

CT8611 **PROGRAMMABLE HEAT PUMP THERMOSTAT**

INSTALLATION MANUAL

IMPORTANT: *This thermostat may be programmed either before or after installation. Refer to Owner's Guide, form 69-0398, for programming instructions.*

Toll-free Customer Assistance

For all questions concerning this thermostat, please read and follow the instructions. If additional assistance is needed, call Honeywell Customer Assistance toll-free at 1-800-468-1502, Monday-Friday, 7:00 a.m.-5:30 p.m. Central Time.

Before you call, please have the following information available—thermostat model number and date code, kind of heating/cooling system (i.e., hot water, warm air, oil, gas, etc.), number of wires connected to the thermostat.

NOTICE

This equipment is a Class B digital apparatus, which complies with Canadian Radio Interference Regulations, CRC c. 1374.

STEP 1

PREPARATION

Your new thermostat provides energy saving control for a 24 Vac multistage heat pump heating/cooling system direct from the control transformer.

The CT8611 includes SYSTEM and ENRG SAV LEDs located near the top of the thermostat face. The SYSTEM LED lights when the thermostat is signaling for heating or cooling. The ENRG SAV LED lights during the LEAVE and SLEEP periods.

The CT8611 also includes AUX. HT. and EM. HT. LEDs near the bottom center of the subbase. The AUX. HT. LED lights whenever the thermostat is calling for operation of the backup or auxiliary heater. Backup (auxiliary) heat is more expensive to operate than the heat pump and typically is used only when the heat pump is unable to handle the heating load. The EM. HT. LED lights whenever the thermostat system switch is in the EM. HT. position.

Heat and cool anticipation is fixed in all models; no adjustment is necessary. Cycle rates are adjustable for auxiliary heating stage.

Any questions concerning your system's compatibility with your thermostat may be directed to Honeywell Customer Assistance at their toll-free number, 1-800-468-1502.



WARNING

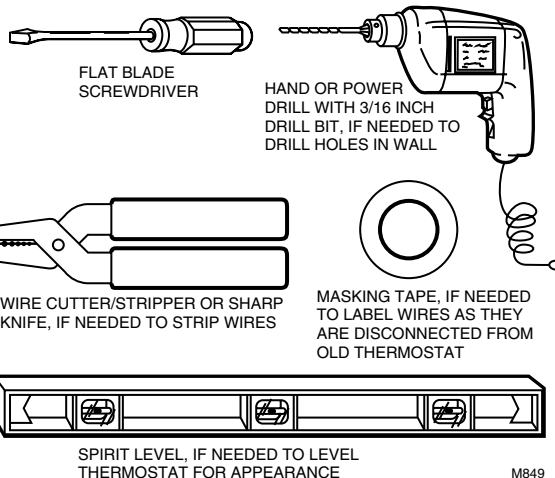
This device is designed to operate on low voltage (20 to 30 Vac). The application of higher voltage is dangerous and may cause electrical shock, fire or personal injury.

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 CT8611 Heat Pump Thermostat Wiring Guide, form 69-0817, to make sure the product is suitable for your application.
3. Allow thermostat to warm to room temperature before operating.
4. After installation is complete, check thermostat operation as provided in these instructions.

TOOLS REQUIRED FOR INSTALLATION

- Assemble a flat blade screwdriver and other tools as needed (right).
- Test to make certain that your heating and cooling systems are working properly. If either does not work, contact your local heating/air conditioning dealer. To avoid compressor damage, do not operate the cooling system if outdoor temperature is below 50° F [10° C].
- TURN OFF POWER** to the system at the heat pump and at the fuse/circuit breaker panel.
- Carefully unpack your new thermostat. Save instructions, proof of purchase from packaging and original receipt.



STEP 2

REMOVE OLD THERMOSTAT



WARNING

If your old thermostat is attached to a junction box in the wall, it is likely that 120V are present. To prevent electrical shock hazard, *do not proceed*. Call a qualified electrician.



CAUTION

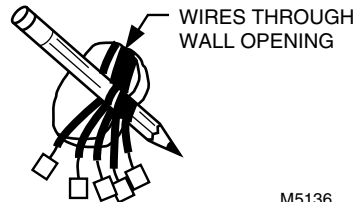
1. Disconnect power supply to prevent electrical shock or equipment damage.
2. After wiring is complete, push excess wire back into the hole, and plug hole with nonhardening caulk, putty, or insulation to prevent drafts from affecting thermostat operation.

Remove cover from old thermostat. If it doesn't snap off when pulled firmly from the bottom, check for a screw that locks the cover.

Loosen screws holding thermostat to subbase, wallplate or wall, and lift away.

Disconnect wires from old thermostat or sub base. Always label all wires as you disconnect them from your old thermostat. Use the CT8611 Wire Tags provided to label each wire with the appropriate terminal designation as you remove it. It is important to note the terminal designation when removing wires. Not all thermostats are wired by color code.

Keep the wires from falling back into the wall by wrapping them around a pencil, as shown.



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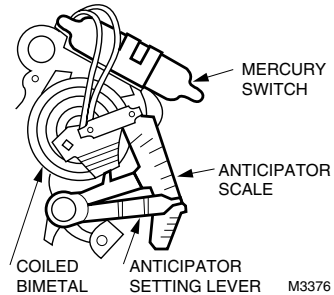
Do not discard your old thermostat until you have thoroughly checked out system operation with your new Honeywell CT8611 Heat Pump Thermostat installed. If your old thermostat contains mercury, do not dispose of it in the trash, see below.

RECYCLING THERMOSTAT

If this thermostat is replacing a thermostat that contains mercury in a sealed tube, do *not* place your old thermostat in the trash. Contact your local waste management authority for instructions regarding recycling and the proper disposal of your old thermostat.



If you have questions, call Honeywell Inc. at 1-800-468-1502.



Typical location of a mercury switch in a thermostat.

STEP 3

MOUNT THERMOSTAT SUBBASE

- The subbase does not require leveling for proper operation; level it for appearance only.
- Remove thermostat from subbase (Fig. 1).
- Mount the subbase directly onto the wall with the screws included in the package. Use the subbase as a template, and with a pencil, mark the two mounting screw positions (Fig. 2). Use 3/16 in. bit to drill holes for anchors. Gently tap anchors into holes until they are flush with the wall surface.

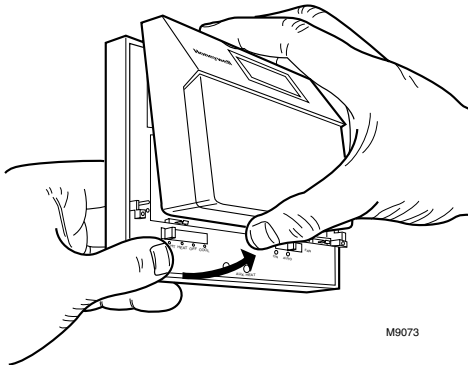


Fig. 1—Removing thermostat from base.

- Thread wires through the center opening of the subbase. Then, mount the subbase using the two screws provided. Gently tighten the screws, level the top surface of the subbase and then securely tighten the screws.

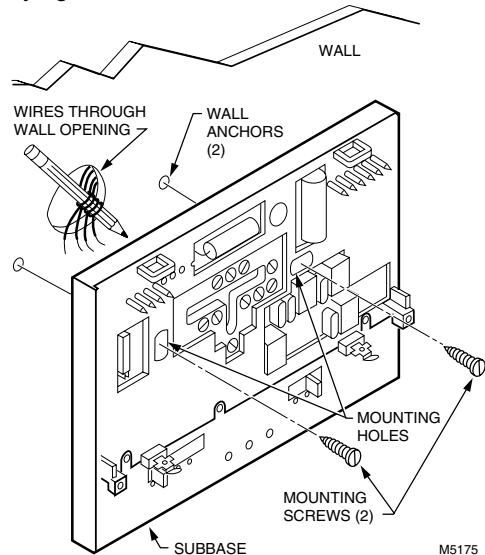


Fig. 2—Mounting subbase on wall.

STEP 4

WIRE THERMOSTAT TERMINALS

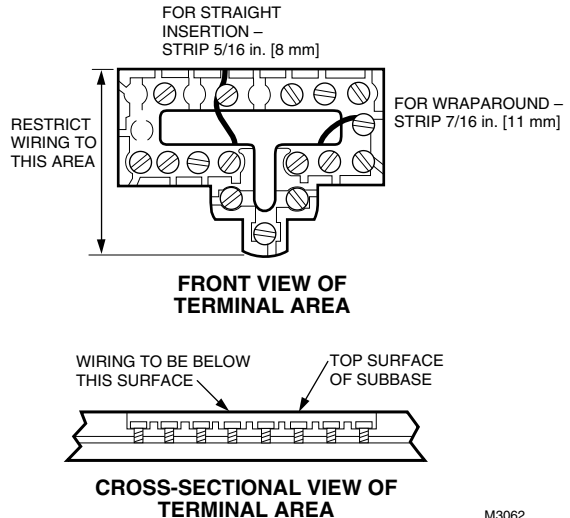
NOTE: All wiring must comply with local codes and ordinances. If unsure about household wiring procedures, call Honeywell Customer Assistance with your questions Monday-Friday, 7:00 a.m.-5:30 p.m., Central time, 1-800-468-1502.

Refer to the CT8611 Heat Pump Thermostat Wiring Guide, form 69-0817, and to the wire labels you applied when you removed the old thermostat. Match the letter from your old thermostat wire with the appropriate letter on your new thermostat. Follow any special instructions provided in the Wiring Guide. Wire only those terminals shown with lines connecting them. Some terminals on the thermostat may not be used.

For each wire, loosen the terminal screw, slip the wire beneath its matching terminal, and tighten the screw.

The shape of the terminal barrier allows straight or conventional wraparound wiring connections.

NOTE: Keep all wiring restricted to ribbed area surrounding terminals (Fig. 3) to assure thermostat/subbase contact.



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Fig. 3—Keep wiring restricted to ribbed area surrounding terminals.

□ Figs. 4 and 5 illustrate typical hookups for the CT8611 heat pump thermostat.

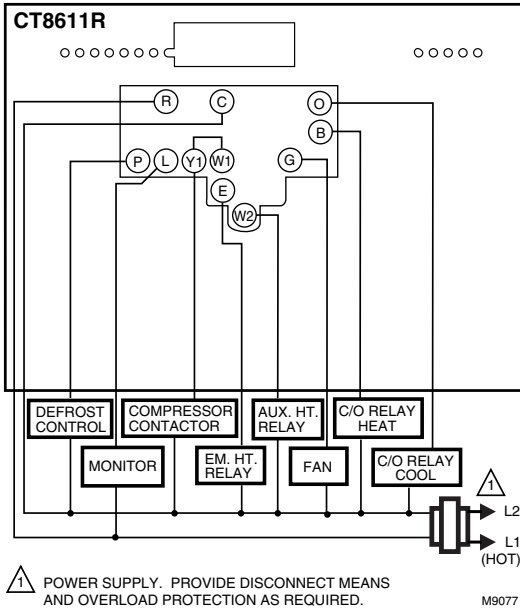


Fig. 4—Typical hook up of CT8611 with jumper intact.

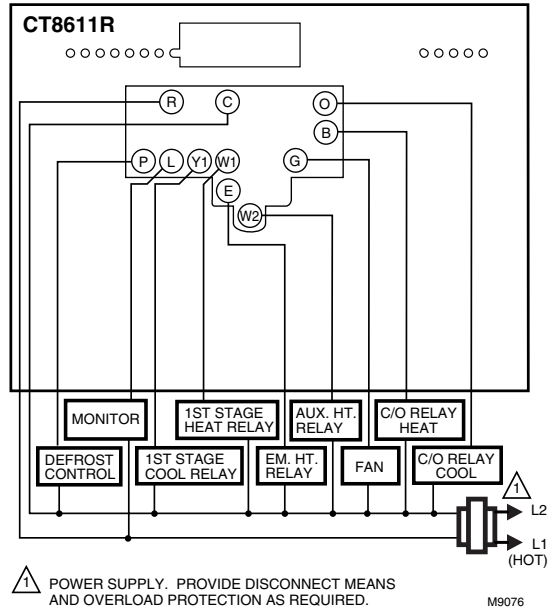


Fig. 5—Typical hook up of CT8611 with jumper removed.

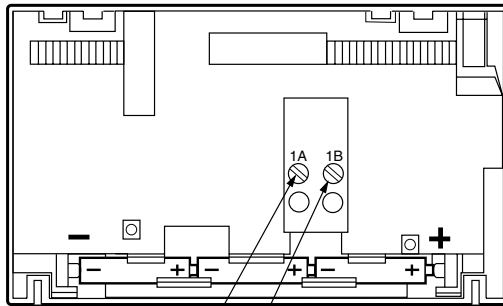
STEP 5

COMPLETE INSTALLATION

ADJUST CYCLE RATE

1st stage heating and 1st stage cooling cycle rates are factory-set for heat pumps. The heat pump compressor cycle rate cannot be adjusted.

To customize the thermostat's performance to different types of heating equipment, however, a cycle rate adjustment screw is provided on the back of the thermostat to control the auxiliary heat cycle rate. Correct setting of the screw will provide optimum savings, See Fig. 6.



1B	AUXILIARY HEAT CYCLE RATE	
IN	3 CPH	SLOWER CYCLING
OUT 1/2 TURN	6 CPH	FASTER CYCLING

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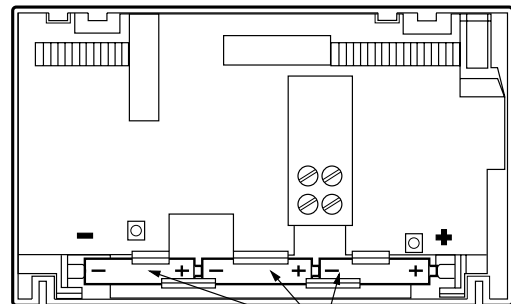
Fig. 6—Cycle rate adjustment.

NOTE: MOST APPLICATIONS DO NOT REQUIRE A CHANGE IN CYCLE RATE.

The room air temperature normally varies slightly from the comfort temperature setting with the cycling of the heat pump or auxiliary heater.

INSTALL BATTERIES

Three AAA alkaline batteries are included with the thermostat to prevent program loss in case of power outage. Install batteries in back of thermostat as shown in Fig. 7. Without battery backup, the



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BATTERY PLACEMENT
(NOTE CORRECT PLUS
AND MINUS DIRECTION)

Fig. 7—Battery placement.

program will remain for only about 20 seconds in the event of power loss.

When batteries are first installed, the display will flash 1:00 PM and 32°. When the batteries are low, the display will flash REPL BAT. You have 20-30 seconds to replace batteries after removing them from the thermostat. After 20-30 seconds, you will have to reprogram. REPL BAT indication will disappear when the thermostat is mounted back onto the powered subbase.

If batteries are completely dead, the display will go blank when the thermostat is removed from the subbase. After replacing the battery in this case, reprogramming is necessary.

MOUNT THE THERMOSTAT

With system switch set to OFF, hang the thermostat on the tabs at the top of the subbase (Fig. 8A). Swing down and press on lower edge until thermostat snaps in place (Fig. 8B). Open cover and tighten the captive mounting screws (Fig. 8C).

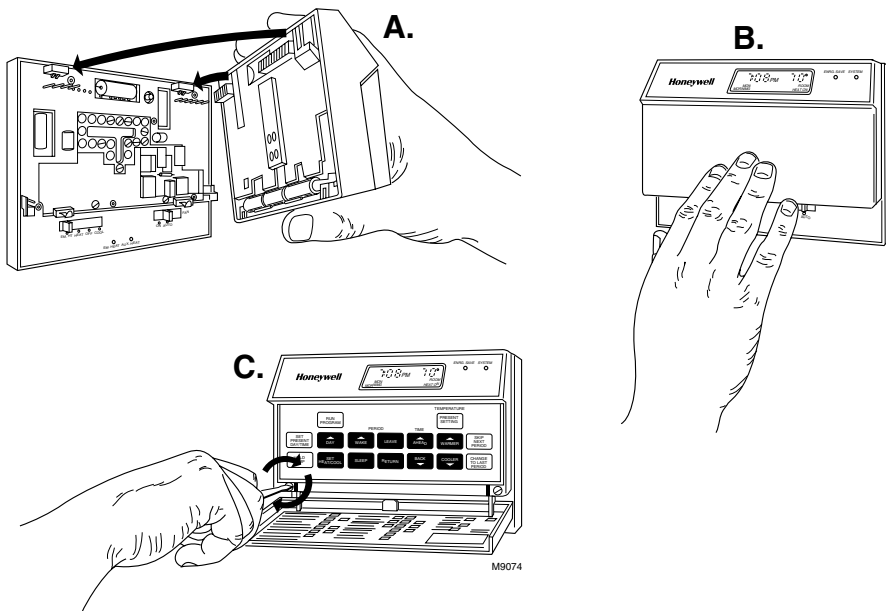



Fig. 8—Mounting the thermostat on subbase.

SET DAY AND TIME

Restore 24V power to the thermostat. When power is applied, the display will read 1:00 PM and indicate the room temperature. It will go off for a few seconds, then begin to flash on and off. Set the present day and time.

Press  .

Press  to set the current day. Each press of the

DAY key advances the display one day.

Press TIME  or  to set the current time.

If the display will not come on:

- check the mounting of the thermostat to the subbase. If loose or misaligned, remove thermostat and reinstall on the subbase, making sure it is firmly attached.
- check to see that system power is on.
- check voltage between R and C; it should be 20 to 30 Vac.

STEP

6

CHECK THERMOSTAT OPERATION



CAUTION

- Do not check the heating system operation by jumpering thermostat terminals at the primary control. This will damage the thermostat.
 - To avoid possible compressor damage, do not operate the cooling system if the outside temperature is below 50° F [10° C]. See compressor manufacturer's instructions for further information.
 - During cold weather, some heat pumps will require that the crankcase heater be energized several hours before operating the heat pump. Refer to the manufacturer's recommendations.
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Restore the power to the system.

CHECK HEATING OPERATION
Move the system switch to HEAT and the fan switch to AUTO. Press WARMER key until the setting is about 10° F [6° C] above room temperature.

Heating should start and the fan should run (there may be a delay of 5-10 minutes before heat turns on). Press COOLER key until the setting is about 10° F [6° C] below room temperature. The heating equipment and fan should shut off.

During checkout, the backup heat will come on immediately. During normal operation, the backup heat will come on after a delay.

Backup (auxiliary) heat is more expensive to operate than the heat pump and typically is used only when the heat pump is unable to handle the load.

CHECK EMERGENCY HEATING OPERATION

Move the system switch to EM. HEAT and the fan switch to AUTO. Press WARMER key until the setting is about 10° F [6° C] above room temperature. Heating should start and the fan should run.

CHECK COOLING OPERATION
Move the system switch to COOL and the fan switch to AUTO. Press COOLER key until the setting is about 10° F [6° C] below room temperature. Cooling should start and the fan should run. Press WARMER key until the setting is about 10° F [6° C] above room temperature. The cooling equipment and fan should shut off.

ABOUT ADAPTIVE INTELLIGENT RECOVERY™

- *People perceive temperature* from a variety of sources, not only from the air in the room, but also from their surroundings—walls, windows and furnishings.
- *Human beings feel differences* in temperature as slight as two degrees Fahrenheit.
- *Common household thermometers* and standard *thermostats* sense only air temperature, which may or may not reflect how hot or cold the room actually *feels* to a human being.
- This thermostat reads the temperature of the wall as well as the air—and responds to temperature changes as little as one degree Fahrenheit—so room temperature is more likely to “feel right.”

THE OPTIMUM COMFORT AND ENERGY SAVINGS SOLUTION

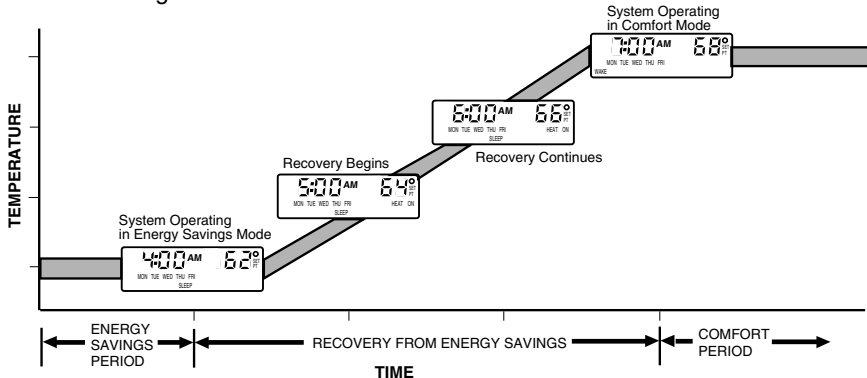
This thermostat is actually a small but powerful computer. When calculating the exact time to turn

on your furnace or air conditioner, it considers (1) air temperature, (2) the temperature of the wall and (3) when you want the comfort temperature established.

During Adaptive Intelligent Recovery™ the thermostat increases the control temperature gradually and turns the equipment on and off several times to save energy by avoiding “overshooting” the comfort temperature. See the current control temperature anytime during recovery by pressing the PRESENT SETTING key. On some models, both the SYSTEM and ENERGY SAVING lights may be lit at the same time during recovery.

This “smart” control learns from experience. Each day it checks how closely it “hit the target” and adjusts the recovery start time accordingly.

It typically takes four to eight days after installation for this thermostat to adjust to the weather, life style, home construction and heating/cooling system. The thermostat calculates the LEAVE/RETURN recovery separately from the SLEEP/WAKE recovery.



THE THERMOSTAT USES THE SAME SCHEME TO RETURN GRADUALLY TO LOWER COMFORT TEMPERATURE DURING THE COOLING SEASON.

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IF ADDITIONAL ASSISTANCE IS NEEDED, PLEASE CONTACT HONEYWELL CUSTOMER ASSISTANCE AT 1-800-468-1502, MONDAY-FRIDAY, 7:00 AM-5:30 PM, CENTRAL TIME. BEFORE YOU CALL, PLEASE HAVE THE FOLLOWING INFORMATION AVAILABLE: TYPE OF HEATING SYSTEM, IGNITION TYPE, WHETHER GAS OR ELECTRIC AIR CONDITIONING, MODEL NUMBER OF OLD THERMOSTAT, NUMBER OF WIRES, AND TERMINAL DESIGNATIONS USED.

Honeywell

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