

Robertshaw®

9901i

9915i

9920i

DELUXE

PROGRAMMABLE

THERMOSTATS



User's Manual

Menu Driven Display

Integrated Damper /
Economizer Control

24 VAC with Worry-Free
Memory Storage

English and Spanish Menus



110-1069B

Two Year Warranty

IMPORTANT SAFETY INFORMATION

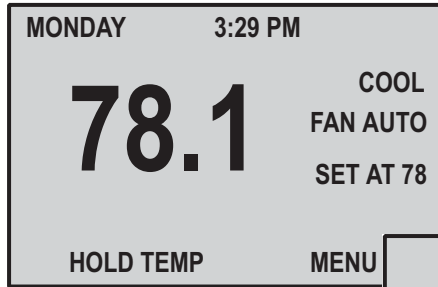
WARNING:

- 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.

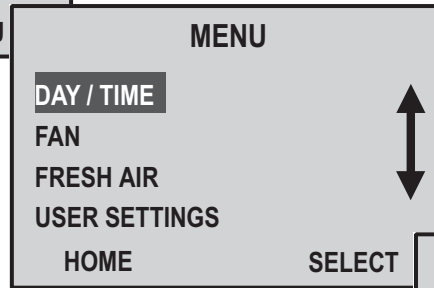
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Changing the Time of Day

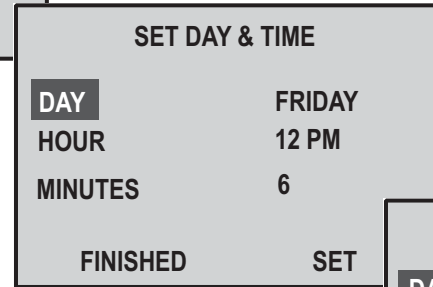


From the main screen press MENU.

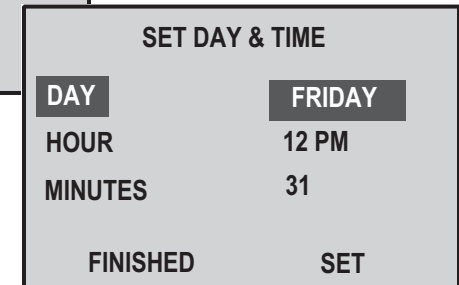


Use the UP or DOWN arrows to highlight DAY/TIME.
Press SELECT.

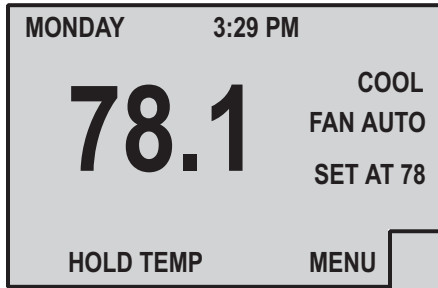
Use the UP or DOWN arrow to highlight DAY, HOUR or MINUTES. Press SET.



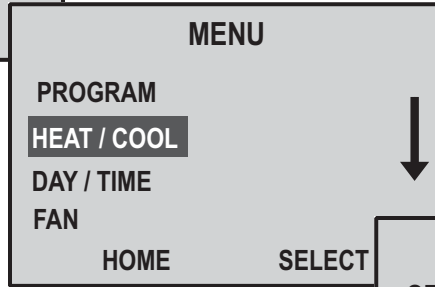
Use the UP or DOWN arrow to scroll through the days of the week, hours or minutes.
Press SET to select desired value.
Press FINISHED when complete.



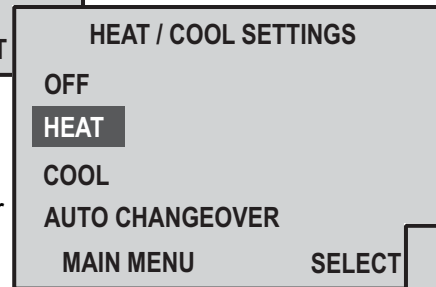
Turning on Heating and Cooling Cycles



From the main screen press MENU.



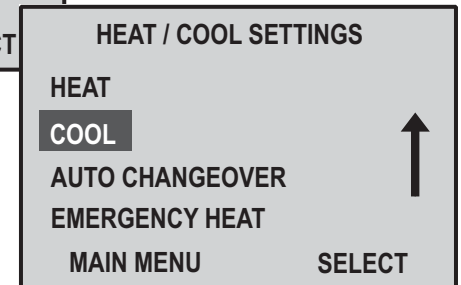
Use the UP or DOWN arrows to highlight HEAT/COOL.
Press SELECT.



Use the UP or DOWN arrows to highlight HEAT, COOL or AUTO CHANGEOVER. Press SELECT. The SELECT button will turn on the desired cycle. You do not have to turn off HEAT to turn on COOL. When HEAT or COOL or AUTO CHANGEOVER is turned on, all others are automatically shut off. After pressing the SELECT button, the main screen will automatically appear.

NOTE: Emergency Heat is used only on the 9920i model.

NOTE: AUTO CHANGEOVER appears only if Auto Changeover is turned on in the Installer Settings.



What do the LED's below the display mean?

When the LED's are on...

HEAT – The heating cycle has been activated.

FAN – The fan has been activated.

COOL – The cooling cycle has been activated.

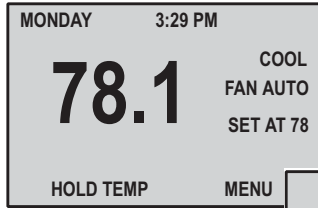
AUX – The second stage of heating or cooling has been activated.

CHECK – Indicates that the heat pump should be serviced by a qualified technician.

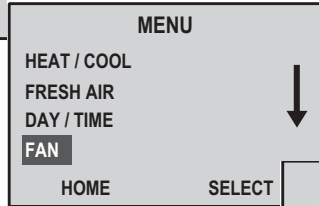
EMER – Emergency heat has been activated.

Thermostat Model	LED Names • = Model has the LED					
	HEAT	FAN	COOL	AUX	CHECK	EMER
9901i	•	•	•			
9915i	•		•	•		
9920i				•	•	•

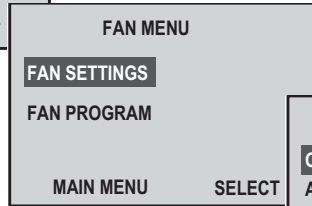
Fan Cycles



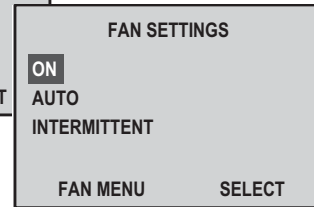
From the main screen press MENU.



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

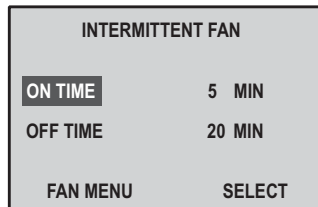


Use the UP or DOWN buttons to highlight FAN settings. Press SELECT.



Three 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. Highlight the choice you desire and press SELECT.

Intermittent Fan

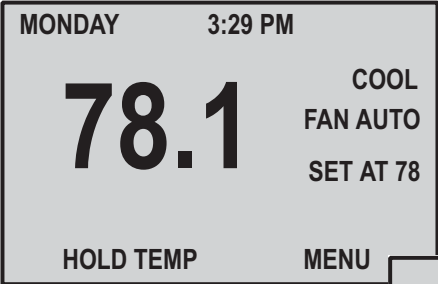


INTERMITTENT will turn the fan on for a set period of time for a given interval.

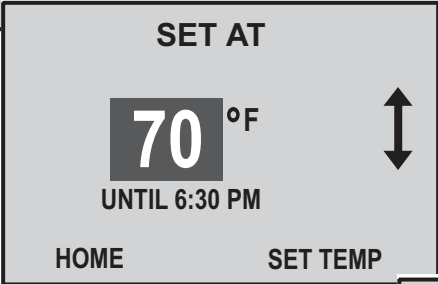
The thermostat will cycle the fan on for the set ON cycle. The fan will remain off for the set OFF cycle.

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.

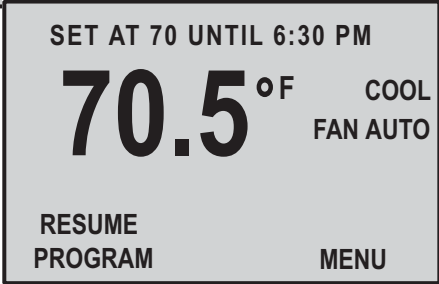
Temporary Temperature Adjustments



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

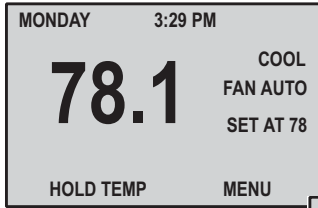


Use the UP or DOWN button to adjust to the desired temperature. This is a temporary 3-hour hold or until the next programmed event, whichever is shorter. For a longer duration see page 9.

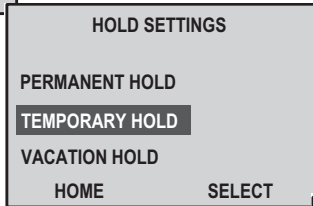


After pressing the SET TEMP button or after 5 seconds the screen will indicate the new setpoint and its duration. To return to the normal operating program mode, press RESUME PROGRAM.

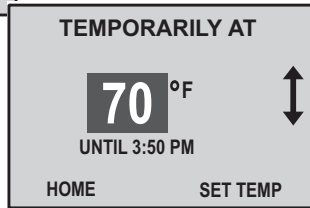
Timed Temperature Adjustments



Press the HOLD TEMP button. The following screen appears.

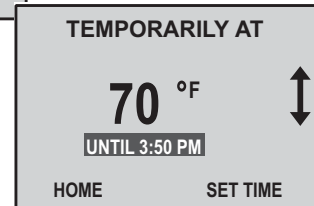


Press the DOWN button to highlight TEMPORARY HOLD. Press SELECT.

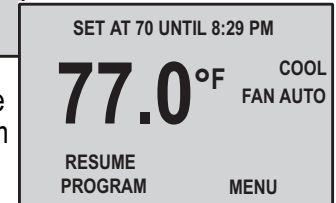


The temperature should be highlighted. Press the UP or DOWN button to adjust the temperature. Press SET TEMP.

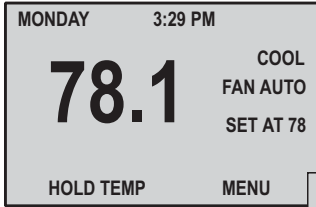
The time should be highlighted. Press the UP or DOWN button to adjust the time. Press SET TIME.



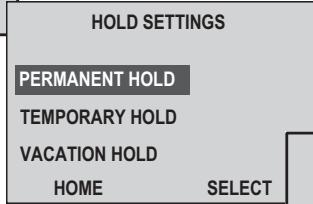
The main screen will now indicate a TEMPORARY HOLD until the desired time. Press RESUME PROGRAM to return to the program operating mode.



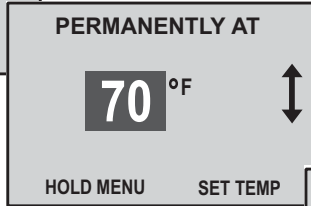
Permanent Hold



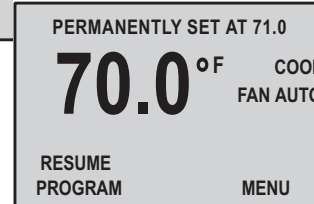
From the main screen press the HOLD TEMP button. The following screen appears.



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

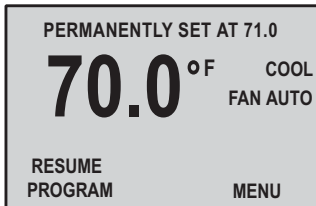


Use the UP or DOWN arrow to set the temperature to the desired level. Press SET TEMP.



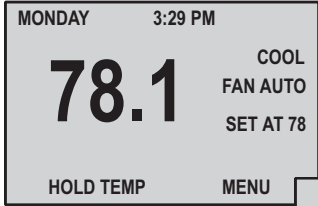
The main screen will now indicate a PERMANENT HOLD. Press RESUME PROGRAM to return to the program operating mode.

Returning to Program Mode

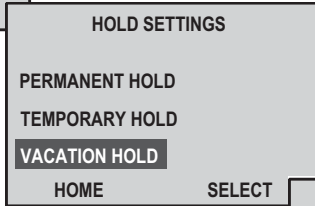


Simply press the RESUME PROGRAM button. This works from all HOLD screens.

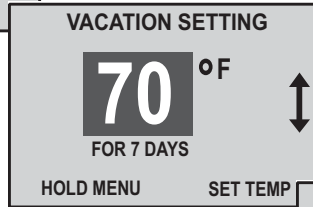
Vacation Hold



From the main screen press the HOLD TEMP button. The following screen appears.

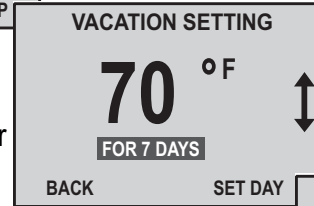


Use the UP or DOWN arrow to highlight the VACATION HOLD feature. Press SELECT.

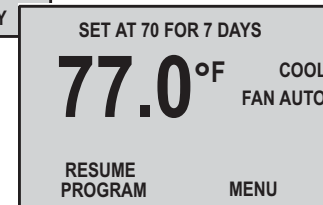


The temperature should be highlighted. Use the UP or DOWN arrow change to the desired temperature. Press SET TEMP.

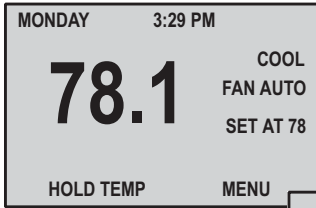
The number of days should be highlighted. Use the UP or DOWN arrow to set the length of your vacation. Press SET DAY.



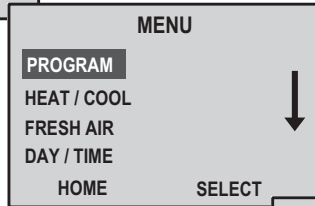
The main screen will now indicate the VACATION settings. Press RESUME PROGRAM to cancel and return to the program operating mode.



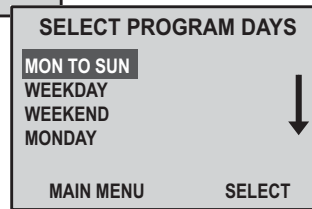
Programming



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. WEEKDAY allows for weekday programming while WEEKEND 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
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
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 programming.

Programming (Con't.)

MONDAY PROGRAM ↑			
		HEAT	COOL
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
BACK		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
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
BACK		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
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
BACK		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.

MONDAY PROGRAM ↑			
		HEAT	COOL
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
MAIN MENU		SELECT	

Copy Command

MONDAY PROGRAM 			
		HEAT	COOL
OCC	8:30AM	72	78
DUSK	5:00PM	74	76
UNOCC	6:00PM	62	82
COPY			
MAIN MENU	SELECT		

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

NOTE: Copy command will appear only if programming an individual day.

COPY MONDAY TO	
TUESDAY	YES
WEDNESDAY	
THURSDAY	
FRIDAY	YES
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

Events

An event is a programming period. This could be the period in the morning when the facility is occupied. It could be the period when no one is at work. It could be the evening.

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

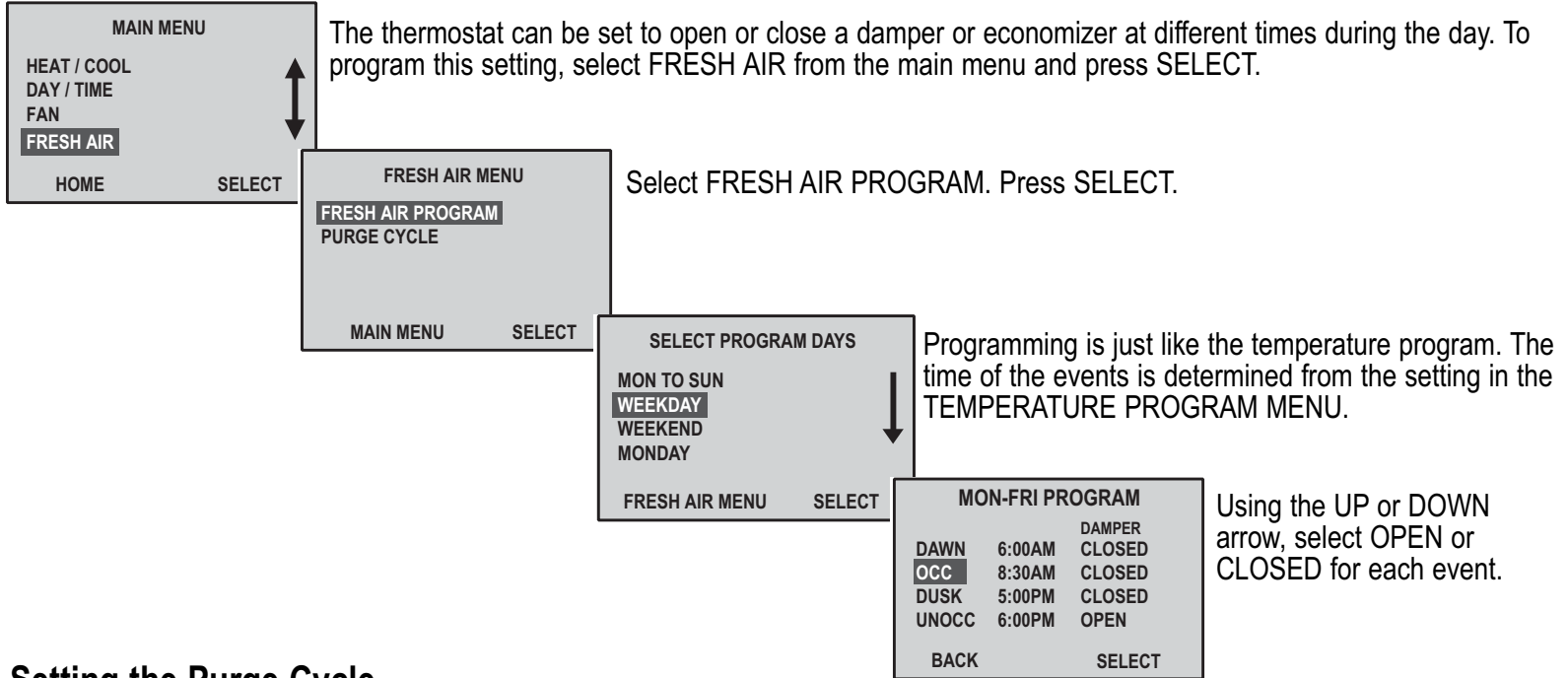
This thermostat can be selected for 2, 4, or 6 events.

Energy Saving Programs

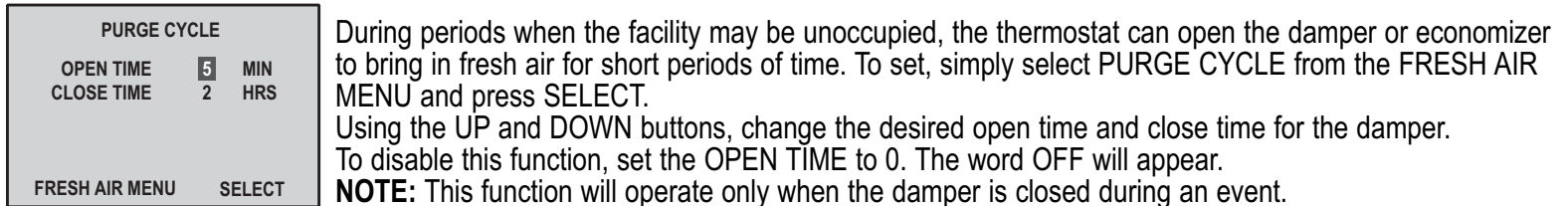
The thermostat is set with the US EPA ENERGYSTAR® recommended times and temperatures for optimal energy savings. You can change these to suit your lifestyle.

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.

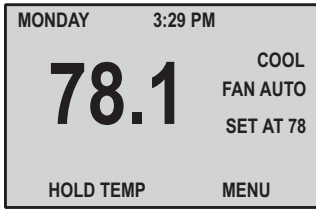
Setting the Economizer / Damper Program



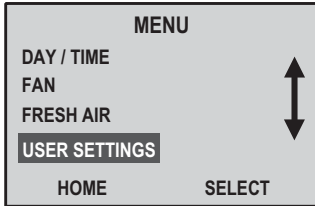
Setting the Purge Cycle



User Settings



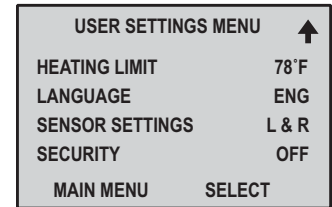
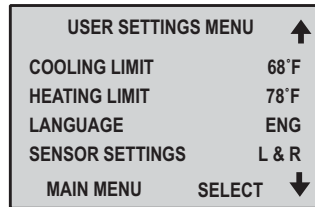
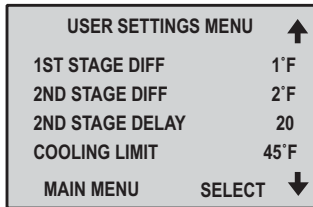
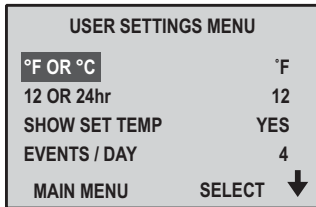
The USER SETTINGS can change the way information is displayed on the thermostat and help to optimize comfort. It's one way to truly personalize your new thermostat.



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

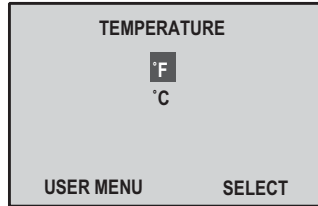
USER SETTINGS are below the FAN settings. Use the DOWN button to scroll below the screen. Press SELECT.

Choose the setting you would like to change. When the SETTING is highlighted, press SELECT. There are 12 USER SETTINGS in all as listed below. For detailed information on each user setting, please go to the next page.

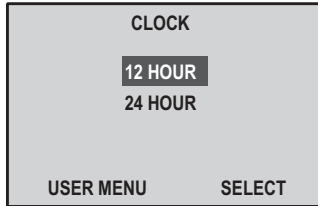


Detailed Information on the USER SETTINGS

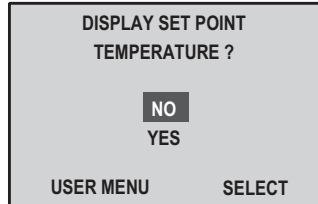
To select a USER SETTING, use the UP or DOWN button to highlight the desired value. Press SELECT to select desired value.



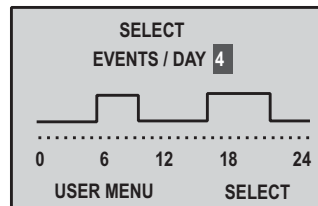
TEMPERATURE: Fahrenheit or Celsius
Temperature will be displayed in F or C.



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	1.0°F
2ND DIFF	2.0°F
2ND DELAY	20 MIN
USER MENU	SELECT

DIFFERENTIAL SETTINGS

The temperature differential is your comfort level. The differential is the difference from setpoint before your heating or cooling system will turn on. The 9915i and 9920i models also have 2nd stage differential. If the temperature falls below (or above for cooling) the setpoint by the 1st stage differential plus the 2nd stage, the auxiliary heating (or cooling) system will turn on.

The 2nd stage delay is a timed delay before the second stage will turn on if the setpoint has not been achieved within that time frame.

SENSOR SETTINGS	
USE LOCAL SENSOR	
AVG. LOCAL / REMOTE	
USE REMOTE SENSOR	
USER MENU	SELECT

SENSOR SETTINGS

This screen will appear when a remote indoor sensor (9020i) 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.

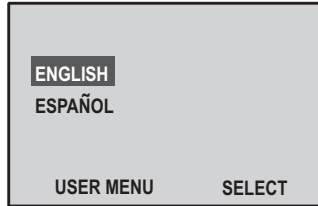
FOR USER SETTINGS	
0 0 0 0	
USER MENU	SELECT

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

COOLING and HEATING LIMITS

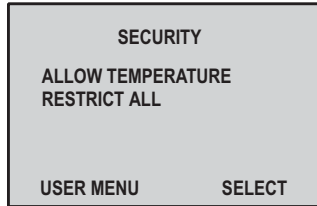
To prevent individuals from adjusting the thermostat too hot or too cold, you can limit the maximum setting for the heating and cooling modes. This will help you save on energy costs.

More Detailed Information on the USER SETTINGS



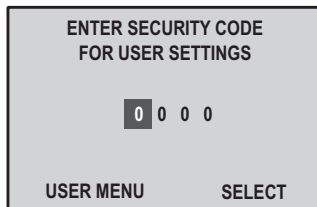
LANGUAGE SETTING

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



SECURITY SETTINGS

In order to prevent tampering with the program and 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 SELECT. 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.

Changing USER Settings

About the only features you may need to change are the temperature differentials (if you desire additional comfort), and the security settings. All the other settings probably will not need to be changed.

INSTALLER SETTINGS

The INSTALLER SETTINGS are set 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
AUTO CHANGEOVER	OFF
EER	ON
MAIN MENU	SELECT ↓

INSTALLER SETTINGS ↑	
DEADBAND	3°F
SECURITY	OFF
CONTACT INFO	3°F
SERVICE INT	
MAIN MENU	SELECT ↓

INSTALLER SETTINGS ↑	
SERVICE INT	
REMINDER	RUN
TEMP OFFSET	3.0°F
SHORT CYCLE	OFF
MAIN MENU	SELECT ↓

SYSTEM SETUP	
FURNACE	
HEAT PUMP	
INSTALL MENU	SELECT

SYSTEM SETUP
The 9901i has a furnace or heat pump system selection.

1ST STAGE HEATING	
GAS / OIL	
ELECTRIC	
INSTALL MENU	SELECT

1st STAGE HEATING
The 9915i 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 9920i 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 9920i, you can set the lower temperature (below which the heat pump will not run) and upper temperature (above which the 2nd stage heat will not run). This promotes efficient operation of the heating system.

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

DISABLE
ENABLE

INSTALL MENU SELECT

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.

AUTOCHANGE DEADBAND

3°F

INSTALL MENU SELECT

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 2-8°F (1.0-4°C).

ENTER SECURITY CODE
FOR INSTALLER
SETTINGS

0 0 0 0

INSTALL MENU SELECT

SECURITY CODE

Enter a code to prevent changes to the INSTALLER settings.

CONTACT INFORMATION

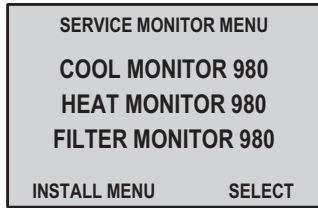
AIR EXPERTS
1-555-555-1212

BACK EDIT

CONTACT INFORMATION

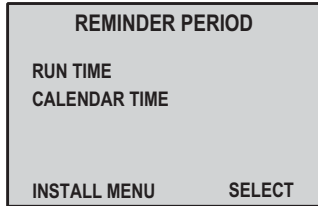
This allows the servicing HVAC contractor to put their name and phone number into the thermostat to remind you when service may be required.

INSTALLER SETTINGS (continued)



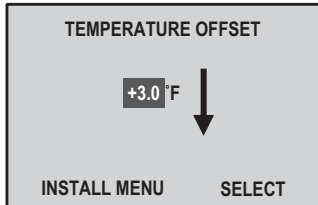
SERVICE MONITOR MENU

Two menus are available for the 9920i, the System Monitor and the Filter Monitor. Three menus are available for the 9901i and the 9915i, the Cool Monitor, the Heat Monitor and the Filter Monitor. All can be set based on the HVAC system run time or the calendar. See Reminder Interval. All selections can be set from OFF to 360 days in 30 day increments or OFF to 980 in 20 hour increments.



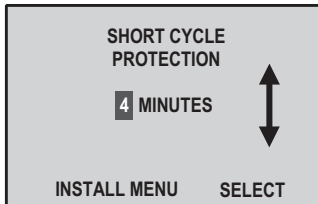
REMINDER INTERVAL

The Reminder Interval can be set for either HVAC system run time or based on the calendar. If Run Time is chosen, the service reminder will be set in hours. After the HVAC system has been operating for the selected number of hours, a Service Reminder will be displayed informing you that service is suggested for your system. If Calendar Time is chosen, the service reminders will be set in days. After the selected number of days has passed, a Service Reminder will be displayed informing you that service is suggested for your system.



TEMPERATURE OFFSET

The OFFSET or calibration feature allows the installer to recalibrate the thermostat if the displayed room temperature is not the actual room temperature. The OFFSET feature also allows you to display a temperature that is different from the actual room temperature.



SHORT CYCLE PROTECTION

You can change or remove the timed delay that protects the compressor in an air conditioner or heat pump system. Short Cycle Protection should be turned off ONLY if the HVAC system has other protective circuits that guarantee a compressor off time. This feature is adjustable from OFF to 5 minutes in 1-minute increments.

Changing INSTALLER SETTINGS

The INSTALLER SETTINGS are selected based on the type of equipment you have in your facility. This feature should be set only by a certified HVAC technician. Changing these settings could result in higher energy costs and may even damage the equipment. You should only change the FILTER MONITOR length should you get a new type of filter.

Energy Efficient Recovery™ (EER™)

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 facility to the desired temperature.

Indoor Sensor

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 area but have the thermostat in a secure location.

Outdoor Sensor

The remote outdoor sensor (part #9025i) can be used to aid in the comfort of your facility 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 a heat pump system, the remote outdoor sensor can help determine when to turn on the second stage of heating for optimal comfort. The remote outdoor sensor should be installed on the northern wall of the facility, away from direct sunlight or other heat sources that may affect its sensitivity.

Additional Information

For additional troubleshooting information, visit our web site at www.about-i-series.com. To talk with a service representative, give us a call at 800-445-8299.

Power Outage Protection

The 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 the power is out for more than two hours, simply reset the clock. See page 4.

Resetting to Factory Conditions

To reset the thermostat to factory conditions, press the UP button and the LEFT button at the same time. Hold for 8 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.

TWO YEAR LIMITED WARRANTY

The manufacturer warrants to the original contractor installer or to the original consumer user, each new Robertshaw 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.

The manufacturer 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 the manufacturer.

Repair or replacement as provided under this warranty is the exclusive remedy of the consumer. This warranty and our liability does not apply to 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 the manufacturer. 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:

In the USA:

Invensys Controls Americas
515 South Promenade Ave.
Corona, CA 92879-1736 USA
Attn: Warranty Department

In Canada:

Invensys Controls Americas
3505 Laird Road Unit #14
Mississauga, Ontario L5L 5Y7 Canada
Attn: Warranty Department

Invensys Controls Americas
515 Promenade Avenue
Corona CA 92879-1736
United States of America
Made in Mexico
Patents Pending
www.about-i-series.com

110-1069B