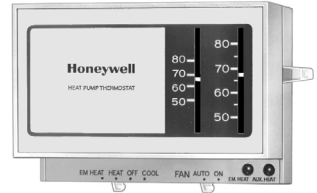


## CT70A Heat Pump Thermostat

### Installation Instructions

Thermometer Scale Range: 45° F to 85° F [7° C to 29° C].  
Electrical Ratings: 24 to 27 Vac.



### Do-It-Yourself Models

## Your Honeywell Thermostat

Your new Honeywell CT70A Heat Pump Thermostat provides low voltage (24 Vac) control of two-stage heating and one-stage cooling in heat pump systems, using manual changeover. Light-emitting diodes (LEDs) provide emergency heat and auxiliary heat indication.

### Recycling Notice



This control contains mercury in a sealed tube. Do not place control in the trash at the end of its useful life.

If this control is replacing a control that contains mercury in a sealed tube, do not place your old control in the trash.

Contact your local waste management authority for instructions regarding recycling and the proper disposal of this control, or of an old control containing mercury in a sealed tube.

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

## 1 PREPARATION

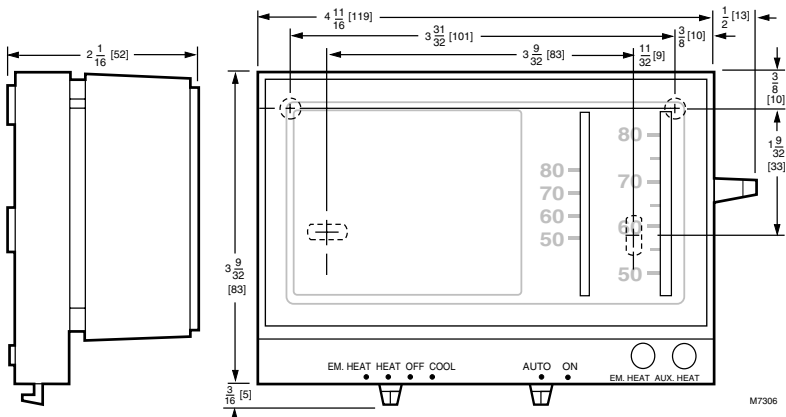
Your Honeywell thermostat should be properly installed if you follow these instructions step-by-step. It is recommended that as you read, understand and complete each step, you check ✓ it off with pencil or pen.

Check thermostat suitability for your home's system by reviewing the ratings listed on the front of these instructions and reviewing the CT70 Heat Pump Thermostat Wiring Guide enclosed.

Make certain that your home's heat pump system is working, especially if it has been inoperative for a length of time. If the system does not work, contact your local heating dealer for assistance.

Carefully unpack your new thermostat. Save packages of screws, instructions, receipt and proof-of-purchase.

## 2 THERMOSTAT MOUNTING DIMENSIONS



### 3 REMOVE OLD THERMOSTAT

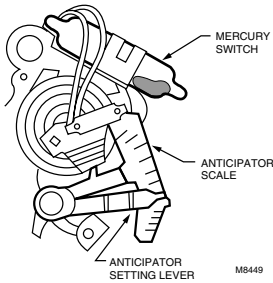


#### WARNING

Begin by turning off power to the heat pump at the main service panel.

Remove cover of old thermostat—cover normally snaps off when pulled firmly from the bottom. If it resists, check for a screw that locks the cover.

Before removing the old thermostat from the wall, look at it carefully to locate the heat anticipator adjustment mechanism. (See illustration to help you recognize the heat anticipator.)



Make a note here  of that anticipator setting for reference in setting the anticipator on your new thermostat. The heat anticipator pointer, if adjustable, will be set at one of a series of numbers representing the current rating for the primary control of your heat pump. The number will be one of the following: .2, .4, .8, etc., or 0.2, 0.4, 0.8, etc. If no heat anticipator indication is showing, do not be concerned for now; go on to the next step.

Loosen screws holding thermostat base to wall and lift away.

Disconnect wires from old thermostat. As you disconnect each wire, tape the end and label it with the enclosed wiring labels to make reconnection to new thermostat easier.

Check the old insulation for cracks, nicks or fraying, and apply high quality plastic tape where necessary for adequate insulation.

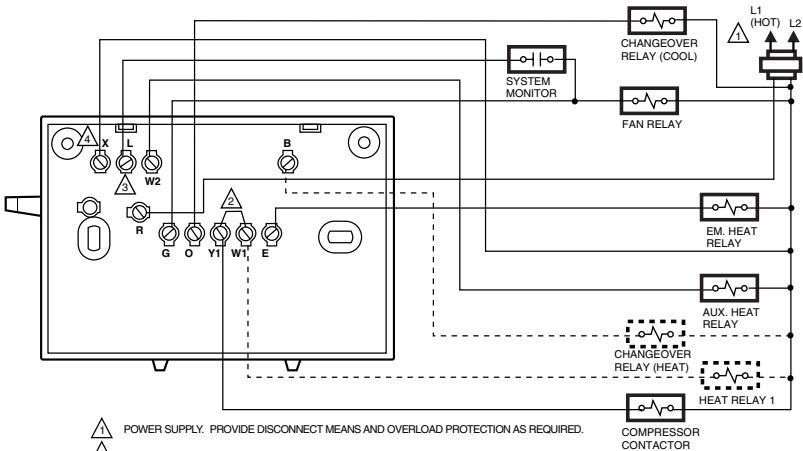
Retain the old thermostat for reference purposes and until your new thermostat is functioning smoothly.

### 4 WIRE AND MOUNT NEW THERMOSTAT

This thermostat can be mounted directly to the wall or on a horizontal outlet box. Choose the method that best fits your installation.

Grasp the thermostat cover at the top and bottom with one hand. Pull outward on bottom edge of the cover until it snaps free of the thermostat base. Carefully remove and save the packing material surrounding the mercury switches.

Run wiring (if necessary) to the location. If the wiring is plastered into the wall, make a hole next to the cable and loosen the wires so that they can be pushed back into the wall later. Thread wires through the hole in packing material saved above. Connect the wires to the terminals on the back of the thermostat according to the labels you placed on the wires or as shown in the wiring diagram.



- POWER SUPPLY. PROVIDE DISCONNECT MEANS AND OVERLOAD PROTECTION AS REQUIRED.
- REMOVE W1-Y1 JUMPER WHEN HEAT RELAY 1 IS USED.
- WHEN L TERMINAL IS CONNECTED TO SYSTEM MONITOR, EM HEAT LED ALSO INDICATES COMPRESSOR MALFUNCTION.
- X TERMINAL MUST BE CONNECTED FOR PROPER OPERATION.

M8447

Push the excess wire back through the hole and plug any opening with packing material to prevent drafts that may affect thermostat performance.

Loosely secure the thermostat to the wall or outlet box with screws through the two mounting holes at the middle of the device. The sheetmetal screws included with the thermostat are designed for use in plaster walls that do not need anchors.

Exactly level the thermostat using a spirit level or plumb line. **An incorrectly leveled thermostat will cause inaccurate temperature control.** Tighten the two mounting screws at the middle of the device. Install two screws in top mounting holes and tighten.

Replace the thermostat cover.

## 5 CHECK OUT THERMOSTAT

Turn on the power to the heat pump system.

To check heating, move the system switch on the thermostat to HEAT and the fan switch to AUTO. Move the set point lever to about 10° F [6° C] above room temperature. Heating should start and the fan should run. Move the set point lever about 10° F [6° C] below room temperature. Heating and fan should shut off.

NOTE: To prevent compressor short cycling, a minimum-off timer may be included to prevent the compressor from starting for up to five minutes from when the thermostat last turned off the compressor, or from when the system first received power.

Check cooling only if outdoor temperature is at least 50° F [10° C]. To check cooling, move the system switch on the thermostat to COOL and the fan switch to AUTO. Move the set point lever about 10° F [6° C] below room temperature. Cooling and fan should start (see NOTE above). Move the set point lever about 10° F [6° C] above room temperature. Cooling and fan should shut off.

To check fan, move the system switch to OFF, and the fan switch to ON. The fan should run continuously. Move the fan switch to AUTO. In this position, the fan operates in response to the thermostat in both heating and cooling.

## 6 SETTING THERMOSTAT

Move the set point lever to the desired control point on the temperature scale.

Move the system switch and fan switch to the desired operating positions.

The system switching positions control the system operation as follows:

EM.HT.: Emergency heat relay is energized. Cooling system is off. Compressor is de-energized. Fan runs on call for heat if fan switch is in AUTO position. EM.HT. LED is on continuously.

HEAT: Heat pump equipment is providing warm air to the living space.

OFF: All heating/cooling equipment is de-energized.

COOL: Heat pump equipment is providing cool air to the living space.

The fan switching positions control the fan operation as follows:

AUTO: The fan operates in response to the thermostat in both heating and cooling.

ON: The fan operates continuously.

# 7 TROUBLESHOOTING

Your Honeywell thermostat requires little or no attention. Most problems can generally be traced to the following:

Symptom	Problem	Corrective Action
Compressor doesn't provide warm air.	Equipment has compressor protection time delay.	Wait five minutes and check for heat.
	System switch at OFF or COOL position.	Move switch to HEAT position.
	Blown fuse or tripped circuit breaker.	Replace fuse or reset circuit breaker.
	Heat pump power switch is at OFF.	Switch to ON.
	Improper connections to thermostat.	With power to furnace at OFF, tighten all mounting and terminal screws. Repair frayed or broken wires.
	Defective thermostat. (Here's how you know: Remove the thermostat from the wall. Disconnect wire from W1 terminal. Touch W1 wire to terminal R. The thermostat is defective if the compressor starts.) Some systems have a time delay, so allow five minutes. See step 5.	Exchange the thermostat (see Warranty).
	Other.	Contact a qualified service technician for assistance.
Compressor will not stop delivering warm air.	Turn temperature setting lever all the way down.	Heater should start to cool within minutes. If not, turn off power at the main service panel, and contact qualified service technician.
Thermostat setting and thermometer reading disagree.	Thermostat is not level.	Recheck the thermostat position on the wall. Use level to make sure it is level. See step 4.
	Thermostat affected by drafts or radiant heat.	Contact a qualified service technician to change the location. The thermostat should be about 5 ft [1.5m] above the floor and on an inside wall.
Compressor doesn't provide cool air.	Equipment has compressor protection time delay.	Wait five minutes and check for cool.
	System switch is in OFF or HEAT position.	Move switch to COOL position.
	Blown fuse or tripped circuit breaker.	Replace fuse or reset circuit breaker.
	Compressor switch (located outdoors) is at OFF.	Move switch to ON position.
	Improper connections to thermostat.	With power to heat pump OFF, tighten all mounting and terminal screws. Repair broken wires.
	Defective thermostat. (Here's how you know: Remove the thermostat from the wall. Disconnect wire from Y1 terminal. Touch Y1 wire to terminal R. The thermostat is defective if the compressor starts. Some systems have a time delay, so allow at least five minutes.) See NOTE in step 5.	Exchange the thermostat. See Warranty.
	Other.	Contact service technician for assistance.

## Limited One-Year Warranty

Honeywell warrants this product to be free from defects in the workmanship or materials, under normal use and service, for a period of one (1) year from the date of purchase by the consumer. If, at any time during the warranty period, the product is defective or malfunctions, Honeywell shall repair or replace it (at Honeywell's option) within a reasonable period of time.

If the product is defective,

- (i) return it, with a bill of sale or other dated proof of purchase, to the hardware or home center store from which you purchased it, or
- (ii) package it carefully, along with proof of purchase (including date of purchase) and a short description of the malfunction, and mail it, postage prepaid, to the following address:

Honeywell Inc, RG Department  
1050 Berkshire Lane  
Plymouth, MN 55441-4437

in Canada: Honeywell Limited/Honeywell Limitée  
740 Ellesmere Road  
Scarborough, Ontario M1P 2V9

This warranty does not cover removal or reinstallation costs. This warranty shall not apply if it is shown by Honeywell that the defect or malfunction was caused by damage which occurred while the product was in the possession of a consumer.

Honeywell's sole responsibility shall be to repair or replace the product within the terms stated above. HONEYWELL SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE OF ANY KIND, INCLUDING ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING, DIRECTLY OR INDIRECTLY, FROM ANY BREACH OF ANY WARRANTY, EXPRESS OR IMPLIED, OR ANY OTHER FAILURE OF THIS PRODUCT. Some states do not allow the exclusion of incidental or consequential damages, so this limitation may not apply to you.

THIS WARRANTY IS THE ONLY EXPRESS WARRANTY HONEYWELL MAKES ON THIS PRODUCT. THE DURATION OF ANY IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IS HEREBY LIMITED TO THE ONE YEAR DURATION OF THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

If you have any questions concerning this warranty, please write our Customer Assistance Center, Honeywell Inc., P.O. Box 524, Minneapolis, MN 55440-0524 or call 1-800-468-1502, Monday-Friday, 7:00 a.m.-5:30 p.m. Central time. In Canada write Retail Products ON15-02H, Honeywell Limited/Honeywell Limitée, 740 Ellesmere Road, Scarborough, Ontario M1P 2V9.



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