Honeywell

T87F THERMOSTAT

APPLICATION

The T87F provides temperature control for 24 to 30 volt residential heating, cooling, or heating-cooling systems. For heating systems the T87F mounts on the wall plate provided. For cooling only or heating-cooling systems, order the 137421A Heating-Cooling Wall Plate, with remote switching, or with the Q539 Subbase, which provides switching at the thermostat location (order wall plate or subbase separately).

The spdt switch makes 1 set of contacts on a temperature fall to operate the heating system. The other set of contacts make on a temperature rise to operate the cooling system when the T87F is used to control cooling.

Models with positive OFF feature break the electrical circuit to prevent system operation when the switch is moved to the OFF position. These models use the 137421B wall plate for cooling or heating-cooling systems.

INSTALLATION

CAUTION

1. Installer must be a trained, experienced serviceman.
2. Disconnect power supply before wiring.
3. All wiring must comply with applicable codes and ordinances.
4. On systems using a low voltage gas valve, never apply a jumper across valve coil terminals. This may burn out thermostat heat anticipator.
5. Always conduct a thorough checkout when installation is complete.

NOTE: The T87F was carefully adjusted at the factory. HANDLE THE THERMOSTAT CAREFULLY.

LOCATION

Locate the thermostat about 5 feet above the floor in an area with good air circulation at average temperature.

Do not mount thermostat where it may be affected by drafts, hot or cold air from ducts, or radiant heat from the sun or appliances.

MOUNTING WALL PLATE OR SUBBASE

IMPORTANT

1. Use plumb line or spirit level to accurately level the wall plate or subbase as in Fig. 1. Inaccurate leveling may cause thermostat control deviation.
2. When using the T87F, with a Q539 Subbase, follow the mounting and wiring instructions furnished with the subbase.

1. Place the wall plate on the wall at the desired location. Pull the thermostat cable through the entrance hole of the wall plate.
2. Fasten the wall plate. Do not tighten the screws.
3. Level according to Fig. 1, then tighten the screws.
4. After wiring the wall plate, plug the hole to prevent drafts from affecting the thermostat.

NOTE: To mount the T87 Thermostat on an outlet box, order 129044A Adapter Ring Assembly.

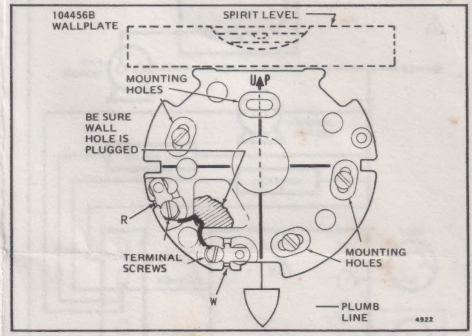


Fig. 1—Level wall plate before mounting T87F.

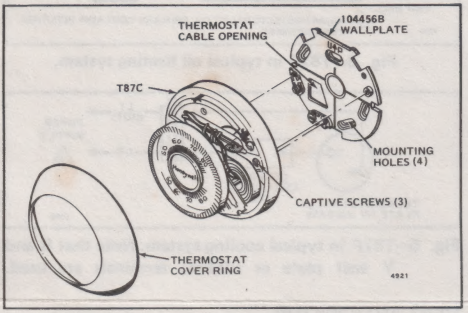
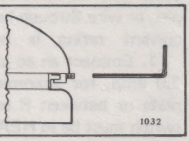


Fig. 2—Mounting T87F and 104456B Wall Plate.

MOUNTING THERMOSTAT

Remove standard cover—pull ring outward with fingertips, pressing lightly on dial with thumbs.

Remove locking cover—loosen the 3 screws along the cover edge with the Allen wrench furnished. Remove the cover as for standard cover ring.



Align the thermostat over the wall plate and tighten the 3 captive mounting screws. These captive screws complete the electrical connections to the thermostat. Adjust heat anticipator to match current rating of primary control. See Fig. 8.

WIRING

CAUTION

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

All wiring must comply with local electrical codes.

The T87F is adaptable to most 2-wire, 24 to 30 volt heating systems and to most 3-wire, 24 to 30 volt heating systems controlled by a series 10 (spst) thermostat. The following hookups are typical applications. When using the T87F for cooling control, refer to the hookups in the Q539 Subbase instructions.

For variations of these systems, refer to the installation instructions for the controlled equipment.

S.K.
Rev. 9-73 (.002)

Form Number
95-6731—4
Residential Div.

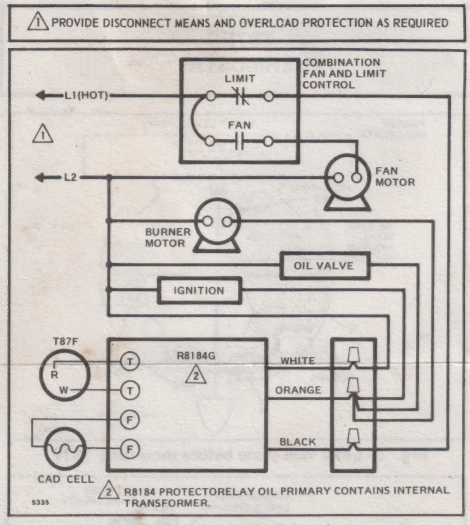


Fig. 3—T87F in typical oil heating system.

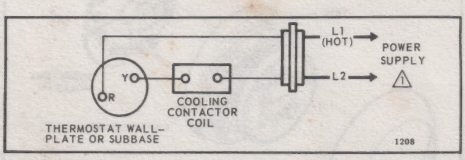


Fig. 5—T87F in typical cooling system. Note that R and Y wall plate or subbase terminals are used.

HEAT ANTICIPATOR

Adjust heat anticipator to match current rating of primary control, which is usually stamped on the control nameplate. Move the indicator to match this rating, and the heat anticipator will be properly adjusted. Indicator may be moved with fingers, or with pencil point, pin, or wire through hole shown in drawing below. If the current rating is not given, proceed as follows:

1. Connect an ac ammeter of appropriate range (0 to 2.0 amp, for example) between terminals on the wall plate or between R and W on subbase. Subbase system switch must be in HEAT position.

2. Let the heating system operate for 1 minute before reading the ammeter.

3. Use the current reading to select the proper heat anticipator setting on the indicator scale.

A slightly higher setting to obtain longer burner-on times (and thus fewer cycles per hour) may be desirable on some systems. Example: If burner-on time is too short with a setting of 0.4, adjust to 0.45 and check system operation, adjust to 0.5 setting and recheck until the desired burner-on time is obtained.

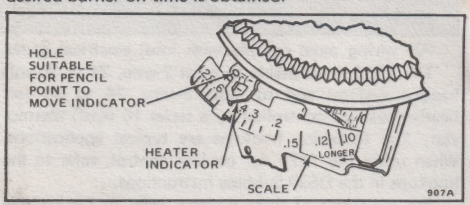


Fig. 8—Adjust heat anticipator to match current rating of the primary control.

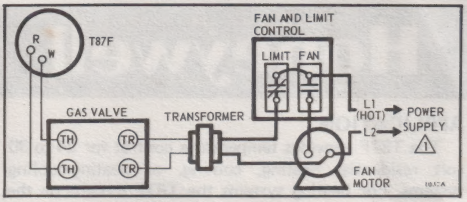


Fig. 4—T87F in typical gas heating system.

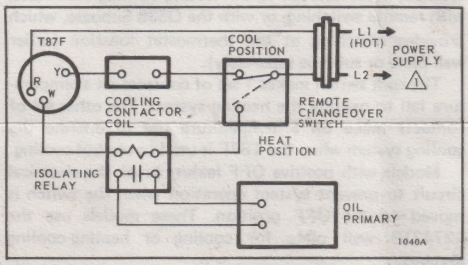


Fig. 6—T87F in typical heating-cooling application using a remote mounted system changeover switch.

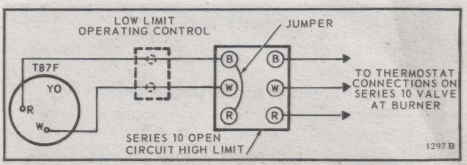


Fig. 7—T87F replacing a series 10 thermostat

TEMPERATURE SELECTION

To select the temperature control point, turn the transparent dial until the desired point on the setting scale (top) is in line with the pointer.

On locking cover models the temperature range may be limited with stops at either extreme. The left stop is for the lower extreme, right stop for high extreme.

RECALIBRATION

The T87F is calibrated at the factory and no recalibration should be necessary. If the thermostat is accurately leveled and still appears to be out of calibration, order 104994 Calibration Wrench. Instructions for recalibrating are furnished with the wrench.

CHECKING THERMOSTAT OPERATION

Turn down temperature setting to lowest point. If subbase is used, move system switch to HEAT position. Raise temperature setting until heating equipment starts. This point should be at room temperature. Turn dial back slowly. Heating equipment should stop when dial has been turned below room temperature.

If T87F controls cooling, move system switch (if used) to call for COOL and lower setting until cooling equipment starts. Raise setting above room temperature and cooling system should shut down. Make certain all equipment responds properly to the thermostat.

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PRINTED IN U.S.A.