3 inches of wire through wall opening and strip the ends 3/8 inch. Connect wires to screw terminals (fig. 4) and tighten securely. Bend wires to prevent interference with the temperature setting lever.
5. Push wires back through wall opening leaving some slack. Close opening with insulating material.
6. Mount base to wall with the furnished screws.
7. Remove the warning card, (CM60 model only) replace cover and set the temperature setting lever, reconnect electricity.

ADJUSTMENTS

ANTICIPATOR (CM60 Model Only)

The anticipator must be set by the installer. Set to one of the following conditions:

1. The same reading as the replaced thermostat.
2. The current draw (amperage) of the valve or relay (see label on the control).
3. The circuit amperage determined as follows:
 - A. Set the temperature setting lever to the lowest position (LH side) so that contacts are open.
 - B. Use an AC ammeter, 0-1 ampere range, and place probes on point A and point B (fig. 2). Heating control or relay must then turn ON and a reading appear on the meter. Do not use a voltmeter or DC ammeter. NOTE: If equipped with an "OFF" switch, put it in an ON position (point B).
 - C. Set anticipator (slider) to meter reading. This is the nominal setting.
4. After system has operated for several hours, heating cycles should be from 4-6 per hour (typical). For more even heating, cycles can be increased or decreased by adjusting anticipator. Set to higher number for fewer cycles. Make adjustments in small increments.

CALIBRATION

A thermostat responds to the temperature in its immediate area. It is factory calibrated to turn ON when the room temperature is at or below the selected temperature. If re-calibration becomes necessary, proceed as follows:

1. Set temperature setting lever to the lowest position and allow the thermostat to stabilize for 10 minutes.
2. Set the lever to the reading of a thermometer that is accurate and is close to the thermostat, or to the thermostat thermometer, if so equipped. Remove cover. Do not let heat from hands, breath, etc., affect calibration. Work quickly.
3. Hold the lever stationary and, with a blade screwdriver, turn the calibration shaft (fig. 2) counter clockwise until the contacts are apart, and, slowly, turn the shaft clockwise until the contacts just snap closed.
4. Replace cover and set temperature setting lever to the desired setting.

THERMOMETER CALIBRATION

1. Place an accurate thermometer close to the thermostat.
2. Remove cover, and with a blade screwdriver, turn (do not push in) the small slotted shaft on the inside of the cover until the pointer has correct reading on the scale. Breath and body heat will affect the sensitive bimetal, make adjustment quickly.

SERVICE

CONTACT CLEANING

1. Grip cover at top and bottom and pull off carefully.
2. Move temperature lever to open contacts. Place a piece of unprinted, unglazed paper between the contacts and move the lever to close them. Press lightly on the moveable contact and polish by moving the paper back and forth. (Removes tarnish.)
3. Replace cover and test system operation by setting lever.