

**VENSTAR®**

RESIDENTIAL  
THERMOSTAT  
T1900

DIGITAL  
THERMOSTAT

**7-DAY**  
PROGRAMMABLE  
UP TO 3-HEAT  
& 2-COOL



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.



**OWNER'S  
MANUAL**

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**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**

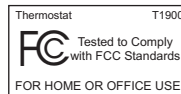
NEVER PUT MORE THAN ONE  
JUMPER ON THE SAME MISC  
JUMPER BLOCK!

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.



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.

The diagram shows a page layout for Section 14. At the top is a header bar with 'SECTION 14 Timers and Deadbands' and the 'VENSTAR' logo. Below this is a 'Section 14 Contents:' section containing a list of sub-sections with page numbers. A small '14' tab is visible on the right side of the page. Callout arrows point to the header, the list items, the side tab, and the page number 'Page 14.1' at the bottom left.

**SECTION 14**  
*Timers and Deadbands* **VENSTAR®**

**Section 14 Contents:**

- *Adjusting the Heat/Cool Differential.....14.2*
- *Adjusting the Cycles Per Hour.....14.3*
- *Adjusting the Deadband.....14.4*
- *Adjusting the Minutes of Run-Time Before the Next Stage.....14.6*
- *Selecting 2nd Stage Turn Off Temperature.....14.7*

Page 14.1

Header shows section # and title of section

Section contents

Visible section tab on the side of the page

Section and page #

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

**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*

**VENSTAR®**

<i>Getting to Know Your Thermostat</i>	<b>1</b>
<i>Quick Start</i>	<b>2</b>
<i>Setting Clock and Day</i>	<b>3</b>
<i>Basic Operation</i>	<b>4</b>
<i>Viewing Outdoor and Remote Temperature and Humidity</i>	<b>5</b>
<i>Programming the Daily Schedule</i>	<b>6</b>
<i>Programming the Fan Operation</i>	<b>7</b>
<i>Thermostat Display Options</i>	<b>8</b>
<i>Humidification</i>	<b>9</b>
<i>Dehumidification</i>	<b>10</b>
<i>Viewing Equipment Run-Times</i>	<b>11</b>
<i>Electric Heat and Heat Pump Operation</i>	<b>12</b>
<i>Dual Fuel Operation</i>	<b>13</b>
<i>Timers and Deadbands</i>	<b>14</b>
<i>Using the Programmable Output</i>	<b>15</b>
<i>Programming Remote Sensor Operation</i>	<b>16</b>
<i>Dry Contact Operation</i>	<b>17</b>
<i>Energy Save Operation</i>	<b>18</b>
<i>Programming the Run-Time Alerts</i>	<b>19</b>
<i>Programming the Vacation Mode</i>	<b>20</b>
<i>Configuring the MISC Outputs</i>	<b>21</b>
<i>Factory Defaults and Calibration</i>	<b>22</b>
<i>Accessories</i>	<b>23</b>
<i>Advanced Setup Table</i>	<b>24</b>

**SECTION 1**  
*Getting to Know Your Thermostat*

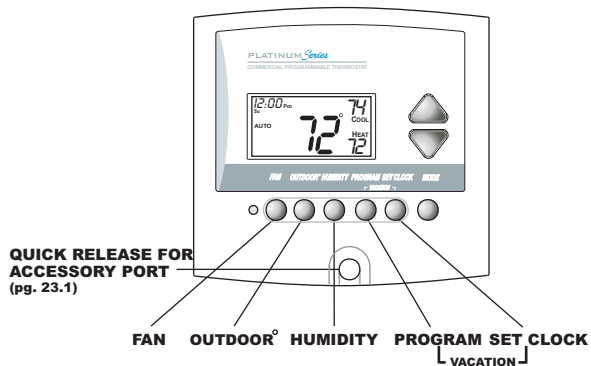
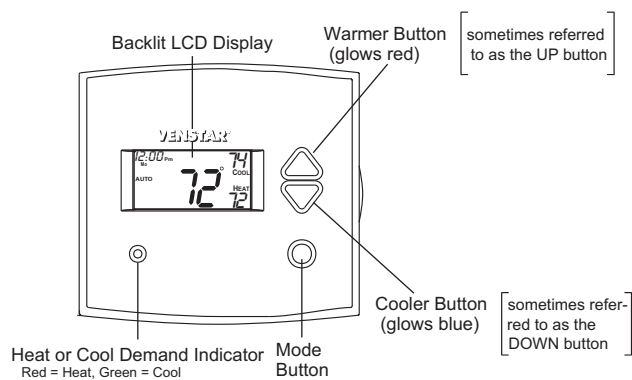
**1**

**VENSTAR®**

**Section 1 Contents:**

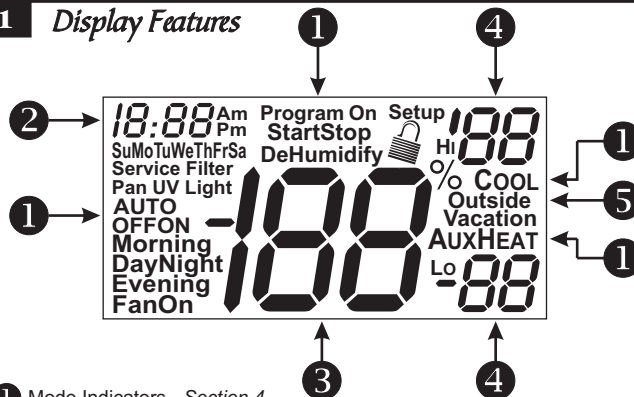
- *Front Panel Buttons*.....1.2
- *Display Features*.....1.3

*Front Panel*





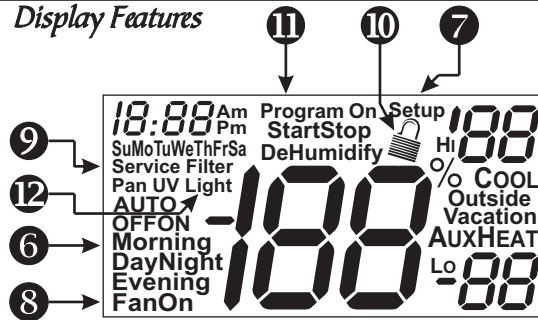
**1 Display Features**



- 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*

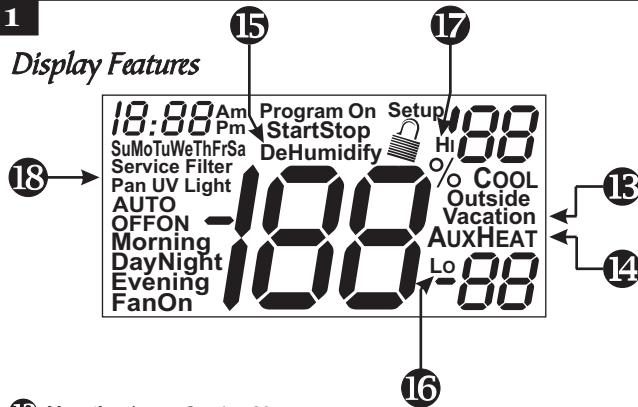
**1**



- 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.

1

Display Features

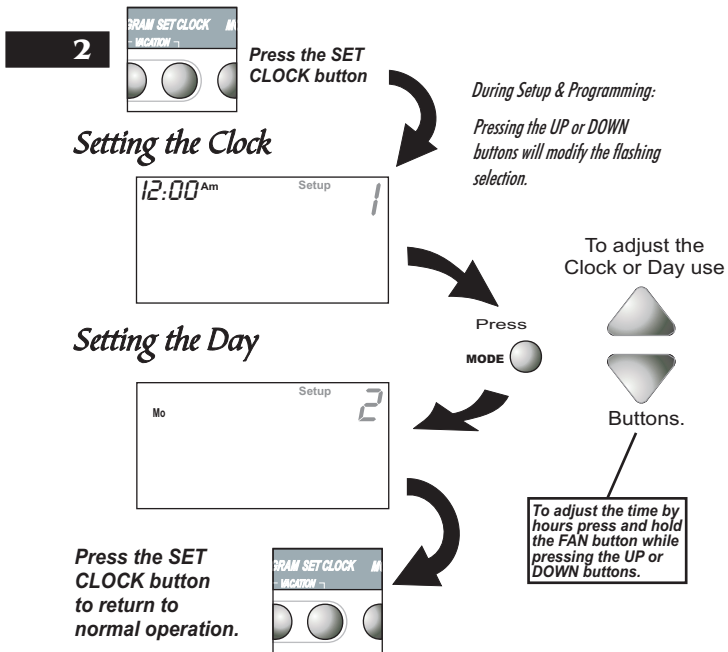


- 13** **Vacation** icon - *Section 20*  
Indicates the thermostat has Vacation setpoints in use.
- 14** **AuxHeat** icon - *Page 14.4*  
Indicates 2nd stage electric strip heat is being used when the thermostat is programmed for Heat Pump operation. Only the Aux icon will appear during Cool to Dehumidify 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:**

- ***Setting the Clock and Day.....2.2***
- ***Selecting the Heat or Cool  
Mode.....2.3***
- ***Selecting Your Desired  
Temperature.....2.4***
- ***Using the Fan Button.....2.4***

*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.*



*Selecting the Heat or Cool Mode*

**2**

**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*



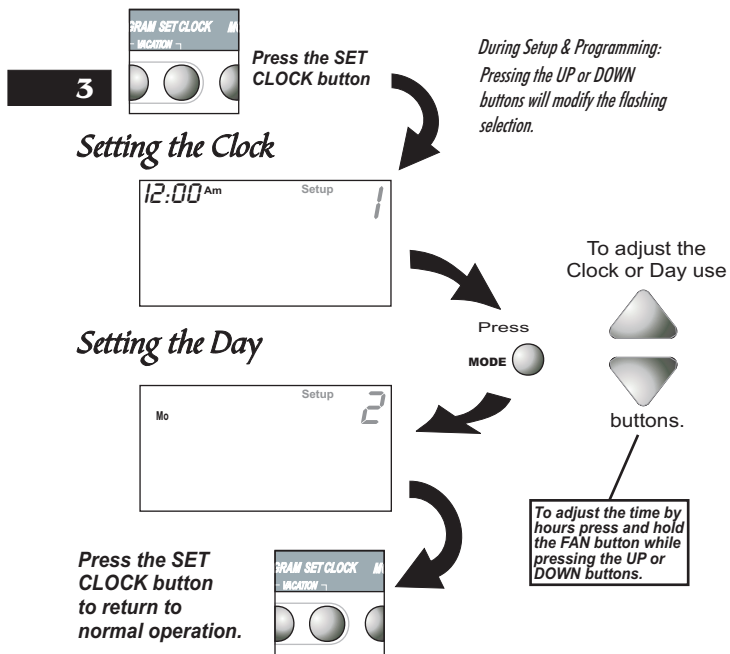
**Fan On** indicates constant fan operation. You may turn the fan on even if the thermostat is in the **Off** mode. Pressing the FAN button toggles this feature on or off.

**Section 3 Contents:**

- *Setting the Clock*.....3.2
- *Setting the Day*.....3.2

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





**Section 4 Contents:**

- *Programmable or Non-Programmable Thermostat.....4.2*
- *Manual or Auto-Changeover Thermostat.....4.3*
- *Selecting the Operating Mode....4.4*
- *Selecting Your Desired Temperature.....4.8*

**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.

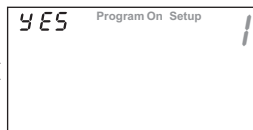
**MODE**  *Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.*

**PROGRAM** 

*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.*

**YES**  Select Yes if you would like the thermostat to be programmable or No for non-programmable.

**NO** 




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


### *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.

**4**

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.

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

**PROGRAM** 

**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.*

---


**YES**

Select Yes if you would like the thermostat to be Auto-Changeover or No for a Heat Only and Cool Only Thermostat.

**NO**

YES
Setup
2

AUTO

Press 

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

### *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**

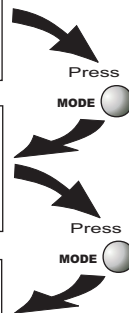
**Heating Only**  
The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.



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



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

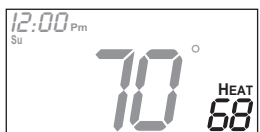


**Operating Mode when the Thermostat is Configured to be:**

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**

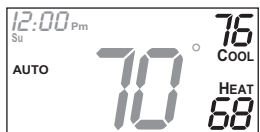
**Heating Only**  
The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.



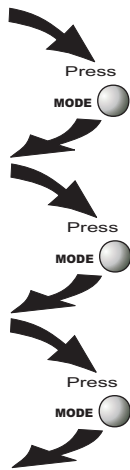
**Cooling Only**  
The **COOL** setting indicates the temperature the room has to reach before the air conditioner will turn on to cool the room.



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



**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.



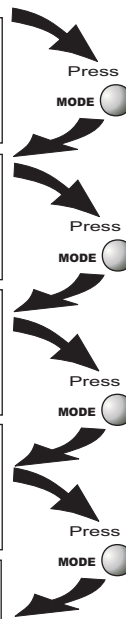
**Time Schedule for Heating Only**  
The **HEAT Program On** setting will activate the time period program for the heating setpoint ONLY (Morning, Day, Evening & Night Periods).



**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.



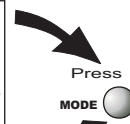
**Operating Mode when the Thermostat is Configured to be:**

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.

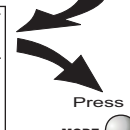
**4**

**Select the Mode by Pressing the MODE Button**

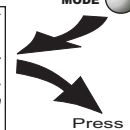
**Heating Only**  
The **HEAT** setting indicates the temperature the room has to reach before the furnace will turn on to heat the room.



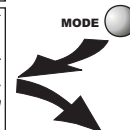
**Cooling Only**  
The **COOL** setting indicates the temperature the room has to reach before the air conditioner will turn on to cool the room.



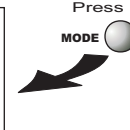
**Heating or Cooling**  
**AUTO** will automatically select heat or cool based on room temperature demand.



**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 setpoints)*

**AUTO OR PROGRAM MODE**

**4**

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**  
*Viewing the Temperature and Humidity Sensors*

**VENSTAR®**

**5**

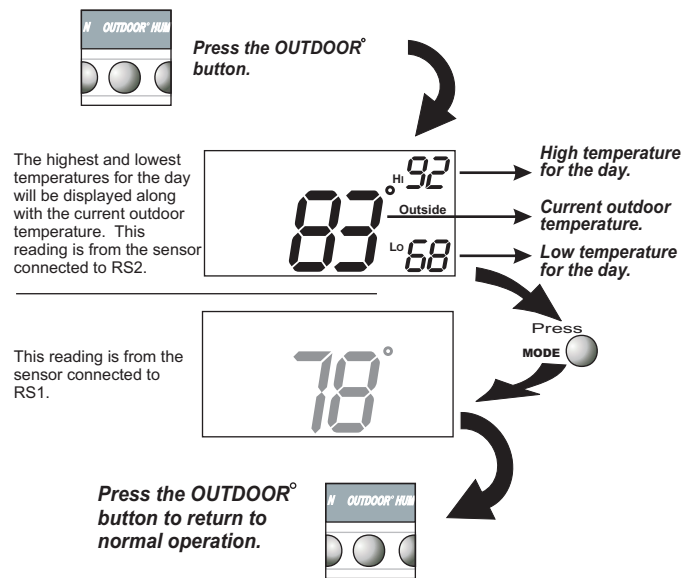
**Section 5 Contents:**

- *Viewing the Outdoor  
Temperature.....5.2*
- *Viewing the Indoor  
Humidity.....5.3*

### Viewing the Outdoor Temperature (RS2)

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<sup>®</sup> 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.

**5**




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

**5**

**HUMIDITY**  *To view the indoor humidity reading, press the HUMIDITY button*

Current Room Humidity →



**Press**  
**HUMIDITY** 

*Press the HUMIDITY button again to return the display to normal operation.*

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:**

<b>6</b>	■ <i>Programming a Daily Schedule.....</i>	<b>6.2</b>
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### Programming a Daily Schedule

Press  
**PROGRAM**

Press the **PROGRAM** button to enter time period programming.

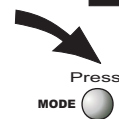
Use the Programming Worksheet on the back cover to help with this section.



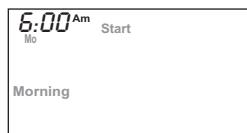
Select the day of week  
(Mo - Su)



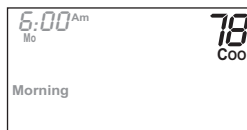
**6**



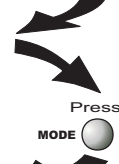
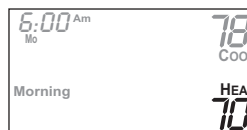
Adjust the start time  
for Morning.



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



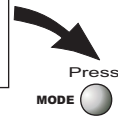
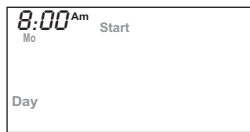
Adjust the heating  
setpoint for Morning.  
(35° - 99°)



Continued



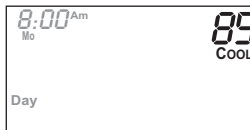
Adjust the start time for Day.



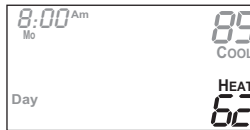
**6**



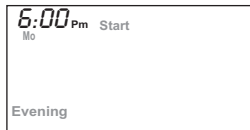
Adjust the cooling setpoint for Day. (35°- 99°)



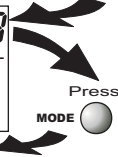
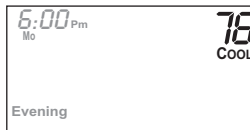
Adjust the heating setpoint for Day. (35°- 99°)



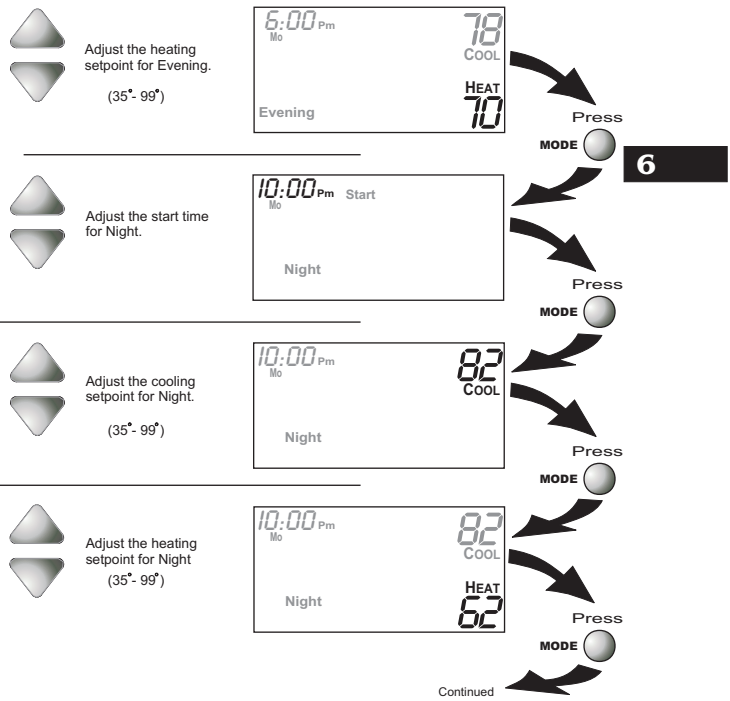
Adjust the start time for Evening.



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

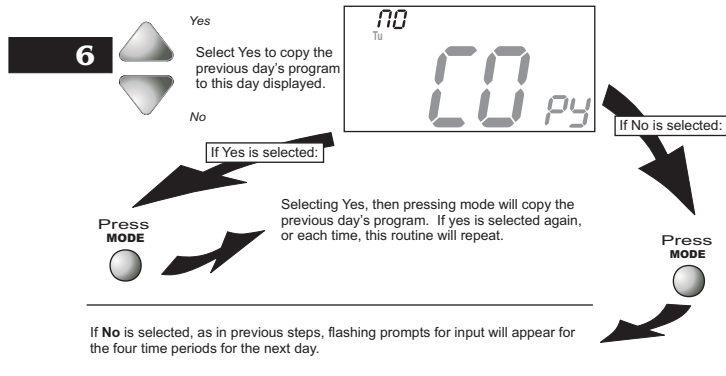


Continued





The copy command becomes available after programming the entire previous 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**  
*Programming the Fan Operation*

**VENSTAR®**

**Section 7 Contents:**

**7**

- *Using the Fan Button.....7.2*
- *Programming the Fan.....7.3*
- *Setting the Fan-Off Time  
Delay.....7.4*

### *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.















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

**PROGRAM** 

**MODE**  *Press the MODE button repeatedly until this setup screen appears.*

7

*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.*


 Adjust the Programmable Fan timer. 0 - 60 minutes. 0:00 = off 	<div style="font-size: 1.5em; font-weight: bold;">0:00</div> <div style="font-size: 0.8em;">Setup 3</div> <div style="font-size: 0.8em; border-top: 1px solid black; padding-top: 2px;">FanOn</div>	  Press
 Adjust the Programmable Fan start time. (step 4 appears only if step 3 is not 0:00) 	<div style="font-size: 1.5em; font-weight: bold;">7:00 Am</div> <div style="font-size: 0.8em;">Start Setup 4</div> <div style="font-size: 0.8em; border-top: 1px solid black; padding-top: 2px;">FanOn</div>	  Press
 Adjust the Programmable Fan stop time. (step 5 appears only if step 3 is not 0:00) 	<div style="font-size: 1.5em; font-weight: bold;">9:00 Pm</div> <div style="font-size: 0.8em;">Stop Setup 5</div> <div style="font-size: 0.8em; border-top: 1px solid black; padding-top: 2px;">OFF</div> <div style="font-size: 0.8em; border-top: 1px solid black; padding-top: 2px;">FanOn</div>	  Press    Press

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


### 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**

**MODE**  Press the **MODE** button. While holding the **MODE**, press the **PROGRAM**

**PROGRAM** 

**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.*



Set the Fan Off Delay to 0, 30, 60, or 90 seconds.






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 8 Contents:**



- *Turning On/Off the Backlight.....8.2*
- *Programming the Thermostat to Display Temperature in Fahrenheit or Celsius.....8.2*
- *Locking/Unlocking the Keypad.....8.3*

### Turning On/Off the Backlight

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



**8**

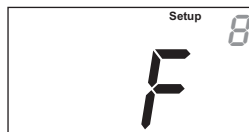
-  Select backlight operation:
- AUTO** - Light from 6pm to 6am nightly.
-  **ON** - Light continuously.
- OFF** - Light for 8 seconds after a button press.



Press 

### Programming the Thermostat to Display Temperature in Fahrenheit or Celsius


-  **C** Select thermostat operation in degrees Fahrenheit or Celsius.
-  **F**




Press 

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.



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:**

	■ <b>Configuring a Thermostat Output Jumper for Humidity Operation.....</b>	<b>9.2</b>
<b>9</b>	■ <b>Adjusting the Humidification Setpoint.....</b>	<b>9.3</b>
	■ <b>Energizing the Fan with Humidification.....</b>	<b>9.4</b>

**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.*

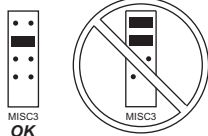
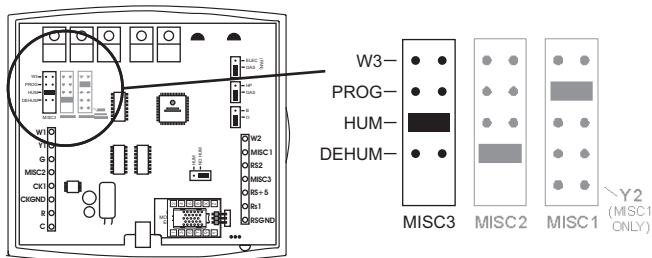
*The Humidifier Service icon is only a suggestive reminder and should not take the place of the humidifier manufacturer's required maintenance requirements and schedule.*

### 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.

**9**



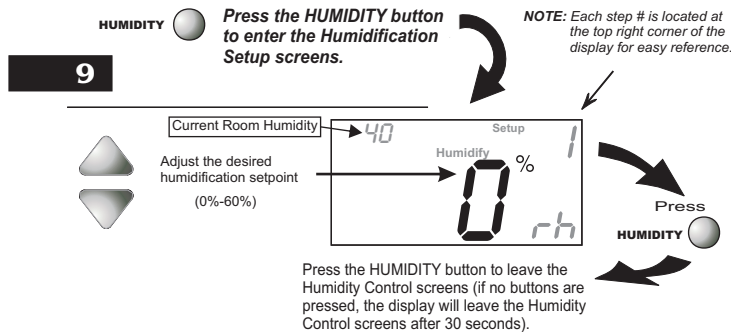
**IMPORTANT CAUTION**

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

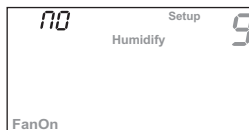
*Note: Press the MODE button momentarily to move through the setup screens. Press and hold the MODE button to move backwards through the setup screens.*

**MODE**  *Press the MODE button repeatedly until this setup screen appears.*

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



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.



**9**

Press 

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:**

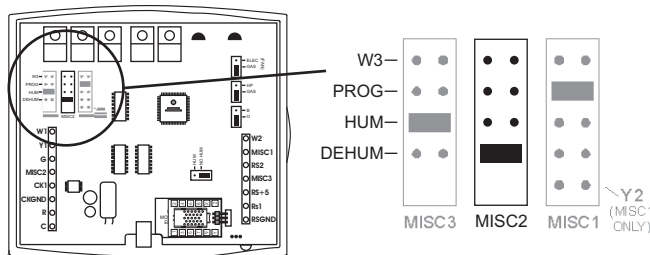
- *Configuring a Thermostat Output Jumper for Dehumidification Operation.....10.2*
- 10** ■ *Adjusting the Dehumidification Setpoint.....10.3*
- *Using Your Air Conditioner to Dehumidify.....10.4*
- *Using the Reheat Function.....10.5*
- *Using the DEHUM Terminal.....10.6*


### 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.

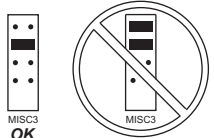
**10**



**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 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 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.

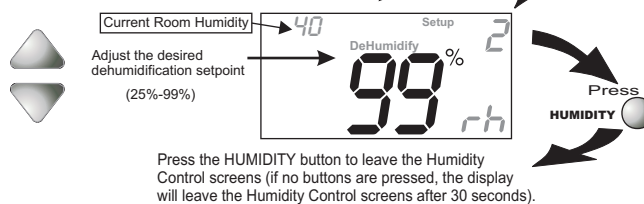
**Cool to Dehumidify:** If the thermostat is programmed for Cool to Dehumidify operation, then the thermostat will energize the cooling system any time the humidity in the home is above the setpoint you have chosen. The thermostat may also be programmed for Reheat operation if available. See pages 10.4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

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

- HUMIDITY**  **Press the HUMIDITY button to enter the Humidification Setup screens.**
- MODE**  **Press the MODE button once.**

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





**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.

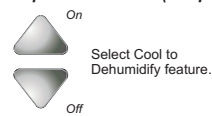
### Using Your Air Conditioner to Dehumidify

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.*

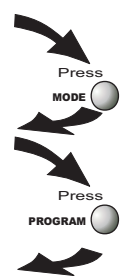
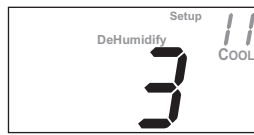
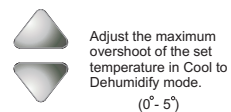
- MODE**  **Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.**
  - PROGRAM**  **Press the MODE button repeatedly until this setup screen appears.**
- Note: Press the MODE button momentarily to move through the setup screens. Press and hold the MODE button to move backwards through the setup screens.*

**10**

**Steps 10 and 11 only appear if the Dehumidification setpoint is not 99% (see page 10.3).**



**Step 11 appears only if step 10 is set to "ON"**




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

**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.


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

*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.*

**10** **MODE**  Press the **MODE** button repeatedly until this setup screen appears.

*Step 12 appears only if step 10 is set to "ON" and if the Dehumidification setpoint is not 99% (see page 10.3).*

**On**  If Reheat operation is desired during the dehumidification process select On; otherwise select Off.

**Off** 



Press 

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


**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.

**10**


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


**PROGRAM** 

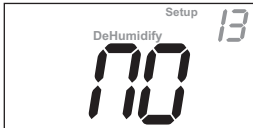
**MODE**  *Press the MODE button repeatedly until this setup screen appears.*


*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.*

---

**NC**  Normally Closed (NC) = DEHUM deenergized for low speed fan.

**NO**  Normally Open (NO) = DEHUM energized for low speed fan.



Press 

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

**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**  
*Viewing Equipment Run-Times*


**VENSTAR®**


**Section 11 Contents:**


- *Viewing the Heat  
Run-Time.....11.2*
- *Viewing the Cool  
Run-Time.....11.3*
- 11** ■ *Viewing the Humidifier  
Run-Time..... 11.4*
- *Viewing the UV Light  
Run-Time.....11.5*

### *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.


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

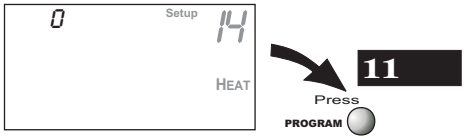
**PROGRAM** 

**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.*

**Press**  Counts the number of hours Heat has been running. Press FAN to reset the Energy Watch\* Heat counter. (0 - 1999 hrs.)

**FAN** 






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

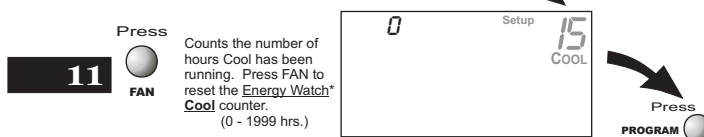
**\* Energy Watch:** This feature enables you to closely monitor your energy usage by keeping track of the number of hours your heating system has been operating.

### *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.

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





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

**\* 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*

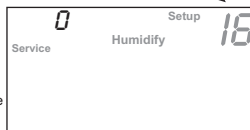
After your humidification system has been operating for the number of days set in step #16 below, the Service Humidify icon will appear. This counter keeps track of the number of days since the Service Humidify icon was reset.

**MODE**  *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.*

**Press**  **FAN**  
Counts the number of days the humidifier has been running. Press FAN to reset the Service Humidify counter and remove the icon from the display.




**11**


**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.

### *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.

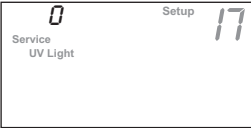
**MODE**  *Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.*


**PROGRAM** 

**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.

**11**  Counts the number of days since the UV Light was last reset. Press FAN to reset the Service UV Light counter and remove the icon from the display.

 The display screen shows "Service UV Light" with a "0" on the left and "Setup 17" on the right.

**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 12**  
*Electric Heat and Heat Pump Operation*

**VENSTAR®**


**Section 12 Contents:**

- *Viewing the Heat Pump and Reversing Valve Jumper Setting.....12.2*
- *Viewing the Electric Heat Jumper Setting.....12.3*
- *Using Emergency Heat.....12.4* **12**



### *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).

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


**PROGRAM** 

**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.*

**12**  **ON** = Heat Pump operation  
**OFF** = Gas Electric operation



 Indicates that the thermostat jumper is set for an **O** reversing valve (energize in cooling) or a **b** reversing valve (energize in heating).





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

### *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*).

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

**PROGRAM** 

**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.*

**12**



**ON** indicates that the thermostat jumper is set for Electric Heat operation, or **OFF** for Gas/Electric or Heat Pump operation.

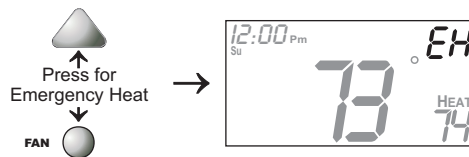


Press 

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

### *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.

## **SECTION 13** *Dual Fuel Operation*

**VENSTAR®**

### *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*).

**13**

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.



### Programming the Thermostat to Operate a Dual Fuel System

**MODE**  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.*



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

On  
 Select Dual Fuel operation\*, (On), or normal operation\*, (Off).  
 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 Dual Fuel Heat Pump with Balance Point. Outdoor Temp > Balance Point. BP = ON HP = ON	1st	RVR			•	•
	2nd	RVR	•		•	•
	3rd	RVR	•		•	•
DF = ON Dual Fuel Heat Pump with Balance Point. Outdoor Temp < Balance Point. BP = ON HP = ON	1st			•	•	
	2nd			•	•	
	3rd			•	•	
DF = ON Dual Fuel Heat Pump with no Outdoor Sensor (Outdoor Sensor has failed). BP = N/A HP = ON	1st			•	•	
	2nd			•	•	
	3rd			•	•	
DF = ON Dual Fuel Heat Pump with Balance Point set to 'OF'. BP = OFF HP = ON	1st			•	•	
	2nd			•	•	
	3rd			•	•	
DF = OFF Heat Pump with three stages of heat with Balance Point. Outdoor Temp > Balance Point. BP = ON HP = ON	1st	RVR			•	•
	2nd	RVR	•		•	•
	3rd	RVR	•		•	•
DF = OFF Heat Pump with three stages of heat with Balance Point. Outdoor Temp < Balance Point. BP = ON HP = ON	1st	RVR			•	•
	2nd	RVR	•		•	•
	3rd	RVR	•		•	•
DF = N/A Non-Heat Pumps. Dual Fuel and Balance Point options are unavailable. BP = N/A HP = OFF	1st				ELEC/GAS	
	2nd				ELEC/GAS	
	3rd				ELEC/GAS	

**13**

\*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:**

- *Adjusting the Heat/Cool Differential.....14.2*
- *Adjusting the Cycles Per Hour.....14.3*
- *Adjusting the Deadband.....14.4*
- *Adjusting the Minutes of Run-Time Before the Next Stage.....14.6*
- *Selecting 2nd Stage Turn Off Temperature.....14.7*

**14**

### *Adjusting the Heat/Cool Differential*

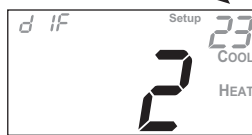
The Heat and Cool setpoints will not be allowed to come any closer to each other than the value in this step. This minimum difference is enforced during Auto Changeover operation.

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



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



Press 




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


**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.

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




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



Setup 24

**6** CY



Press

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

### *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.

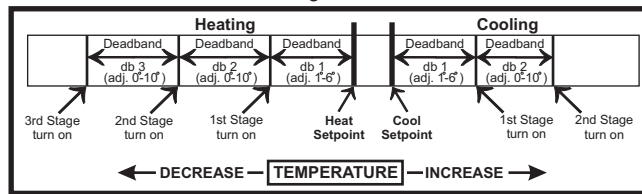
The **3rd Stage** of Heat is turned on when:

(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.


**14**





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.

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

**PROGRAM** 


**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.*


 Adjust the deadband for the 1st stage.  
(1° - 6°)



**14**

 Adjust the deadband for the 2nd stage.  
(0° - 10°)




 Adjust the deadband for the 3rd stage.  
(0° - 10°)




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

### *Adjusting the Minutes of Run-Time Before the Next Stage*


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

**MODE**  Press the **MODE** button. While holding the **MODE**, press the **PROGRAM**


**PROGRAM**  button to enter Setup screens.

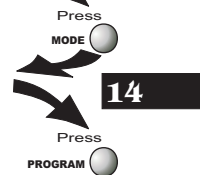
*Note: Press the **MODE** button momentarily to move through the setup screens. Press and hold the **MODE** button to move backwards through the setup screens.*

**MODE**  Press the **MODE** button repeatedly until this setup screen appears.

 Adjust the amount of time stage 1 must be on before stage 2 turns on.  
(0 - 60 min.)



 Adjust the amount of time stage 2 must be on before stage 3 turns on.  
(0 - 60 min.)






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

### 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).

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

**14**


**On**  Select On or Off:  
**On** - 2nd stage will remain on until setpoint is reached.

**Off**  **Off** - 2nd stage will turn off after reaching 1st stage deadband.

Setup 30

2nd

OFF

Press 

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 15**  
*Using the Programmable Output*

**VENSTAR®**

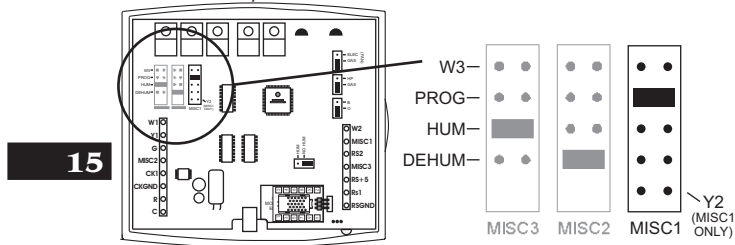
**Section 15 Contents:**

- *Configuring a Thermostat Output Jumper for Programmable Output Operation.....15.2*
- *Time-Based Control of the Programmable Output.....15.3*
- *Temperature-Based Control of the Programmable Output.....15.6*
- *Internet/Phone Control of the Programmable Output.....15.7*

### Setting a Thermostat Jumper for Programmable Output Operation

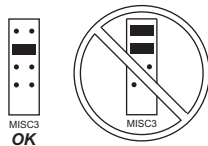
To control one of the MISC outputs using time, temperature, or Internet/phone based operation, place the MISC1, or MISC2, or MISC3 jumper on the terminal labeled PROG (see diagram below). This extra output will supply 24VAC to the selected MISC terminal based on the programming described in the following 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**

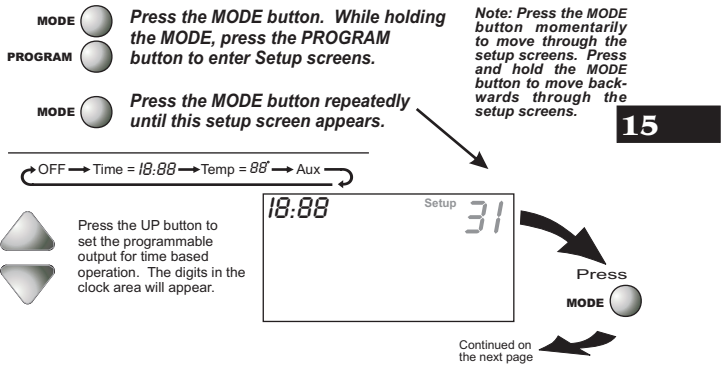


### *Time-Based Control of the Programmable Output*

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:

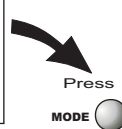
- 1) An exterior lighting system that needs to be energized every day between the hours of 8pm and 1am.
- 2) A sprinkler system that needs to be energized every day between the hours of 2am and 4am.





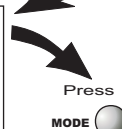


### Time-Based Control of the Programmable Output

 NC Programmable Output Polarity:  
 NC = Normally Closed to turn off  
 between the start and stop times  
 in steps 35 and 36.  
 NO = Normally Open to operate  
 between the start and stop times  
 in steps 35 and 36.

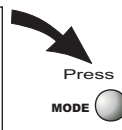
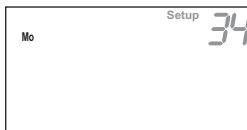




 7-Day Select 7-Day or 1-Day  
 Programming:  
 7-Day = Different program  
 for each day.  
 1-Day = Same program  
 every day.

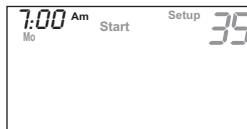


*If Step 33 is set for 1-Day, then Day of the Week and Copy functions do not appear or apply.*

**15**  Select the day of  
 the week  

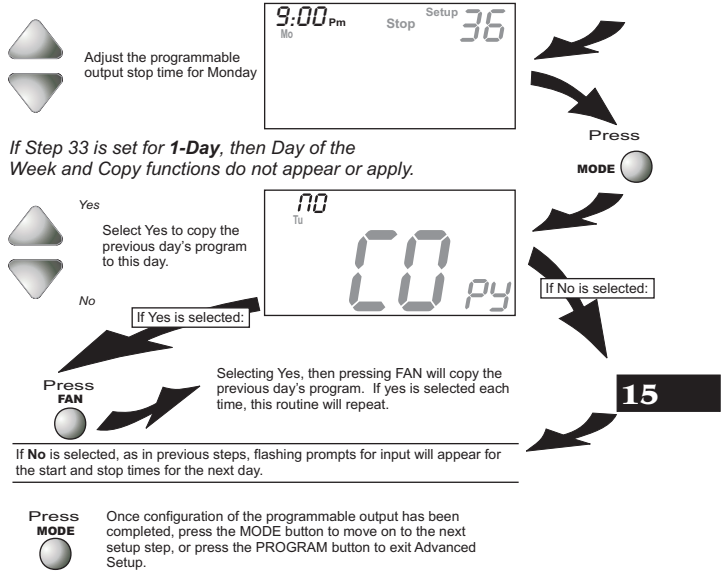



 Adjust the program-  
 mable output start time  
 for Monday.  
 (24 Hours)



Continued on the next page

*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.

- MODE**  Press the **MODE** button. While holding the **MODE**, press the **PROGRAM** button to enter Setup screens.
- PROGRAM**  *(This button is used during the MODE button hold to enter the 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.*

OFF → Time = 18:88 → Temp = 88° → Aux →

**15**



Press the UP button twice to set the programmable output for temperature-based operation. The large temperature digits will appear.



Press **MODE** 



**NC** Programmable Output Polarity:  
 NC = Normally Closed to operate when the setpoint is less than the setpoint in step #36.  
**NO** = Normally Open to operate when the setpoint is equal to or greater than the setpoint in step #36.




Press **MODE** 



Adjust the programmable output setpoint.  
 (35°-125°)



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.

### *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.

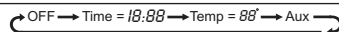
Possible **AUX** scenarios:

- 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.

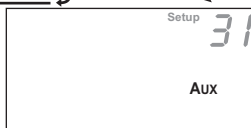
**MODE**  **Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.**

**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.*



Press the UP button three times to set the programmable output for Aux (web-based operation).



**15**

Press **MODE** 



**NC** Programmable Output Polarity:  
**NC** = Normally Closed to operate when programmed to be OFF through the phone or internet.  
**NO** = Normally Open to operate when programmed to be ON through the phone or internet.



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 16**  
*Programming Remote Sensor Operation*

**VENSTAR®**

**Section 16 Contents:**

- *Installing the Remote  
Sensors.....16.2*
- *Controlling or Reading the  
Remote Temperature (RS1)...16.3*
- *Averaging the Remote Sensor  
(RS1) with the Thermostat  
Sensor.....16.4*

### *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 not 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<sup>o</sup> 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.

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

*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.*

**16** **MODE**  *Press the MODE button repeatedly until this setup screen appears.*

-  YES
  -  NO
- Optional Remote Sensor:  
**YES** = Read Only Remote Sensor RS1.  
**NO** = Control to Remote Sensor RS1.





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


### *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.


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


**PROGRAM** 

**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.*

---

 *On*

 *Off*

Optional Remote Sensor Operation:


**ON** = Averages thermostat sensor with Remote Sensor 1.

**OFF** = Does not average thermostat sensor with Remote Sensor 1.

Setup 39

OFF

**16**

Press 

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 17**  
*Programming the Dry Contact*

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**Section 17 Contents:**


- *Dry Contact Operation..... 17.2*
- *Dry Contact Polarity.....17.2*
- *Dry Contact Programming.....17.3*

### 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.

**MODE**  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.*

**YES**  
 Set to YES if the dry contact will be used.  
 Set to NO if the dry contact will not be used.  
**NO**



Press **MODE** 

**Step 41 appears only if step 40 is "YES".**

**NC**  
 Dry Contact Polarity: Normally Closed (NC).  
 Normally Open (NO)  
**NO**




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.

### 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.

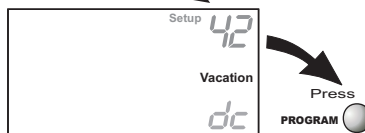
**MODE**  **Press the MODE button. While holding the MODE, press the PROGRAM button to enter Setup screens.**


**PROGRAM**  **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 42 appears only if step 40 is "YES".**

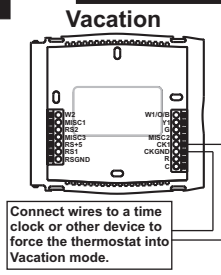
**Service Pan**  
 Select Service Pan to lockout Y1 when the dry contact is energized. Select Vacation to enable Vacation setpoints when the dry contact is energized.



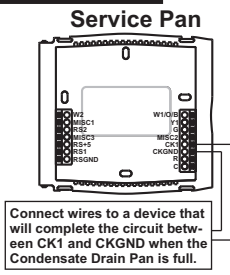
**Vacation**  
 Press the PROGRAM button to leave the Setup screens. If no buttons are pressed, the display will leave the setup screens after 30 seconds.

**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.

**17**



**OR**




## SECTION 18 Energy Save Operation


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### 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.


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

**PROGRAM** 


**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.*

 On  
Select Energy Save on or off.  
Off



**18**

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 19**  
*Programming Run-Time Alerts*

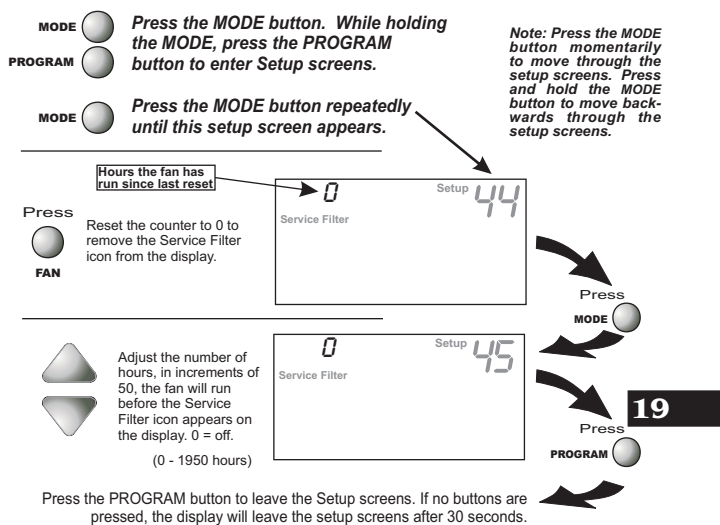
**VENSTAR®**

**Section 19 Contents:**

- *Setting and Resetting the Service Filter (Fan Run-Time) Alert.....19.2*
- *Setting and Resetting the UV Light Run-Time Alert.....19.3*
- *Setting and Resetting the Humidify Run-Time Alert.....19.4*




### *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.


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

**Days since the UV Light icon has been reset** → **0** Setup **17**

Service UV Light


**Press FAN**  Reset the counter to 0 to remove the Service UV Light icon from the display.

**MODE**  *Press the MODE button repeatedly until this setup screen appears.*

**19**  Adjust the number of days in increments of 10 before the UV Light icon appears on the display. 0 = off.  
(0 - 1990 days)

Setup **46**


Service UV Light

**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.

## 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.

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

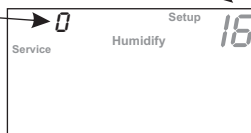
*Note: Press the **MODE** button momentarily to move through the setup screens. Press and hold the **MODE** button to move backwards through the setup screens.*

**MODE**  Press the **MODE** button repeatedly until this setup screen appears.


Days since the last reset of the Service Humidify counter.


Press  **FAN**


Reset the counter to 0 to remove the Service Humidify icon from the display.





**MODE**  Press the **MODE** button repeatedly until this setup screen appears.


 Adjust the number of days in increments of 10 before the Service Humidify icon appears. 0 = Off (0 - 1990 days)



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.

 *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.*



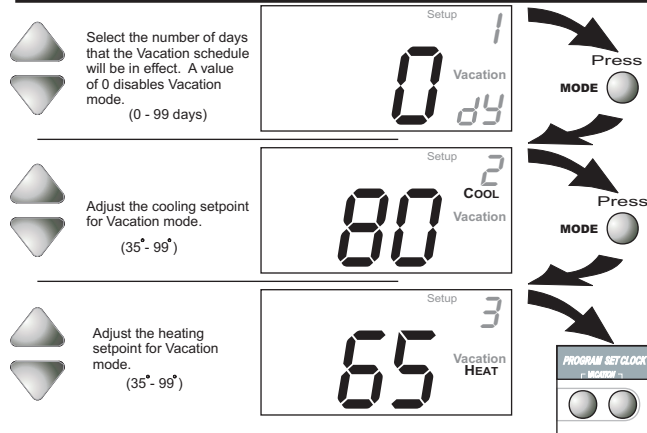
## SECTION 20 Programming Vacation Mode

**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.



**20**

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**  
*Configuring the MISC Outputs*

**VENSTAR®**

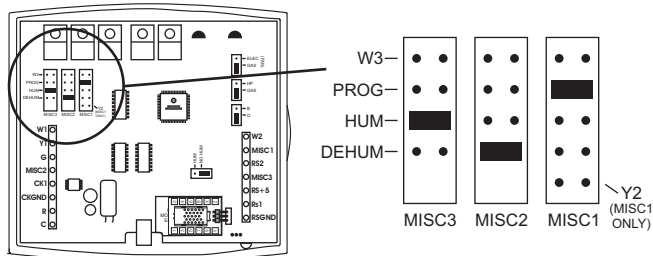
**Section 21 Contents:**

- *Configuring the Jumpers.....21.2*
- *Explanation of Jumper  
Settings.....21.3*

### Configuring the Jumpers

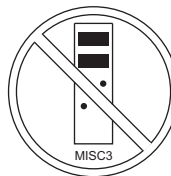
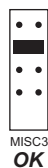
For additional flexibility, your thermostat has three configurable outputs. These outputs are designed to have different functions depending on how the jumpers are set (*below*). Each output, labeled MISC1, MISC2, and MISC3 may be set for one of the five choices available.

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.**



*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.*

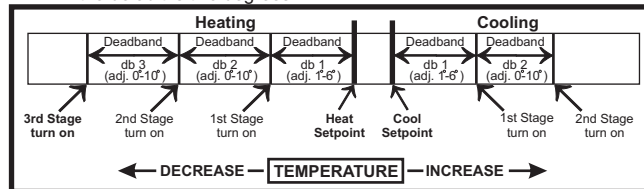
W3 MULTI-STAGE OPERATION EXPLAINED - Page 14.4

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 setpoint 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:

- 21** 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

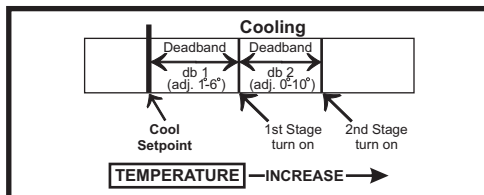
Control up to two Cool stages.

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**  
*Factory Defaults, Calibration, and Sensors*

**VENSTAR®**

**Section 22 Contents:**

- *Resetting the Thermostat to the  
Factory Default Settings.....22.2*
- *Calibrating the Temperature  
and Humidity Sensors.....22.3*




***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**  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.

**FAN** 




**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**

**22**


**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**  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.

**FAN** 






---

- 3**

**PRESS**  **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.


**TWICE**






**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.

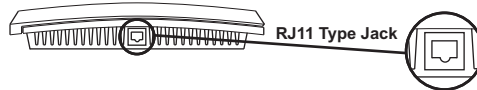
## SECTION 23

### Accessories

VENSTAR®

**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.

*The Accessory Port is located on the bottom of the thermostat.*



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

\*Df = Factory Default Setting

**SECTION 25**  
**VENSTAR** *Index*



**Accessory Port, 23.1**

**Alerts**  
 see *Run-Time*

**Auto**

adjust temperature,  
 2.4, 4.8  
 changeover, 1.3, 4.3  
 14.2, 24.1  
 differential, see  
*Differential*  
 fan, 7.2  
 icon, 1.3  
 lockout, 4.3  
 mode, 2.3

**Aux icon, 15.7**

**AuxHeat icon, 1.5**

**Average**  
 thermostat sensor,  
 16.4



**b reversing valve, 12.2**

**Balance Point, 13.1-  
 13.2, 24.1**

**Buttons**

down, 2.2, 2.4, 1.2,  
 8.3, 22.3

11.2-11.5, 12.4, 22.2  
 fan, 1.2, 2.4, 7.2,  
 front panel, 1.2  
 humidity, 1.2, 5.3,  
 9.3, 10.3  
 mode, 1.2, 2.3, 4.2,  
 8.3, 22.2  
 outdoor, 1.2, 5.2  
 program, 1.2, 4.2,  
 6.2  
 set clock, 1.2, 2.2,  
 20.1  
 up, 1.2, 2.2, 8.3,  
 12.4  
 vacation, 1.2, 20.1



**C, 8.2, 24.1**

**Calibration, 22.3**

**Celsius, 8.2, 24.1**

**Clock**

display, 1.3  
 setting, 2.2, 3.2

**Compressor Lockout,  
 14.3**

**Cool**

1st stage  
 deadband, see  
*Deadband*  
 dehum, 10.6  
 minutes of run-  
 time, 14.4, 14.6

24.1

**2nd stage**

deadband, see  
*Deadband*  
 dehum, 10.6  
 minutes of run-  
 time, 14.4, 14.6  
 21.5, 24.1  
 turn off  
 temperature,  
 14.7, 24.1  
 Y2 operation, 21.5

deadband, see  
*Deadband*

droop, see *Deadband*  
 electric/heat pump,

12.2

icon, 1.3

indicator, 1.2

mode, 2.3

overshoot, see

*Overshoot*

program, see *Program*

run-time, see *Run-Time*

setpoint, 2.3-2.4,

6.2-6.5

to dehumidify, see

*Dehumidify*

**Condensate Drain Pan,  
 1.5, 17.3**

**Copy Function**

see *Program*

**Cycles Per Hour, 14.3,  
 24.1**

**SECTION 25**  
**VENSTAR** *Index*



**Day**  
 icon, 1.4  
 programming, 6.3  
 setting, 2.2, 3.2

**Deadband**  
 balance point, 13.1  
 1st stage, 14.4-14.5, 24.1  
 2nd stage, 14.4-14.5, 21.3, 21.5, 24.1  
 3rd stage, 14.4-14.5, 21.3, 24.1

**Dehumidify**  
 Aux icon, 1.5  
 cool to, 10.4, 24.1  
 DEHUM jumper, 10.6  
 icon, 1.5  
 setpoint, 10.3

**Delay**  
 fan-off, see *Fan*  
 time between stages, see *Time Delay*

**Differential**  
 dehumidify, 10.2,  
 heat and cool, 14.2, 24.1  
 humidify, 9.2

**Disabled Keypad**  
 see *Keypad Lockout*

**Drain Pan Overflow Alarm**, see *Dry Contact*

**Dry Contact**  
 operation, 17.2, 24.1  
 polarity, 17.2, 24.1  
 service pan, 17.3  
 vacation, 17.3, 24.1

**Dual Fuel**  
 changeover balance point, 13.1-13.2  
 control two heat sources, 13.1  
 operation, 13.1, 24.1  
 output matrix, 13.3  
 outdoor sensor, 13.2



**EH, 12.4**

**Electric Heating**  
 AuxHeat icon, 1.5  
 jumper setting, 12.3  
 24.1  
 reheat, 10.5  
 W2, 10.5

**Emergency Heat, 12.4**

**Energy Save, 18.1**

**Energy Watch**  
 cool, 11.3, 24.1  
 heat, 11.2, 24.1

**EZ Programmer, 23.1**



**Factory Defaults**  
 caution, ii  
 settings, 22.2  
 resetting, 22.2

**Fahrenheit, 8.2**

**Fan**  
 button function, see *Buttons*  
 off time delay, 7.4, 24.1  
 on during heat, see *Electric Heat*  
 on icon, 1.4, 2.4, 7.2  
 program, see *Programmable Fan*  
 run-time, 19.2  
 2nd stage heat, see *Emergency Heat*  
 speed, see *Dehumidify*  
 with humidity, 9.4

**Fd, 22.2**

**Flashing Selection, 2.2**



**Gas Furnace**  
 control the fan, 12.3  
 jumper, 12.2, 13.3

**Green Indicator, 1.2**



**Heat**

- 1st stage
  - deadband, see *Deadband*
  - emergency heat, 12.4
  - minutes of run-time, 14.4, 14.6, 24.1
- 2nd stage
  - deadband, see *Deadband*
  - emergency heat, 12.4
  - electric strip heat, 2.4
  - minutes of run-time, 14.4, 14.6, 24.1
- 3rd stage
  - deadband, see *Deadband*
  - W3, 21.3
- AuxHeat icon, 1.5
- deadband, see *Deadband*
- droop, see *Deadband*
- electric/heat pump, 12.2-12.3

- icon, 1.3
- indicator, 1.2
- mode, 2.3
- program, see *Program*
- run-time, see *Run-Time*
- setpoint, 2.3-2.4, 6.2-6.4

**Heat Pump**

- AuxHeat, 1.5
- emergency heat, 12.4
- jumper setting, 12.2
- multi-stage, 13.1

**Hi**

- icon, 1.5, 5.2
- temperature, 5.2

**Humidify**

- icon, 1.5
- service, 11.4, 19.4, 24.1
- setpoint, 9.3
- with Fan, 9.4



**Internet-based Operation,**

- see *Programmable Output*

**IR Receiver, 23.1**

**IR Remote Control,**

**23.1**



**Jumpers**

- DEHUM, 21.4
- ELEC, 12.3, 13.3
- electric heat, 12.3, 13.3, 24.1
- gas electric, 12.2, 13.3, 24.1
- heat pump, 12.2, 24.1
- HUM, 9.2, 21.4
- programmable output, 15.2
- reversing valve, 12.2, 13.3, 24.1
- W3, 21.3
- Y2, 21.5



**Keypad Lockout, 1.4, 8.3**



**LCD, 1.2**

**Locked Indication**

**SECTION 25**  
**VENSTAR®** *Index*

see *Keypad Lockout*

**Lo**  
 icon, 1.5, 5.2  
 temperature, 5.2



**Manual**  
 changeover, 4.4, 4.6  
 cool, 4.3  
 heat, 4.3

**Maximum Outdoor Temperature**, see *Hi*

**Minimum Outdoor Temperature**, see *Lo*

**MISC**  
 jumper, see *Jumpers*  
 output, 21.2-21.5

**Mode**, 1.3, 2.3

**Multi-stage Operation**, 14.4



**Non-Programmable Thermostat**, 4.2, 4.4-4.5

**Normally Open/Closed**, dry contact, 17.2

programmable output, 15.4  
 dehum terminal, 10.6



**O Reversing Valve**  
 see *Reversing Valve*

**Off Mode**, 1.3, 2.3

**Outdoor**  
 button, see *Buttons*  
 icon, 1.3  
 sensor, 1.3, 5.2, 13.1-13.2, 16.3  
 viewing temperature, 5.2

**Overshoot**, 10.4, 24.1



**Pan, Service**  
 see *Dry Contact*

**Phone-based operation**  
 see *Programmable Output*

**Polarity**, see *Dry Contact*

**Program**  
 Copy, 6.5

daily schedule, 6.2-6.4  
 mode, 1.3, 4.6-4.7  
 On icon, 2.3  
 worksheet, back page

**Programmable Fan**  
 7.3, 24.1

**Programmable Output**  
 Internet/phone control, 15.7  
 jumper setting, 15.2, 21.3  
 temperature-based control, 15.6  
 time-based control, 15.3

**Programmable Thermostat**, 4.2



**Reheat**  
 during cool to dehumidify, 10.4  
 electric heating, 10.5  
 function, 10.5  
 W2, 10.5

**Remote Sensor**  
 averaging with Thermostat, 16.4  
 calibrate, 22.3  
 control to, 16.3, 24.1



**SECTION 25**  
**VENSTAR** *Index*

degree icon blink,  
 16.2-16.4  
 outdoor temperature,  
 see *Outdoor*  
 read to, 16.3  
 viewing, 5.2, 22.3

**Reset**

thermostat settings,  
 see *Factory Defaults*  
 run-time  
 fan/filter, 19.2,  
 24.1  
 humidify, 19.4,  
 UV light, 19.3,  
 24.1

**Reversing Valve, 12.2,  
 13.3**

**RS1**, see *Remote  
 Sensor*

**RS2**, see *Outdoor  
 Sensor*

**Run-Time**

resetting, see *Reset  
 setting*,  
 humidifier, 19.4,  
 24.1  
 service filter, 19.2  
 24.1  
 UV light, 19.3,  
 24.1  
 viewing,  
 cool, 11.3, 24.1  
 heat, 11.2, 24.1  
 humidification, 11.4  
 24.1

UV light, 11.5, 24.1



**Schedule**

Daily, see *Program*

**2nd stage turn off  
 temperature, 14.7, 24.1**

**Sensor**

outdoor, see *Outdoor  
 remote*, see *Remote  
 thermostat*, see  
*Thermostat*

**Service**

filter icon, see *Reset  
 humidify icon*, see  
*Reset*  
 pan icon, see *Dry  
 Contact*  
 UV light, see *Reset*

**Set Clock**, see *Clock*

**Setpoint**

balance point, 13.2  
 cool, see *Cool  
 dehumidification*,  
 10.3  
 heat, see *Heat  
 vacation*, 20.1  
 humidification, 9.3  
 programmable  
 output, 15.6

**Setup Icon, 1.4**

**Simplest Operation,  
 4.2-4.3**

**Smart Recovery**, see  
*Energy Save*



**Terminal, MISC**, see  
*MISC*

**Thermostat Sensor**  
 averaging, 16.4, 24.1  
 calibrate, 22.3

**Three Stage Heat,  
 13.3**

**Time**, see *Clock*

**Time Delay**,

compressor lockout,  
 14.3  
 cycles per hour,  
 14.3, 24.1  
 1st to 2nd stage,  
 14.6, 24.1  
 2nd to 3rd stage,  
 14.6, 24.1

**Time Schedule**, see  
*Program*



**UV Light**  
 icon, 1.4

**VENSTAR** SECTION 25 *Index*

resetting, see *Reset*  
run-time, see *Run-Time*  
setting, see *Run-Time*



**Vacation,**  
button, see *Buttons*  
mode, 20.1-20.2  
programming, 20.1-20.2  
setpoints, 20.1



**W3,** see *Jumpers*  
**Warranty, 26.1**  
**Web, 15.7**



**Y2,** see *Jumpers*

## 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
M O N D A Y	Morning			
	Day			
	Evening			
	Night			
T U E S D A Y	Morning			<i>Copy Mon → Tue</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			
W E D N E S D A Y	Morning			<i>Copy Tue → Wed</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			
T H U R S D A Y	Morning			<i>Copy Wed → Thu</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			
F R I D A Y	Morning			<i>Copy Thu → Fri</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			
S A T U R D A Y	Morning			<i>Copy Fri → Sat</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			
S U N D A Y	Morning			<i>Copy Sat → Sun</i>
	Day			<input type="checkbox"/> No
	Evening			<input type="checkbox"/> Yes
	Night			



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