VENSTAR®

RESIDENTIAL
THERMOSTAT
T1900

DIGITAL THERMOSTAT

7-DAY PROGRAMMABLE

UP TO 3-HEAT & 2-COOL

HEAT COOL & HEAT PUMP

WITH HUMIDITY CONTROL

- Control up to 3 Heat & 2 Cool Stages
- 3 Configurable Outputs
- Adjustable 2nd & 3rd Stage Timers & Deadbands
- Backlit Display & Button Legends
- Aux Heat Indicator
- Dry Contact Equipped
- Outdoor Sensor Ready with High/Low Readouts for the Day
- Equipped with Optional Humidity Module: Controls Humidification, Dehumidification and Reheat
- Programmable Output
- Accepts EZ Programmer™
- Accepts Optional IR Remote Control
- Accepts Comfort Call™ Phone Control Accessory

- Use with most Air Conditioning & Heating Systems including: 1 or 2 Stage Electric Cooling & 3 Stage Gas Heating, Heat Pump, Electric or Hydronic Heat.

ENERGY STAR

OWNER'S MANUAL

VENSTAR®

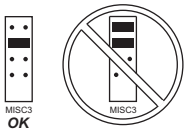
CAUTION

Follow the Installation Instructions before proceeding. Set the thermostat mode to “OFF” prior to changing settings in setup or restoring Factory Defaults.

CAUTION

NEVER PUT MORE THAN ONE JUMPER ON THE SAME MISC JUMPER BLOCK!

THIS MAY DAMAGE YOUR THERMOSTAT AND VOID YOUR WARRANTY.



NOTE: Due to variations in environmental conditions, it is not always possible to achieve the desired humidification or dehumidification setpoint.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

c UL us LISTED 4Z95

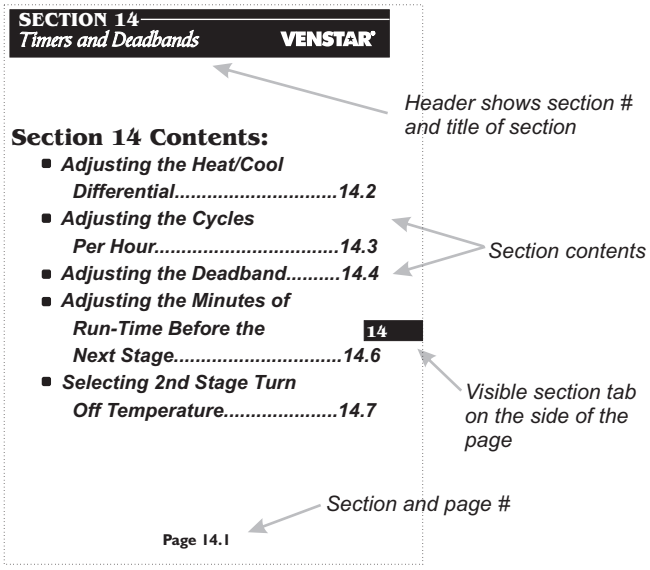
Thermostat T1900
FC Tested to Comply with FCC Standards
FOR HOME OR OFFICE USE

How to Use This Manual

VENSTAR®

The Table of Contents divides the thermostat features into sections making it easier to quickly find information.

The first page of each section contains a more detailed Contents of each section, such as the example page shown below.



In addition, this manual also has an Index to help you find any information regarding this thermostat quickly.

Glossary of Terms

VENSTAR®

Auto-Changeover: A mode in which the thermostat will turn on the heating or cooling based on room temperature demand.

Configurable Output Jumper: Using jumpers on the thermostat you can configure the MISC1, MISC2, and MISC3 terminals to control humidification, dehumidification, 2nd stage cooling, 3rd stage heating, and a programmable output.

Cool Setpoint: The warmest temperature that the space should rise to before cooling is turned on (without regards to deadband).

Deadband: The number of degrees the thermostat will wait, once setpoint has been reached, before energizing heating or cooling.

Dehumidify: To reduce the amount of moisture in the air.

Differential: The forced temperature difference between the *heat setpoint* and the *cool setpoint.*

Heat Setpoint: The coolest temperature that the space should drop to before heating is turned on (without regards to deadband).

Humidify: To increase the amount of moisture in the air.

Icon: The word or symbol that appears on the thermostat display.

Mode: The current operating condition of the thermostat (i.e. Off, Heat, Cool, *Auto,* Program On).

Non-Programmable Thermostat: A thermostat that does not have the capability of running the *Time Period Programming.*

Programmable Thermostat: A thermostat that has the capability of running the *Time Period Programming.*

Reheat: Running the cooling and 2nd stage strip heaters at the same time in order to *dehumidify* the air without cooling down the room temperature.

Temperature Swing: *Same as Deadband.*

Time Period Programming: A program that allows the thermostat to automatically adjust the *heat setpoint* and/or the *cool setpoint* based on the time of day.

Table of Contents

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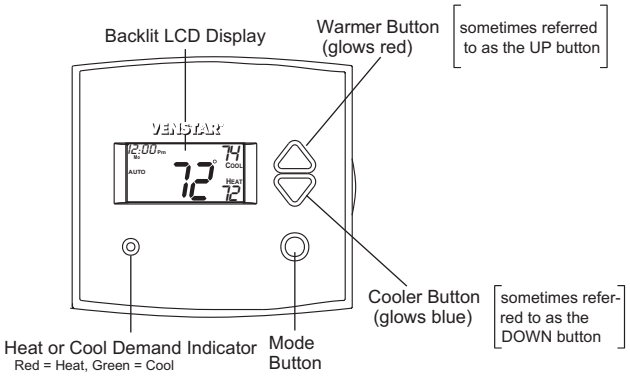
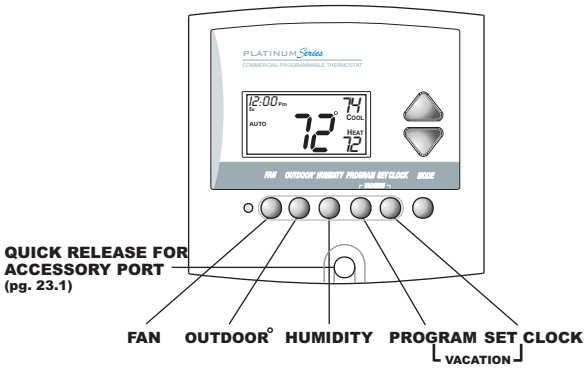
SECTION 1
Getting to Know Your Thermostat
1

VENSTAR®

Section 1 Contents:

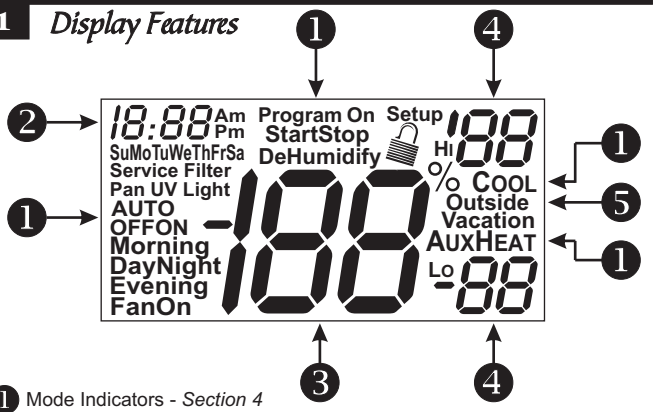
Front Panel


Backlit LCD Display
Warmer Button
(glows red)
sometimes referred
to as the UP button
VENSTAR
12:00 Pm
AUTO
72°
74
COOL
HEAT
72
Cooler Button
(glows blue)
sometimes refer-
red to as the
DOWN button
Heat or Cool Demand Indicator
Red = Heat, Green = Cool
Mode
Button


PLATINUM Series
COMMERCIAL PROGRAMMABLE THERMOSTAT
12:00 Pm
AUTO
72°
74
COOL
HEAT
72
FAN OUTDOOR° HUMIDITY PROGRAM SET CLOCK MODE
QUICK RELEASE FOR
ACCESSORY PORT
(pg. 23.1)
FAN
OUTDOOR°
HUMIDITY
PROGRAM SET CLOCK
VACATION

VENSTAR®

1 *Display Features*



1 Mode Indicators - *Section 4*
Selects the operational mode of the equipment.
HEAT - Indicates the heating 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 heating and cooling is turned off.
PROGRAM ON - Indicates the time period program is enabled to run.

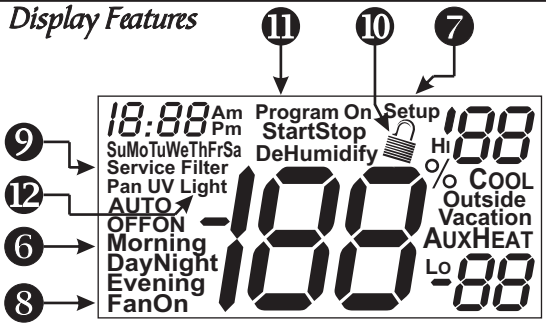
2 Clock with Day of the Week - *Section 3*
Indicates the current time and day. This clock is also used to program the time period schedules.

3 Room Temperature Display - *Section 5*
Indicates the current room temperature and displays the outdoor temperature when selected.

4 Desired Set Temperature - *Section 4/5*
Indicates desired room temperature(s). Also displays the highest and lowest temperatures for the day.

5 **Outside** icon - *Section 5*
Indicates the temperature displayed is from the optional outdoor sensor.

Display Features



6 **Morning**, **Day**, **Evening** & **Night** icons - *Section 6*
Indicates the day part of the time period program.

7 **Setup** icon - *Sections 6-19*
Indicates the thermostat is in the setup mode.

8 **Fan On** icon - *Section 7*
Indicates constant, continuous fan operation.
When **Fan On** is not lit - indicates the fan will only operate when necessary to heat or to cool.

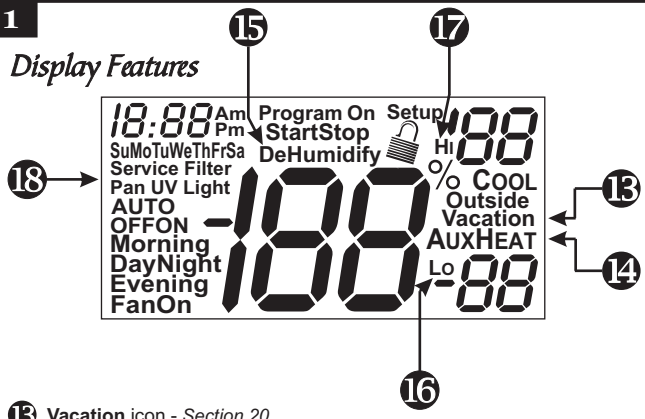
9 **Service Filter** icon - *Section 19*
Appears when the filter should be serviced under normal conditions.
Adjustable from 0 - 1950 hours of blower operation.

10 icon - *Section 8*
Indicates the keypad has been locked.

11 **StartStop** icon - *Section 6*
Appears when programming timer functions.

12 **UV Light** icon - *Section 19*
Appears when the UV bulb should be serviced under normal conditions. Adjustable from 0 - 1990 days of operation.

Display Features



13 **Vacation** icon - *Section 20*
Indicates the thermostat has Vacation setpoints in use.

14 **AuxHeat** icon - *Page 14.4*
Indicates 2nd stage electric strip heat is being used when the thermostat is programmed for Heat Pump operation. Only the Aux icon will appear during Cool to Dehumidify to indicate Reheat operation.

15 **Humidify/DeHumidify** icon - *Sections 9-10*
Indicates the system is currently humidifying/dehumidifying the air.

16 **Lo** icon - *Section 5*
Indicates the lowest recorded outdoor temperature for the day.

17 **Hi** icon - *Section 5*
Indicates the highest recorded outdoor temperature for the day.

18 **Service Pan** icon - *Section 17*
Indicates that a sensor (optional accessory) has detected the condensate drain pan is full and the compressor (Y1) has been locked out.

Section 2 Contents:

Note: *Following the instructions in this section will allow you to operate your thermostat using the factory default settings. These settings are depicted in the illustrations throughout this manual.*

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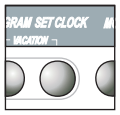
2



Press the SET CLOCK button

During Setup & Programming:

Pressing the UP or DOWN buttons will modify the flashing selection.

Setting the Clock

To adjust the Clock or Day use

Press

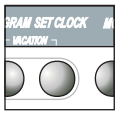
MODE

Buttons.

Setting the Day

To adjust the time by hours press and hold the FAN button while pressing the UP or DOWN buttons.

Press the SET CLOCK button to return to normal operation.



Selecting the Heat or Cool Mode

Select Mode by Pressing the MODE Button

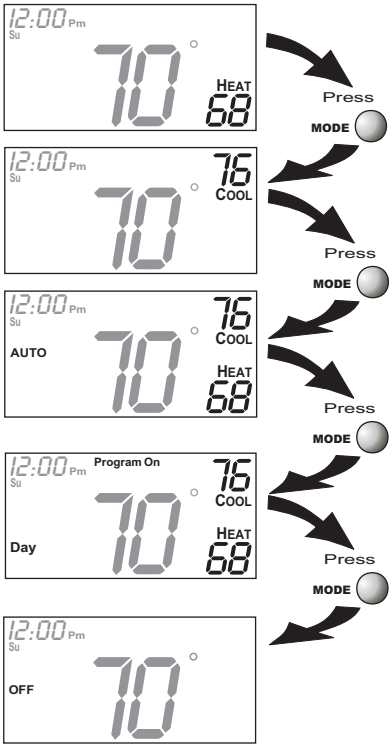
Heating Only
*The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.*

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

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

Time Schedule for Heating or Cooling
*The **Program On** setting will activate the time period programming for the cooling or heating setpoint ONLY (Morning, Day, Evening & Night Periods).*

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



Selecting Your Desired Temperature (adjusting the setpoints)

2

AUTO OR PROGRAM MODE

Pressing the UP or DOWN buttons in Auto **or** Program mode will adjust **both** the heat and cool set temperatures simultaneously.

Adjust the desired set temperature with the

buttons.

HEAT OR COOL MODE

Pressing the UP or DOWN buttons in Heat **or** Cool mode will adjust only the heat **or** cool set temperature.

Adjust the desired set temperature with the

buttons.

Using the Fan Button

Press FAN 

Fan On indicates constant fan operation. You may turn the fan on even if the thermostat is in the **Off** mode. Pressing the FAN button toggles this feature on or off.

Section 3 Contents:

Note: *During setup & programming pressing the UP or DOWN buttons will modify the flashing selection.*

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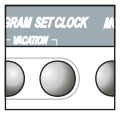
3



Press the SET CLOCK button

During Setup & Programming: Pressing the UP or DOWN buttons will modify the flashing selection.

Setting the Clock

To adjust the Clock or Day use

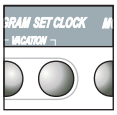
Press MODE

Setting the Day

buttons.

To adjust the time by hours press and hold the FAN button while pressing the UP or DOWN buttons.

Press the SET CLOCK button to return to normal operation.



Section 4 Contents:

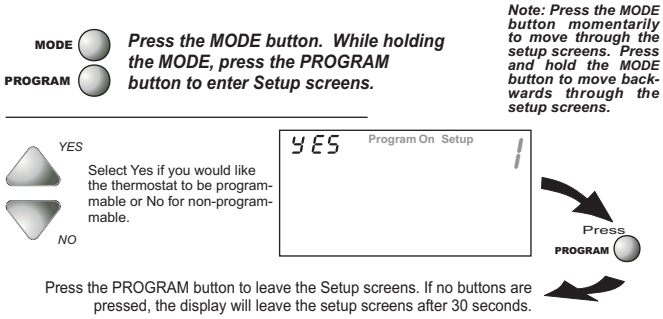
Note: *During setup & programming pressing the UP or DOWN buttons will modify the flashing selection.*

Programmable or Non-Programmable Thermostat

4 When the very simplest operation is desired, this thermostat may be configured to be non-programmable, with or without Auto Changeover. Follow the step below.

If 'NO' is selected, the thermostat will lockout the Program On screen; only the Off, Heat, Cool, and Auto screens may be accessed by pressing the MODE button.

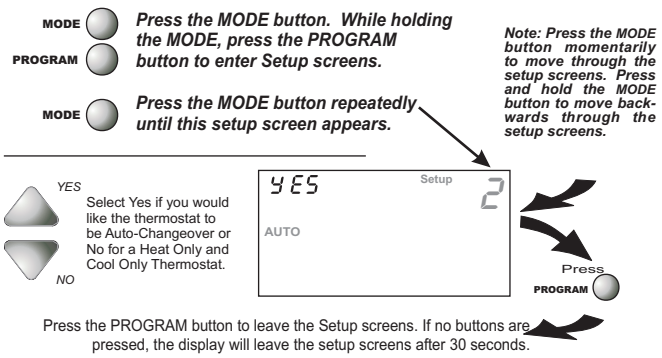
Select 'YES' if you would like your thermostat to be **programmable**, then the Program mode will be accessible through the use of the MODE button.



Manual or Auto-Changeover Thermostat

When the very simplest operation is desired, this thermostat may be configured to be a manual heat and cool thermostat, with or without time period programmability. Follow the step below.

The thermostat may be programmed to function as a Heat Only or Cool Only thermostat by selecting 'NO' in the setup screen below. This will lockout the Auto Changeover screen and only allow the Off, Heat, Cool, and Program On screens to be accessed.



Operating Mode when the Thermostat is Configured to be:

4

NON-PROGRAMMABLE WITH MANUAL CHANGEOVER - If the thermostat is configured to be a non-programmable thermostat with Manual Changeover, the following screens will be available by pressing the MODE button.

Select the Mode by Pressing the MODE Button

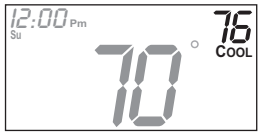
Heating Only

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

Press MODE

Cooling Only

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



Press MODE

Off

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

Operating Mode when the Thermostat is Configured to be:

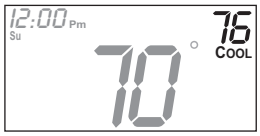
NON-PROGRAMMABLE WITH AUTO CHANGEOVER - If the thermostat is configured to be a non-programmable thermostat with Auto Changeover, the following screens will be available by pressing the MODE button

Select the Mode by Pressing the MODE Button

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

Press MODE

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



Press MODE

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

Press MODE

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

Operating Mode when the Thermostat is Configured to be:

PROGRAMMABLE WITH MANUAL CHANGEOVER - If the thermostat is configured to be a programmable thermostat with Manual Changeover, the following screens will be available by pressing the MODE button.

4

Select the Mode by Pressing the MODE Button

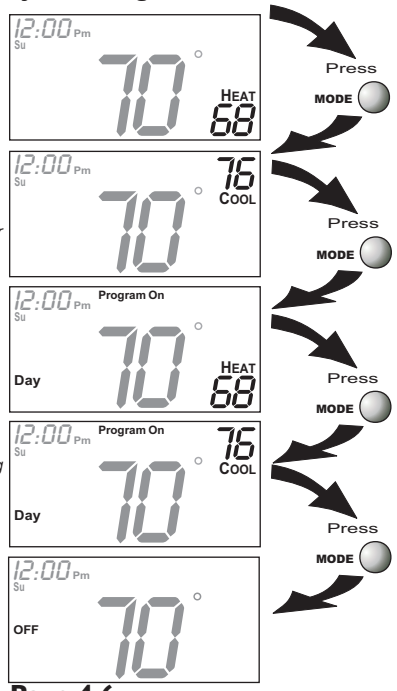
Heating Only
*The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.*

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

Time Schedule for Heating Only
*The **HEAT Program On** setting will activate the time period program for the heating setpoint ONLY (Morning, Day, Evening & Night Periods).*

Time Schedule for Cooling Only
*The **COOL Program On** setting will activate the time period program for the cooling setpoint ONLY (Morning, Day, Evening & Night Periods).*

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



Operating Mode when the Thermostat is Configured to be:

PROGRAMMABLE WITH AUTO CHANGEOVER - If the thermostat is configured to be a programmable thermostat with Auto Changeover, the following screens will be available by pressing the MODE button.

Select the Mode by Pressing the MODE Button

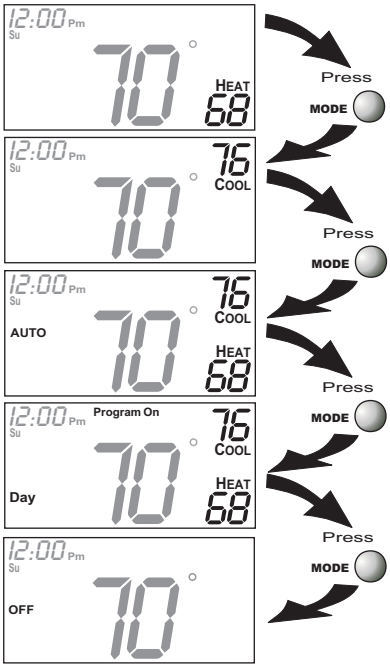
Heating Only
*The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.*

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

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

Time Schedule for Heating or Cooling
*The **Program On** setting wil activate the time period programming for the cooling or heating setpoint ONLY (Morning, Day, Evening & Night Periods).*

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



Selecting Your Desired Temperature (adjusting setpoints)

4

AUTO OR PROGRAM MODE

Pressing the UP or DOWN buttons in Auto **or** Program modes will adjust **both** the heat and cool set temperatures simultaneously. For more information on this see page 14.2.

Adjust the desired set temperature with the

buttons.

HEAT OR COOL MODE

Pressing the UP or DOWN buttons in Heat **or** Cool modes will adjust only the heat **or** cool set temperature.

Adjust the desired set temperature with the

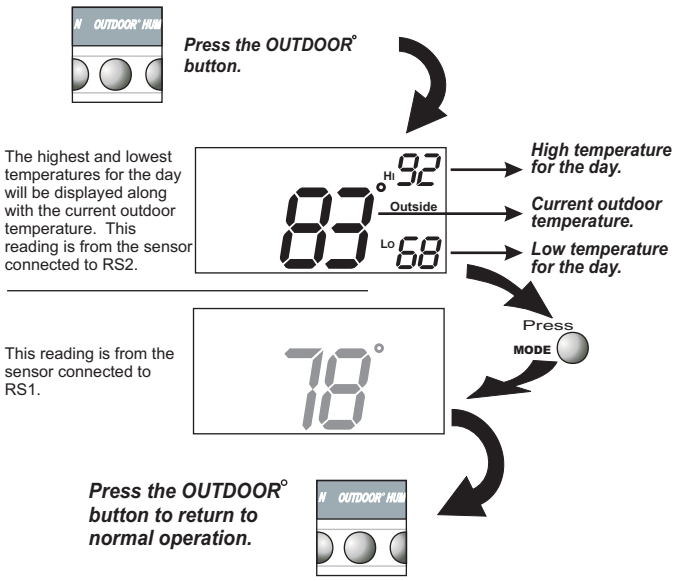
buttons.

Section 5 Contents:

Viewing the Outdoor Temperature (RS2)

5

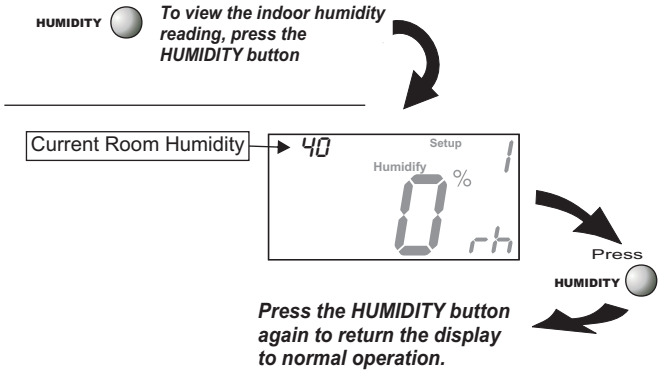
This requires an outdoor sensor (optional accessory) to be installed (*see page 16.2 for wiring instructions*). To read the temperature from the outdoor sensor, press the OUTDOOR° button. The display will then show the current outdoor temperature along with the highest and lowest temperatures for the day. The day starts at 12:00 am.



Note: If no sensors are connected 2 dashes [- -] will appear.

Viewing the Indoor Humidity

To display the current humidity measured at the thermostat, press the HUMIDITY button of the thermostat. The display will then show the current indoor humidity along with the humidification setpoint



NOTE: Due to variations in environmental conditions, it is not always possible to achieve the desired humidification or dehumidification setpoint.

SECTION 6
Programming the Daily Schedule

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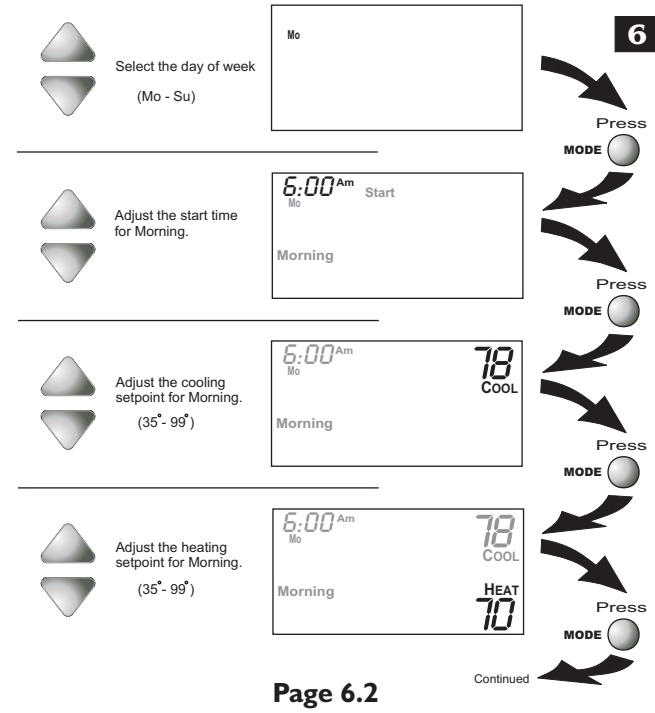
Section 6 Contents:

Programming a Daily Schedule

Press **PROGRAM**

Press the PROGRAM button to enter time period programming.

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



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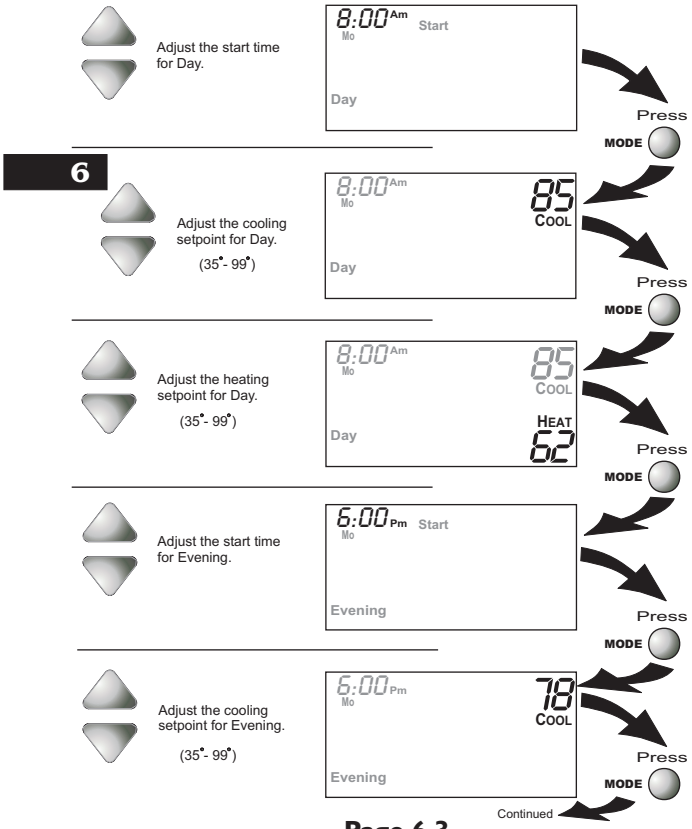
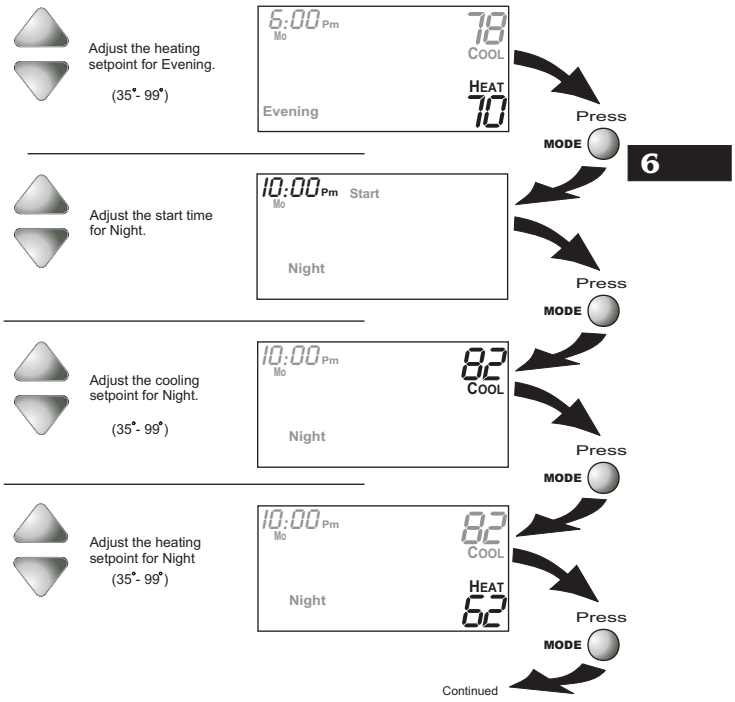
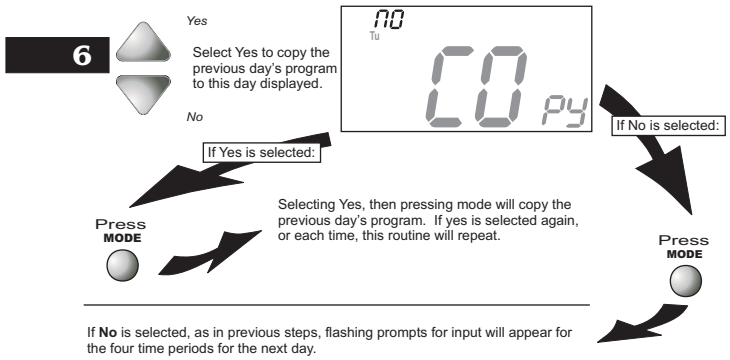
VENSTAR®


Adjust the start time for Day.
8:00 Am Start
Mo
Day
Press
MODE
6
Adjust the cooling setpoint for Day.
(35°- 99°)
8:00 Am
Mo
85
COOL
Day
Press
MODE
Adjust the heating setpoint for Day.
(35°- 99°)
8:00 Am
Mo
85
COOL
Day
HEAT
62
Press
MODE
Adjust the start time for Evening.
6:00 Pm Start
Mo
Evening
Press
MODE
Adjust the cooling setpoint for Evening.
(35°- 99°)
6:00 Pm
Mo
78
COOL
Evening
Press
MODE
Continued


Adjust the heating setpoint for Evening.
(35°- 99°)
6:00 Pm
Mo
78
COOL
HEAT
70
Evening
Press
MODE
Adjust the start time for Night.
10:00 Pm
Mo
Start
Night
Press
MODE
Adjust the cooling setpoint for Night.
(35°- 99°)
10:00 Pm
Mo
82
COOL
Night
Press
MODE
Adjust the heating setpoint for Night
(35°- 99°)
10:00 Pm
Mo
82
COOL
HEAT
62
Night
Press
MODE
Continued

The copy command becomes available after programming the entire previous day.



If **No** is selected, as in previous steps, flashing prompts for input will appear for the four time periods for the next day.

Press PROGRAM After programming for all seven days is complete, press the PROGRAM button to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

Section 7 Contents:

7

Using the Fan Button

When the fan is set for automatic operation it will energize any time there is a call for heating or cooling, otherwise the fan will remain off. Pressing the FAN button will energize the fan and display the **FanOn** icon on the thermostat display. To operate the fan in the automatic mode, press the FAN button again and the FanOn icon will disappear.

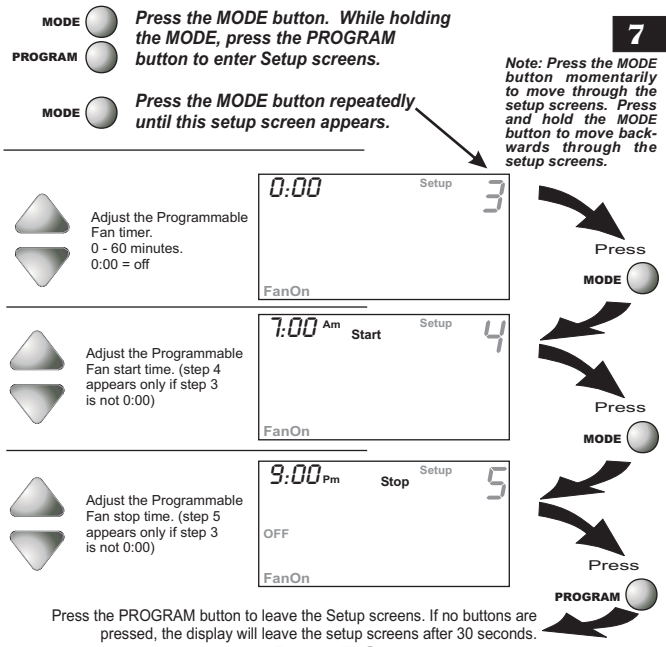
7

Press
FAN

Fan On indicates constant fan operation. You may turn the fan on even if the thermostat is in the **Off** mode. Pressing the FAN button toggles this feature on or off.

Programming the Fan

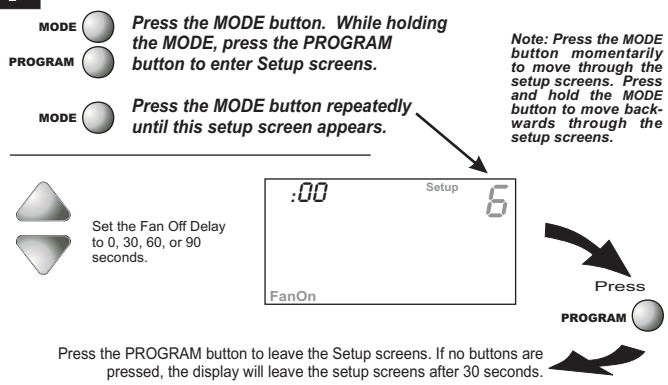
This timer will start the fan at the top of each hour and the fan will run for the number of minutes selected in step #3. Steps 4 & 5 restrict the hours during which the programmable fan may operate; step #4 is the start time and step #5 is the stop time. Selecting the same start and stop times will cause the fan to operate 24 hours a day.



Setting the Fan-Off Time Delay

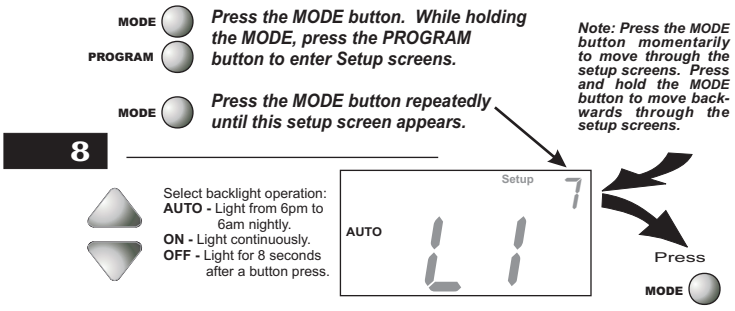
To increase the cooling efficiency of your unit, the thermostat may be programmed to continue running the fan after a call for cooling has been satisfied. This delay may be set for 30, 60, or 90 seconds. If the Fan Off Delay is set for zero seconds, the fan will not energize after a call for cooling has been satisfied.

7

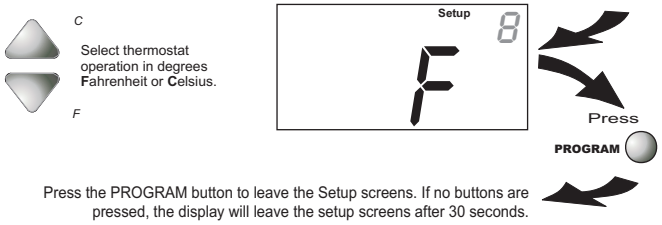


Section 8 Contents:

Turning On/Off the Backlight



Programming the Thermostat to Display Temperature in Fahrenheit or Celsius

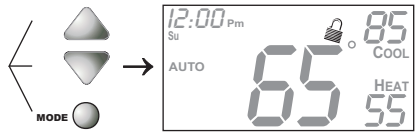


Press the PROGRAM button to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

Locking/Unlocking the Keypad

To prevent unauthorized use of the thermostat, the front panel buttons may be disabled. To disable, or 'lock' the keypad, press and hold the MODE button. While holding the MODE button, press the UP and DOWN buttons together. The icon will appear on the display, then release the buttons.

Press all three buttons in the order outlined above for keypad lockout



To ***unlock*** the keypad, press and hold the MODE button. While holding the MODE button, press the UP and DOWN buttons together. The icon will disappear from the display, then release the buttons.

Section 9 Contents:

Disclaimer:
The manufacturer of this thermostat cannot be liable for misinstallation, improper connection or improper programming of the humidity functions of this thermostat that may result in water damage or mold growth.

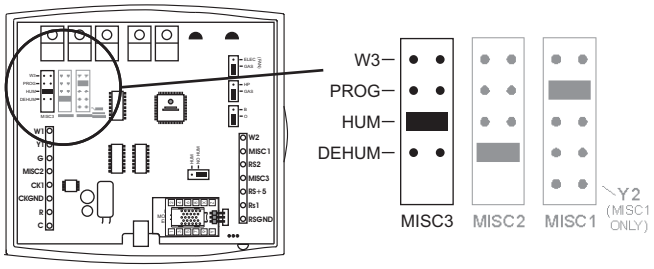
Additionally, the manufacturer of this thermostat is not responsible for the fitness of the humidifier and/or installation of said humidifier connected to this thermostat. Furthermore, the maintenance of the humidifier components, including but not limited to, the filters and pads are not the responsibility of the thermostat manufacturer.

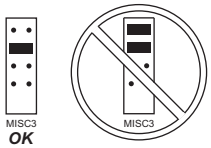
The Humidifier Service icon is only a suggestive reminder and should not take the place of the humidifier manufacturer's required maintenance requirements and schedule.

Setting a Thermostat Output Jumper for Humidity Operation

To control a MISC output for humidification, place the MISC1, MISC2, or MISC3 jumper on the terminal labeled HUM (*see diagram below*). This will supply 24VAC to the selected MISC terminal based on the humidification programming in the following pages. Only one of the three outputs (MISC1, MISC2, or MISC3) is required to have this jumper. *For more information regarding the MISC1, MISC2, and MISC3 outputs, please see section 21.*

In the diagram below, the MISC3 jumper has been set for HUM (humidify) operation.





IMPORTANT CAUTION

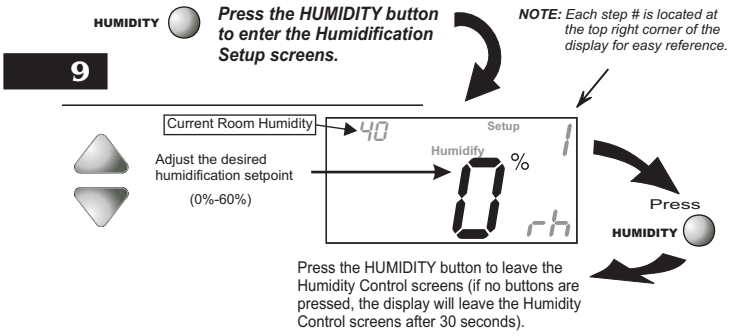
NEVER PUT MORE THAN ONE JUMPER ON THE SAME MISC JUMPER BLOCK!

THIS MAY DAMAGE THE THERMOSTAT AND VOID YOUR WARRANTY

Adjusting the Humidification Setpoint

If your HVAC unit is equipped with a humidification system the thermostat will provide power to the appropriate terminal on the backplate of the thermostat when the humidity in the home falls below the setpoint you have chosen. The value for this setpoint ranges from 0% to 60%.

NOTE: Due to variations in environmental conditions, it is not always possible to achieve the desired humidification or dehumidification setpoint.



Humidification Notes: *Press the button to set the humidity setpoint to 0% for no humidification operation.*

You cannot set the dehumidify setpoint any lower than the humidify setpoint; a 5% differential is forced between the humidify and dehumidify setpoints.

Energizing the Fan with Humidification

Selecting YES for this setup step will enable the Fan to automatically energize any time there is a call for humidity. If NO is selected, the Fan will not automatically energize on a call for humidity.

MODE
PROGRAM

Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.

MODE

Press the MODE button repeatedly until this setup screen appears.

Note: Press the MODE button momentarily to move through the setup screens. Press and hold the MODE button to move backwards through the setup screens.

Step 9 only appears if the Humidification setpoint is not 0% (see page 9.3).

9

Select fan operation with a call for humidification:

NO: Fan will not energize when there is a call for humidification.

YES: Fan will energize when there is a call for humidification.

Press
PROGRAM

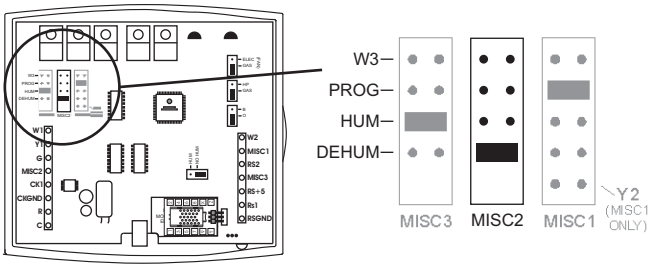
Press the PROGRAM button to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

Section 10 Contents:

Configuring a Thermostat Output Jumper for Dehumidification Operation

To control a MISC output for dehumidification, place the MISC1, MISC2, or MISC3 jumper on the terminal labeled DEHUM (*see diagram below*). This will supply 24VAC to the selected MISC terminal based on the dehumidification programming in the following pages. Only one of the three outputs (MISC1, MISC2, or MISC3) is required to have a jumper. *For more information regarding the MISC1, MISC2, and MISC3 outputs, please see section 21.*

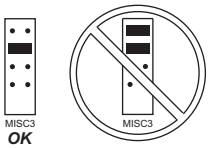
In the diagram below, the MISC2 jumper has been set for DEHUM operation.



IMPORTANT CAUTION

NEVER PUT MORE THAN ONE JUMPER ON THE SAME MISC JUMPER BLOCK!

THIS MAY DAMAGE THE THERMOSTAT AND VOID YOUR WARRANTY



OK

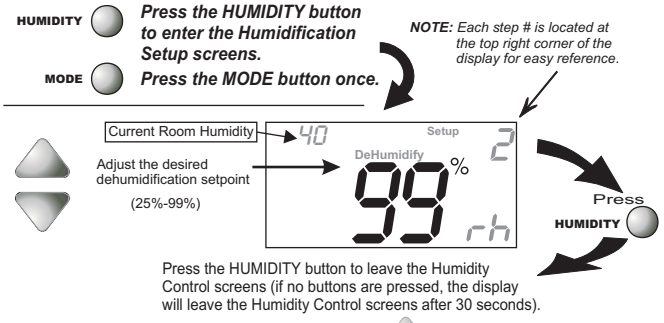
Adjusting the Dehumidification Setpoint

Dehum Terminal: If a MISC terminal selected for DEHUM operation (*see page 10.2)* then the thermostat will provide power to this terminal the when the humidity in the home is above the setpoint you have chosen. See page 10.6 for detailed programming instructions. To utilize this feature your HVAC unit must be equipped with a DEHUM terminal.

Cool to Dehumidify: If the thermostat is programmed for Cool to Dehumidify operation, then the thermostat will energize the cooling system any time the humidity in the home is above the setpoint you have chosen. The thermostat may also be programmed for Reheat operation if available. See pages 10.4 and 10.5 for detailed programming instructions.

In each case, when the indoor humidity falls below the setpoint you have selected, Cool to Dehumidify and the MISC terminal will be de-energized. The value for this setpoint ranges from 25% to 99%.

NOTE: Due to variations in environmental conditions, it is not always possible to achieve the desired humidification or dehumidification setpoint.

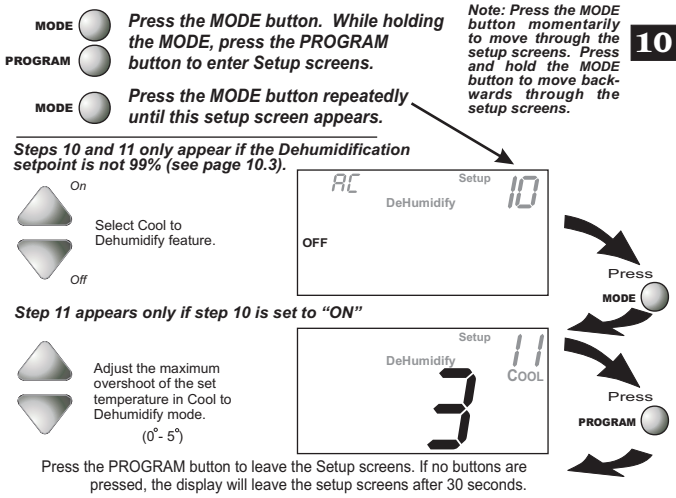


Dehumidification Notes: *Press the ▲ button to set the dehumidification setpoint to 99% for no dehumidification operation. This will lockout Advanced Setup steps 10, 11, and 12 (see pages 10.4 - 10.5).*

You cannot set the dehumidify setpoint any lower than the humidify setpoint; a 5% differential is forced between the humidify and dehumidify setpoints.

Using Your Air Conditioner to Dehumidify

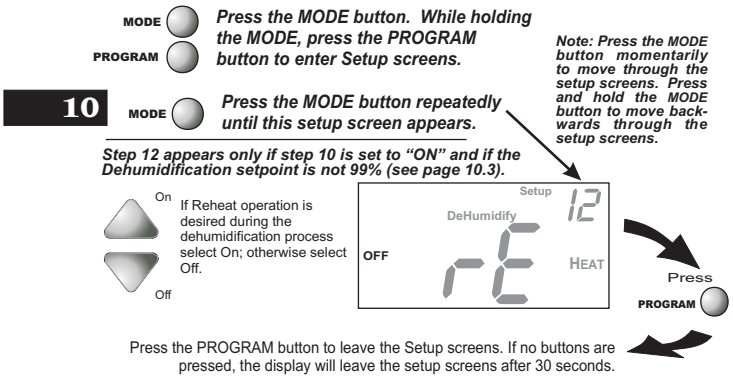
If Cool to Dehumidify is on and the Humidity Module is installed, the thermostat has the ability to initiate a cooling cycle for advanced dehumidification operation. When the thermostat detects the humidity percentage is above the setpoint for dehumidification, and heating or cooling is not on, the thermostat will force the compressor to run with the fan, thus reducing moisture in the air. The green LED will blink once every eight seconds to indicate this is taking place. This feature will also allow you to adjust the cooling overshoot of the setpoint, from 0° to 5° (adjustable in step #11). *For Example: If the cooling overshoot is set for 3°F and the cooling setpoint is set for 74°F, then as long as the room temperature reads between 71°F and 74°F this feature will energize the compressor and fan to dehumidify the air.*



Dehumidification Notes: *The thermostat must be in the Cool, Auto, or Program On mode for the Cool to Dehumidify feature to be available.*

Using the Reheat Function

This feature allows the thermostat to turn on Electric Heating (W2) during Cool to Dehumidify to maintain room temperature until the dehumidification setpoint is reached. The cooling cycle will allow for the dehumidification of the air to occur while the Electric Heating will allow for a constant room temperature. If Reheat is enabled the Aux icon will appear on the display during Cool to Dehumidify operation.



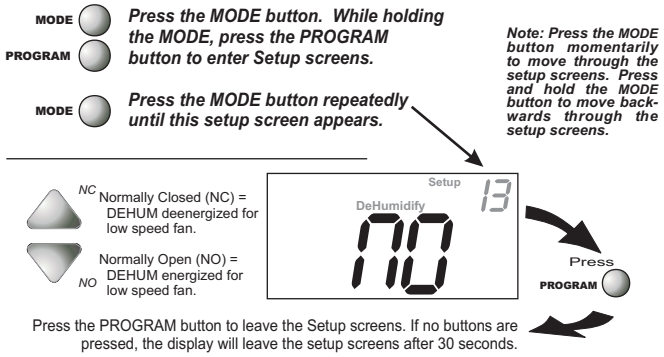
Dehumidification Notes: *Reheat is only available if Cool to Dehumidify has been set to ON in step #10 (see page 10.4).*

Using the Dehum Terminal

If you configure a MISC output jumper for DEHUM, it may be programmed to operate in one of two ways:

1) **Normally Closed** (NC): The thermostat will de-energize the DEHUM terminal to allow the fan to run in low speed when there is a call for 1st stage cooling and the room humidity is greater than the dehumidification setpoint.

2) **Normally Open** (NO): The thermostat will energize the DEHUM terminal to allow the fan to run in low speed when there is a call for 1st stage cooling only and the room humidity is greater than the dehumidification setpoint.



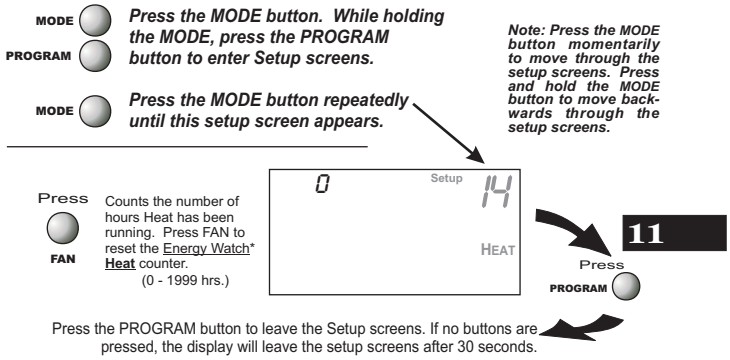
Dehumidification Notes: The DEHUM terminal will "release" and allow the fan to operate normally if there is call for 2nd stage cooling or if the call for Cooling and/or Dehumidification has been satisfied.

Section 11 Contents:

VENSTAR®

Viewing the Heat Run-Time - Energy Watch

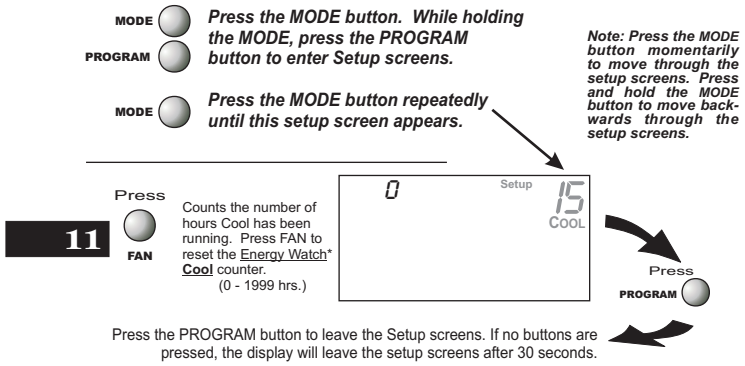
This display will track the number of hours that your heating system has been operating. Press the FAN button to reset the counter.



* ***Energy Watch:*** *This feature enables you to closely monitor your energy usage by keeping track of the number of hours your heating system has been operating.*

Viewing the Cool Run-Time - Energy Watch

This display will track the number of hours that your cooling system has been operating. Press the FAN button to reset the counter.

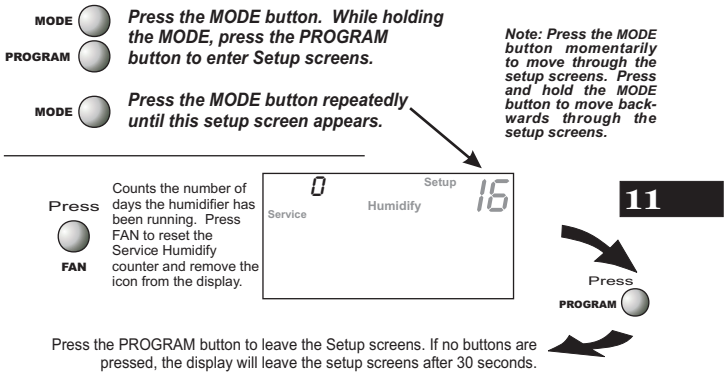


11

* ***Energy Watch:*** *This feature enables you to closely monitor your energy usage by keeping track of the number of hours your cooling system has been operating.*

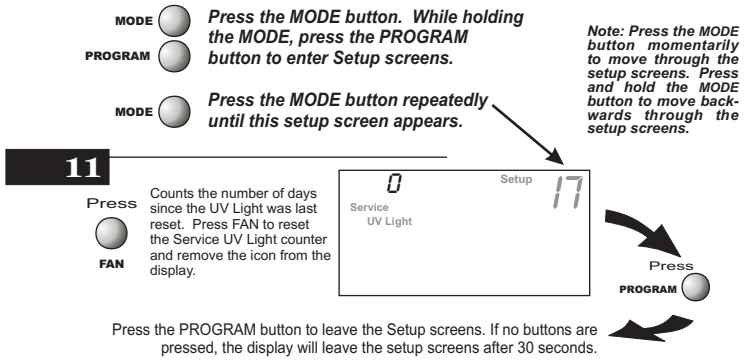
Viewing the Humidification Run-Time

After your humidification system has been operating for the number of days set in step #16 below, the Service Humidify icon will appear. This counter keeps track of the number of days since the Service Humidify icon was reset.



Viewing the UV Light Run-Time

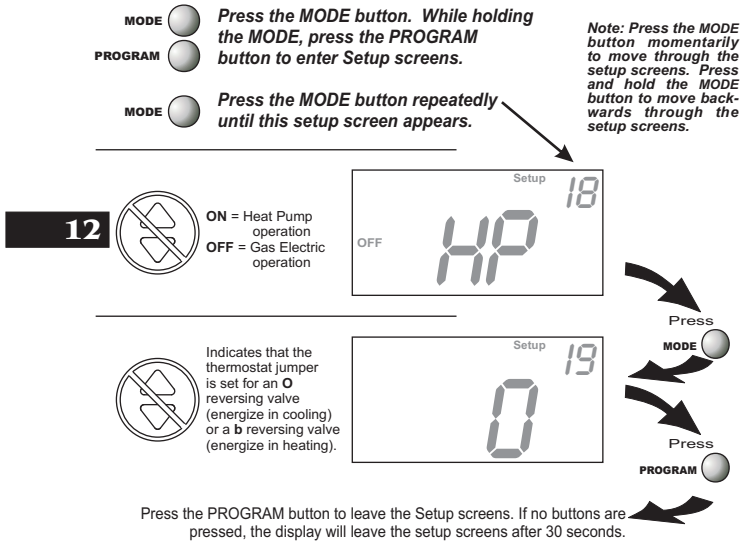
After the UV light has been operating for the number of days set in step #17 below, the Service UV Light icon will appear. This counter keeps track of the number of days since the UV light icon was last reset.



Section 12 Contents:

Viewing the Heat Pump and Reversing Valve Jumper Settings

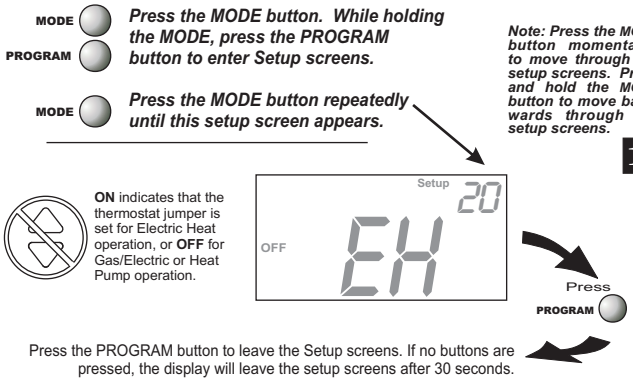
Steps 18 and 19 are 'Read Only' and may only be set with the jumpers on the circuit board of the thermostat (*see page 5.4 of the Installation Instructions*).



Viewing the Electric Heat Jumper Setting

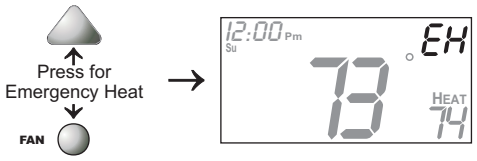
Placing the jumper on ELEC will cause the thermostat to turn on the fan immediately any time there is a heat demand. Since most gas furnaces control the fan, this feature should be off unless it is necessary for the thermostat to energize the fan with first stage heat.

Step 20 is 'Read Only' and may only be set with the jumpers on the circuit board of the thermostat (*see page 5.3 of the Installation Instructions*).



Using Emergency Heat

ENTER EMERGENCY HEAT: Only available if you have a Heat Pump installed. To initiate the Emergency Heat feature, press the FAN button. While holding the FAN button press the UP button. The Cool setpoint display will read 'EH' (emergency heat).



12

OPERATION: During Emergency Heat operation the thermostat will turn on the fan and the 2nd stage of heat when there is a demand for heat. Also during Emergency Heat the 1st stage of heating or cooling will be unavailable.

EXIT EMERGENCY HEAT: Follow the same steps as entering Emergency Heat by pressing the FAN and UP buttons. During Emergency Heat, only OFF and HEAT modes are available by pressing the MODE button.

Programming the Thermostat to Operate a Dual Fuel System

Advanced Setup step #21 (*next page*) allows this thermostat to be configured to control two heat sources for Dual Fuel operation.

Dual Fuel systems utilize an outdoor temperature sensor. When the outdoor temperature is at or below the Changeover Balance Point, *step #22* (*next page*), the primary heat source is 'locked out' and the heat source connected to W3 is energized. There is a three degree deadband from the Changeover Balance Point, which requires the outdoor temperature to rise three degrees before switching back to the primary heat source. If an outdoor temperature sensor (RS2) is not installed and the thermostat is programmed for Dual Fuel operation, 1st and 2nd stage heating is locked out and only W3 will be energized (*see page 13.3 for detailed information*).

For outdoor sensor (RS2) wiring please see page 16.2 of this manual and for the thermostat jumper setting and wiring instructions please refer to page 5.6 of the Installation Instructions.

VENSTAR®

Programming the Thermostat to Operate a Dual Fuel System

Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.

Press the MODE button repeatedly until this setup screen appears.

Note: Press the MODE button momentarily to move through the setup screens. Press and hold the MODE button to move backwards through the setup screens.

*If the **HP/GAS** Jumper is not set for **HP**, then steps 21 and 22 will be unavailable (see Install Manual pg. 5.4).*

Select Dual Fuel operation*, (On), or normal operation*, (Off).

Press MODE

13

Adjust the Changeover Balance Point for the outdoor sensor** (RS2).

(32°- 85°F, OF=no sensor)

(0°- 30°C)

Press PROGRAM

Press the PROGRAM button to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

** To see the outputs that will be energized in Dual Fuel or Normal operation, please see the next page.*

*** In the case of Dual Fuel operation (Dual Fuel set to 'ON'), an outdoor sensor is **required**.*

Output Matrix for Dual Fuel and Three Stage Heat Applications

This table illustrates the outputs that will be energized on a call for first, second and third stage heating, based on the programming in setup steps 21 and 22 (*see previous page*) and the HP/GAS jumper setting on page 12.2.

For example, in the first section of this matrix the thermostat has been programmed to operate a Heat Pump Dual Fuel system based on a Balance Point. The Outdoor Temp is warmer than the Balance Point (*Outdoor Temp > Balance Point*). This means that 1st stage heating will energize G and Y1, 2nd stage heating will energize W2 and 3rd stage heating (W3) is unavailable. The Reversing Valve may, or may not be energized, depending on how it has been programmed (*see note*).

		ST	W1	W2	W3	G	Y1
DF = ON BP = ON HP = ON	**Dual Fuel Heat Pump with Balance Point: Outdoor Temp > Balance Point.**	1st	RVR			●	●
		2nd	RVR	●		●	●
		3rd	RVR	●		●	●
DF = ON BP = ON HP = ON	**Dual Fuel Heat Pump with Balance Point. Outdoor Temp < Balance Point.**	1st			●	●	
		2nd			●	●	
		3rd			●	●	
DF = ON BP = N/A HP = ON	**Dual Fuel Heat Pump with no Outdoor Sensor (Outdoor Sensor has failed).**	1st			●	●	
		2nd			●	●	
		3rd			●	●	
DF = ON BP = OFF HP = ON	**Dual Fuel Heat Pump with Balance Point set to 'OF'.**	1st			●	●	
		2nd			●	●	
		3rd			●	●	
DF = OFF BP = ON HP = ON	**Heat Pump with three stages of heat with Balance Point. Outdoor Temp > Balance Point.**	1st	RVR			●	●
		2nd	RVR	●		●	●
		3rd	RVR	●		●	●
DF = OFF BP = ON HP = ON	**Heat Pump with three stages of heat with Balance Point. Outdoor Temp < Balance Point.**	1st	RVR			●	●
		2nd	RVR	●		●	●
		3rd	RVR	●	●	●	●
DF = N/A BP = N/A HP = OFF	**Non-Heat Pumps. Dual Fuel and Balance Point options are unavailable.**	1st	●			ELEC/GAS	
		2nd	●	●		ELEC/GAS	
		3rd	●	●	●	ELEC/GAS	

*RVR = Reversing Valve. RVR will be energized depending on this jumper setting. See page 12.2 of this manual and page 5.4 of the Installation Instructions for detailed programming information.

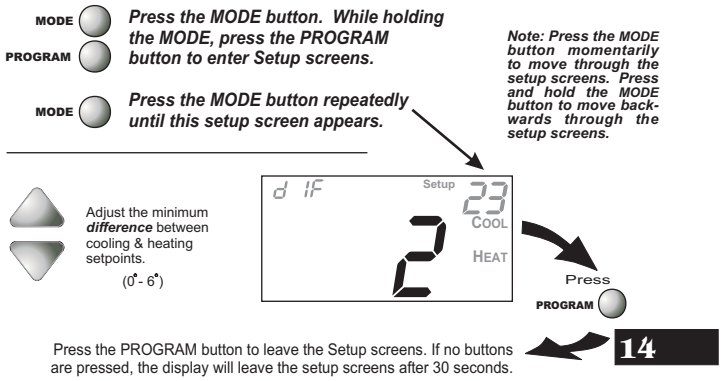
*ELEC/GAS = Electric Heat or Gas Heat. The fan will be energized depending on this jumper setting. See page 12.3 of this manual and page 5.3 of the Installation Instructions for detailed programming information.

Section 14 Contents:

VENSTAR®

Adjusting the Heat/Cool Differential

The Heat and Cool setpoints will not be allowed to come any closer to each other than the value in this step. This minimum difference is enforced during Auto Changeover operation.

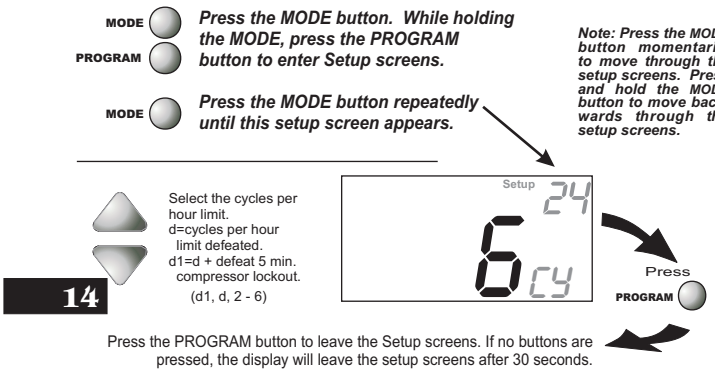


14

Note: *To increase the spread between the heating and cooling setpoints, press the MODE button until only the heat setpoint is displayed. Adjust the desired setpoint. Press the MODE button until only the cool setpoint is displayed. Adjust the desired setpoint. Press the MODE button again to enter the Auto-Changeover mode where both the heat and cool setpoints are displayed.*

Adjusting the Cycles Per Hour

The Cycles Per Hour setting may limit the number of times per hour your HVAC unit may energize. For example, at a setting of 6 cycles per hour the HVAC unit will only be allowed to energize once every 10 minutes. The Cycles Per Hour limit may be overridden and reset by pressing the UP or DOWN buttons on the thermostat.



Adjusting the Deadband

MULTI-STAGE OPERATION - Controls up to three Heat and two Cool stages.

The **2nd Stage** of heat or cool is turned on when:

(**A**) The 1st Stage has been on for the time required (*step #28, page 14.6).* It is adjustable from 0-60 minutes and the default is two minutes.

And

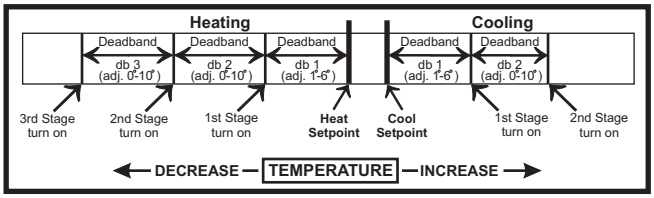
(**B**) The temperature spread from the setpoint is equal to or greater than: *the setpoint plus the 1st stage deadband (step #25, next page), plus the 2nd stage deadband (step #26, next page).* This 2nd stage deadband is adjustable from 0-10 degrees and the default is two degrees.

The **3rd Stage** of Heat is turned on when:

(A) The 2nd stage has been on for the time required (*step #29, page 14.6).* It is adjustable from 0-60 minutes and the default is two minutes.

And

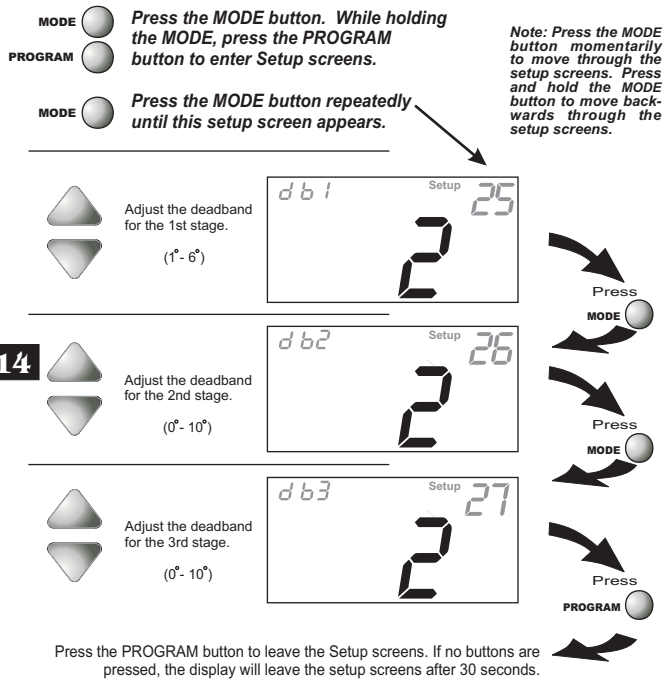
(B) The temperature from the setpoint is equal to or greater than: *the setpoint plus the 1st stage deadband (step #25, next page), plus the 2nd stage deadband (step #26, next page) plus the 3rd stage deadband (step #27, next page).* This 3rd stage deadband is adjustable from 0-10 degrees and the default is two degrees.



The above figure assumes the minimum on time for the prior stage has been met to allow the next stage to turn on; once the deadbands have been exceeded.

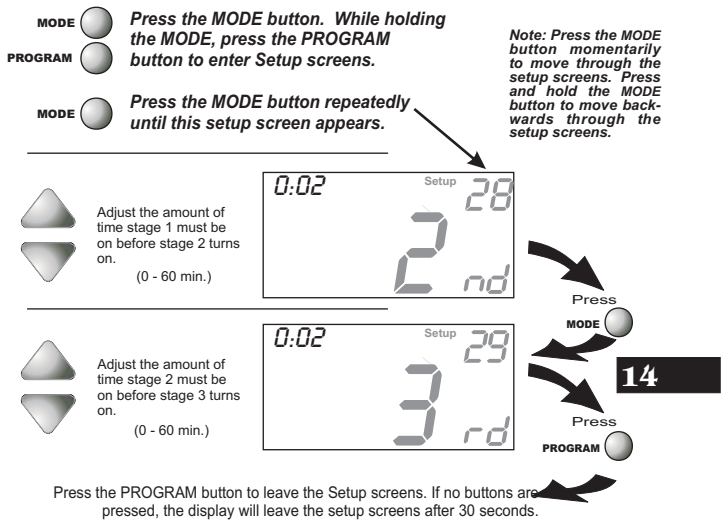
Adjusting the Deadband

For more detailed information, please see the explanation on the previous page.



Adjusting the Minutes of Run-Time Before the Next Stage

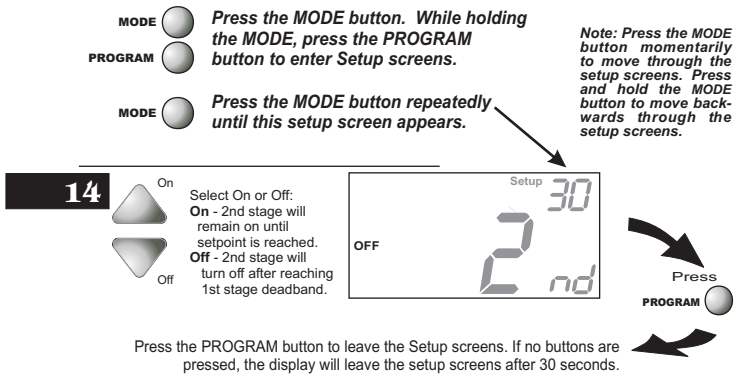
For more detailed information, please see the explanation on page 14.4.



Selecting 2nd Stage Turn Off Temperature

If ON is selected, the second stage of cooling or heating will remain energized until the thermostat reaches the setpoint on the thermostat display.

If OFF is selected, the second stage of cooling or heating will turn off after reaching the 1st stage deadband (*see page 14.4 for more information).*

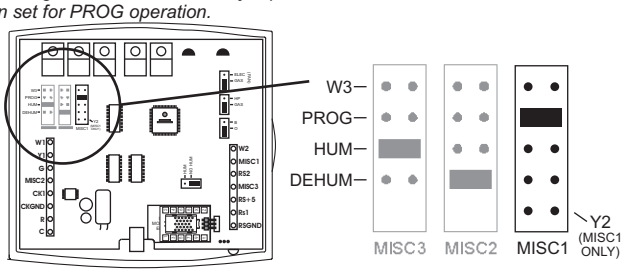


Section 15 Contents:

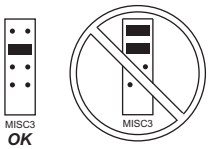
Setting a Thermostat Jumper for Programmable Output Operation

To control one of the MISC outputs using time, temperature, or Internet/phone based operation, place the MISC1, or MISC2, or MISC3 jumper on the terminal labeled PROG (*see diagram below*). This extra output will supply 24VAC to the selected MISC terminal based on the programming described in the following pages. Only one of the three outputs (MISC1, MISC2, or MISC3) is required to have this jumper. *For more information regarding the MISC1, MISC2, and MISC3 outputs, please see section 21.*

In the diagram below, the MISC1 jumper has been set for PROG operation.



IMPORTANT CAUTION



NEVER PUT MORE THAN ONE JUMPER ON THE SAME MISC JUMPER BLOCK!

THIS MAY DAMAGE THE THERMOSTAT AND VOID YOUR WARRANTY

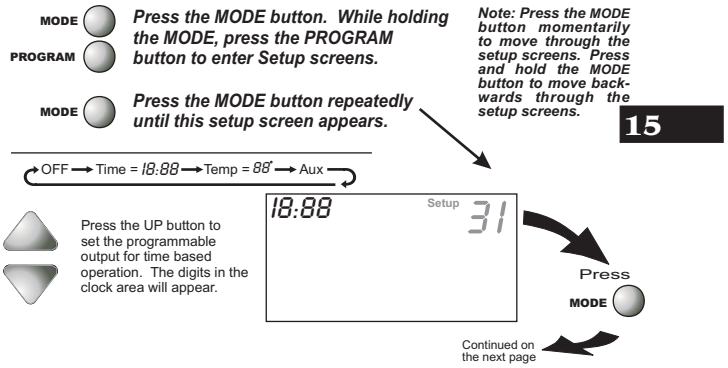
Time-Based Control of the Programmable Output

To operate one of the MISC outputs using time-based operation, set Advanced Setup step #31 (*below*) for Time 18:88. This extra output will supply 24VAC to the selected MISC terminal, which is especially useful for devices that require a start and stop time. Refer to page 14.4 - 14.5 for more details on programming this output.

Possible **TIME** scenarios:

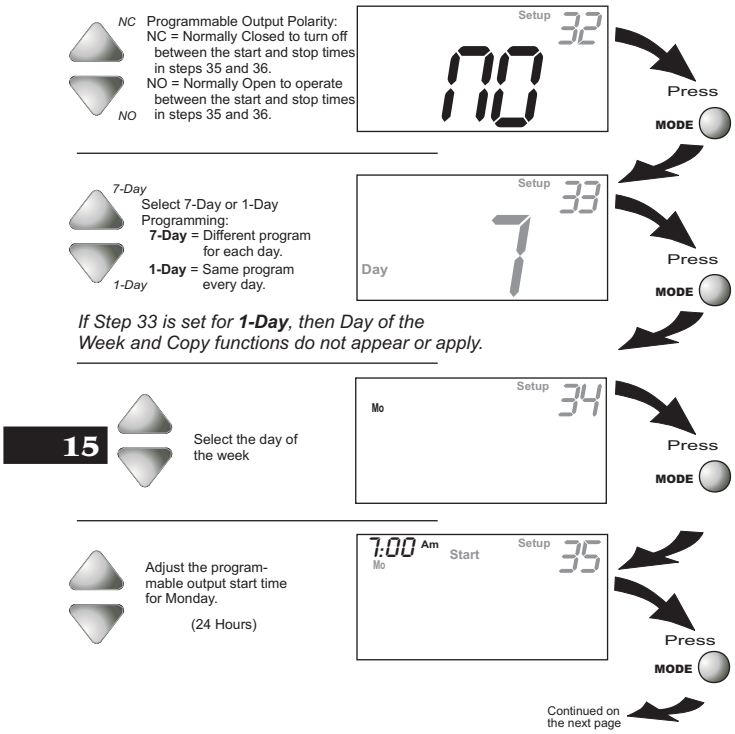
1) An exterior lighting system that needs to be energized every day between the hours of 8pm and 1am.

2) A sprinkler system that needs to be energized every day between the hours of 2am and 4am.



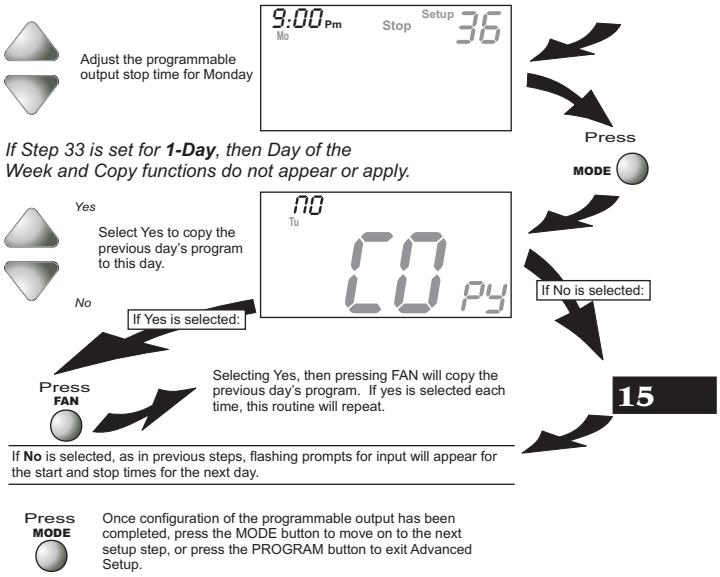
VENSTAR®

Time-Based Control of the Programmable Output



VENSTAR®

Time-Based Control of the Programmable Output

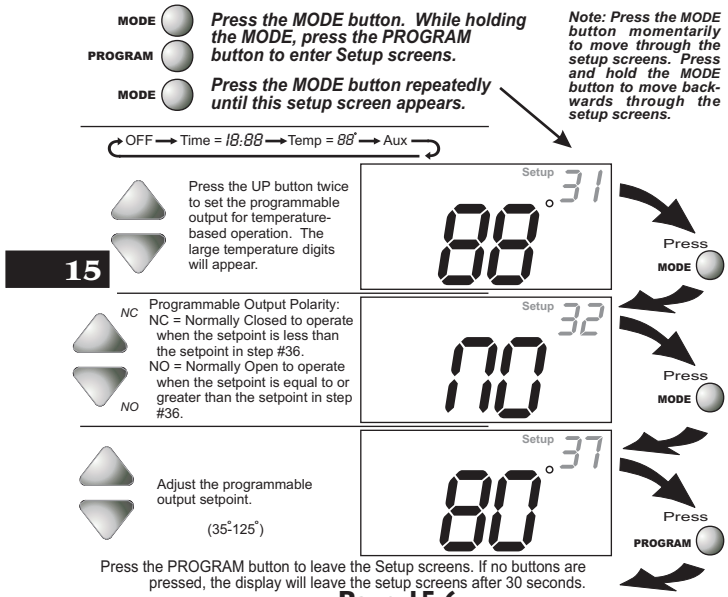


Temperature-Based Control of the Programmable Output

To operate a MISC output using temperature-based operation, program advanced setup step #31 (*below*) for temperature 88°. This extra output will supply 24VAC to the selected MISC terminal based on the temperature of RS1 and the setpoint in step #37 (*below*).

Possible **TEMPERATURE** scenario:

1) An exhaust fan in the attic of a store that needs to be energized when the attic temperature is above 85 degrees.

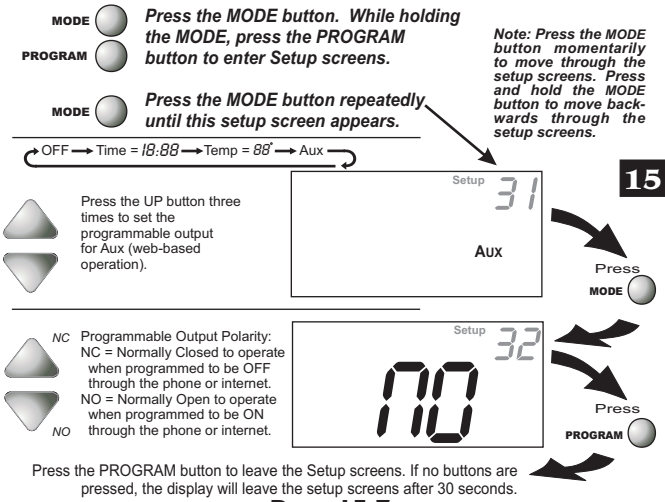


Internet/Phone Control of the Programmable Output

To operate a MISC output using Internet/phone-based operation, program advanced setup step #31 for Aux (*below*). This terminal is especially useful for devices that can be energized via the Internet. Telephone control may also be available when the thermostat is connected to the Internet.

Possible **AUX** scenarios:

1) Arm the alarm system in your home after you have left for the day.
2) Turn on your spa before arriving home.
3) Turn on your interior lights while you're away.



Section 16 Contents:

Installing the Remote Sensors

The Remote Sensor measures indoor air temperature and sends this information to the thermostat; it measures temperature with a range of 32° to 99° F.

The Remote Sensor should be connected to the thermostat using solid conductor CAT 5, CAT 5e, or CAT 6 type network communication cable. This is an unshielded cable with four twisted pairs of 24 gauge solid wire; *DO NOT use stranded cable*. The cable length should not exceed 250 feet. If less than 75 feet of cable is required to connect the thermostat to the Remote Sensor, a three conductor thermostat cable (18-24 gauge) may be used; this cable is NOT suitable for any length greater than 75 feet.

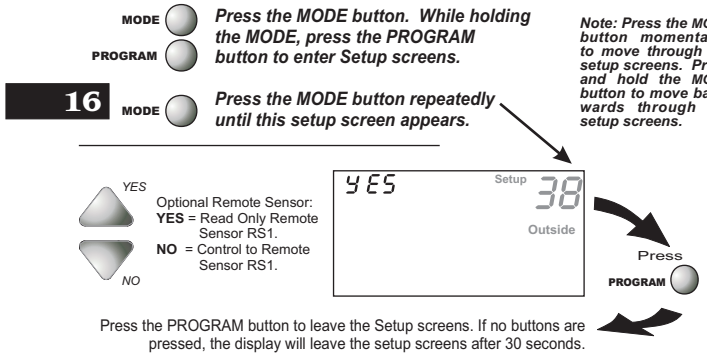
IMPORTANT: Do no use shielded wire. Do not run sensor wiring in the same conduit as the 24VAC thermostat wiring. Electrical interference may cause the sensor to give incorrect temperature readings.

Controlling or Reading the Remote Temperature (RS1)

The thermostat may be programmed to only READ the remote sensor, or to CONTROL to the remote sensor. Refer to advanced setup step #38, below.

Read Only Sensor (RS1): If step #38 is set to only READ to the remote sensor, the thermostat will not use this sensor for temperature control. This sensor may be viewed by pressing the OUTDOOR° button on the thermostat and then pressing the MODE button.

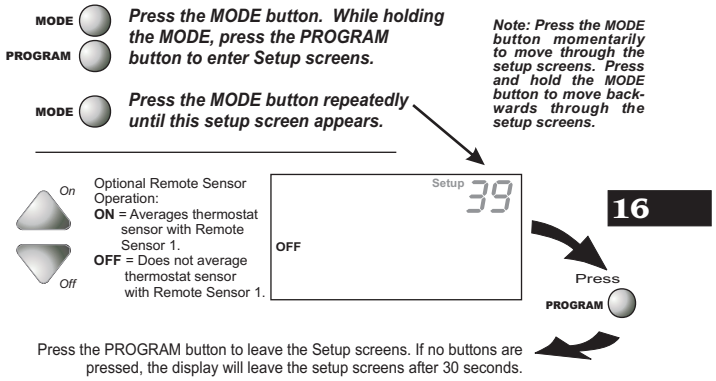
Control Sensor (RS1): If step #38 is set to CONTROL to the remote sensor, the thermostat will ignore the reading of its internal temperature sensor and only display the temperature reading from the remote sensor. The degree icon on the thermostat will blink once per second to indicate that a remote sensor reading is being displayed.



Averaging the Remote Sensor (RS1) with the Thermostat Sensor

If step #38 is set to control to the remote sensor, the thermostat will ignore the reading of its internal temperature sensor and only display the temperature reading from the remote sensor. The degree icon on the thermostat will blink once per second to indicate that a remote sensor reading is being displayed.

If step #39 is set to ON (*see below*), the thermostat will average its internal sensor with the wired temperature sensor connected to RS1. The temperature displayed will be the average of the thermostat's internal sensor and the remote (RS1) sensor.



SECTION 17
Programming the Dry Contact

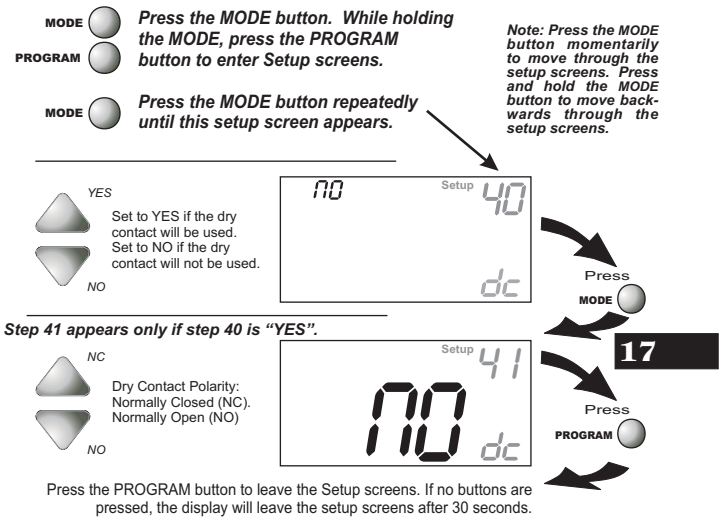
VENSTAR®

Section 17 Contents:

Dry Contact Operation

If the dry contact is going to be used, select YES in step #40. If the dry contact is not going to be used, select NO in step #40 below.

DRY CONTACT POLARITY - The terminals may be set to be Normally Open (NO) or Normally Closed (NC) in step #41. If NO is selected the dry contact will operate when it is forced closed. If NC is selected, the dry contact will operate until it is forced open.

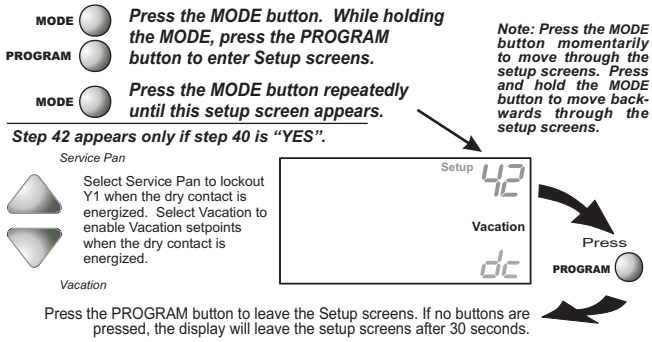


Dry Contact Programming

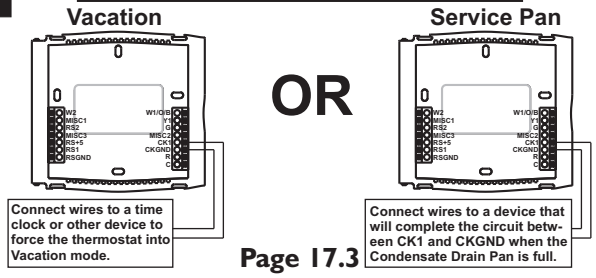
VACATION MODE OR SERVICE THE CONDENSATE DRAIN PAN -

If Vacation is selected in step #42 (*below*), when the dry contact is energized and the thermostat will be forced into Vacation mode (*Section 20*).

If Service Pan is selected, when the dry contact is energized the thermostat will lockout Y1 (compressor) and write Service Pan on the display.



NOTE: *If Service Pan is selected and the dry contact was closed at least once, the Service Pan icon will remain on the display to alert the user that a problem has occurred. This icon will be cleared once a button is pressed.*



Connect wires to a time clock or other device to force the thermostat into Vacation mode.

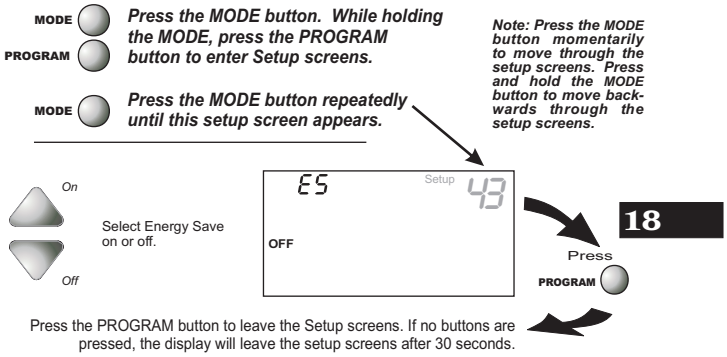
Connect wires to a device that will complete the circuit between CK1 and CKGND when the Condensate Drain Pan is full.

SECTION 18
Energy Save Operation

VENSTAR®

How to Use the Energy Save Feature

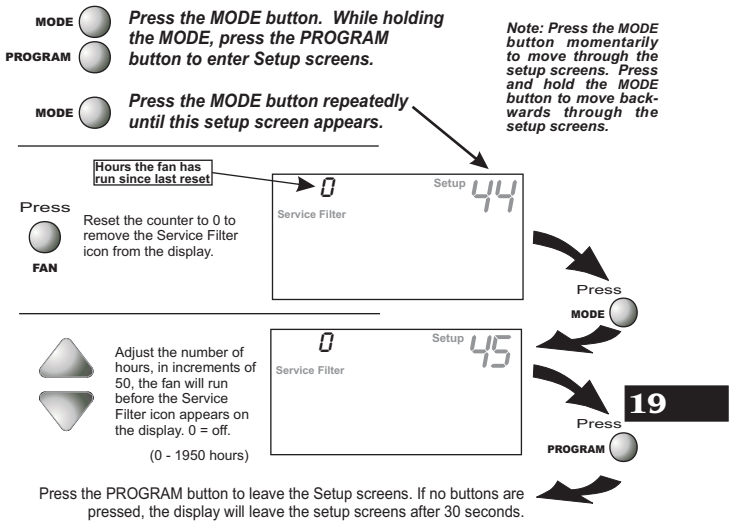
If the thermostat is configured to be programmable (*Section 4),* and Energy Save has been selected in step #43 (*below*), the room will attempt to reach the selected comfort temperature at the exact time programmed into the thermostat. Energy Save, or more commonly known as Smart Recovery, only works when the thermostat enters the Morning mode from the Night mode. For example, if the Night program is set for 11pm at 65°F heating and 85°F cooling, and the Morning program is set for 6am at 72°F heating and 75°F cooling, the thermostat will turn the system on before 6am in an effort to bring the temperature to its correct setting at exactly 6am.
The T1900 learns from experience, so please allow 4-8 days after a program change or after initial installation to give Energy Save time to adjust to local weather, the construction of your home, and your heating and cooling system.



Section 19 Contents:

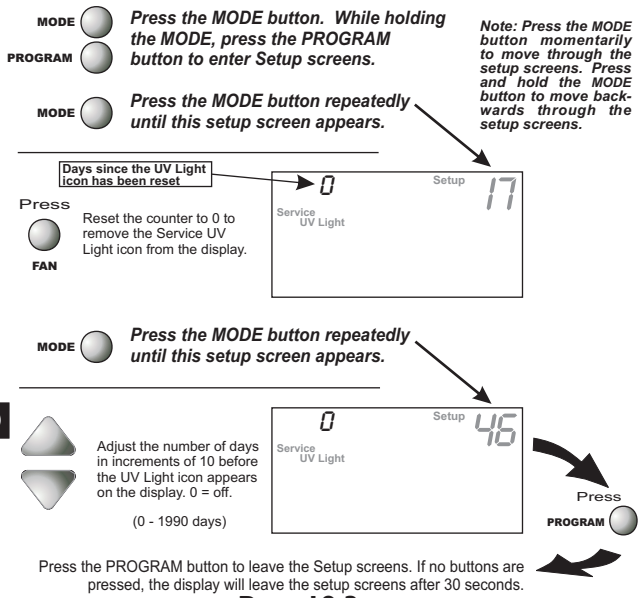
How to Set and Reset the Service Filter (Fan Run-Time) Alert

This counter keeps track of the number of hours of fan run-time whether the fan is energized in the Heating or Cooling modes, or in stand alone fan operation. The Service Filter icon will appear after the preset number of hours of fan run-time in step #45 (*below*) has been achieved. Setting this counter to zero in step #45 will prevent the Service Filter icon from ever appearing.



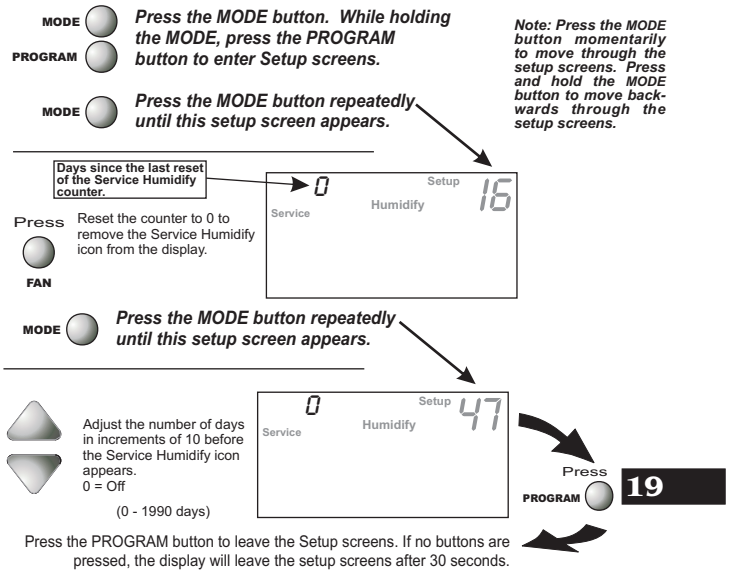
How to Set and Reset the UV Light Run-Time Alert

This counter keeps track of the number of days since the UV Light counter has been reset. The UV Light icon will appear after the number of days has been achieved, as shown in step #46 (*below*). Setting the counter to zero in Step #46 will prevent the Service UV Light icon from ever appearing.



How to Set and Reset the Humidifier Run-Time Alert

This counter keeps track of the number of days since the Service Humidify icon was last reset; this icon will appear after the number of days set in step #47 (*below*) has elapsed. Setting this counter to zero in step #47 will prevent the Service Humidify icon from ever appearing.



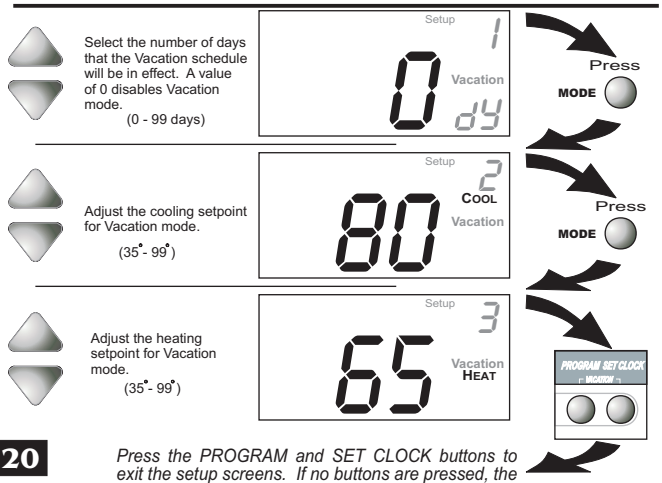
The humidifier run-time alert does not take the place of any humidifier manufacturer's recommended maintenance plan; it only serves as a helpful reminder.

SECTION 20
Programming Vacation Mode

VENSTAR®

When the thermostat is programmed for Vacation mode, it will take effect at 12:00 am of the next day.
The thermostat will control to the cooling and heating setpoints set in Vacation programming steps 2 and 3.
Vacation setpoints will be enforced for the number of days specified in step #1 (0 - 99 days).

Press the SET CLOCK button. While holding the SET CLOCK button, press the PROGRAM button to enter the Vacation programming setup steps.

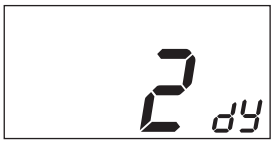


Press the PROGRAM and SET CLOCK buttons to exit the setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

You cannot set the Heat setpoint any higher than the Cool setpoint minus the deadband setting in Advanced Setup step #23 on page 14.2.

Programming Vacation Mode (continued)

VACATION DISPLAY - When the thermostat is placed into the Vacation mode, the thermostat will display the screen shown below.



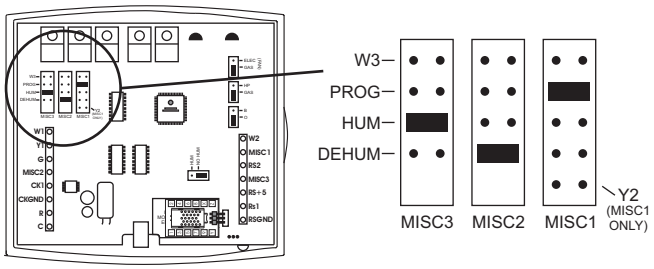
To return the thermostat to normal operation from Vacation mode, press the PROGRAM and SET CLOCK buttons and adjust the days in step #1 to zero (*see previous page*).

Press the PROGRAM and SET CLOCK buttons to return to normal operation.

Section 21 Contents:

Configuring the Jumpers

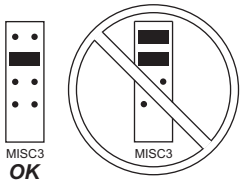
For additional flexibility, your thermostat has three configurable outputs. These outputs are designed to have different functions depending on how the jumpers are set (*below*).
Each output, labeled MISC1, MISC2, and MISC3 may be set for one of the five choices available.
In the diagram below, the MISC3 jumper has been set for HUM (humidification) operation, the MISC2 jumper has been set for DEHUM (humidification) operation, and the MISC1 jumper has been set for PROG (programmable) operation.



CAUTION

NEVER PUT MORE THAN ONE JUMPER ON THE SAME MISC JUMPER BLOCK!

DOING SO MAY DAMAGE YOUR THERMOSTAT AND VOID THE WARRANTY.



OK

Explanation of Jumper Settings

W3 JUMPER SETTING

If the jumper for MISC1, MISC2, or MISC3 is set to W3, the corresponding MISC screw terminal on the backplate will control a third stage of heat.

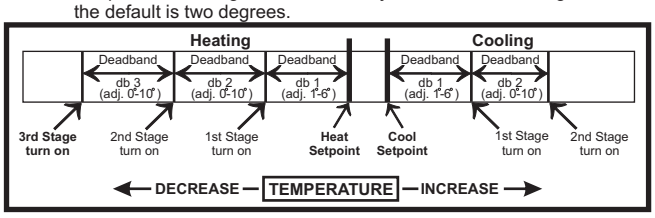
W3 MULTI-STAGE OPERATION EXPLAINED - *Page 14.4*

The **3rd Stage** of Heat is turned on when:

(A) The 1st and 2nd stages have been on for the time required (*steps 28 and 29, page 14.6).* It is adjustable from 0-60 minutes and the default is two minutes.

And

(B) The temperature from the setpoint is equal to or greater than: *the set-point plus the 1st stage deadband (step #25, 14.5), plus the 2nd stage deadband (step #26, 14.5) plus the 3rd stage deadband (step #27, 14.5).* This 3rd stage deadband is adjustable from 0-10 degrees and the default is two degrees.



PROG JUMPER SETTING

If the jumper for MISC1, MISC2, or MISC3 is set to PROG, the corresponding MISC screw terminal on the backplate will control a pilot relay or other accessory.

PROGRAMMABLE OUTPUT - SECTION 15

This jumper setting allows the MISC outputs to control a pilot relay by time, temperature, or a signal from the Internet/Phone. The following are three possible scenarios:

By **Time**: A device that requires a start and stop time. For example, an exterior lighting system that needed to be energized every day between the hours of 8pm and 1am.

By **Temperature**: An exhaust fan that needs to energize whenever the temperature from RS1 rises above 90 degrees F.

By **Remote**: Remotely arming a security system through the web or phone.

Explanation of Jumper Settings (continued)

HUM JUMPER SETTING

If the jumper for MISC1, MISC2, or MISC3 is set to HUM, the corresponding MISC screw terminal on the backplate will control a humidification system.

HUMIDIFICATION OPERATION - SECTION 9

If your HVAC unit is equipped with a humidification system the thermostat will provide power to the MISC1, MISC2, or MISC3 terminal of the thermostat when the humidity in the home falls below the humidity setpoint you have chosen. The value for this setpoint ranges from 0% to 60%. If no humidity is desired or if a humidification system has not been installed, set the value to 0%.

DEHUM JUMPER SETTING

If the jumper for MISC1, MISC2, or MISC3 is set to DEHUM, the corresponding MISC screw terminal on the backplate will be connected to the dehumidification terminal of a furnace board.
NOTE: Not all furnaces have a dehumidification terminal.

DEHUMIDIFICATION OPERATION - SECTION 10

If your HVAC unit is equipped with a dehumidification system the thermostat will operate in one of two ways.

1) **Normally Closed** (NC): The thermostat will **de-energize** the MISC1, MISC2, or MISC3 terminal of the thermostat (this MISC terminal is connected to the DEHUM terminal on your furnace) to allow the fan to run in low speed when the humidity in the home is above the dehumidify setpoint you have chosen and there is a call for 1st stage cooling.

2) **Normally Open** (NO): The thermostat will **energize** the MISC1, MISC2, or MISC3 terminal of the thermostat (this MISC terminal is connected to the DEHUM terminal on your furnace) to allow the fan to run in low speed when the humidity in the home is above the dehumidify setpoint you have chosen and there is a call for 1st stage cooling.

Explanation of Jumper Settings (continued)

Y2 JUMPER SETTING

If the jumper for MISC1 is set to Y2 the MISC1 screw terminal on the backplate will control a second stage of cooling.

Y2 OPERATION - *Page 14.4*

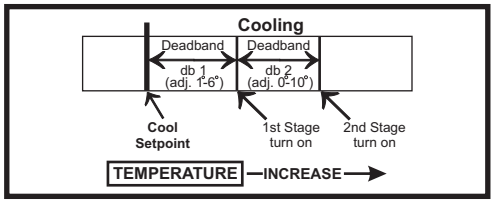
Control up to two Cool stages.

The **2nd Stage** of heat or cool is turned on when:

(**A**) The 1st Stage has been on for the time required (*step #28, page 14.6).* It is adjustable from 0-60 minutes and the default is two minutes.

And

(**B**) The temperature spread from the setpoint is equal to or greater than: *the setpoint plus the deadband (step #25, page 14.5), plus the 2nd deadband (step #26, page 14.5).* This 2nd deadband is adjustable from 0-10 degrees and the default is two degrees.



Section 22 Contents:

Resetting the Thermostat to the Factory Default Settings (for default values see page 24.1)

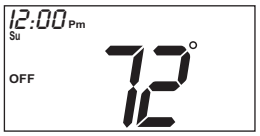
If, for any reason, you desire to return all the stored settings back to the factory default settings, follow the instructions below.

WARNING: This will reset all Time Period and Advanced Programming to the default settings. Any information entered prior to this reset may be permanently lost.

1

MODE

Place the thermostat in the OFF mode.

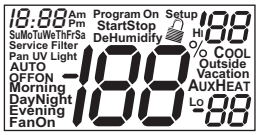


2

MODE

FAN

Press and hold the MODE button. While holding the MODE button, press and hold the FAN button for 5 seconds. All icons will appear on the display.



3

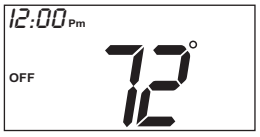
FAN

After all of the icons appear, release the MODE and FAN buttons. Then press and hold the FAN button for 5 seconds.

4

MODE

After the letters **Fd** appear on the display (Factory Default), release the FAN button. Press the MODE button **once** to return to normal operation.



Calibrating the Temperature and Humidity Sensors

Under normal circumstances it will not be necessary to adjust the calibration of the temperature and humidity sensors. If calibration is required, please contact a trained HVAC technician to correctly perform the following procedure.

1

MODE

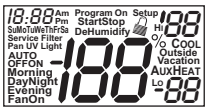
Place the thermostat in the OFF mode.

2

MODE

FAN

Press and hold the MODE button. While holding the MODE button, press and hold the FAN button for 5 seconds. All icons will appear on the display.



3

PRESS

TWICE

THERMOSTAT SENSOR

Press the UP and DOWN buttons at the same time twice. The thermostat temperature will be displayed and may be calibrated using the UP or DOWN buttons.

CALIBRATE

4

MODE

REMOTE SENSOR (RS1)

Press the MODE button once. The remote sensor temperature will be displayed and may be calibrated using the UP or DOWN buttons. If a remote sensor is not installed, only dashes will appear.

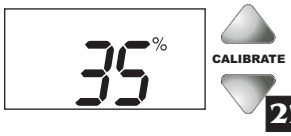
CALIBRATE

5

MODE

HUMIDITY SENSOR

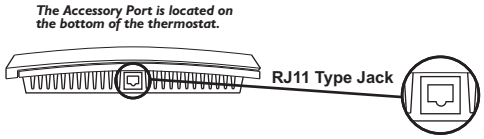
Press the MODE button once. The relative humidity at the thermostat will be displayed and may be calibrated using the UP or DOWN buttons.



CALIBRATE

After calibration is complete, press the MODE button **once** to return to normal operation.

ACCESSORY PORT - The RJ11 Jack is used to connect the T1900 to the IR Receiver (ACC0431) for wireless communication or the EZ Programmer (ACC0432) for easy downloading or uploading of thermostat information.



IR RECEIVER / REMOTE CONTROL (optional accessory) - When the IR Receiver is connected, the thermostat can be controlled using an IR Remote Control. The thermostat may also interface with other wireless systems in your home. For more information see the manual for the IR Receiver (ACC0431).

EZ PROGRAMMER (optional accessory) - When the EZ Programmer is connected, the thermostat Time Period Programming and Advanced Setup Programming can be stored into the EZ Programmer's memory. This information can then be uploaded to other T1900 thermostats. For more information see the manual for the (ACC0432).

COMFORT CALL (optional accessory) - When Comfort call is connected, the thermostat's Heating and cooling functionality may be accessed and controlled through the phone. For more information see the manual for Comfort Call (ACC0433).

SECTION 24
Advanced Setup Table

VENSTAR®

Step#	Description	Pg#	Range	Df *
1	Programmable Thermostat	4.2	Yes/No	Yes
2	Auto Changeover Thermostat	4.3	Yes/No	Yes
3	Programmable Fan	7.3	0:00-0:60	0
4	Programmable Fan Start Time	7.3	24 Hour	7am
5	Programmable Fan Stop Time	7.3	24 Hour	9pm
6	Fan Off Delay	7.4	0, 30, 60, 90	0
7	Thermoglow Backlight	8.2	Auto/On/ Off	Auto
8	F or C	8.2	F/C	F
9	Humidify with Fan	9.3	Yes/No	No
10	Cool to Dehumidify	10.4	On/Off	Off
11	Maximum Dehum Overshoot	10.4	0˚- 5˚	3˚
12	Reheat Operation	10.5	On/Off	Off
13	DEHUM Terminal Polarity	10.6	NO/NC	NC
14	Energy Watch - Heat Timer	11.2	read only	- -
15	Energy Watch - Cool Timer	11.3	read only	- -
16	Reset Service Humidify Icon	11.4	read only	- -
16	Reset UV Light Icon	11.5	read only	- -
18	Heatpump Jumper Setting	12.2	read only	- -
19	Reversing Valve Jumper Setting	12.2	read only	- -
20	Electric Heat	12.3	read only	- -
21	Dual Fuel Operation	13.2	Off/On	Off
22	Changeover Balance Point	13.2	32˚- 85˚	35˚
23	Minimum Heat/Cool Differential	14.2	0˚- 6˚	2˚
24	Cycles Per Hour	14.3	d1, d, 2-6	6
25	Deadband/Temp. Swing 1st Stage	14.5	1˚- 6˚	2˚
26	Deadband/Temp. Swing 2nd Stage	14.5	0˚- 10˚	2˚
27	Deadband/Temp. Swing 3rd Stage	14.5	0˚- 10˚	2˚
28	Minutes Between Stage 1 & 2	14.6	0-60min	2
29	Minutes Between Stage 2 & 3	14.6	0-60min	2
30	2nd Stage turn off at setpoint	14.7	On/Off	Off
31	Programmable Output	15.3	Off/Time/ Temp/Aux	Off
32	Programmable Output Polarity	15.4	NO/NC	NO
33	7 Day/1 Day Programmable Output	15.4	7Day/ 1Day	7-Day
34	Programmable Output Day of the Week	15.4	Mo - Su	Mo
35	Programmable Output Start Time	15.4	24 Hour	7am
36	Programmable Output Stop Time	15.5	24 Hour	9pm
37	Programmable Output Temp. Setpoint	15.6	35˚-125˚	80˚
38	Thermostat READ to RS1	16.3	Yes/No	Yes
39	Local Sensor Averaging	16.4	On/Off	Off
40	Dry Contact Operation	17.2	Yes/No	No
41	Dry Contact Polarity	17.2	NO/NC	NO
42	Dry Contact Programming	17.3	Vacation/ Service Pan	Vacation
43	Energy Save	18.1	Off/On	Off
44	Reset Service Filter Icon	19.2	read only	- -
45	Service Filter Run Time Set	19.2	0 - 1950	0
46	UV Light Run-Time Set	19.3	0 - 1999	0
47	Service Humidify Run-Time Set	19.4	0 - 1999	0

***Df = Factory Default Setting**

SECTION 26
Warranty

VENSTAR®

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 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 MANUFACTURER WILL NOT BE RESPONSIBLE FOR:

1. Normal maintenance as outlined in the installation and servicing instructions or owner's 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 for 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.

Programming Worksheet

see Section 6

DAY	PERIOD	START TIME	COOL	HEAT	
MONDAY	Morning				
	Day				
	Evening				
	Night				
TUESDAY	Morning				*Copy Mon → Tue*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				
WEDNESDAY	Morning				*Copy Tue → Wed*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				
THURSDAY	Morning				*Copy Wed → Thu*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				
FRIDAY	Morning				*Copy Thu → Fri*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				
SATURDAY	Morning				*Copy Fri → Sat*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				
SUNDAY	Morning				*Copy Sat → Sun*
	Day				☐ *No*
	Evening				☐ *Yes*
	Night				

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