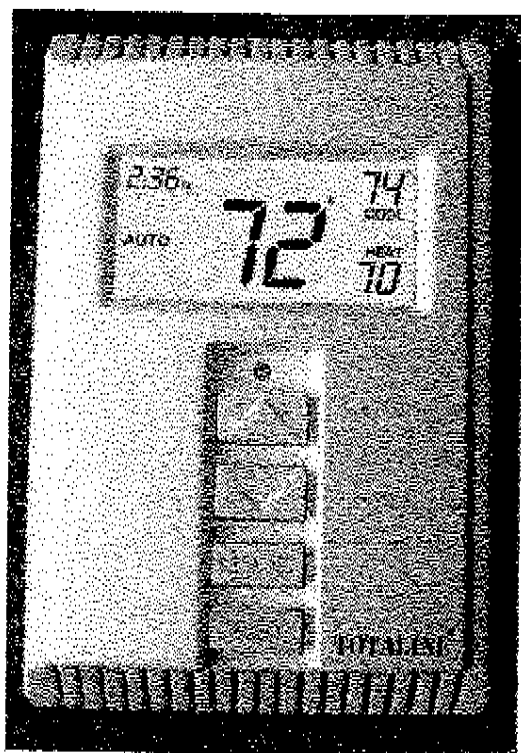


# Residential Programmable Digital Thermostat

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- Dual Setpoint
- 1 Day Programmable
- 4 Time Periods Per Day
- Very Easy To Program
- Large, Easy To Read Display
- Thermoglow™ Backlight
- Auto Changeover
- No Batteries Required

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### Meets Residential California Title 24

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- Use with most Air Conditioning & Heating Systems including:  
1 or 2 Stage Electric Cooling & Gas Heating, Heat Pump,  
Electric or Hydronic Heat.

# TOTALINE

*Star*

## Table Of Contents

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### **CAUTION**

Follow *Installation Instructions* before proceeding.

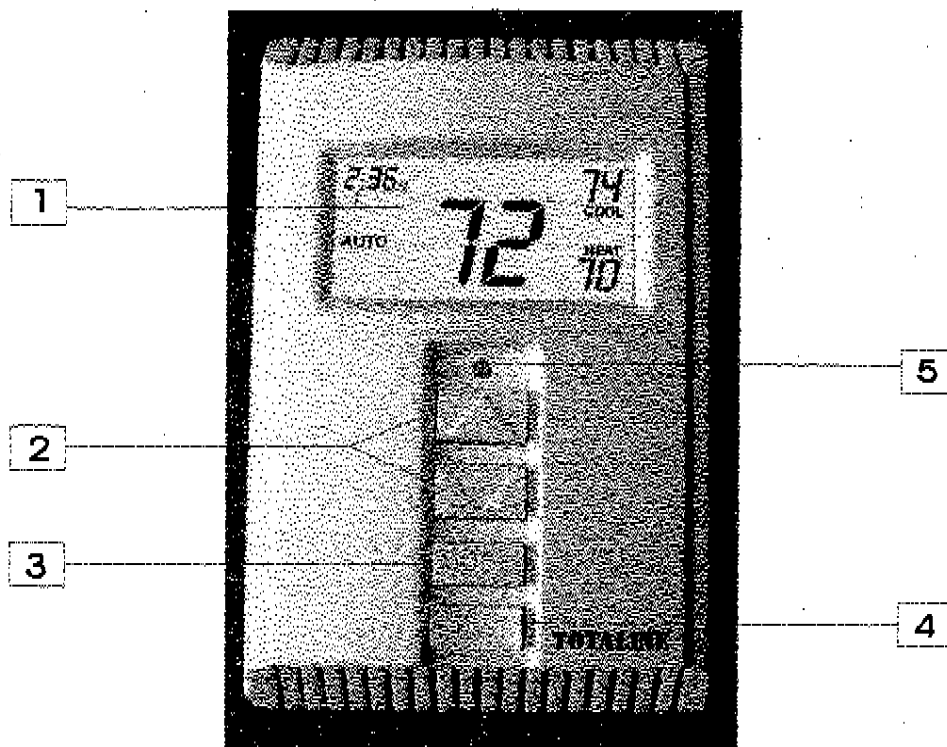
SET THERMOSTAT TO MODE "OFF" PRIOR TO  
CHANGING SETTINGS IN SETUP OR RESTORING  
FACTORY DEFAULTS.

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Replacement Components Division © Carrier Corporation 2/98

**P/N P474-1000**

# Front Panel



1 **Liquid Crystal Display**  
*with Thermoglow™*

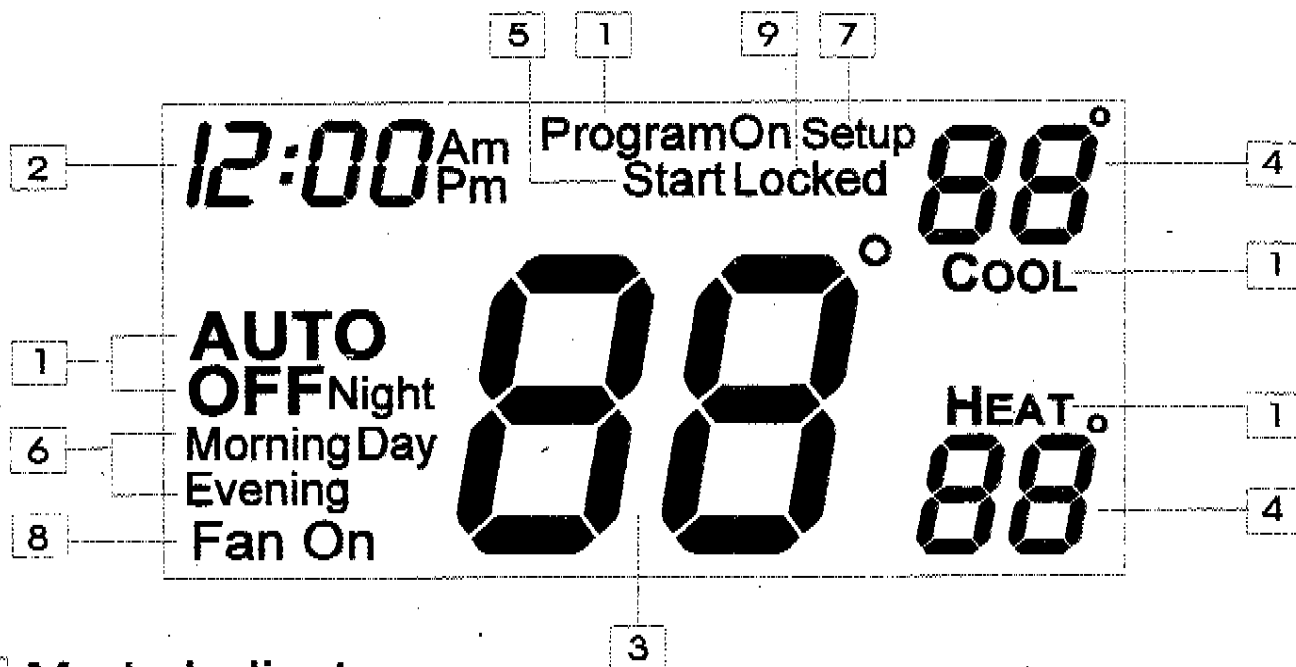
2 **Up/Down Buttons**

3 **Mode Button**

4 **Fan Button**

5 **Heat or Cool Indicator**  
Heat = Red, Cool = Green

## Display



### 1 Mode Indicators

Selects the operation mode of the equipment.

**HEAT** - indicates the heat mode.

**COOL** - indicates the air conditioning mode.

**AUTO** - indicates the system will automatically changeover between heat and cool modes as the temperature varies.

**OFF** - indicates the entire system is turned off.

**PROGRAM ON** - indicates the stored program is enabled to run. *Page 6.*

### 2 Clock

Indicates the current time. This clock is also used to program the timer periods. *Page 5.*

### 3 Room Temperature Display

Indicates the current room temperature.

### 4 Desired Set Temperature

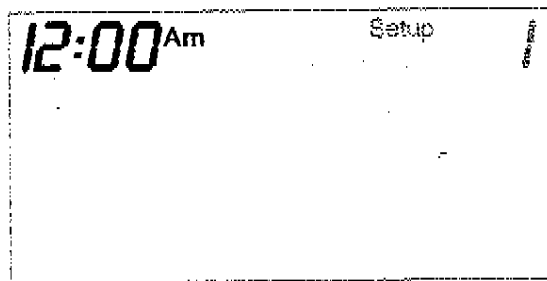
Indicates desired room temperature(s). *Page 7.*

- 5 Start Indication**  
Start appears when programming timer functions. *Page 8.*
- 6 Morning, Day, Evening & Night Indication**  
Indicates the program time period. *Page 8-10.*
- 7 Setup Indication**  
Indicates the thermostat is in the programming mode. *Page 11.*
- 8 Fan Operation Indication**  
**Fan On** - indicates constant, continuous fan operation.  
When **Fan On** is not lit - indicates the fan will only operate when necessary to heat or to cool. *Page 7.*
- 9 Locked Indication**  
**Locked** appears after the right combination of buttons are pressed, rendering the buttons inoperative. *Page 17.*

## Quick Start *Set the Clock and Go*



**Press the Mode button. While holding the Mode, press the Fan button for 2 seconds to enter Setup screens.**



**During Setup & Programming:**  
**Pressing the Mode button selects different flashing items. (Represented in dark black)**  
**Pressing the Up and Down buttons will modify the flashing selection.**

Press



To adjust the clock use



buttons.

**Press both Mode and Fan buttons as above to return to normal operation.**



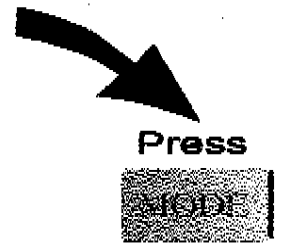
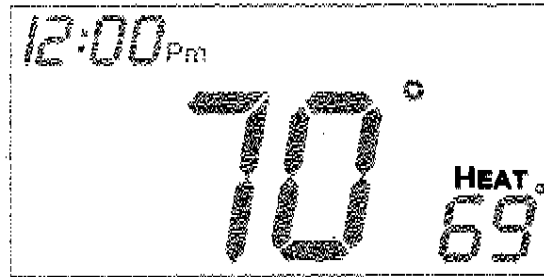
The Thermostat is preprogrammed from the factory to operate 1 or 2 Stage equipment\* without the need for further programming. To optimize the installation of this thermostat follow the instructions in the Advanced Setup section.

*\* The thermostat is not preprogrammed from the factory to operate electric heat or heat pump systems. To control these systems, follow the steps in the Advanced Setup section, pages 11 & 12.*

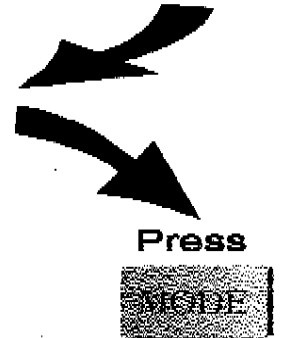
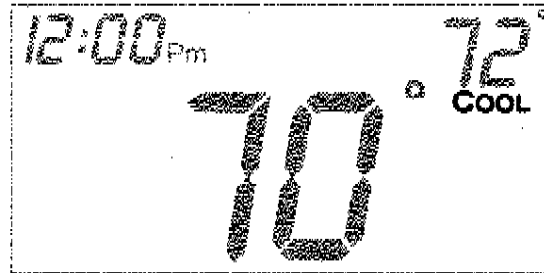
# Basic Operation

## Select Mode

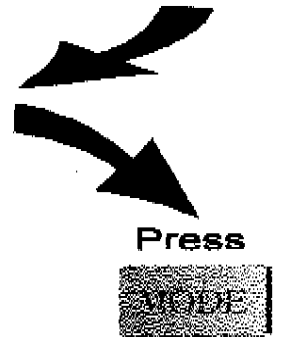
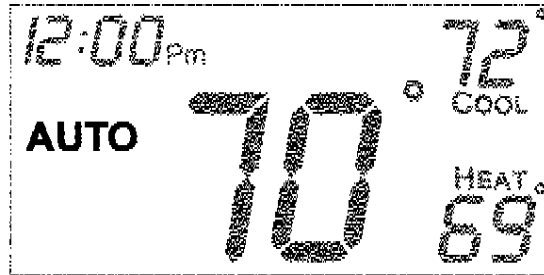
The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.



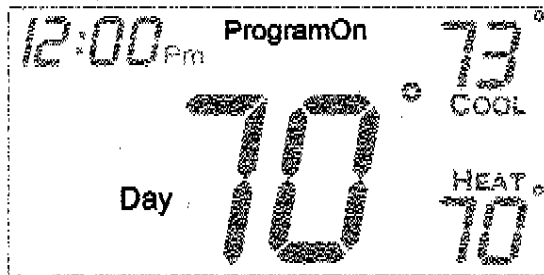
The **COOL** setting indicates the temperature the room has to reach before the air conditioner will turn on to cool the room.



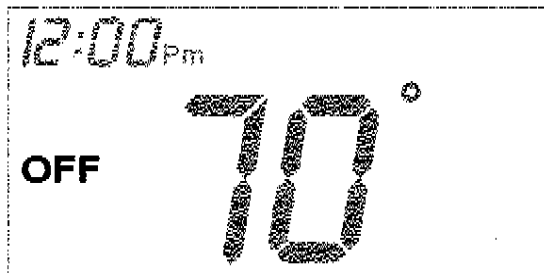
**AUTO** will automatically select heat or cool based on room temperature demand.



**Program On** will activate the stored timer operation. (Morning, Day, Evening & Night Periods).

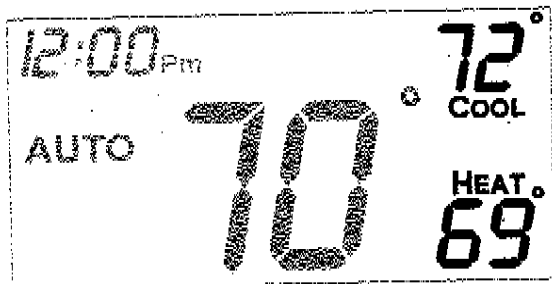


**OFF** indicates both heating and air conditioning systems are turned off.



# Basic Operation

## Select Desired Temperature



In any mode, adjust the desired Set Temperature with

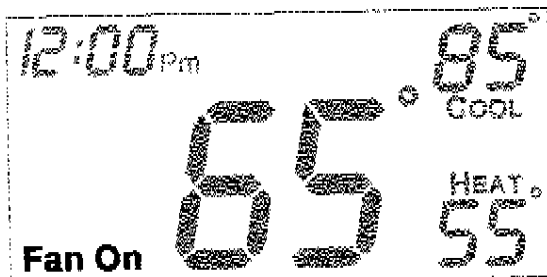


buttons.

Pressing the up/down buttons in Auto mode will adjust both the heat and cool set temperatures simultaneously.  
Pressing the up/down buttons in Heat or Cool modes will adjust only the heat or cool set temperature.

## Fan Operation

Press



**Fan On** indicates constant fan operation. This feature is active even if the thermostat is set to Off.



# Programming

## 4 Time Periods

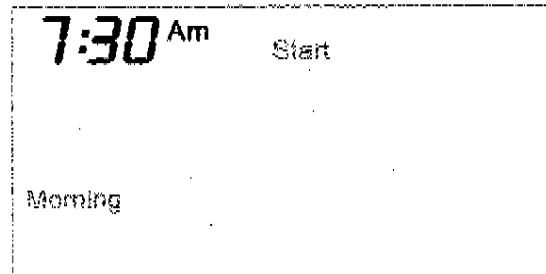


**Press the Mode button. While holding the Mode, press the Up button for 2 seconds to enter time period programming.**

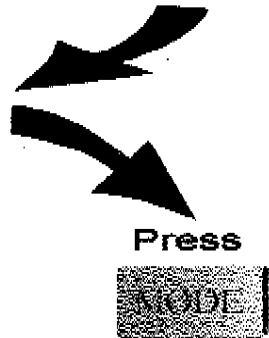
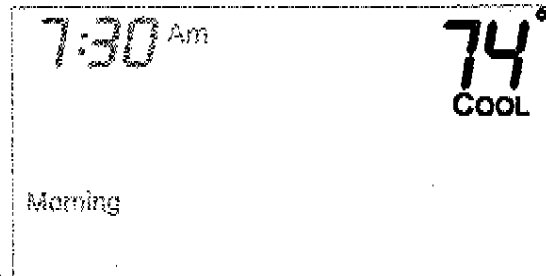
*Use the back cover Programming Worksheet to help with this section.*



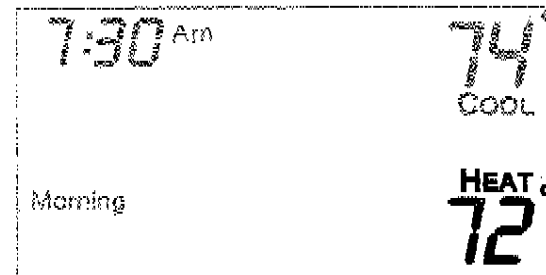
Adjust the start time for Morning.



Adjust the cooling setpoint for Morning.  
(35 - 99°)



Adjust the heating setpoint for Morning.  
(35 - 99°)



Continued

# Programming

## 4 Time Periods



Adjust the start time  
for Day.



10:30<sup>Am</sup> Start

Day

Press



Adjust the cooling  
setpoint for Day.



(35 - 99°)

10:30<sup>Am</sup>

Day

75°  
COOL

Press



Adjust the heating  
setpoint for Day.



(35 - 99°)

10:30<sup>Am</sup>

Day

75°  
COOL

HEAT  
73°

Press



Adjust the start time  
for Evening.



5:30<sup>Pm</sup> Start

Evening

Press



Adjust the cooling  
setpoint for Evening.



(35 - 99°)

5:30<sup>Pm</sup>

Evening

75°  
COOL

Press



# Programming

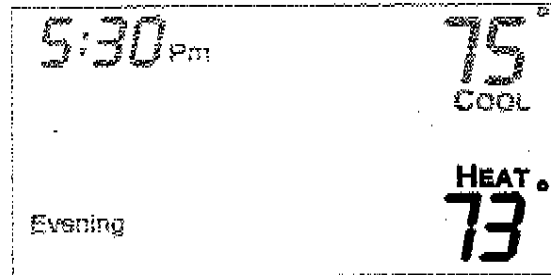
## 4 Time Periods



Adjust the heating setpoint for Evening.



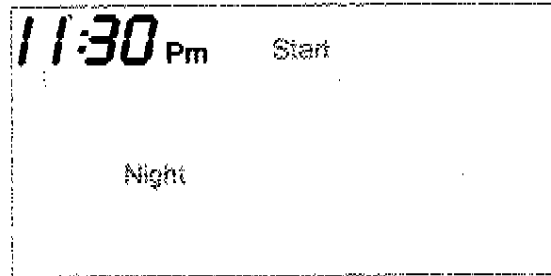
(35 - 99°)



Press



Adjust the start time for Night.



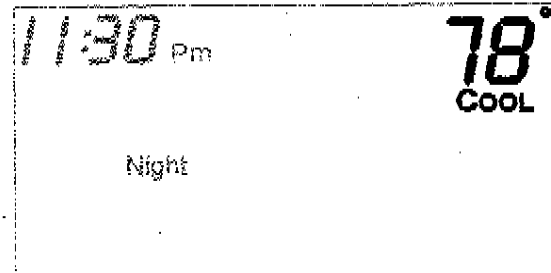
Press



Adjust the cooling setpoint for Night.



(35 - 99°)



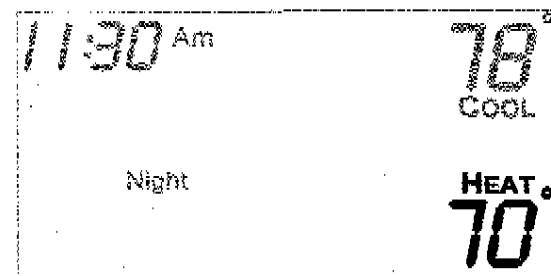
Press



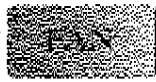
Adjust the heating setpoint for Night



(35 - 99°)



# Advanced Setup



**Press the Mode button. While holding the Mode, press the Fan button for 5 seconds to enter Setup screens.**

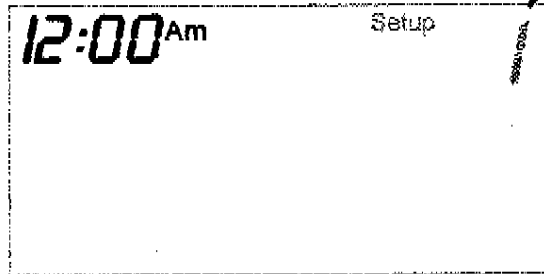
**NOTE:** Each step # is located at the top right corner of the display for easy reference.



Adjust the time of day clock.



*Tip: To change hours quickly, press and hold the Fan button in and press the up or down buttons.*



Press

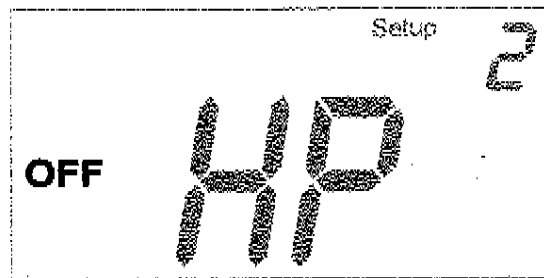


On

Select residential Heat Pump, On or Off.



Off





Press

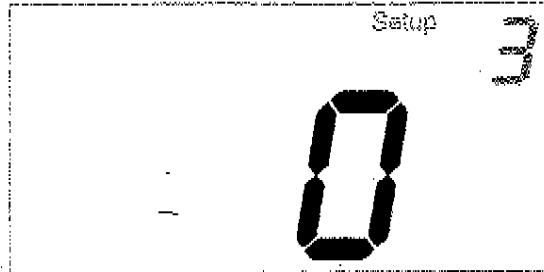


Continued

# Advanced Setup


 B  
 Select the reversing valve polarity for Heat Pump, O or B.  
 (Step 3 only appears if heat pump is on in step 2)


 O

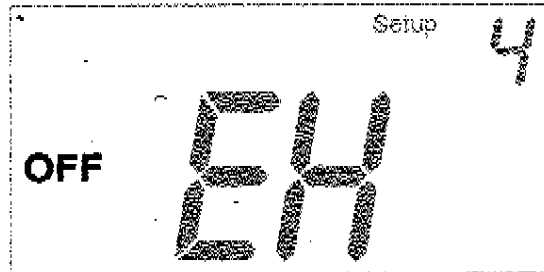


Press

MODE


 On  
 Select Electric Heat On or Off. (Step 4 only appears if heat pump is off in step 2)


 Off

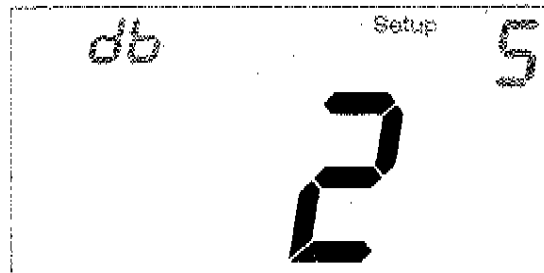


Press

MODE


 Adjust the deadband from 1 - 6 degrees.




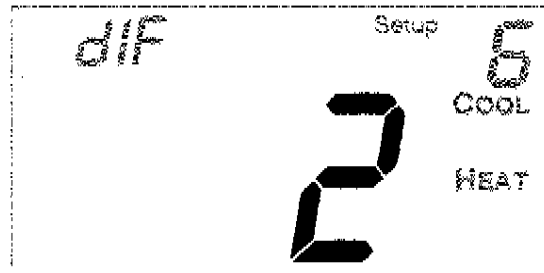


Press

MODE


 Adjust the minimum **difference** between cooling & heating setpoints.  
 (0 - 6°)




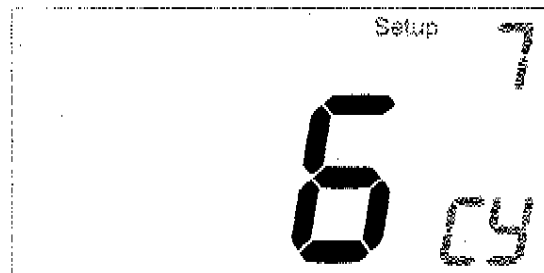


Press

MODE

 Select the cycles per hour limit.  
 d=cycles per hour limit defeated.  
 d1=d + defeat 5 min. Compressor lockout.  
 (d, d1, 2 - 6)





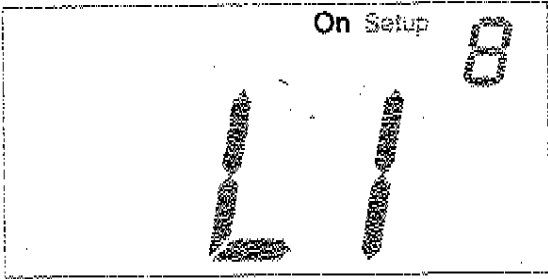
Press

MODE

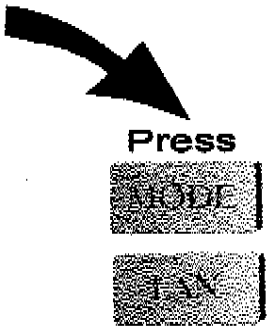
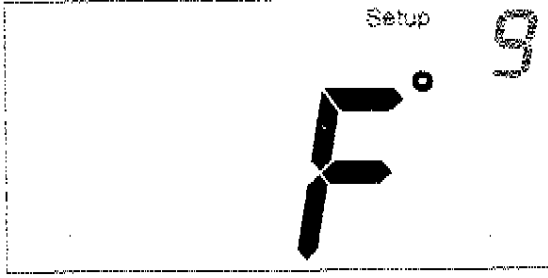
# Advanced Setup



Select the display-backlight always On, or Off after 8 seconds.



Select thermostat operation in degrees Fahrenheit or Centigrade.



**Press the Mode button. While holding in the Mode, press the Fan button for 5 seconds to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.**

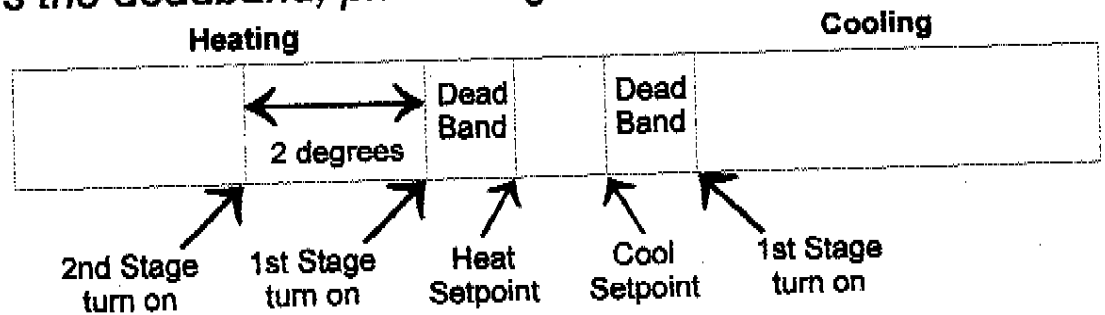
# Advanced Setup

## Advanced Setup Table

Step #	Description	Range	Factory Default
1	Time of day clock set	24 hour	12:00 Am
2	Heat Pump	Off / On	Off
3	Reversing Valve polarity	O / B	O
4	Electric Heat	Off / On	Off
5	Deadband or Temperature swing	1 - 6	2
6	Forced minimum difference heat/cool	0 - 6	2
7	Cycles per hour	d, d1, 2 - 6	6
8	Thermoglow backlight	Off / On	On
9	Fahrenheit or Centigrade	F / C	F

## About Advanced Features & Operation

- \* **MEMORY BACKUP** - In the event of a power loss, the thermostat will retain the stored program settings without external power or batteries.
- \* **2 STAGE OPERATION** - The 2nd Stage of heat is turned on when (1) the 1st Stage has been on for a minimum of two minutes, and (2) the temperature spread from the setpoint is equal to or greater than: *the setpoint plus the deadband, plus 2 degrees.*

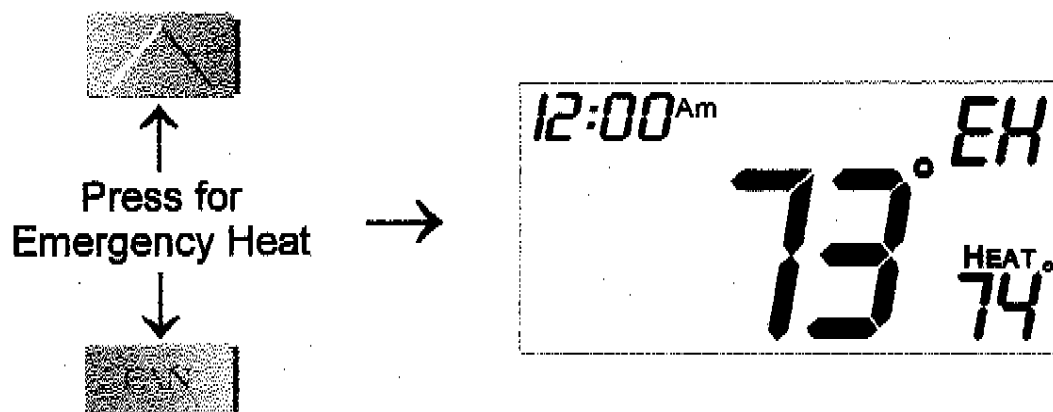


- \* **MINIMUM HEAT/COOL SETPOINT DIFFERENCE** - The Heat and Cool setpoints will not be allowed to come any closer to each other than the value set in Advanced Setup *step # 6, on page 12*. This minimum difference is enforced during Auto changeover and Program On operation.



## About Advanced Features & Operation

- \* **EMERGENCY HEAT** - Is a feature available to Heat Pump installations. To turn on Emergency Heat press in the Fan button. While holding the Fan button press the Up button for 2 seconds. The Cool setpoint display will read 'EH'.

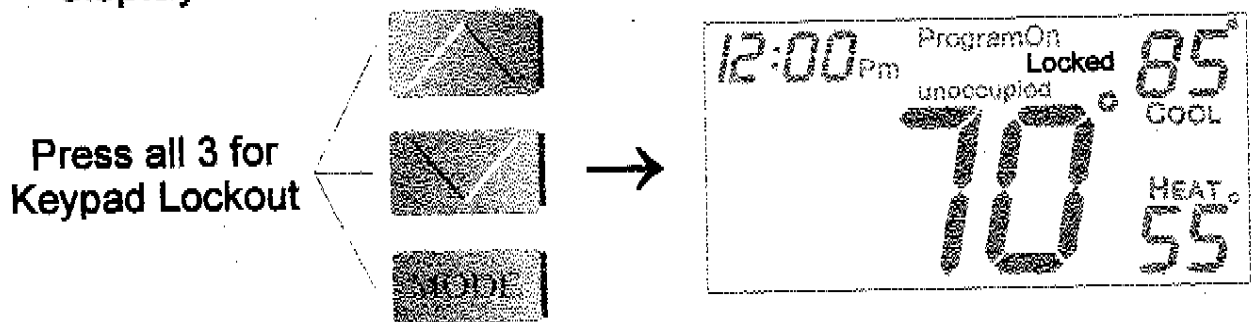


During Emergency Heat the thermostat will turn on the fan and the 2nd stage of heat, when there is a demand for heat, locking out the 1st stage compressor. Exiting Emergency Heat is the same as entering. During Emergency Heat only OFF and HEAT are available.

- \* **ELECTRIC HEAT** - Selecting Electric Heat on, *page 12, step 4*, will cause the thermostat to turn on the fan immediately any time there is a heat demand. Since all gas furnaces control the fan, this feature should be off unless the heater is only electric.

## About Advanced Features & Operation

- \* **KEYPAD LOCK** - To prevent unauthorized use of the thermostat, the front panel buttons may be disabled. To disable, or 'lock' the keypad, press and hold in the Mode button. While holding the Mode button in, press the Up and Down buttons in together. The **Locked** icon will appear on the display.



To **unlock** the buttons, again press and hold the Mode button. While holding the Mode button in, press the Up and Down buttons in together. The **Locked** icon will disappear from the display.

- \* **DUAL SETPOINT BEHAVIOR** - The adjustable setpoint range is: 35 - 99 degrees in Fahrenheit and 2 - 36 degrees in Centigrade. When in the modes Heat or Cool, this adjustable range is unhampered. When adjusting any Auto mode, including programming Occupied and Unoccupied periods, the thermostat will not allow the Heat setpoint to get closer to the Cool setpoint than the value programmed as the minimum difference in *step 6, page 12*.  
When entering the Auto mode from Cool, the Heat and Cool setpoints will remain spread apart by the amount that they were adjusted, prior to entering Auto. For example: If the Cool setpoint was set to 80 while in the Cool mode and the Heat setpoint was adjusted to 70 while in the Heat mode, upon entering the Auto mode the Heat and Cool setpoints would be 80 and 70. **Both** setpoints would then move up and down together, (in this example spread by 10 degrees), by pressing the up or down buttons.  
To move the Heat and Cool setpoints closer together, enter the Cool or Heat mode by pressing the Mode button, then adjust the setpoint(s) closer together. Heat is limited to how close it can come to Cool by *step 6, page 12*.

## About Advanced Features & Operation

- \* **FACTORY DEFAULTS** - If, for any reason it is desirable to return all stored settings back to the factory default settings, press the Mode button. While holding the Mode button in, press the Down button for 2 sec. All icons will appear. Press and hold in the Override button until Fd appears. This resets all factory settings. To calibrate room temperature, press the Mode button once more. At this point use the Up and Down buttons to calibrate room temperature, if needed. Press the Mode button to return to normal operation. **NOTE CAUTION ON PAGE 1.**

# Warranty

**One-Year Warranty** – This CARRIER CORPORATION (herein referred to as "COMPANY") product is warranted to be free from defects in material and workmanship. If it appears within one year from the date of original installation, whether or not actual use begins on that date, that the product does not meet this warranty a new or remanufactured part at the COMPANY'S sole option, to replace any defective part will be provided without charge for the part itself, PROVIDED the defective part is returned to our distribution through a qualified servicing dealer.

**THIS WARRANTY DOES NOT INCLUDE LABOR OR OTHER COSTS** incurred for diagnosing, repairing, removing, installing, shipping, servicing or handling of either defective parts or replacement parts. Such costs may be covered by a separate warranty provided by the installer.

**THIS WARRANTY APPLIES ONLY TO PRODUCTS IN THEIR ORIGINAL INSTALLATION LOCATION AND BECOMES VOID UPON REINSTALLATION.**

**LIMITATIONS OF WARRANTIES -- ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH THE LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.**

**ALL WORK UNDER THE TERMS OF THIS WARRANTY SHALL BE PERFORMED DURING NORMAL WORKING HOURS. ALL REPLACEMENT PARTS, WHETHER NEW OR REMANUFACTURED, ASSUME AS THEIR WARRANTY PERIOD ONLY THE REMAINING TIME PERIOD OF THIS WARRANTY.**

## **THE COMPANY WILL NOT BE RESPONSIBLE FOR:**

1. Normal maintenance as outlined in the installation and servicing instructions or owners manual including filter cleaning and/or replacement and lubrication.
2. Damage or repairs required as a consequence of faulty installation, misapplication, abuse, improper servicing, unauthorized alteration or improper operation.
3. Failure to start due to voltage conditions, blown fuses, open circuit breakers or other damages due to the inadequacy or interruption of electrical service.
4. Damage as a result of floods, winds, fires, lightning, accidents, corrosive environments or other conditions beyond the control of the Manufacturer.
5. Parts not supplied or designated by the Manufacturer, or damages resulting from their use.
6. Manufacturer products installed outside the continental U. S .A., Alaska, Hawaii, and Canada.
7. Electricity or fuel costs or increases in electricity or fuel costs from any reason whatsoever including additional or unusual use of supplemental electric heat.
8. **ANY SPECIAL INDIRECT OR CONSEQUENTIAL PROPERTY OR COMMERCIAL DAMAGE OF ANY NATURE WHATSOEVER.** Some states do not allow the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

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