



ComfortChoice[®] *Touch* Thermostat

Designed for ZigBee[®] Wireless Technology



USER GUIDE



Carrier

A United Technologies Company

TABLE OF CONTENTS

	PAGE
WELCOME	6,7
THE TOUCH SCREEN	8,9
Home – Inactive	8
Home – Active	9
PHYSICAL BUTTONS	10
Home Button	10
Up and Down Buttons	10
QUICK START	11–16
Setting the Time and Date	11
Select the Mode	14
Set or Change the Heating and Cooling Setpoints	16
BASIC THERMOSTAT OPERATION	17–20
Hold Until	17
Hold the Temperature	17
Fan Selection	19

TABLE OF CONTENTS

THE BASIC SETUP SCREEN	21–32
Screen	23
Filter Replacement Reminder	29
Filter Replacement Reminder Reset	32
Sounds	34
PROGRAMMING THE THERMOSTAT	36–65
Select and Set the Program Schedule	36
The Edit Buttons	42
View the Schedules	43
Programs Schedules	43
All Days	43
Weekday / Weekend Schedule	47
Each Day Schedule	52
Vacation Scheduling	55
Vacation Pending Screen	62
Canceling or Modifying a Pending Vacation Schedule	63
Activating HOLD UNTIL During a Vacation Event	65

TABLE OF CONTENTS

SMART RECOVERY	66
ZIGBEE® WIRELESS TECHNOLOGY	67–68
Signal Strength Indicator	68
SMART ENERGY FEATURES	69–80
Demand Response Event	69
Event Notification	70
Demand Response Event INFO Button	72
Customer Override	73
Price Messages	74
Setting Up a Price Response	75
Price Tiers	75
Price Event Notification	77
Restore Normal Settings	78
Optional Methods	80
ZIGBEE messaging	81
A Message from the Energy Provider	81
A Cancel Message from the Energy Provider	84
Multiple Messages	85

TABLE OF CONTENTS

KEYPAD LOCKOUT FEATURE	87–94
Selecting Lockout	89
Unlocking the Thermostat	94
USB SUPPORT	97–101
TROUBLESHOOTING	102–104
Screen is Unresponsive	102
No Heat or Cooling	102
EHeat is Displayed	102
Power Outage	102
Check Filter Reminder	102
Loss of Wireless Communications	103
System Error Messages	103
Forgotten Lockout Password	104
Time is Incorrect (Time Zone, Daylight Savings, Loss of Communications, Etc)	104
Widely Swinging Temperatures	104
Memory Failure	104

WELCOME

This is the Carrier ComfortChoice[®] *Touch* Programmable Communicating Thermostat (PCT) with ZigBee[®] wireless technology. This unique device's state-of-the-art technology and easy to use interface makes it easier than ever for you to keep your home comfortable while saving energy and money. Designed to be smart – and smart looking – as any of the other electronics in your home, the new *Touch* thermostat offers programming options to fit your lifestyle – not anybody else's.

The thermostat can be set for 7-day, 5/2-day, or 1-day programmable operation. Different heating and cooling set points and times are programmable for 4 periods per day.

WELCOME

The thermostat also contains an advanced wireless communication module that helps you save energy by automatically responding to signals from your energy provider. In the event your energy provider sends a signal to your thermostat, there may be adjustments made to your settings that will help you save energy. When signals are sent to your thermostat that could result in adjustments to your settings, the display will inform you of the changes. Your energy provider can also send messages to the thermostat, which will also show on your display.

By offering four daily temperature set points that allow you to set temperatures according to the occupancy and activities in the home, programmable thermostats can save energy and money without sacrificing comfort. When the home is unoccupied or people are sleeping, temperatures can be set lower for heating or higher for cooling.

THE TOUCH SCREEN

Home – Inactive

The screen provides a clean uncluttered look when not in use, showing the time/date, room temperature, outside temp (if an outside sensor is used), equipment icons and any energy event indicators. See Fig. 1.

The vent openings in the lower left corner of the thermostat contain the room temperature sensor. **IMPORTANT:** To ensure correct temperature readings, do not block the vent openings.

NOTE: If configured for a screen saver and a screen saver has been loaded, it will be displayed after idle for 25 seconds.



Fig. 1 – The Home Inactive Screen

THE TOUCH SCREEN

Home – Active

Whenever the screen is touched, or the *Home* button is pressed, the Home Active screen provides the user with all of the selections needed to use the thermostat. The Home Active screen will time-out and return to the inactive mode after 60 seconds. See Fig. 2.



Fig. 2 – The Home Active Screen

PHYSICAL BUTTONS

Located on the cover under the touch screen are three physical buttons: the Up button, the Home button, and the Down button. See Fig. 3.

Home Button

Use this button to wake up the thermostat, return the thermostat to the Home Inactive state, or return to Home from any screen.

Up and Down Buttons

Use these buttons to increase or decrease settings, such as temperature and time/date values.



Fig. 3 – The Physical Buttons

QUICK START

Setting the Time and Date

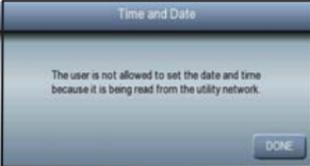
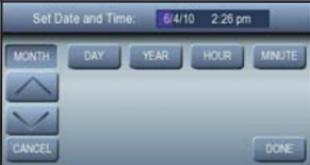
The thermostat is equipped to automatically communicate wirelessly with a communication network to obtain date and time information. In some instances the time zone and daylight savings settings may need to be set manually. In the event of a loss of communications, or the lack of a communications network, the time and date can be set manually.

Check or set the time/date by performing the following steps:

1. Either touch the screen or press the *Home* button to activate the Home screen.
2. Press the *Setup* button to open the Basic Setup menu.
3. Press the *Time/Date* icon on the Basic Setup menu screen.

One of three possible screens will open (see Fig. 4):

QUICK START

	<p>The time and date are being read from the communication network and the user cannot alter the setting.</p>
	<p>The time and date are read from the communication network, but your time zone and daylight saving setting must be selected.</p>
	<p>The time and date need to be manually set.</p>

A11138

Fig. 4 – Date and Time Set Up

QUICK START

Change the date and time by performing the following steps:

1. Select the Month, Day, Year, Hour or Minute button.
2. Use the up and down arrow buttons to adjust the date and time shown in the top status bar to the desired settings.
3. Press the *Done* button to return to the Basic Setup menu screen.
4. Press the *Home* button to return to the Home screen.

QUICK START

Select the Mode

The heating or cooling system is operated using the *MODE* button to select the desired cooling or heating Mode. The current mode is always displayed above the *MODE* button on the status bar on the Home screen. Activate the Home Screen to change the mode.

1. Press the *MODE* button on the Home screen to view the mode choices, as shown in Fig. 5.



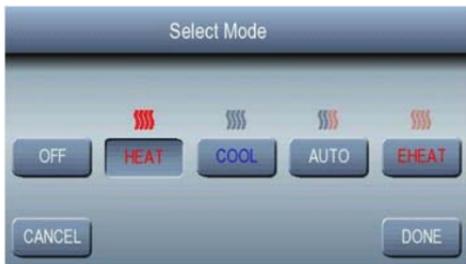
Fig. 5 – Mode Button

A11109

QUICK START

2. The Select Mode screen shows the different mode choices available. See Fig. 6.
 - OFF – Turns the heating and cooling system off.
 - HEAT – Enables the heating equipment to operate as needed. When the equipment is operating, a red icon will appear over the *HEAT TO* button.
 - COOL – Enables the cooling equipment to operate as needed. When the equipment is operating, a blue icon will appear over the *COOL TO* button.
 - AUTO – Enables both the heating and cooling equipment to operate as needed. When the equipment is operating, if the heating equipment is running, then a red icon will appear over the *HEAT TO* button; if the cooling equipment is operating, then a blue icon will appear over the *COOL TO* button.
 - EHEAT – Enables emergency heat – also known as auxiliary heat. The EHEAT selection uses auxiliary heat only. Heat Pump heat is not used.
3. The button for the currently selected mode is indented. Select the desired mode.
4. Press the *DONE* button to save the selection or the *CANCEL* button to ignore all changes and return to the previous setting.

QUICK START



A11111

Fig. 6 – Select Mode

Set or Change the Heating and Cooling Setpoints

Change the heating and cooling setpoints by either using the Up and Down physical arrow buttons on the front of the unit, or by activating the Home screen and using the *HEAT TO* and *COOL TO* touch screen buttons. Refer to Fig. 5.

BASIC THERMOSTAT OPERATION

Hold Until

The user has selected to follow the program schedule but changes the setpoint temporarily. In addition to the setpoint change, there is a “hold until” time indicating how long this temporary setpoint shall remain active. At the user specified hold until time, the setpoints shall return to their program schedule values. When hold until is active, the status box in the upper left hand corner of the display shall say **HOLD UNTIL** with the hold until time displayed underneath the status box.

If you wish to cancel the **HOLD UNTIL** and resume your programmed schedule, hit the *HOLD* button. The *HOLD* button will then become the *RESUME* button. Then, press the *RESUME* button, and your settings will be adjusted as required per the programmed schedule.

Hold the Temperature

The thermostat is normally programmed to follow a schedule, but the current temperature can be held indefinitely by pressing the *HOLD* button on the Home Active screen. The word *HOLD* will appear in the top left corner of the screen. See Fig. 7.

Resume the schedule by pressing the *RESUME* button.

BASIC THERMOSTAT OPERATION

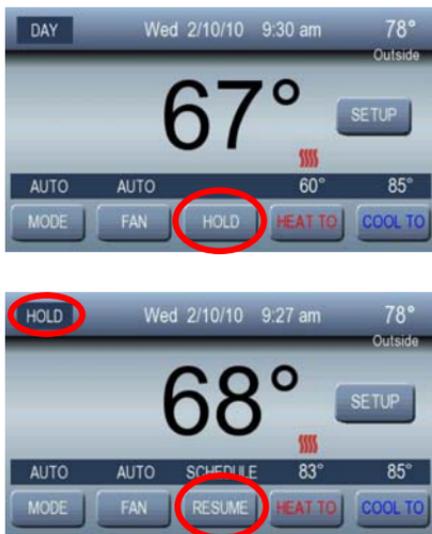


Fig. 7 – The Hold Button

BASIC THERMOSTAT OPERATION

Fan Selection

The fan distributes air throughout the home for a more even temperature in all spaces. Select the desired Fan mode from one of the two options available:

- **AUTO** – The fan runs only when the heating or cooling equipment is running.
- **ON** – The fan runs continuously regardless of whether the heating or cooling equipment is running. When the fan is running continuously and the heating or cooling equipment is not operational, a fan icon will appear over the *FAN* button.

Change the Fan mode by performing the following steps:

1. Activate the Home screen.
2. Press the *FAN* button.
3. Select either *AUTO* or *ON*.
4. Press the *DONE* button to save the selection or the *CANCEL* button to ignore all changes and return to the previous setting.

BASIC THERMOSTAT OPERATION



Fig. 8 – The Fan Selection

A11112

THE BASIC SETUP SCREEN

Pressing *Setup* on the Active Home screen opens the Basic Setup menu screen, as shown in Fig. 9.



A11113

Fig. 9 – The Basic Setup Menu Screen

THE BASIC SETUP SCREEN

Pressing the *ADVANCED* button opens the Advanced Setup menu screen, as shown in Fig. 10.



A11080

Fig. 10 – The Advanced Setup Menu Screen

When you push the *Version* button, the current software version will be displayed. For more information on the *Lockout* button, refer to the Keypad Lockout Feature section; for more information on the *USB* button, see the USB Support section.

THE BASIC SETUP SCREEN

Screen

Pressing the *Screen* button will display the following screen.



Fig. 11 – The Screen Menu

A11114

Pressing the *Done* button, or not pressing any buttons for 60 seconds, will return to the Basic Setup Screen.

THE BASIC SETUP SCREEN

Pressing the *Adjust Brightness* button will switch to the Set Screen Brightness screen.

Range: Level 1–8

The user shall be able to set the backlight level of the home inactive screen to a different setting for each period of the program schedule. The idea being that brighter levels are desirable during the daytime and darker levels are desirable at night. Lower levels result in a darker screen.

THE BASIC SETUP SCREEN

Pressing the *WAKE*, *DAY*, *EVENING* or *SLEEP* buttons shall move the adjustment arrows below the selected button. The adjustment arrows will be used to adjust the brightness of the display for that programming period. The *Up* button selects a brighter level and the *Down* button selects a darker level.



Fig. 12 – The Set Screen Brightness Screen

A11115

THE BASIC SETUP SCREEN

If the thermostat is put into HOLD, the backlight level shall continue to change, even though the setpoints do not, based on the times of each programmed period.



A11116

Fig. 13 – The Set Screen Brightness Screen

When a vacation is active, the home inactive screen backlight level shall be set to the SLEEP setting. After 60 seconds of no button presses, the screen will return to the Screen menu.

THE BASIC SETUP SCREEN

If the *Screen Saver* button is pressed on the Screen menu, the following screen will be displayed.



A11117

Fig. 14 – The Set Screen Saver Screen

This screen allows the user to configure whether a screen saver is displayed if a valid one is saved in the thermostat memory. If a screen saver has been saved, when ON is selected, the thermostat will display the screen saver after 25 seconds of idle time. When OFF is selected, a screen saver will not be displayed – even if a valid one was saved. See the USB Support section for instructions on how to load a screen saver into the thermostat.

After 60 seconds of no button presses, the screen will return to the Screen menu.

THE BASIC SETUP SCREEN

If the *Clean Screen* button is pressed on the Screen menu, the following screen will be displayed.



A11118

Fig. 15 – The Screen Cleaning Screen

This screen will allow the user to clean the screen without impacting anything on the thermostat. A timer, counting down from 60 seconds, is displayed in the center of the screen. The physical up and down buttons are disabled during this 60 second time period, but the Home button will cancel the countdown. After 60 seconds, the screen will switch to the Home Active screen.

THE BASIC SETUP SCREEN

Filter Replacement Reminder

The thermostat tells you when it is time to change the filter. When the filter needs to be replaced, the *FILTER* button will be displayed on the Home Active screen. See Fig. 16.



A11081

Fig. 16 – Filter Replacement Reminder

1. Press the *FILTER* button on the Home Active screen.
2. The Reminder screen shows 0 (zero) hours, as shown in Fig. 17.

THE BASIC SETUP SCREEN



A11082

Fig. 17 – Filter Change Required

3. When the *RESET* button is pressed, the “Change Filter in” value will reset to its original value, and the reminder will go away. Therefore, the filter should be replaced when *RESET* is pressed.
4. Press the *DONE* button to save the changes and return to the Home Active Screen, or press the *CANCEL* button if you are not ready to replace the filter, which will ignore the reset.
5. If the *RESET* button was not pressed and either the *CANCEL* or *DONE* buttons are pressed, the filter reminder shall remain visible on the Home Active screen with an open envelope next to the *FILTER* button. This indicates the message has been read, but the filter timer has not been reset. See Fig. 18.



A11083

Fig. 18 – Filter Message Read But Timer Not Reset

THE BASIC SETUP SCREEN

Filter Replacement Reminder Reset

This setup allows the user to reset the filter use timer when the filter is changed prior to the filter reminder message being displayed.

1. Press the *Reminders* button on the Basic Setup menu screen.
2. The Reminder screen shows the number of hours remaining before the filter requires changing, as shown in Fig. 19.
Replace the filter immediately if the counter shows 0 (zero) hours.

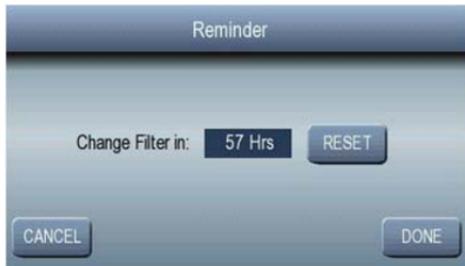
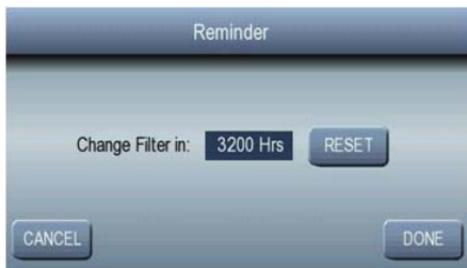


Fig. 19 – Time Remaining Before Required Filter Change

A11119

THE BASIC SETUP SCREEN

3. Press the *Reset* button to reset the timer back to its original value. See Fig. 20.
4. Press the *DONE* button to save the changes and return to the Home Active screen, or press *CANCEL* to ignore all changes and return to the Basic Setup menu screen.



A11120

Fig. 20 – Filter Change Time Reset

THE BASIC SETUP SCREEN

Sounds

The buzzer can be configured to provide audible feedback when the touch screen is pressed. There are two buzzer sounds:

- A high pitched sound for a valid touch of the display.
- A low pitched sound for an invalid touch of the display. An invalid touch indicates touching or pressing a non–functioning button or attempting to change a parameter to a value beyond its allowable range.

NOTE: The three physical buttons do not provide any audible feedback.

THE BASIC SETUP SCREEN

Turn the buzzer on or off by performing the following steps:

1. Select the *Sounds* button from the Basic Setup menu screen.
2. Select either *ON* or *OFF*, and then select the *DONE* button.
See Fig. 21.

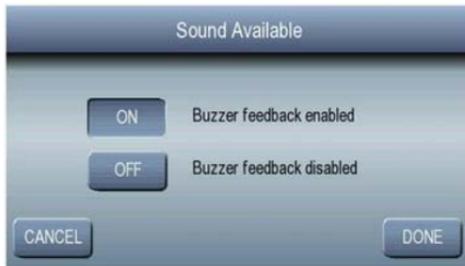


Fig. 21 – Configuring the Buzzer

A11121

PROGRAMMING THE THERMOSTAT

The ComfortChoice *Touch* thermostat can be set to adjust the temperature of a home according to one's schedule. Temperatures inside the home can be set to change based on whether or not the home is occupied, or whether residents are awake or asleep.

For example, the thermostat can be programmed to automatically allow the house to naturally cool down and maintain a lower temperature throughout the night while occupants sleep or during the day when the house is empty, and it can be programmed to automatically warm the house in the morning before occupants wake up or in the afternoon before returning home.

Select and Set the Program Schedule

The ComfortChoice *Touch* thermostat automatically stores settings and repeats those settings each day, while still allowing programming to be overridden at any time and settings to be changed manually.

There are three program schedules available:

- **All Days** – All seven (7) days are programmed with the same time periods and heating/cooling setpoints.
- **Weekday/Weekend** – Monday thru Friday are programmed with the same time periods and heating/cooling setpoints. Saturday and Sunday are programmed with the same time periods and heating/cooling setpoints, but these settings can be different than the settings for Monday thru Friday.
- **Each Day** – Each day can be programmed differently.

PROGRAMMING THE THERMOSTAT

There are four (4) periods within each day: Wake, Day, Evening, and Sleep.

The following tables illustrate the *All Days* program schedule and the *Weekday/Weekend* program schedule:

All Days Program Schedule			
Monday thru Sunday	Time	Heating Setpoint	Cooling Setpoint
Wake	6 AM	68°	76°
Day	8 AM	60°	85°
Evening	5 PM	68°	76°
Sleep	10 PM	60°	82°

PROGRAMMING THE THERMOSTAT

Weekday/Weekend Program Schedule			
Monday thru Friday	Time	Heating Setpoint	Cooling Setpoint
Wake	6 AM	68°	76°
Day	8 AM	60°	85°
Evening	5 PM	68°	76°
Sleep	10 PM	60°	82°
Saturday and Sunday	Time	Heating Setpoint	Cooling Setpoint
Wake	8 AM	68°	76°
Day	9:45 AM	60°	72°
Evening	6:30 PM	68°	76°
Sleep	11:30 PM	60°	82°

PROGRAMMING THE THERMOSTAT

Perform the following steps to open the Schedule screen:

1. Touch the screen or press the *Home* button to activate the Home screen.
2. Press the *Setup* button.
3. Press the *Schedule* button to open the Schedule screen, as shown in Fig. 22.



Fig. 22 – The Schedule Screen

A11122

PROGRAMMING THE THERMOSTAT

The screen will switch to the appropriate screen when the *All Days*, *Weekday/Weekend*, or *Each Day* button is pressed. See Fig. 23.



A11123

Fig. 23 – The All Days Schedule Screen

PROGRAMMING THE THERMOSTAT

Press the *BACK* button to return to the Schedule screen, or press the *EDIT* button to open the Edit Schedule screen shown in Fig. 24.



A11124

Fig. 24 – The All Days Edit Schedule Screen

PROGRAMMING THE THERMOSTAT

The Edit Buttons

Fig. 24 shows the four (4) edit buttons used to manipulate the program schedule.

- The *PERIOD* function allows the user to change the schedule for the period indicated in the programming bar. Pressing the *Up* or *Down* arrows with the *PERIOD* button selected will cycle through the periods: Wake, Day, Evening, or Sleep.
- The *START* function allows the user to change the starting time of the period. Pressing the *Up* or *Down* arrows with the Start button selected will increase or decrease the display period start time in 15 minute increments.
- The *HEAT TO* function allows the user to change the heating setpoint. Pressing the *Up* and *Down* arrows with the *HEAT TO* button selected will increase or decrease the heating setpoint in one (1) degree increments.
- The *COOL TO* function allows the user to change the cooling setpoint. Pressing the *Up* and *Down* arrows with the *COOL TO* button selected will increase or decrease the cooling setpoint in one (1) degree increments.

PROGRAMMING THE THERMOSTAT

View the Schedules

Perform the following steps to view a schedule:

1. Press the *SETUP* button on the Active Home screen.
2. Press the *Schedule* button on the Basic Setup screen.
3. Select the Schedule to view – *All Days*, *Weekdays/Weekend*, or *Each Day*.

The times and setpoints shown as dashes indicate that the values for each are not the same for every day of the week.

Programs Schedules

This section describes how to program the thermostat for the three (3) different schedule options.

All Days

Use the *All Days* schedule to program all seven (7) days with the same time periods and heating / cooling setpoints.

The All Days Schedule will display the program schedule that is executed every day. The times and setpoints shown as dashes “—” indicate that the setpoint values are not the same for every day of the week. Refer to Fig. 25.

PROGRAMMING THE THERMOSTAT

Perform the following steps to open the All Days Schedule screen and program the schedule.

1. Press the *SETUP* button on the Active Home screen.
2. Press *Schedule* on the Basic Setup screen.
3. Select *All Days*.



Fig. 25 – The All Days Schedule

A11125

PROGRAMMING THE THERMOSTAT

4. Press the *EDIT* button to open the Edit Schedule screen. See Fig. 26. Pressing the *BACK* button will return to the Program Schedule menu screen without saving any changes made.



A11126

Fig. 26 – The All Days Edit Schedule

5. Press the *PERIOD* button to change the schedule for the period indicated in the programming bar, which is above the four (4) edit buttons used to manipulate the program schedule. The up or down arrow buttons with the *PERIOD* button selected cycle through the periods of Wake, Day, Evening, and Sleep.

PROGRAMMING THE THERMOSTAT

6. Press the *START* button to change the starting time of the period. Pressing the *up* or *down* arrow buttons with the *START* button selected will increase or decrease the display period start time in 15 minute increments.
7. Press the *HEAT TO* button to change the heating setpoint. Pressing the *up* and *down* arrows with the *HEAT TO* button selected will increase or decrease the heating setpoint in one (1) degree increments.
8. Press the *COOL TO* button to change the cooling setpoint. Pressing the *up* and *down* arrows with the *COOL TO* button selected will increase or decrease the cooling setpoint in one (1) degree increments.
9. Press the *SAVE* button to save changes made to the program schedule and return to the All Days schedule screen.

Pressing the *CANCEL* button will exit the screen without saving the changes made and will return to the Program Schedule Menu screen.

PROGRAMMING THE THERMOSTAT

Weekday / Weekend Schedule

Use the *Weekday / Weekend* schedule to program all five (5) weekdays (Monday thru Friday) with the same time periods and heating / cooling setpoints, and program both Saturday and Sunday with the same time periods and heating / cooling setpoints but different from the weekday settings.

The *Weekday / Weekend* schedule allows temperatures to be set according to the occupancy and the activities in the home for a typical week. When the home is unoccupied or people are sleeping, temperatures can be set lower for heating or higher for cooling.

The *Weekday / Weekend* schedule will display the program schedule that is executed every day for both Monday thru Friday and for Saturday and Sunday. Refer to Fig. 27 and 28.

PROGRAMMING THE THERMOSTAT

The times and setpoints shown as dashes “—” indicate that the setpoint values are not the same for every day of the week.



A11127

Fig. 27 – The Weekday Schedule

PROGRAMMING THE THERMOSTAT



A11128

Fig. 28 – The Weekend Schedule

Perform the following steps to open the *Weekday / Weekend Schedule* screen and program the schedule:

1. Press the *SETUP* button on the Active Home screen.
2. Press the *Schedule* button on the Basic Setup screen.
3. Select either *WEEKDAY* or *WEEKEND*. The *WEEKDAY / WEEKEND* button toggles between the two schedules.
4. Press the *EDIT* button to edit that particular schedule. Pressing the *BACK* button will return to the Program Schedule menu screen without saving any changes made.

PROGRAMMING THE THERMOSTAT

5. Press the *PERIOD* button to change the schedule for the period indicated in the programming bar. The *up* or *down* arrow buttons with the *PERIOD* button selected cycle through the periods of Wake, Day, Evening, and Sleep. Refer to Fig. 29.
6. Press the *START* button to change the starting time of the period. Pressing the *up* or *down* arrow buttons with the *START* button selected will increase or decrease the display period start time in 15 minute increments.
7. Press the *HEAT TO* button to change the heating setpoint. Pressing the *up* and *down* arrows with the *HEAT TO* button selected will increase or decrease the heating setpoint in one (1) degree increments.
8. Press the *COOL TO* button to change the cooling setpoint. Pressing the *up* and *down* arrows with the *COOL TO* button selected will increase or decrease the cooling setpoint in one (1) degree increments.

PROGRAMMING THE THERMOSTAT

9. Press the *SAVE* button to save changes made to the program schedule and return to the All Days schedule screen.
Pressing the *CANCEL* button will exit the screen without saving the changes made and will return to the Program Schedule Menu screen.
10. Press the *WEEKDAY / WEEKEND* button to switch to the remaining schedule and repeat steps 5. thru 9.



A11096

Fig. 29 – The Weekday / Weekend Edit Schedule

PROGRAMMING THE THERMOSTAT

Each Day Schedule

Use the *Each Day* schedule to program different time periods and heating / cooling setpoints for each day of the week. Fig. 30 shows an example of a Daily Schedule for Wednesday.



A11129

Fig. 30 – Daily Schedule

PROGRAMMING THE THERMOSTAT

Perform the following steps to open the *Each Day Schedule* screen and program the schedule:

1. Press the *SETUP* button on the Active Home screen.
2. Press the *Schedule* button on the Basic Setup screen.
3. Press the *EACH DAY* button.
4. Fig. 30 shows an example of a daily schedule. Press the *EDIT* button to edit that particular schedule. Pressing the *BACK* button will return to the Program Schedule menu screen without saving any changes made.
5. Press the *PERIOD* button to change the schedule for the period indicated in the programming bar. The *up* or *down* arrow buttons with the *PERIOD* button selected cycle through the periods of Wake, Day, Evening, and Sleep. Refer to Fig. 31.
6. Press the *START* button to change the starting time of the period. Pressing the *up* or *down* arrow buttons with the *START* button selected will increase or decrease the display period start time in 15 minute increments.
7. Press the *HEAT TO* button to change the heating setpoint. Pressing the *up* and *down* arrows with the *HEAT TO* button selected will increase or decrease the heating setpoint in one (1) degree increments.

PROGRAMMING THE THERMOSTAT

8. Press the *COOL TO* button to change the cooling setpoint. Pressing the *up* and *down* arrows with the *COOL TO* button selected will increase or decrease the cooling setpoint in one (1) degree increments.
9. Perform Step 5. through Step 8. for each day of the week, advancing to other days using the middle two buttons (labeled with the day) on the bottom of the screen.
10. Press the *SAVE* button to save changes made to the program schedule and return to the Each Day Schedule screen.
Pressing the *CANCEL* button will exit the screen without saving the changes made and will return to the Program Schedule Menu screen.



A11130

Fig. 31 – Each Day Edit Schedule

PROGRAMMING THE THERMOSTAT

Vacation Scheduling

Your thermostat provides a convenient way to program a special heating / cooling schedule while you are away on vacation or for an extended period of time. When Vacation is active, the thermostat still communicates with the ZigBee network and controls the HVAC equipment to the desired setpoints.

Perform the following steps to set a vacation schedule:

1. Activate the Home screen by touching the screen or pressing the physical *Home* button.
2. Press the *SETUP* button.
3. Press the *Vacation* button. The Vacation Start Date screen opens, as shown in Fig. 32.



A11097

Fig. 32 – Vacation Start Date Screen

PROGRAMMING THE THERMOSTAT

NOTE: If a vacation schedule already exists, the Vacation Pending screen will open.

4. Use the *up* and *down* arrows to set each of the values (Month, Day, Year, and Time).
5. Press the *NEXT* button and set the values for the Vacation Return Date. See Fig. 33.

NOTE: Allow some time for the heating and cooling system to raise / lower the temperature settings, so you will be comfortable when you return. It can take hours to restore normal settings to a house.



Fig. 33 – Vacation Return Date Screen

A11098

PROGRAMMING THE THERMOSTAT

6. Press the *NEXT* button. The screen will transition to either the Mode Select screen or an Error screen. The Error screen is displayed when the vacation start date and end date are reversed. See Fig. 34.



Fig. 34 – The Vacation Error Screen

PROGRAMMING THE THERMOSTAT

- The equipment mode selection is made before entering vacation mode. See Fig. 35. Once vacation mode is active, the equipment mode setting cannot be changed until the vacation is over or ended. See Fig. 38.
- Select *HEAT*, *COOL*, or *AUTO* and set the desired setpoints.
- Press the *NEXT* button.



Fig. 35 – Vacation Equipment Mode Selection

PROGRAMMING THE THERMOSTAT

10. The currently selected vacation mode will be displayed in the center of the screen. See Fig. 36.
11. Press the *CANCEL* button to return to the Home Active screen without saving the changes to the vacation schedule.
12. Press the *BACK* button to return to the Vacation Mode selection screen.
13. Press the *NEXT* button to switch to the vacation confirmation screen.



Fig. 36 – Vacation Setpoints Screen

PROGRAMMING THE THERMOSTAT

14. The vacation confirmation screen will display the vacation schedule to be confirmed. It also shows the duration of the vacation period in days and hours. See Fig. 37.
- Press the *CANCEL* button to return to the Home Active screen without saving the changes to the vacation schedule.
 - Press the *BACK* button to return to the vacation setpoint selection screen.
 - Press the *DONE* button to save the vacation schedule and return to the Home Active screen.

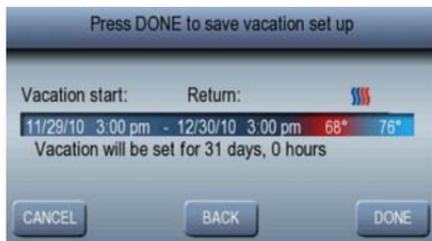


Fig. 37 – Vacation Confirmation Screen

PROGRAMMING THE THERMOSTAT

15. Fig. 38 shows how the Home Active screen will look when the vacation mode is active.



Fig. 38 – The Home Active Screen with Active Vacation Mode

PROGRAMMING THE THERMOSTAT

Vacation Pending Screen

When vacation mode is pending and the start date/time is less than one (1) month away, the Home Active screen will show the vacation start date and time, as shown in Fig. 39.



Fig. 39 – Vacation Pending Message

PROGRAMMING THE THERMOSTAT

Canceling or Modifying a Pending Vacation Schedule

If the vacation mode is active and you arrive home earlier than expected, simply press the *END* button under the Vacation label to end the vacation schedule and return the thermostat to normal settings. Refer to Fig. 38 for the *END* button location.

PROGRAMMING THE THERMOSTAT

Cancel a pending vacation by pressing the *SETUP* button on the Home Active screen. Then press the *Vacation* button. Perform one of the following on the Vacation Pending screen. See Fig. 40.

- Press the *DELETE* button to delete the pending vacation schedule and go back to the settings screen.
- Press the *BACK* button to go back to the settings screen without modifying the pending vacation schedule.
- Press the *EDIT* button to change the Vacation start and end date settings.



A11131

Fig. 40 – Cancel or Modify a Pending Vacation Schedule

PROGRAMMING THE THERMOSTAT

Activating HOLD UNTIL during a Vacation Event

Setpoints can be modified during a vacation event by pressing the physical up and down arrow buttons or touching the *HEAT TO* or *COOL TO* buttons, resulting in a *HOLD UNTIL* event. See Fig. 41.

The system will return to the vacation settings at the end of the *HOLD UNTIL* time period.

NOTE: The only way to cancel a *HOLD UNTIL* while in vacation mode is to cancel Vacation. Cancel a pending vacation by pressing the *SETUP* button on the Home Active screen.



Fig. 41 – Activating HOLD UNTIL During a Vacation Event

SMART RECOVERY

The Smart Recovery feature transitions your home from one temperature period (wake, day, evening, sleep) to the next as energy efficiently as possible.

Smart Recovery transition times may start up to 90 minutes prior to the next programming period. During Smart Recovery, the thermostat ramps the setpoint from the current room temperature to the next setpoint using small increments.

If the user initiates the *HOLD* function in the middle of a Smart Recovery mode, the setpoints are held at their current displayed value.

NOTE: If either the *Hold*, *Hold Until* or *Vacation* function is active during the time that Smart Recovery would be performed, a Smart Recovery will not occur.

ZIGBEE[®] WIRELESS TECHNOLOGY

Your thermostat is equipped with ZigBee[®] wireless technology - similar to Bluetooth[®] - that is used to communicate to an energy portal supplied by the energy provider.

If the thermostat is connected to the ZigBee[®] network, up to five signal bars are displayed to show the relative signal strength.

- If the outdoor air sensor is not present, the signal strength is displayed in the top right corner of the display.
- If the optional outdoor air sensor is connected, the outdoor air temperature is displayed in the top right corner of the display and the signal strength indicator is to the left of the outdoor air temperature, as shown in Fig. 42.

ZIGBEE[®] WIRELESS TECHNOLOGY

Signal Strength Indicator

The signal indicator displays five (5) solid gray bars when the signal is strong, as shown in Fig. 42.

The signal indicator displays more empty gray bars as signal strength weakens.

The signal strength indicator displays five red empty bars when communication is lost.

When the signal strength is zero, the bars will be red and empty. When not connected to a ZigBee[®] network, no bars will be displayed.



Fig. 42 – Signal Strength Indicator Showing Good Strength

SMART ENERGY FEATURES

The thermostat is programmed with Smart Energy features that are offered by your energy provider. Depending on the plan offered by the energy provider, you may be enrolled in one or both of the following:

- Demand Response program
- Pricing program

Demand Response Event

You may be enrolled in a Demand Response program offered by your energy provider. Depending on peak energy demands, your energy provider may choose to send a message to your thermostat to initiate a Demand Response Event.

The energy provider will select a start time, a duration, and either set back your thermostat setting by a few degrees or choose to cycle the air-conditioning or heating on and off at a safe pre-determined rate.

The effect of the event is to reduce the peak demand, resulting in more reliable power delivery for everyone. Most people do not even notice the event is happening.

Once the Event is completed, the thermostat is restored to the pre-event settings.

SMART ENERGY FEATURES

Event Notification

The thermostat alerts the homeowner to a Demand Response Event that is in progress by showing an Event icon on the screen. Fig. 43 shows a Level 2 Event.



A11132

Fig. 43 – Utility Event Highlighted Icon

SMART ENERGY FEATURES

The Demand Response Events have various levels (from 1 to 5) indicating the increasing level of demand response. There is also a Green level, indicating that not enough power is being provided by Green energy sources. There are mandatory levels defined as Emergency, Planned Outage and Service Disconnect. Your Energy Provider may use some or all of the levels. Please contact your energy provider for more detailed information.

SMART ENERGY FEATURES

Demand Response Event INFO Button

Press the *INFO* button on the screen, as shown in Fig. 43, for more information during a Demand Response Event.

The information screen explains the reason the energy provider is running the event, the time remaining until the event expires, and the adjustments that were made to your settings. See Fig. 44.

After viewing the information, you can press *BACK* or the physical *Home* button to go back to the Home screen.



A11133

Fig. 44 – Demand Response Event INFO Screen

SMART ENERGY FEATURES

Customer Override

During most Events Green thru 5, homeowners have the ability to override an event and restore the settings if it becomes uncomfortable inside the house.

During certain mandatory Events, the energy provider may be forced to instruct your thermostat to perform a mandatory shut down of heating and cooling equipment for a specific amount of time. During these rare instances, homeowners lose the ability to override any settings for the duration of the event.

Contact your energy provider for additional information about Demand Response Events and to determine if this is an option in your area.

When a Demand Response Event occurs, it is always advisable to allow the event to run to completion. However, if it becomes necessary to override the event, press the *OVERRIDE* button on the *INFO* screen. Refer to Fig. 44.

The End Participation screen opens, as shown in Fig. 45.

Press the *YES* button to confirm the decision to END PARTICIPATION and restore the original settings, or press the *BACK* button to exit the screen without changes.

NOTE: The utility company will be notified if you choose to override the event.

SMART ENERGY FEATURES



A11134

Fig. 45 – End Participation Screen

Price Messages

You may be enrolled in a program where the price of electricity varies and the energy provider sends messages alerting the thermostat to the price changes.

An advantage to using this thermostat is that you can program automatic responses based on the current cost of electricity.

For example, if the price change is minimal, you may choose to raise the air-conditioning setback by only 2°. However, if the price change is drastic, you may choose to raise the air-conditioning by 10°.

SMART ENERGY FEATURES

Setting Up a Price Response

The thermostat must be programmed with the necessary information in order to respond to price signals. Settings can be changed at any time.

Price Tiers

The number of pricing tiers is determined by your energy provider. Fig. 46 shows three, color-coded price tiers: *Above Normal* (yellow), *Peak Pricing* (orange), and *Critical* (red). The following example uses the Critical price tier.

Perform the following steps to set up the price response:

1. Activate the Home screen and press the *SETUP* button.
2. Press the *Price Response* button to open the *Setpoint Offsets for Pricing Events* screen.

For each price tier displayed, you can select your offset to the normal temperature setting you use. For example, if you normally cool at 76°, a 2° offset will cause the thermostat to raise your setting to 78° for the duration of the price event, thus saving you energy and money during the elevated price period.

SMART ENERGY FEATURES



Fig. 46 – The Price Response Screen

A11135

SMART ENERGY FEATURES

Price Event Notification

When a price event becomes active, the Home Active and the Home Inactive screens will both display the Price Event icon, as shown in Fig. 47. The *HEAT TO* and *COOL TO* automatically adjust to the setback temperatures and reflect the color code of the event.



Fig. 47 – The Price Event Icon

Press the *INFO* button for additional information about the event. See Fig. 48. Additional steps can be taken to save energy during the higher pricing periods by not using other energy consuming devices such as a dryer or dishwasher, and turning off lights.

SMART ENERGY FEATURES

Restore Normal Settings

Although it is advisable to maintain the setpoint offsets for the duration of the event, normal thermostat settings can be restored at any time after the thermostat has automatically responded to a price signal.

Before restoring, first read the information from the energy provider to see what the price level is, how much time is left in the price event, and what your adjustment was. Refer to the information screen in Fig. 48.

Press the *BACK* button to leave the screen and maintain the setpoint offsets, or press the *RESTORE* button to restore the thermostat to the normal settings.



Fig. 48 – Information on the Price Event

Press the *BACK* button to exit the screen or press the *YES* button to restore your original temperature settings. See Fig. 49.

SMART ENERGY FEATURES



Fig. 49 – Restoring Temperature Settings

When *YES* is pressed, the setpoint offsets are removed, and the setpoints showing on the Home screen no longer have the background color of the pricing event.

NOTE: You will be consuming energy at the higher price for the time remaining in the price event. See Fig. 50.

SMART ENERGY FEATURES



Fig. 50 – Price Event Color Disappears from Setpoints

Optional Methods

Removing offsets from the setpoints during a pricing event can also be done by simply changing the setpoints from the Home Active screen by pressing the physical *up* and *down* arrow buttons, or by using the *HEAT TO* and *COOL TO* buttons.

SMART ENERGY FEATURES

ZigBee® Messaging

A Message from the Energy Provider

A message icon on the Home Active and Home Inactive screens alert the homeowner to important text messages sent by the energy provider, as shown in Fig. 51.

On the Home Active screen, press the *UTILITY* button to display the message. On the Home Inactive screen, press the mail icon button to display the message.



A11136

Fig. 51 – Messaging Icons

In some instances, the energy provider requests a confirmation that you read the message. If this is the case, the screen is displayed with a *CONFIRM* button instead of *DELETE*. See Fig. 52.

Pressing the *BACK* button returns to the Home Active screen.

Pressing the *CONFIRM* button sends a confirmation back to the energy provider.

SMART ENERGY FEATURES

If the user does not send a confirmation, the message is displayed continuously even after the event expires regardless of the duration, or until the message is replaced by a new message.

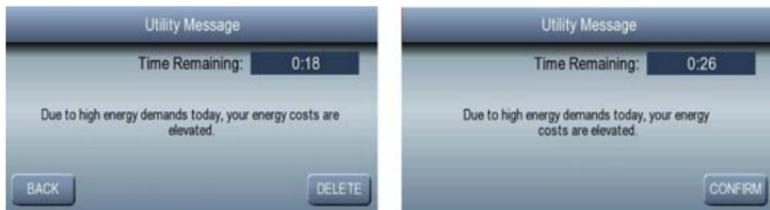


Fig. 52 – Messaging Icons

The envelope icon changes to an open envelope icon to show that the homeowner read the message and sent the confirmation to the energy provider. The icon will remain on the screen for the duration of the event. See Fig. 53.

SMART ENERGY FEATURES



A11137

Fig. 53 – The Open Envelope Icon

The *UTILITY* button and the envelope disappear from the screen if:

- The message expires.
- The homeowner deletes the message.
- The energy provider cancels the message.

SMART ENERGY FEATURES

A Cancel Message from the Energy Provider

If the energy provider sends a *Cancel Message* that requires confirmation, it is shown as a new Utility message on the Home Active screen, as shown in Fig. 54. The message being cancelled is displayed when the user presses the *UTILITY* button. Pressing the *CONFIRM* button sends a confirmation back to the energy provider.

If the message is not confirmed, the Cancel Message is displayed continuously until it is replaced by a new message.



Fig. 54 – The Cancel Message Screen

SMART ENERGY FEATURES

Multiple Messages

A Filter message could become active during a Utility Message event. In that case, the Home Active screen displays a *MESSAGE* button instead of a *FILTER* or *UTILITY* button. An open or closed envelope is shown with the *MESSAGE* button based on the read status of the message. See Fig. 55.



Fig. 55 – Multiple Messages

SMART ENERGY FEATURES

Pressing the *MESSAGE* button opens the Message screen, as shown in Fig. 56. The user can then read the individual messages by pressing the corresponding buttons. Unread messages are shown with a closed envelope.



Fig. 56 – The Message Screen

KEYPAD LOCKOUT FEATURE

The thermostat contains a keypad lockout feature that allows the homeowner to either lock some or all of the features of the thermostat. This is particularly useful in controlling the settings and preventing others from adjusting them.

The thermostat features two levels of lockout:

- *Lock Everything* prevents someone from making any changes to the thermostat.
- *Lock All But Temperature Settings* allows someone to adjust the temperature to stay comfortable but not adjust features such as program schedules or settings.

KEYPAD LOCKOUT FEATURE

If the entire keypad is locked and the user presses a button, a backlight turns on to maximum brightness for 10 seconds but none of the thermostat settings can be changed. The invalid buzzer signal will beep.

If the temperature settings are enabled in the keypad lockout, the setpoints can be changed by the physical buttons or the *HEAT TO* and *COOL TO* touch screen buttons.

KEYPAD LOCKOUT FEATURE

When the keypad lockout is set to either option and a utility demand response event, a utility message, or the filter reminder message becomes active, the buttons related to these events are also locked out. This prevents an unauthorized user from overriding a demand response event, deleting a utility message, or resetting a filter timer.

When the entire keypad is locked and a pricing event becomes active, the info button related to the event is also locked out, preventing the unauthorized user from restoring setpoints during a pricing event. However, if the keypad lockout setting is setpoints only and a pricing event becomes active, the info button for the pricing event is functional.

Selecting Lockout

Select the lockout feature by performing the following steps:

1. Activate the Home screen.
2. Press the *SETUP* button.
3. Press the *ADVANCED* button. See Fig. 57.
4. Press the *Lockout* button.

KEYPAD LOCKOUT FEATURE



Fig. 57 – Navigate to the Advanced Setup Screen

5. Select one of the two lockout modes (see Fig. 58):

- Lock Everything
- Lock All But Temperature Settings

The *CANCEL* button will return to the Advanced Setup screen.



Fig. 58 – Lockout Selection Screen

A11100

KEYPAD LOCKOUT FEATURE

6. When either Lock button is pressed, a screen will appear to allow the user to enter a 4-digit pin code. See Fig. 59.
 - Pressing the *CANCEL* button will return to the Advanced Setup screen.
 - Pressing the *CLEAR* button will erase the pin code that is being currently entered.
 - Pressing the *DONE* button will save the 4-digit pin code, lock out the keypad according to the selection entered on the previous screen, and switch to the Home Inactive screen.

KEYPAD LOCKOUT FEATURE

If more than four digits are entered, the invalid buzzer signal will beep. If less than four digits are entered when the *Done* button is pressed, the invalid buzzer signal will beep, and the pin code will be erased.

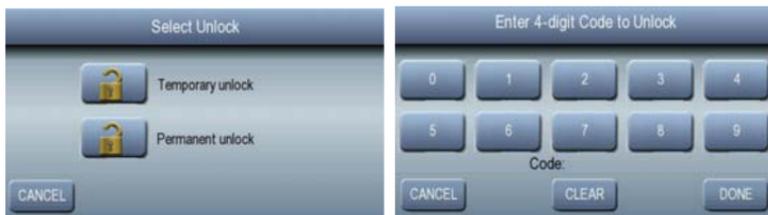


Fig. 59 – Select Lockout Option and Personal 4-Digit Lock Code

When the keypad lockout is active, a lock symbol will appear on the Home Inactive screen in the lower right hand corner of the display. See Fig. 60.



Fig. 60 – Thermostat is Locked

KEYPAD LOCKOUT FEATURE

When keypad lockout is active, the Home Active screen either allows the setpoint to be changed or does not allow any changes. Fig. 61 shows the keypad lockout is set to everything but setpoint.

This results in the *MODE*, *FAN*, and *HOLD* buttons being grayed out.

The reason that the *HEAT TO* button is grayed out is because the mode is Cool. If the mode was Auto, the *HEAT TO* button would not be grayed out.



Fig. 61 – Keypad is Locked

KEYPAD LOCKOUT FEATURE

Unlocking the Thermostat

When the Keypad Lockout function is enabled, a Lock icon and an *Unlock* button appear on the Home Active screen. See Fig. 61.

Unlock the thermostat by performing the following steps:

1. Press the *Unlock* button.
2. See Fig. 62. Select one (1) of the two (2) options:
 - **Temporary Unlock:** This option allows the authorized user to make changes to features such as program schedules or settings. The Home Active display now has an open lock showing to indicate that the keypad is temporarily unlocked. Once the screen goes to the Home Inactive screen after 60 seconds, the temporary unlock ends. See Fig. 63.
 - **Permanent Unlock:** This option allows the authorized user to return the thermostat to a permanent unlocked mode.
3. Type the 4-digit lock code using the touchscreen number buttons, and then press the *DONE* button. Pressing the *CANCEL* button will return to the Home Active screen with the lock still activated. Pressing the *CLEAR* button will erase the pin code that is being currently entered.

KEYPAD LOCKOUT FEATURE



Fig. 62 – Select an Unlock Option



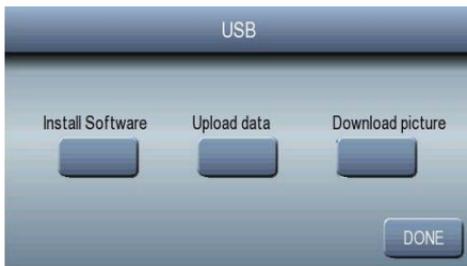
Fig. 63 – Thermostat is Temporarily Unlocked

KEYPAD LOCKOUT FEATURE

If the code is forgotten, call your Energy Service provider, and they will supply you with a code to unlock the system.

USB SUPPORT

The thermostat has a USB port that is located on the right side of the thermostat. When a USB drive is inserted, the USB screen can be accessed by selecting *SETUP*, then *Advanced*, and then pressing the USB button as shown in Fig. 10. This will display the USB screen shown in Fig. 64.



A11102

Fig. 64 – USB Screen

The *Install Software* option is used to update the thermostat software if necessary. Should this be required, separate instructions will be provided by your energy provider.

The *Upload Data* option allows you to save up to the past 30 days of runtime data to a .csv file. The file can then be opened using software such as Microsoft® Excel.

USB SUPPORT

The *Download Picture* option is used to download a bitmap image to be used as the Screen Saver, which is enabled as described in the Basic Setup section above. The only file format supported at this time is a 480 x 272 8-bit indexed color bitmap (.BMP) file. You will need to use picture editing software to convert pictures into this format before copying them to a USB drive. The filename also must be 8.3 format, meaning the file must have a name with no spaces from 1 to 8 characters and an extension of .BMP such as “sunset.bmp”. Inserting a USB drive with properly named and formatted images will display the following screen, as shown in Fig. 65.



A11101

Fig. 65 – Available Screen Saver Files (Example)

Select the image you would like to make your screen saver and press **LOAD** to download the picture.

Pressing *CANCEL* will return to the USB screen.

USB SUPPORT

Pressing any of the filenames will select that image to be loaded into the thermostat. When the image is being downloaded, the following screen will be displayed as shown in Fig. 66.

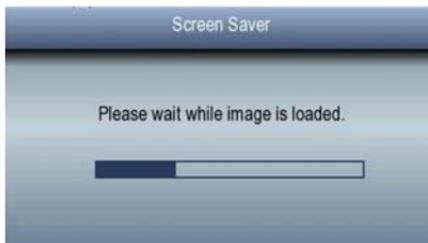


Fig. 66 – Downloading a Screen Saver

USB SUPPORT

Once the download of the BMP from the thumb drive to serial flash is complete, the following screen is displayed if the screen saver is not configured to be ON. This will allow the user to turn the screen saver display option ON by pressing *YES*, or OFF by pressing *NO*. See Fig. 67.

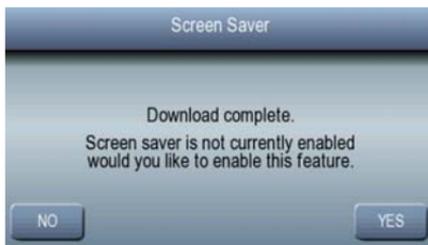


Fig. 67 – Download Complete, Enable Screen Saver

USB SUPPORT

Once the download of the BMP from the thumb drive to serial flash is complete, the following screen is displayed if the screen saver is configured to be ON. See Fig. 68.

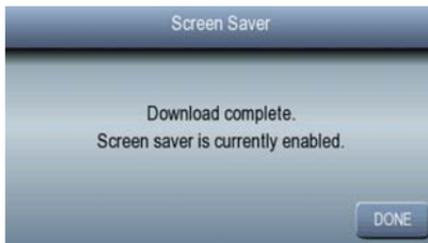


Fig. 68 – Download Complete

When *YES* or *DONE* are pressed, the downloaded picture will be a screen saver.

TROUBLESHOOTING

This section provides troubleshooting for some common issues associated with the Carrier ComfortChoice Programmable Communicating Thermostat.

Screen is Unresponsive

Check if the thermostat screen is locked to unauthorized users. Unlock the thermostat by providing the 4-digit lock code to enable control of the thermostat.

No Heat or Cooling

Check if the Mode is off. If the Mode displays OFF on the Home Active screen, press the MODE button and select COOL, HEAT, or AUTO, and then press the DONE button.

EHeat is Displayed

Enables emergency heat – also known as auxiliary heat. The EHEAT selection uses auxiliary heat only. Heat Pump heating is not used.

Power Outage

The thermostat's configuration options are stored to non-volatile memory and are retained through a power outage.

Check Filter Reminder

The Filter Reminder appears on the screen when it is time to change the air filter. Change the filter and reset the filter counter. Press the *Reset* button to reset the timer back to its original value. Press the *Done* button to save the changes and return to the Home Active screen.

TROUBLESHOOTING

Loss of Wireless Communications

Contact your service provider.

System Error Messages

Communication Error

If the User Interface and UIOB cannot communicate with each other, an error message states, “Communication Error Between Thermostat and I/O Board.”

Room Air Temperature Sensor Failure

If the room air temperature sensor reads less than -50° F or greater than 150° F, it is considered failed.

The Y1, Y2, W1, W2 outputs will be turned off and the room temperature display will show “--”. The fan will continue to run if the user has set the fan selection to “fan on”.

The home screen displays, “Room Air Temperature Failure”.

Outdoor Air Temperature Sensor Failure

If the outdoor air temperature sensor reads less than -50° F or greater than 150° F, it is considered failed.

If any feature requiring an outdoor air temperature sensor has been enabled and the outdoor air temperature sensor fails, then a -- error message is displayed in the outdoor air temperature location.

TROUBLESHOOTING

Forgotten Lockout Password

Contact your Energy Provider for a temporary password.

Time is Incorrect (time zone, daylight savings, loss of communications, etc)

Press the SETUP key on the Home Active screen, and then press the Time/Date button and reset the time and date.

Widely Swinging Temperatures

Check the pricing offsets for excessively high or low settings. Press SETUP on the Home Active screen, and press Price Response on the Basic Setup screen. If the offset amounts are acceptable, then contact your service provider.

Memory Failure

If the thermostat internal memory fails, an error message will be displayed.



Copyright 2011 Carrier Corp. • 7310 W. Morris St. • Indianapolis, IN 46231
Printed in U.S.A.

Edition Date: 05/11

Catalog No: OM—CFTCHCCZIG—02

Replaces: OM—CFTCHCCZIG—01

Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.