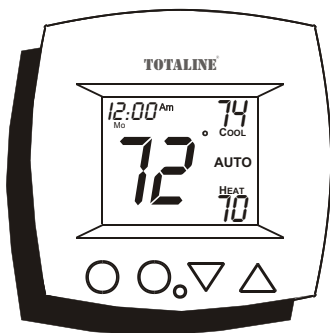


1 For All™ Programmable Digital Thermostat



• *Optional Locking Cover*

- Dual Setpoint
- 5+1+1 Day Programmable
- 3 Occupied, 1 Unoccupied
- Very Easy to Program
- Large, Easy To Read Display
- Thermoglow™ Backlight
- No Batteries Required
- Auto Changeover
- Energy Saving Smart Fan
- Locking Keypad
- Override Button

Meets California Title 24 Both Commercial & Residential

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

TOTALINE

Star

Replacement Components Division © Carrier Corporation 11/98

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CAUTION

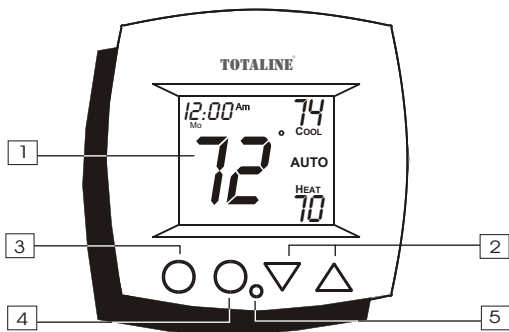
Follow Installation Instructions before proceeding.

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

Replacement Components Division © Carrier Corporation 11/98

P/N P474-2150

Front Panel



1 **Liquid Crystal Display**
with Thermoglow™

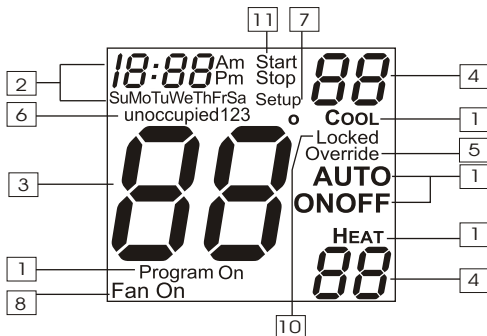
2 **Up/Down Buttons**

3 **Mode Button**

4 **Override 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 with Day of the Week

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

3 Room Temperature Display

Indicates the current room temperature.

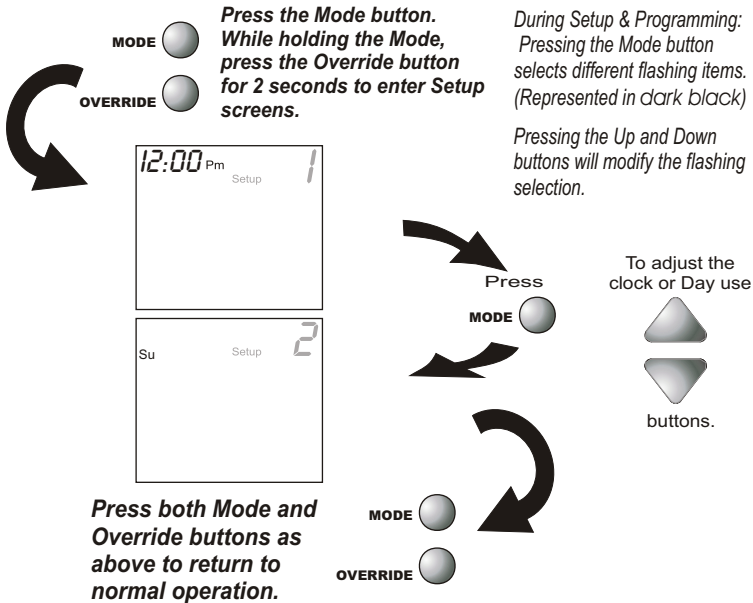
4 Desired Set Temperature

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

Display

- 5 Override Indication
Indicates the current program is currently being overridden for up to 4 hours. *Page 7,17.*
- 6 Occupied or Unoccupied Indication
Indicates the program number: Occupied 1,2,3, or Unoccupied. *Page 8-11.*
- 7 Setup Indication
Indicates the thermostat is in the programming mode. *Page 13.*
- 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 13.*
- 10 Locked Indication
Locked appears after the right combination of buttons are pressed, rendering the buttons inoperative. *Page 19.*
- 11 **Start / Stop** Indication
Start or Stop appears when programming timer functions. *Page 9.*

Quick Start *Set the Clock and Go*



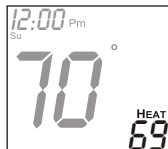
The thermostat is preprogrammed from the factory to operate 1 or 2 Stage equipment* without the need for further programming. To optimize the installation of this thermostat follow the instructions in the Advanced Setup section.

** 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 14.*

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.



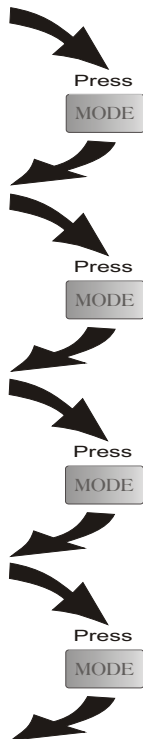
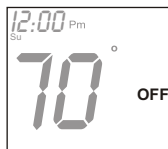
AUTO will automatically select heat or cool based on room temperature demand.



Program On will activate the stored timer operation.
(occupied & unoccupied periods.)

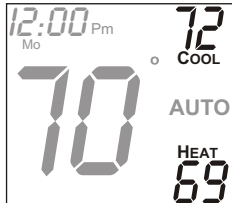


OFF indicates both heating and air conditioning systems are turned off.



Basic Operation

Select Desired Temperature



In any mode, adjust the desired Set Temperature with



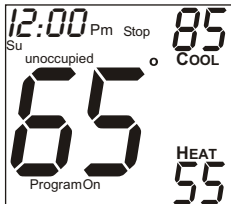
buttons.

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 **o**r cool set temperature.

Override



Press



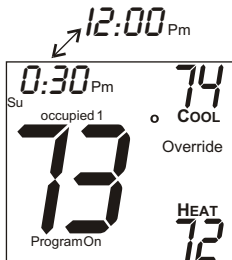
During programmed, unoccupied periods a press of the Override button will force the thermostat into Occupied 1 comfort settings, temporarily.

With each successive push of the Override button, the override timer will add 30 minutes, until the maximum of 4 hours is reached. Then the next press will zero out the override timer, returning to unoccupied if there are no further button presses.

When in Override, the Override icon and the Occupied 1 icon appear on the display.

The time of day clock alternates with the time remaining in override.

During Override, the setpoints are adjustable, provided the keypad is not locked.



Programming

Occupied & Unoccupied Periods

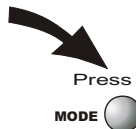
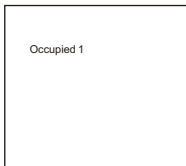


Press the Mode button. While holding the Mode, press the Up button for 2 seconds to enter time period programming.



Select the maximum # of occupied periods to be used on any one day. Typically 1.

(1, 2 or 3)



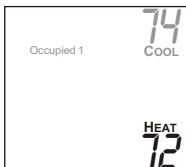
Adjust the cooling setpoint for occupied 1.

(35 - 99°)



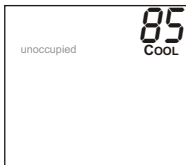
Adjust the heating setpoint for occupied 1.

(35 - 99°)



Adjust the cooling setpoint for unoccupied periods.

(35 - 99°)



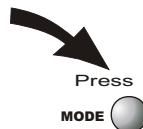
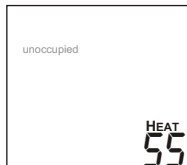
Continued

Programming

Occupied & Unoccupied Periods



Adjust the heating set-point for unoccupied periods.
(35 - 99)



Select the day for Occupied 1.
(MoTuWeThFr, Sa, Su)



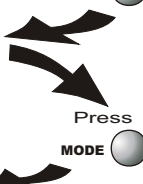
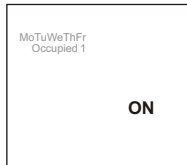
Adjust the start time for occupied 1.



Adjust the stop time for occupied 1.



On
Select Occupied 1 to run on this day (On), or not to run this day (Off).
Off

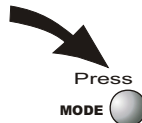


Programming

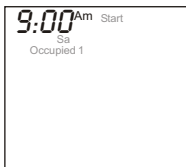
Occupied & Unoccupied Periods



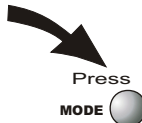
Select the day
for Occupied 1.
(Sa, Su, MoTuWeThFr)



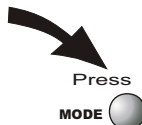
Adjust the start time
for occupied 1.



Adjust the stop time
for occupied 1.



On
Select Occupied 1 to run
on this day (On), or not to
run this day (Off).
Off



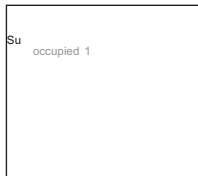
Continued

Programming

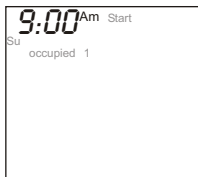
Occupied & Unoccupied Periods



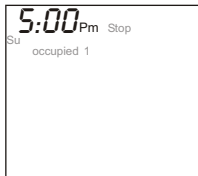
Select the day
for Occupied 1.



Adjust the start time
for occupied 1.



Adjust the stop time
for occupied 1.



On

Select Occupied 1 to run
on this day (On), or not to
run this day (Off).

Off



To Exit Programming



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

PROGRAMMING NOTES

- * If only 1 Occupied period is selected in step 1 on page 8, Occupied 2 & 3 programming steps are skipped.
Further, if only 2 occupieds are selected, Occupied 3 programming steps are skipped.
- * Heat & Cool setpoints for Occupied 1 are the same for every day of the week. Heat & Cool setpoints for Occupied 2 & 3 can be adjusted differently for each day of the week, if desired.
- * **If the start time is set later in the day than the stop time,**
the program will run from the start time to midnight and from midnight to the stop time on the same day. *For example: 9:00pm start, 8:00am stop, on MTWTF. In this example the program will run from 12:00am MTWTF to 8:00am MTWTF and again from 9:00pm MTWTF to 12:00pm MTWTF.*
- * The Unoccupied settings take effect at all times when:
(1) the program is on **and** (2) the current time is outside a preset occupied period.
For this reason start and stop times aren't necessary for unoccupied.
- * If the **same** start and stop times are programmed in for an occupied period, then it will run 24 hours.
- * If one occupied period starts and stops within another occupied period, the lower occupied # has priority.
For example: If Occupied 3 is programmed to be "on" 24 hours, and Occupied 2 is programmed to run that day, then Occupied 2 settings will take over from occupied 3 between Occupied 2 start and stop times.

Advanced Setup

MODE 

OVERRIDE 

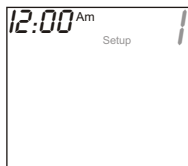
**Press the Mode button.
While holding the Mode,
press the Override button
for 5 seconds to enter Setup
screens.**

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 override button in and press
the up or down buttons.*

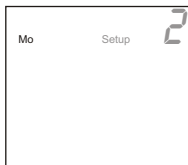


Press

MODE 



Select the day of the
week.



Press

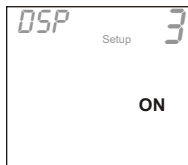
MODE 



Display On

Select Display operation,
Full Display (On), or
Minimal display (Off).

Display Off



Press

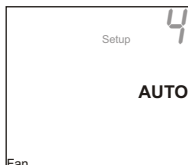
MODE 



Fan On

Select fan operation,
Fan On, or Fan Auto.

Fan Off



Press

MODE 

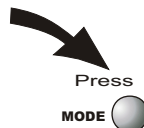
Advanced Setup



On

Select residential Heat Pump, ON or OFF.

Off



B

Select the reversing valve polarity for Heat Pump, O or B.
(Step 6 only appears if heat pump is **on** in step 5)

O



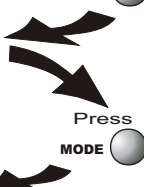
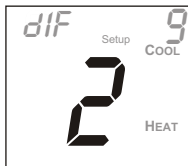
Select Electric Heat On or Off. (Step 7 only appears if heat pump is **off** in step 5)



Adjust the deadband from 1 - 6 degrees.



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

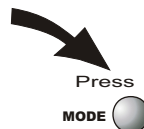


Advanced Setup



Select the cycles per hour limit.
d=cycles per hour limit defeated.
d1=d + defeat 5 min.
Compressor lockout.

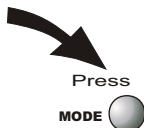
(d, d1, 2 - 6)



On

Select the display back-light always **On**, or **Off** after 8 seconds.

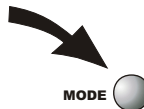
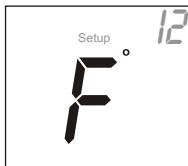
Off



C

Select thermostat operation in degrees Fahrenheit or Centigrade.

F



Press the Mode button.
While holding the Mode, press the Override button for 2 seconds to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

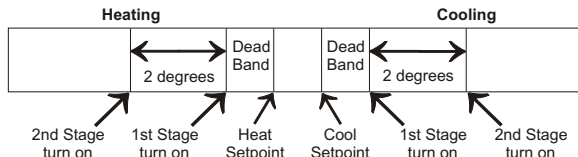
Advanced Setup

Advanced Setup Table

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

About Advanced Features & Operation

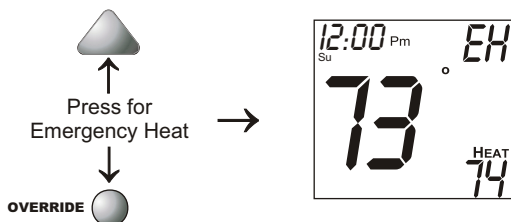
- * **CLOCK BACKUP** - In the event of a power loss, the thermostat internal clock will continue to keep proper time for a minimum of 48 hours without external power or batteries.
- * **2 STAGE OPERATION** - The 2nd Stage of heat or cool is turned on when **(1)** the 1st Stage has been on for a minimum 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 # 9, on page 14*. This minimum difference is enforced during Auto changeover and Program On operation.
- * **ENERGY SAVING SMART FAN** - If Fan On is selected, *page 13, step 4*, the fan will run continuously at all times, except in Off, **and** will only run if there is a heating or cooling demand in Unoccupied periods.
- * **OVERRIDE** - As explained on *page 7*, pressing the Override button during a programmed, Unoccupied period will force the thermostat into Occupied 1, temporarily, up to 4 hours. If the Override button is pressed during an Occupied period, the thermostat will be forced into Unoccupied and the occupied # (1,2 or 3), it was forced out of will be turned off, only for that day. During Override periods the setpoints may be adjusted, but they will not be remembered after Override ends.

About Advanced Features & Operation

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

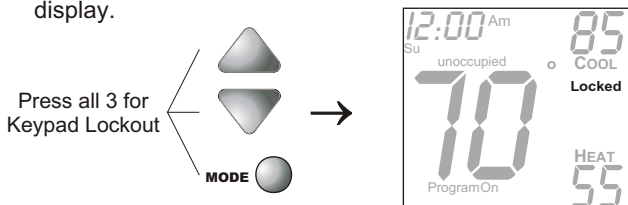


During Emergency Heat the thermostat will turn on the fan and the 2nd stage of heat, when there is a demand for heat, locking out the 1st stage compressor. Exiting Emergency Heat is the same as entering. During Emergency Heat only OFF and HEAT are available.

- * **ELECTRIC HEAT** - Selecting Electric Heat on, *page 14, step 7*, 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.

* DISPLAY BLANKING

The thermostat display may be configured in advanced setup, *page 13, step 3*, to always be visible as normally expected, or may be selected Off. When selected Off, only the time of day will appear until a button is pressed. When a button is pressed the full, normal display will appear then revert to the time of day only, after roughly 10 seconds.

About Advanced Features & Operation

- * **DUAL SETPOINT BEHAVIOR** - The adjustable setpoint range is: 35 - 99 degrees in Fahrenheit and 7 - 35 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 2150 will not allow the Heat setpoint to get closer to the Cool setpoint than the value programmed as the minimum difference in *step 9, page 14*.

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.

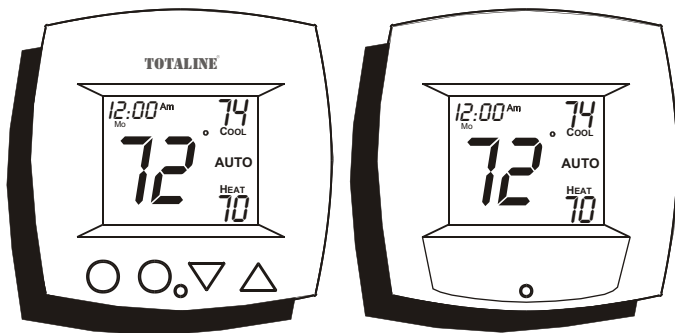
For example: If the Cool setpoint was set to 80 while in the Cool mode and the Heat setpoint was adjusted to 70 while in the Heat mode, upon entering the Auto mode the Heat and Cool setpoints would be 80 and 70. **Both** setpoints would then move up and down together, (in this example spread by 10 degrees), 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 9, page 14*.

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.**

- * **OPTIONAL LOCK COVER** 



Warranty

One-Year Warranty - This 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 manufacturer's sole option, to replace any defective part will be provided without charge for the part itself. PROVIDED the defective part is returned to the distributor 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 MANY 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 MANUFACTURER 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 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.