



insight™

DELUXE  
PROGRAMMABLE  
THERMOSTATS

Models: 9701i  
9715i  
9720i



## User's Manual

### Menu Driven Display

Fully Programmable

24 VAC with Worry-Free  
Memory Storage

English, Spanish or  
French Display Option

110-1023



Two Year Warranty

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## IMPORTANT SAFETY INFORMATION

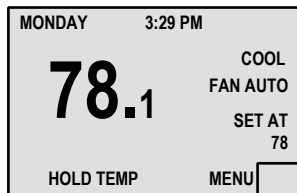
### **WARNING:**

- Always turn off power at the main power source by unscrewing fuse or switching circuit breaker to the off position before installing, removing, or cleaning this thermostat.
- Read all of the information in this manual before programming this thermostat.
- This is a 24V AC low-voltage thermostat. Do not install on voltages higher than 30V AC.
- All wiring must conform to local and national building and electrical codes and ordinances.
- Do not short (jumper) across terminals on the gas valve or at the system control to test installation. This will damage the thermostat and void the warranty.
- This thermostat is equipped with automatic compressor protection to prevent potential damage due to short cycling or extended power outages. The short cycle protection provides a 5-minute delay between heating or cooling cycles to prevent the compressor from being damaged.
- Do not switch system to cool if the temperature is below 50°F (10°C). This can damage the cooling system and may cause personal injury.
- Use this thermostat only as described in this manual.

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## How do I change the time of day and day of the week?

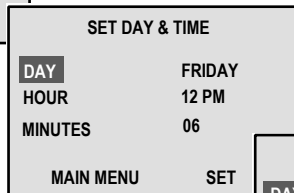


From the main screen press MENU.

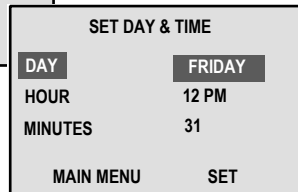


Use the UP or DOWN arrows to highlight DAY/TIME. Press SELECT.

Use the UP or DOWN arrow to highlight DAY, HOUR or MINUTES. Press SET.



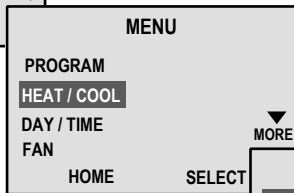
Use the UP or DOWN arrow to scroll through the days of the week, hours or minutes. Press SET to select desired value. Press MAIN MENU when complete.



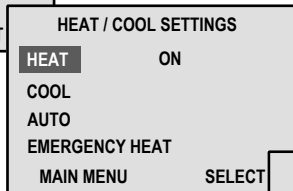
## How do I turn on the heating or cooling cycles?



From the main screen press MENU.

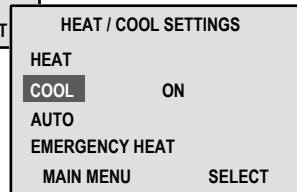


Use the UP or DOWN arrows to highlight HEAT/COOL. Press SELECT.

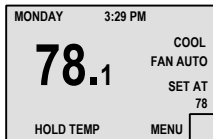


Use the UP or DOWN arrows to highlight HEAT, COOL or AUTO. Press ON/OFF. The ON/OFF button will turn on or off the desired cycle. You do not have to turn off HEAT to turn on COOL. When HEAT or COOL or AUTO is turned on, all others are automatically shut off. To return to the main screen press MAIN MENU.

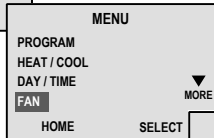
NOTE: Emergency heat is only used on the 9720i model.



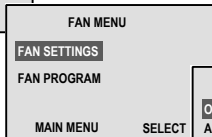
## How do I cycle the fan?



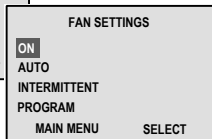
From the main screen press MENU.



Use the UP or DOWN buttons until FAN is highlighted. Press SELECT.

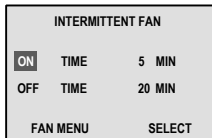


Use the UP or DOWN buttons to highlight FAN settings. Press SELECT.



Four choices are available:  
**ON** will turn the fan on continuously.  
**AUTO** will turn the fan on only when there is a call for heating or cooling.  
**INTERMITTENT** will turn the fan on for a set period of time for a given interval.  
**PROGRAM** allows events to be set as AUTO or ON.  
Highlight the choice you desire and press SELECT.

## How does INTERMITTENT FAN work?

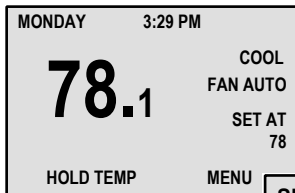


INTERMITTENT will turn the fan on for a set period of time for a given interval.

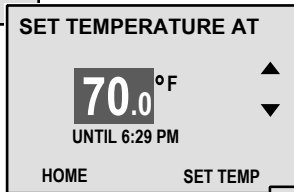
The thermostat will cycle the fan on for the set ON cycle. The fan will remain off for the set OFF cycle.

If the HVAC system runs for a longer period than the ON cycle, the OFF cycle will start counting over again when the system shuts off.

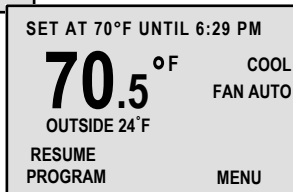
## How do I temporarily change the temperature?



From the main screen, press the UP or DOWN button. The screen will change to the following.

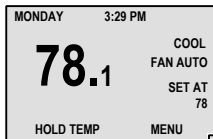


Use the UP or DOWN button to adjust to the desired temperature. This is a temporary 3-hour hold. For a longer duration see page 9.

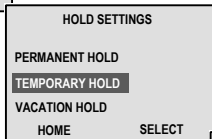


After pressing the SET TEMP button or after 5 seconds the screen will indicate the new setpoint and its duration. To return to the normal operating program mode, press RESUME PROGRAM.

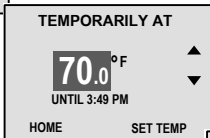
## Can I set a temporary adjustment for longer than 3 hours?



Yes you can! Press the HOLD TEMP button. The following screen appears.

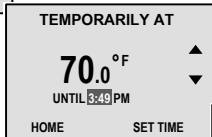


Press the DOWN button to highlight TEMPORARY HOLD. Press SELECT.

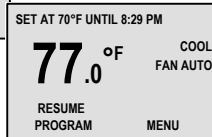


The temperature should be highlighted. Press the UP or DOWN button to adjust the temperature. Press SET TEMP.

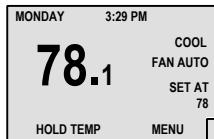
The time should be highlighted. Press the UP or DOWN button to adjust the time. Press SET TIME.



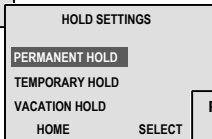
The main screen will now indicate a TEMPORARY HOLD until the desired time. Press RESUME PROGRAM to return to the program operating mode.



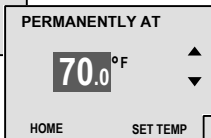
## Can I set the thermostat to hold one temperature indefinitely?



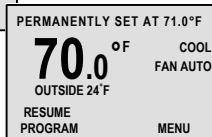
You can do that too! From the main screen press the HOLD TEMP button. The following screen appears.



The PERMANENT HOLD feature should be highlighted. If it is not, use the UP or DOWN arrow to highlight it. Press SELECT.

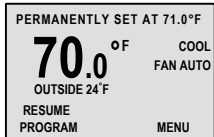


Use the UP or DOWN arrow to set the temperature to the desired level. Press SET TEMP.



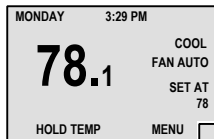
The main screen will now indicate a PERMANENT HOLD. Press RESUME PROGRAM to return to the program operating mode.

## How do I return to the Program Mode after being in HOLD?

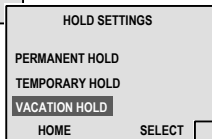


Simply press the RESUME PROGRAM button. This works from all HOLD screens.

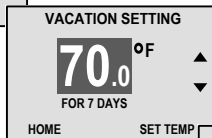
## How do I set the Vacation Mode?



Take a trip and don't worry about the temperature! From the main screen press the HOLD TEMP button. The following screen appears.

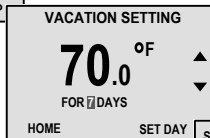


Use the UP or DOWN arrow to highlight the VACATION HOLD feature. Press SELECT.

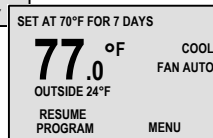


The temperature should be highlighted. Use the UP or DOWN arrow change to the desired temperature. Press SET TEMP.

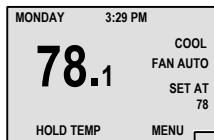
The number of days should be blinking. Use the UP or DOWN arrow to set the length of your vacation. Press SET DAY.



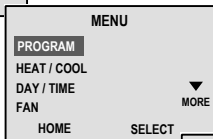
The main screen will now indicate the VACATION settings. Press RESUME PROGRAM to cancel and return to the program operating mode.



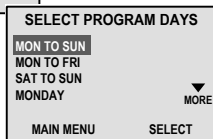
## How do I program my thermostat?



From the main screen press the MENU button.



Use the UP or DOWN button to highlight PROGRAM. Press SELECT.



You can select a variety of programming. Make your selection and press SELECT. MON-SUN allows every day to be set the same. MON-FRI allows for weekday programming while SAT-SUN will adjust weekends differently. You also can select each day of the week individually. NOTE: Even if you select MON-SUN, you still can go back and change individual days to suit your lifestyle.

MONDAY PROGRAM			
		HEAT	COOL
WAKE	06:30A	70.0	78.0
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
MAIN MENU			SELECT ▼

Use the UP or DOWN button to select the event to program. The thermostat can be selected for 2, 4, or 6 events per day. See USER SETTINGS for EVENTS PER DAY selection. After selecting the event to program, press SELECT.

Please go to the next page for a continued discussion on "How to program your thermostat."

## How do I program my thermostat? (Con't.)

MONDAY PROGRAM			
		HEAT	COOL
WAKE	06:00A	70.0	78.0
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
MAIN MENU		SET TIME ▼	

The time for the first event should be highlighted. Use the UP or DOWN key to change the time. Press SET TIME.

MONDAY PROGRAM			
		HEAT	COOL
WAKE	06:30A	70.0	78.0
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
MAIN MENU		SET HEAT ▼	

The heating setpoint for the first event will be highlighted. Use the UP or DOWN key to change the desired temperature. Press SET HEAT.

MONDAY PROGRAM			
		HEAT	COOL
WAKE	06:30A	70.0	78.0
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
MAIN MENU		SET COOL ▼	

The cooling setpoint for the first event will be highlighted. Use the UP or DOWN key to change the desired temperature. Press SET COOL.

The second event will now be highlighted. Use the UP or DOWN key to change events if desired. When the desired event is highlighted, press SELECT. Continue programming until all events are programmed.

MONDAY PROGRAM			
		HEAT	COOL
WAKE	06:30A	70.0	78.0
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
MAIN MENU		SELECT ▼	

## How do I copy one day's program to another day?

MONDAY PROGRAM ▲			
		HEAT	COOL
MORN	08:30A	62.0	85.0
EVE	04:30P	70.0	78.0
NIGHT	10:30P	62.0	82.0
<b>COPY</b>			
MAIN MENU		SELECT	

In the program screen, press the DOWN button until COPY is highlighted.

COPY MONDAY TO	
TUESDAY	YES
WEDNESDAY	
THURSDAY	
<b>FRIDAY</b>	<b>YES</b> ▼
FINISHED	YES / NO

Use the UP or DOWN button to highlight the day to copy to. Press YES / NO. A YES will appear next to the day. Do this for each day to which that program is to be copied. Press FINISHED when complete.

After pressing FINISHED, you can choose to program other days or exit. YES will take you back to the Select Program Days screen. NO will exit you to the main screen.

CONTINUE PROGRAMMING?	
NO	YES

## What is an event?

An event is a programming period. This could be the period in the morning when you are preparing for work or school. It could be the period when no one is at home. It could be the period when the household is asleep at night.

The time for an event is selected based on when you want the event to occur. For example, if you wake up at 6:30 AM, set the first event for 6:30 AM. The thermostat will automatically make sure that your home is at the desired temperature selected for that event by the time you wake.

This thermostat can be selected for 2, 4, or 6 events.

Two events should be selected if someone is home all day thereby requiring a constant temperature during the day and a different temperature at night.

Four events are the most common for working households. Event 1 (WAKE) is the morning period. Event 2 (DAY) is when everybody has left for school or work. Event 3 (EVE) is the return period, coming home from school or work. Event 4 (NIGHT) is the night period when everybody is asleep.

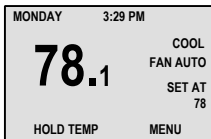
Six events can be used especially when there is activity during the day. Event 1 (WAKE) is the morning period. Event 2 (MORN) is when everybody has left for school or work. Event 3 (NOON) is the lunch period, when the kids may be home for a break. Event 4 (DAY) is the afternoon period when the house is empty. Event 5 (EVE) is the return period, coming home from school or work. Event 6 (NIGHT) is the night period when everybody is asleep.

## How do I know what program is right for me?

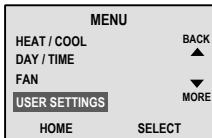
The thermostat is set up with the US EPA ENERGYSTAR® recommended times and temperatures for optimal energy savings. You can change these to suit your lifestyle.

The best rule is to examine your schedule and set the times and temperatures that best fit. This thermostat is so versatile, you can easily temporarily change temperatures or programs at a whim.

## What are the USER settings?



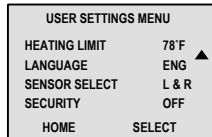
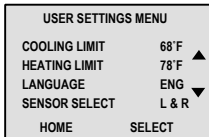
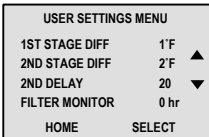
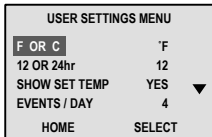
The USER SETTINGS can change the way information is displayed on the thermostat and help to optimize comfort. It's one way to truly personalize your new thermostat.



To get to the USER SETTINGS, press the MENU button from the main screen.

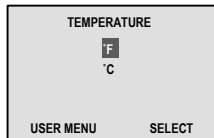
USER SETTINGS are below the FAN settings. Use the DOWN button to scroll below the screen. Press SELECT.

Choose the setting you would like to change. When the SETTING is highlighted, press SELECT. There are 13 USER SETTINGS in all as listed below. For detailed information on each user setting, please go to the next page.



## Detailed Information on the USER SETTINGS (Or what do these USER SETTINGS do?)

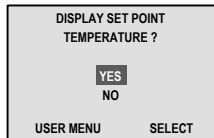
To select a USER SETTING, use the UP or DOWN button to highlight the desired value. Press SELECT to select desired value.



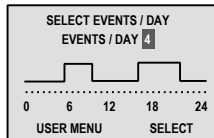
TEMPERATURE: Fahrenheit or Celsius  
Temperature will be displayed in F or C.



CLOCK SETTINGS  
Displays time in standard 12-hour format or military format.



SETPOINT TEMPERATURE  
Each event has a setpoint temperature. Choose whether to display this value or not.



NUMBER OF EVENTS PER DAY  
Select events per day. Choose from 2, 4, or 6 events per day.

## More Detailed Information on the USER SETTINGS.

DIFFERENTIAL SETTING	
1ST DIFF	1°F
2ND DIFF	2°F
2ND DELAY	20 MIN
USER MENU	SELECT

### DIFFERENTIAL SETTINGS

The temperature differential is your comfort level. A lower differential means your system may cycle with greater frequency but will control closer to desired setpoint temperature. The second stage delay is a timed delay to indicate how much time should pass before the second stage is turned on. This is an energy saving feature. To use less energy, set this higher. For greater comfort, set it lower.

FILTER SERVICE MENU	
CHANGE INTERVAL	▲
RESET	980 HR ▼
USER MENU	SELECT

### FILTER SETTINGS

This feature will alert you to needed filter changes. Press CHANGE INTERVAL. Simply set the number of hours between filter changes (see instructions on your filter for recommended intervals).

Select RESET when you've changed your filter.

SET COOLING LIMIT	
LOWEST COOLING SETTING ALLOWED	45°F
USER MENU	SELECT

SET HEATING LIMIT	
HIGHEST HEATING SETTING ALLOWED	90°F
USER MENU	SELECT

### HEATING and COOLING LIMITS

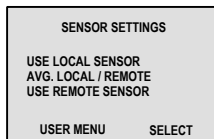
To prevent individuals (probably your kids) from adjusting the thermostat too hot or too cold, you can limit the maximum setting for the heating and cooling modes. This will help you save on energy costs.

SELECT A LANGUAGE	
ENGLISH	
ESPAÑOL	
FRANÇAIS	
USER MENU	SELECT

### LANGUAGE SETTING

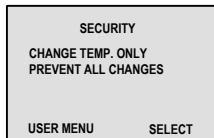
This screen allows you to choose the displayed language; English, French, or Spanish.

## More Detailed Information on the USER SETTINGS.



### SENSOR SETTINGS

This screen will appear when a remote indoor sensor (9720i) is connected to the thermostat. USE LOCAL SENSOR will disable the remote sensor and only sense from the thermostat. AVG. LOCAL/REMOTE will take a temperature reading from both the thermostat and the remote sensor and average the two for even temperature control. USE REMOTE SENSOR will disable the sensor in the thermostat and only control from the remote location.



### SECURITY SETTINGS

In order to prevent tampering with the program and your desired settings, two levels of security are available. The first will allow only temporary changes to the temperature. It protects all other programmed setpoints. The second will restrict changes to EVERYTHING, including temporary changes to the temperature.



### SECURITY CODE

In this screen you enter a four-digit code. Use the UP or DOWN button to change the first value, press OK. The second digit will be highlighted. Repeat for all four values. And don't forget your code. If you do, you will have to reset the entire thermostat and that will erase all the schedules you've programmed into the unit.

## When would I need to change the USER settings?

About the only features you may need to change are the FILTER INTERVAL (in case you get a new type of high efficiency filter), the temperature differentials (if you desire additional comfort), and the security settings. All the other settings probably will not need to be changed.

## What are the INSTALLER settings?

The INSTALLER SETTINGS are setup during the initial installation. They tell the thermostat how to function with your heating or cooling equipment. The following is a brief overview and discussion of these settings.

INSTALLER SETTINGS	
SYSTEM SETUP	GAS
RESIDUAL COOL	60
LOW BALANCE	45°F
HIGH BALANCE	95°F
HOME	SELECT ▼

INSTALLER SETTINGS ▲	
AUTOCHANGEOVER	OFF
EER	ON
DEADBAND	3°F
SECURITY	OFF
HOME	SELECT ▼

SYSTEM SETUP	
FURNACE	
HEAT PUMP	
INSTALL MENU	SELECT

### SYSTEM SETUP

Choose the system component which the thermostat will control.

1ST STAGE HEATING	
GAS / OIL	
ELECTRIC	
INSTALL MENU	SELECT

### 1st STAGE HEATING

The 9701i and the 9715i can have a gas/oil or electric first stage heating. Choose the energy source for 1st stage heating.

## INSTALLER settings (continued)

AUXILIARY HEAT	
STANDARD - COMP. =ON	
ADD ON - COMP. =OFF	
INSTALL MENU	SELECT

### AUXILIARY HEAT

The 9720i can be set to use your 2H/2C heat pump internal auxiliary heating or to use an external add-on source. The add-on feature will be used most often when a single stage heat pump uses a gas or electric furnace as its second stage of heating.

RESIDUAL COOL	
SECONDS DELAY	60
INSTALL MENU	SELECT

### RESIDUAL COOL

In order to get greater efficiency from the cooling system, the fan can be programmed to run for 0 (OFF), 30, 60, 90, or 120 seconds after the air conditioner has shut off.

BALANCE POINTS	
LOW BALANCE	45 F
HIGH BALANCE	95 F
INSTALL MENU	SELECT

### BALANCE POINTS

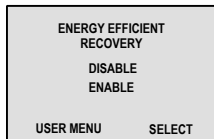
This screen will appear only when the optional outdoor sensor (9025i) is connected to the thermostat. When this sensor is used with the 9720i, you can set the lower and upper temperatures to disable or enable 2nd stage heat.

AUTO CHANGEOVER	
DISABLE	
ENABLE	
INSTALL MENU	SELECT

### AUTO CHANGEOVER

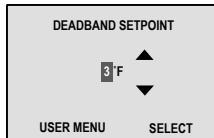
When turned on, the thermostat will switch automatically between heating and cooling to maintain the optimal temperature in your home.

## INSTALLER settings (continued)



### ENERGY EFFICIENT RECOVERY

When turned on, the thermostat will look up to two hours before the next event and anticipate when to turn on to reach the desired temperature.



### DEADBAND SETPOINT

Deadband is used with the AUTO CHANGEOVER feature. The deadband is the temperature difference from the setpoint temperature during which the heating or cooling will not be turned on. This is adjustable from 3-8°F (1.5-4°C).



### SECURITY CODE

Enter a code to prevent changes to the INSTALLER settings.

## When would I need to change the INSTALLER settings?

**NEVER!** The INSTALLER SETTINGS are selected based on the type of equipment you have in your home. This feature should be set only by a certified HVAC technician. Changing these settings could result in higher energy costs and may even damage your equipment. There is a security lock on this feature to prevent tampering. USE IT!

## **How does Energy Efficient Recovery™ (EER™) work?**

Energy Efficient Recovery™ is an energy saving feature. During a set back period (or set up in cooling), it allows the thermostat to look up to two hours ahead to determine when to turn on the heating (cooling) system. During this time period, the second stage is locked out to allow the first (and most efficient stage) to bring your home to the desired temperature.

## **How does my remote indoor sensor work?**

The remote indoor sensor (part # 9020i) can be used to improve the comfort of your home. When used in conjunction with the local sensor on the thermostat, the two sensors average the sensed temperature and control to that average temperature.

You also can use the remote sensor in a stand-alone situation when you want to control the temperature in a remote room but have the thermostat in a secure location.

## **When would I need a remote indoor sensor?**

Large rooms are ideal for remote sensors. Installing a remote sensor across from the thermostat will provide constant comfort throughout the living space.

## **How does my remote outdoor sensor work?**

The remote outdoor sensor (part # 9025i) can be used to aid in the comfort of your home or simply as a sensing device to inquire about outdoor conditions. In most applications, the thermostat will have a display of the temperature sensed by the remote outdoor sensor. With your heat pump system, the remote outdoor sensor can help determine when to turn on the second stage of heating for optimal comfort.

## **Where should I install a remote outdoor sensor?**

The remote outdoor sensor should be installed on the northern wall of your home, away from direct sunlight or other heat sources that may affect its sensitivity.

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## Who should I call for additional help?

For additional troubleshooting information, visit our web site at [www.aboutinsight.com](http://www.aboutinsight.com). To talk with a service representative, give us a call at 800-445-8299.

## What should I do if my power goes out?

Make sure your family is safe and don't worry about the thermostat. Your insight™ thermostat automatically retains the time of day for approximately two hours in the event of a power outage. All other programmed parameters are stored permanently in memory. So, if your power is out for more than two hours, simply reset the clock. See page 5.

## How do I reset the thermostat program to factory conditions?

To reset the thermostat to factory conditions, press the UP button and the LEFT button at the same time. Hold for 3 seconds. The time of day will display 12:00 indicating a reset has occurred.

**NOTE:** This will erase all programming and return the thermostat to the factory conditions including the installer settings. Use this only as a last resort.

## How do I know if the heating or cooling is on?

The display of the thermostat will indicate the operating mode, HEAT or COOL. When the temperature in your home decreases or increases, the HEATING or COOLING cycle will come on based on the displayed mode. When the HVAC system is ON, LEDs along the bottom crease will turn on.

## My energy bills are too high. Is there anything I can do?

While we can't do anything about the high cost of energy, we can try to use less energy thereby lowering our heating and cooling costs.

Generally, the best way to do this is to use the EPA ENERGYSTAR® recommended setpoints for heating and cooling.

	ENERGYSTAR® Setpoints	
	Winter	Summer
	(Heating)	(Cooling)
Morning	70°F (21°C)	78°F (25°C)
Day	62°F (17°C)	85°F (29°C)
Evening	70°F (21°C)	78°F (25°C)
Night	62°F (17°C)	82°F (28°C)

Another way to contain costs is to cycle the heat pump or air conditioner with moderation. The thermostat controls the cycle rate based on temperature differentials. By maintaining a reasonable differential setpoint, 1°F for 1st stage and 2°F for 2nd stage, your furnace will cycle with moderation.

Finally, using the remote outdoor sensor coupled with the balance point feature (see INSTALLER SETTINGS, page 21) will allow your furnace to cycle to the most efficient stage for your heating or cooling needs.

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## TWO YEAR LIMITED WARRANTY

**Invensys plc** warrants to the original contractor installer or to the original consumer user, each new Invensys plc thermostat to be free from defects in materials and workmanship under normal use and service for a period of two (2) years from the date of purchase.

This warranty does not cover batteries (if so equipped), damage caused by batteries, damage resulting from improper installation, alteration, misuse or abuse of the thermostat occurring after the date of purchase.

**Invensys plc** agrees to repair or replace at its option any thermostat under warranty provided it is returned within the warranty period, postage prepaid, with proof of the date of purchase. Cost of thermostat removal or reinstallation is not the responsibility of **Invensys plc**.

Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. This warranty and our liability does not apply to batteries on the merchandise that has been damaged caused by misuse, neglect, mishandling, alterations, improper installation, or use in a way other than in accordance with the recommendations and instructions of **Invensys plc**. Except to the extent prohibited by applicable law, any implied warranty of merchantability or fitness for a particular purpose on this product is limited to the duration of this warranty.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

### *Instructions for return:*

Pack the thermostat carefully in a well-padded carton. Be sure to include a note describing, in detail, what is wrong with the product. Return, postage prepaid, to: **Invensys plc** 515 South Promenade Ave., Corona, CA 91719, Attn: Warranty Department



**Invensys**

515 South Promenade Avenue  
Corona, CA 92879-1736

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110-1023