# T855iSH

## Thermostat Application Guide

| Description | |
|---|---|
| Gas or Oil Heat | Yes |
| Electric Furnace | Yes |
| Heat Pump (No Aux. or Emergency Heat) | Yes |
| Heat Pump (With Aux. or Emergency Heat) | Yes |
| Multi-Stage Systems | Yes |
| Heat Only Systems | Yes |
| Cool Only Systems | Yes |
| Millivolt | No |
| Wired Remote Sensing | Yes |
| Any HVAC system up to 5H/3C with standard low voltage controlled humidifier. | Yes |
| Any HVAC system up to 5H/3C with standard low voltage controlled de-humidifier. | Yes |

## Table of Contents



## Power Type

Hardwire (Common Wire)

**A trained, experienced technician must install this product.**

Carefully read these instructions. You could damage this product or cause a hazardous condition if you fail to follow these instructions.

Una version en espanol de este manual se puede descargar en la pagina web de la compania.



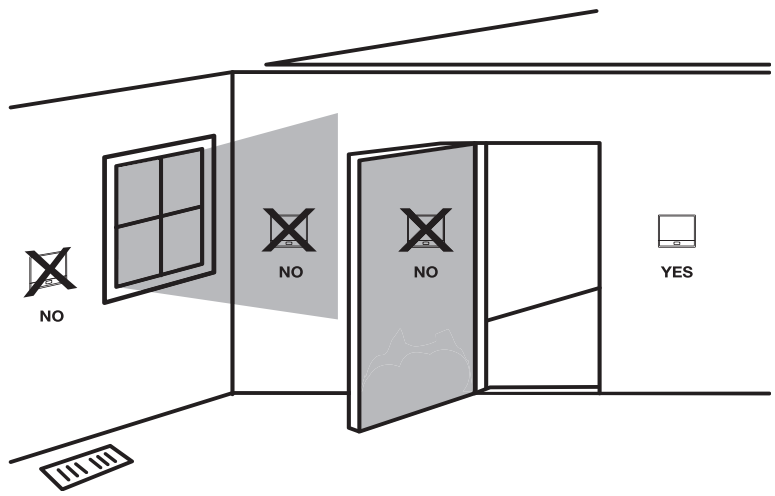


Rev. 2028



## Wall Locations

The thermostat should be installed approximately 4 to 5 feet above the floor. Select an area with average temperature and good air circulation.




**Do not install thermostat in these locations:**

- Close to hot or cold air ducts
- That are in direct sunlight
- With an outside wall behind the thermostat
- In areas that do not require conditioning
- Where there are dead spots or drafts (in corners or behind doors)
- Where there might be concealed chimneys or pipes

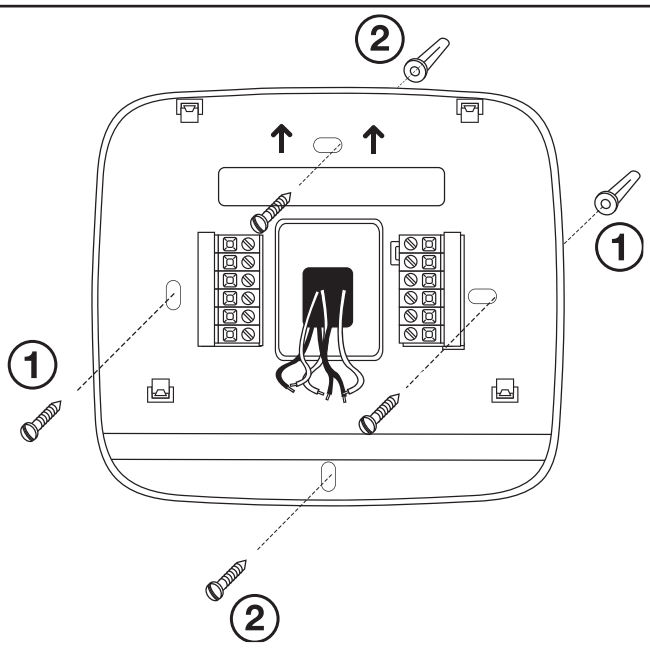
**Installation Tip**

Pick an installation location that is easy for the user to access. The temperature of the location should be representative of the building.





## Subbase Installation




① Horizontal Mount — For horizontal mount put one screw on the left and one screw on the right.

② Vertical Mount — For vertical mount put one screw on the top and one screw on the bottom.

**Installation Tip: Electrical Hazard**

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

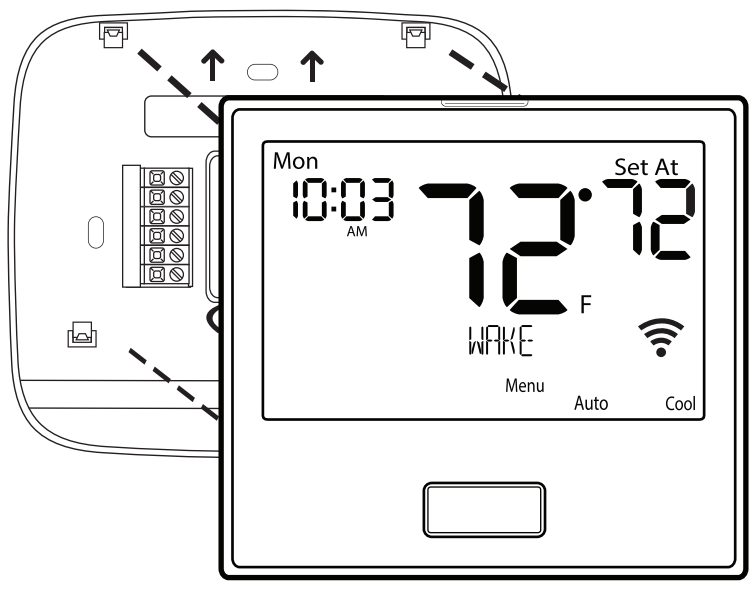
**Mercury Notice**

All of our products are mercury free. However, if the product you are replacing contains mercury, dispose of it properly. Your local waste management authority can give you instructions on recycling and proper disposal.





## Mount Thermostat

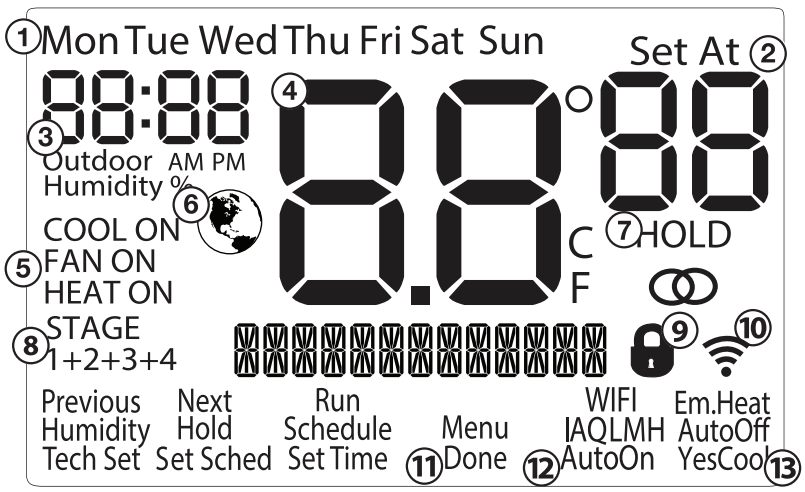



Align the 4 tabs on the subbase with corresponding slots on the back of the thermostat, then push gently until the thermostat snaps in place.

**Note:** To ensure a solid fit between the thermostat and the subbase:

**1.** Mount subbase to a flat wall
**2.** Use screws provided
**3.** Drywall anchors should be flush with the wall
**4.** Wires should be pushed into the wall

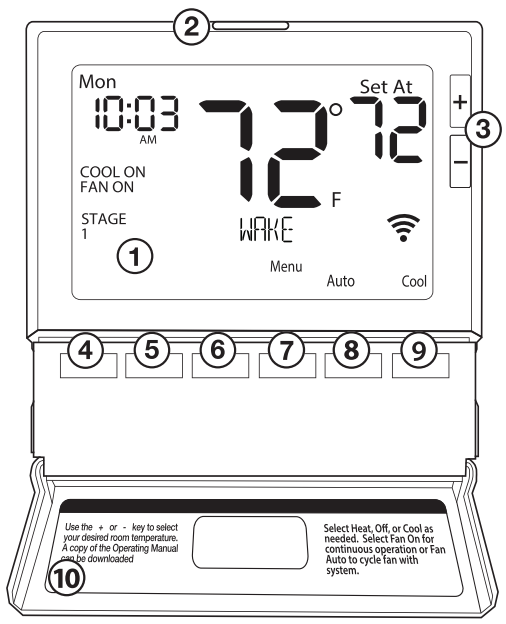
## Getting to know your thermostat




1. **Day of the Week**
2. **Setpoint Indicator:** Displays the user selectable setpoint temperature.
3. **Time of Day / Outdoor Temp / % Humidity**
4. **Indicates current room temperature**
5. **Indicates if heating or cooling equipment is running**
6. **Energy Efficient Globe:** Indicates the setpoint temperature chosen is a efficient choice.
7. **Hold Indicator:** Displayed when the thermostat is in permanent hold
8. Indicates the number of heating or cooling stages running
9. **Keypad Lockout:** Indicates the thermostat is in keypad lockout
10. **WIFI Indicator:** Indicates if WIFI is connected.
11. **Program Menu Buttons:** Shows different options during programming.
12. **Fan Button:** Changes the fan operation between Auto, IAQ, and On.
13. **System Button:** Changes the system operation between Off, Cool, Auto, Heat, and Emergency Heat based on system tech setting.







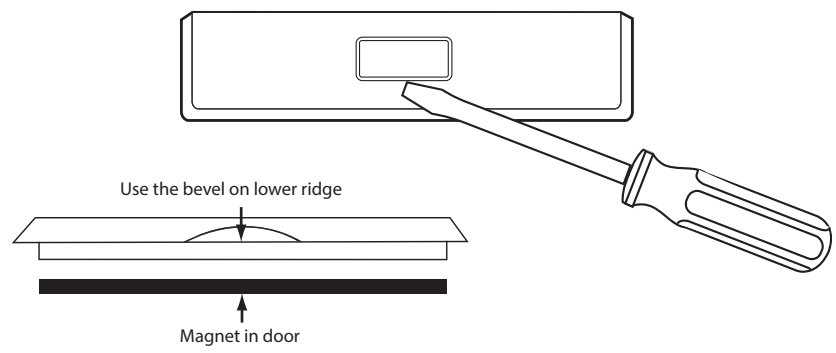

1. LCD Display
2. Glow in the dark light button
3. Setpoint buttons
4-6. Program buttons
7. Menu button
8. Fan button
9. System button
10. Button access door





## About The Badge

All of our thermostats use the same universal magnetic badge. Visit the company website to learn more about our free private label program.




Gently slide a screwdriver into the bottom edge of the badge. Gently turn the screwdriver counter clockwise. The badge is held on by a magnet in the well of the button door. The badge should pry off easily. **DO NOT USE FORCE.**

**Caution: Electrical Hazard**

Failure to disconnect the power before beginning to install this product can cause electrical shock or equipment damage.

**Warning:**

All components of the control system and the thermostat installation must conform to Class II circuits per the NEC Code.

## Wiring

1. If you are replacing a thermostat, make note of the terminal connections on the thermostat that is being replaced. In some cases the wiring connections will not be color coded. For example, the green wire may not be connected to the **G** terminal.
2. Loosen the terminal block screws. Insert wires then retighten the terminal block screws.
3. Place nonflammable insulation into the wall opening to prevent drafts.

**Installation Tip**

Do not overtighten terminal block screws, as this can damage the terminal block. A damaged terminal block can keep the thermostat from fitting on the subbase correctly or cause system operation issues.

**Max Torque = 6in-lbs.**

## Wiring Tips

### C Terminal

This thermostat requires a 24V common wire to the C terminal.

### Wire Specifications

Use shielded or non-shielded 18-22 gauge thermostat wire.

**Note:**

In many heat pump systems with no emergency heat relay, a jumper can be installed between **E** and **W2** to turn thermostat into a single stage control for Emergency Heat Operation.

**Note:**

Outdoor temperature sensor, Indoor temperature sensors, and Slab sensor wiring diagrams are located in R250S and R251S manuals.





## Terminal Designations

This thermostat is shipped from the factory to operate a conventional heating and cooling system. This thermostat may also be configured for a heat pump system. See the "heat pump" configuration step on page 16 of this manual to configure the thermostat for heat pump applications.

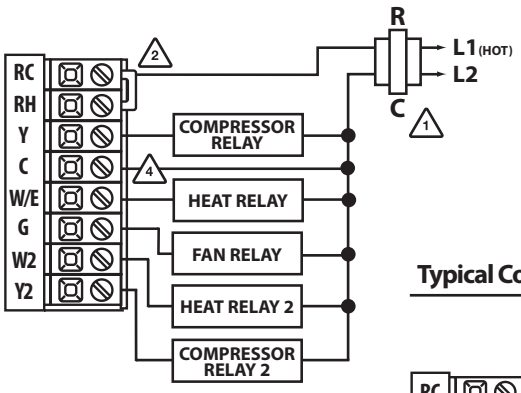
| Terminal | 2 Heat 2 Cool Conventional System | 2 Heat 1 Cool Heat Pump System | 4 Heat 2 Cool Heat Pump System | 5 Heat 3 Cool Heat Pump System |
|---|---|---|---|---|
| RC | Transformer power (cooling) | Transformer power (cooling) | Transformer power (cooling) | Transformer power (cooling) |
| RH | Transformer power (heating) | Transformer power (heating) | Transformer power (heating) | Transformer power (heating) |
| C | Transformer common | Transformer common | Transformer common | Transformer common |
| B | Reversing valve / configurable terminal | Reversing valve / configurable terminal | Reversing valve / configurable terminal | Reversing valve / 3rd stage of heat & cool |
| O | Reversing valve / configurable terminal | Reversing valve / configurable terminal | Reversing valve / configurable terminal | Reversing valve / 3rd stage of heat & cool |
| G | Fan relay | Fan relay | Fan relay | Fan relay |
| W/E | First stage of heat | Emergency Heat | First stage of auxiliary heat | First stage of auxiliary heat (4th stage of heat) |
| Y | First stage of cool | First stage of heat & cool | First stage of heat & cool | First stage of heat & cool |
| Y2 | Second stage of cool | N/A | Second stage of heat & cool | Second stage of heat & cool |
| W2 | Second stage of heat | Auxiliary heat | Second stage of auxiliary heat | Second stage of auxiliary heat (5th stage of heat) |
| S1/S2 | Remote Sensor | Remote Sensor | Remote Sensor | Remote Sensor |
| H | Humidify | Humidify | Humidify | Humidify |
| D | Dehumidify | Dehumidify | Dehumidify | Dehumidify |



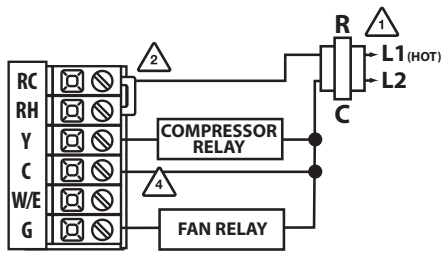


1. Power supply
2. Factory-installed jumper. Remove only when installing on 2-transformer systems

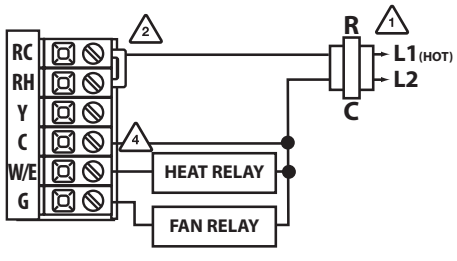
### Typical 2H/2C System: 1 Transformer




### Typical Cool-Only System With Fan




### Typical Heat Only System With Fan




**Note:**

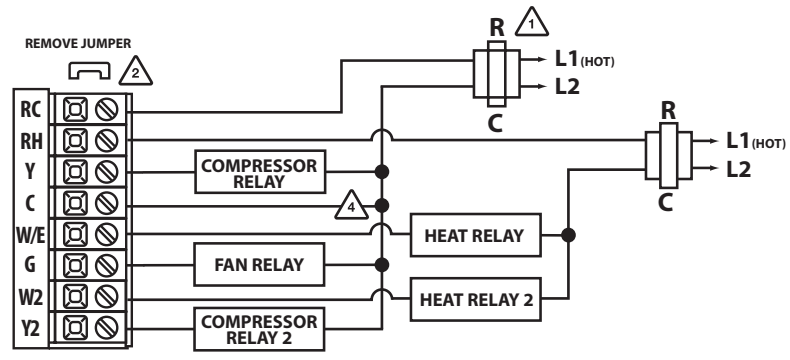
In many systems with no emergency heat relay a jumper can be installed between E and W2.



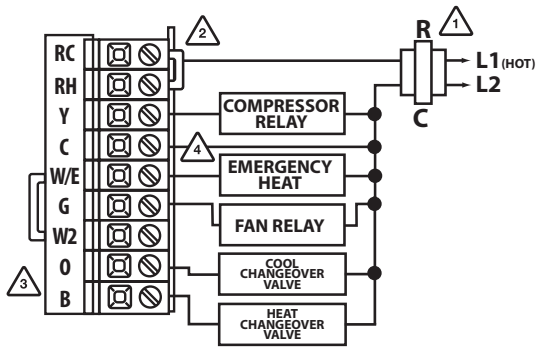


3. Use either O or B terminals for changeover valve
4. A 24 VAC common connection is required with this thermostat.
5. If DEHUM relay requires a normally-energized input, set Dehumidify relay to NC in Technician Setup.

### Typical 2H/2C System: 2 Transformer



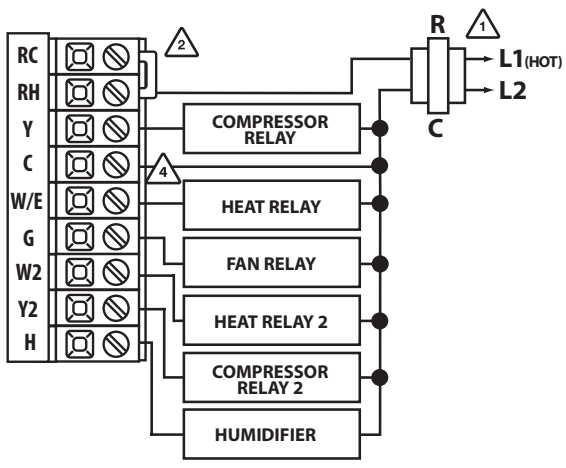

### Typical 2H/1C Heat Pump System



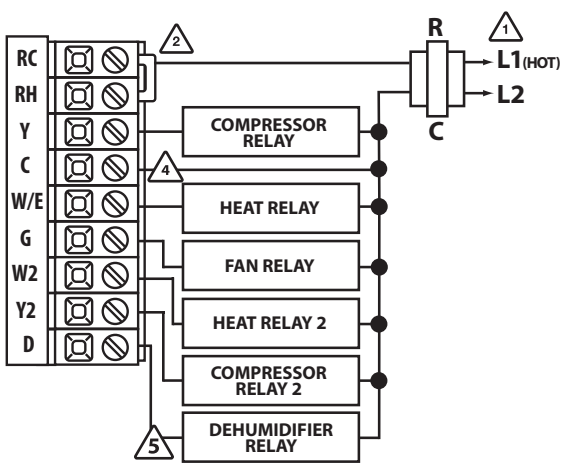
## Wiring Diagrams

1. Power supply
2. Factory - installed jumper. Remove only when installing on 2 transformer systems.
3. Use either O or B terminals for changeover valve.

### Typical 2H/2C system with 24 VAC Humidifier




### Typical 2H/2C system with Dehumidify Terminal

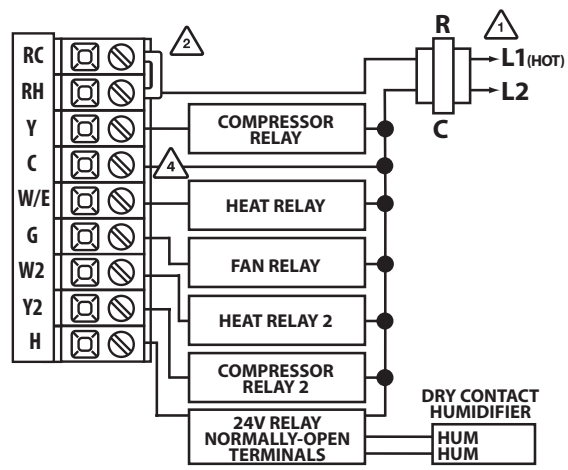




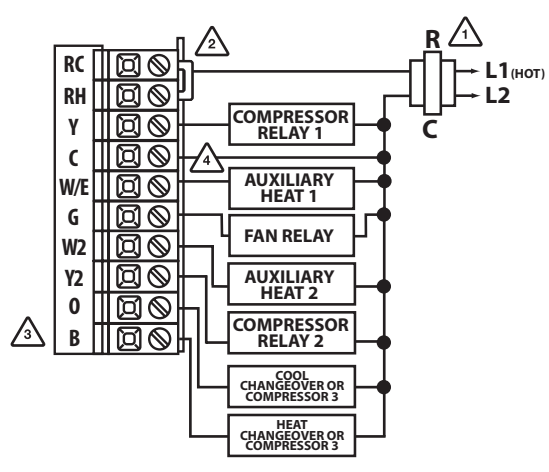

## Wiring Diagrams

4. A 24 VAC common connection is required with this thermostat.
5. If DEHUM relay requires a normally-energized input, set Dehumidify relay to NC in Technician Setup.

### Typical 2H/2C system with Dry Contact Humidifier




### Typical 5H/3C Heat Pump System






## Technician Setup Menu

This thermostat has a technician setup menu for easy installer configuration. To set up the thermostat for your particular application:

1. Press the **MENU** button.
2. Press and hold the **TECH SET** button for 3 seconds. This 3 second delay is designed so that homeowners do not accidentally access the installer settings.
3. Configure the installer options as desired using the table below.

   Use the [+] or [−] keys to change settings and the **NEXT** or **PREV** key to move from one step to another.
   **Note:** Only press the **DONE** key when you want to exit the Technician Setup options.
4. Press the **DONE** key to exit.

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Filter Change Reminder | This feature will flash a reminder after the elapsed run time to remind the user to change the filter. A setting of "OFF" will disable this feature. | OF FILTER | You can adjust the filter change reminder from "OFF" to 2000 hours of runtime in 50 hour increments. | OFF |
| Room Temperature Calibration | This feature allows the installer to change the calibration of the room temperature display. For example, if the thermostat reads 70˚ and you would like it to read 72˚ then select +2. | 0 CAL IBRATE | You can adjust the room temperature display to read up to 4˚above or below the factory calibrated reading. | 0˚F |
| Cooling Swing | The swing setting often called "cycle rate", "differential" or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles. | 0.5 COOL SW ING | The cooling swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the cooling on at approximately 0.5˚ above the setpoint and turn the cooling off at approximately 0.5˚ below the setpoint. | 0.5˚ |

**Swing Setting Tip**
The second stage will turn on at 2x the swing setting. The second stage will turn off when 1x the swing is reached. For example, if the swing setting is .5 degrees for heating and the thermostat is set at 70˚F, the first stage will turn on at approximately 69.5˚F. The second stage will turn on at 69˚F. The second stage will turn off at 69.5˚F and the first will turn off at 70.5˚F. If the third stage is used, it will turn on at 68.5˚F and turn off at approximately 69˚F.



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Heating Swing | The swing setting often called "cycle rate", "differential", or "anticipation" is adjustable. A smaller swing setting will cause more frequent cycles and a larger swing setting will cause fewer cycles. | 0.4 HEAT SW ING | The heating swing setting is adjustable from 0.2˚ to 2˚. For example: A swing setting of 0.5˚ will turn the heating on at approximately 0.5˚ below the setpoint and turn the heating off at 0.5˚ above the setpoint. | 0.4˚ |
| PTAC Mode | This setting allows the thermostat to operate a PTAC. This will allow for multiple fan speeds selectable in the next two tech settings. | OF PTAC MODE | Use the [+] and [−] buttons to select ON/OFF. | OFF |
| PTAC Fan Speeds (Only displayed if PTAC mode is "ON") | This setting allows you to choose the number of fan speeds the thermostat will control. G = Low Speed Fan B/O = Medieum Speed Fan Y2 = High Speed Fan | 2 FAN SPEEDS | Use the [+] and [−] buttons to select , 2 or 3. 1. Speeds: ON, Auto 2. Speeds: Low, High, Auto 3. Speeds: Low, Med, High, Auto | 2 |
| PTAC Medium Fan Speed Terminal (Only displayed if PTAC mode is ON and PTAC fan speeds is set to 3) | This setting will select the terminal for medium fan speed operations. The selected terminal cannot be used for reversing valve operations when heat pump is enabled. | 0 MED FAN TERM | Use the [+] and [−] buttons to select O/B terminals. | 0 |
| Heat Pump | When turned on the thermostat will operate a heat pump. EM. Heat will show as an option in the system switch tech setting. Use the [+] and [−] button to adjust. | OF HEAT PUMP | OFF configures the thermostat for conventional systems. ON configures the thermostat for heat pump systems. | OFF |

| System Mode | Default Heat | Heat Options | Cool Default | Cool Options |
|---|---|---|---|---|
| PTAC (conventional) | 1 | 1 | 1 | 1 |
| PTAC (Heat Pump) | 2 | 2, 1 | 1 | 1 |
| Heat Pump | 2 | 5, 4, 3, 2, 1 | 2 | 3, 2, 1 |
| Conventional | 2 | 2, 1 | 2 | 3, 2, 1 |

## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| System Stages | This setting allows you to select the number of heat and cool stages. | 2H2C<br>SET STAGES | Use the [+] and [-] buttons to select 1H/1C, 2H/1C, 2H/2C, 3H/1C, 3H/2C, 3H/3C, 4H/2C, 4H/3C, 5H/3C.<br>Note: Heat and cool choices are limited based on conventional, heat pump, or PTAC system configuration. | 2H |
| Third Stage of Cool Terminal Designation<br>(Only displayed if stages of cool is set to three on previous setting) | This setting allows the O or B terminal to be selected as the third stage of cool. The selected terminal will not be used for reversing valve functions in heat pump mode. | 0<br>3 COOL TERM | Use the [+] and [-] buttons to select O/B. | O |
| System Set | You can configure the system switch for the particular application. Heat - Off - Cool, Heat - Off, Cool - Off, Heat - Off - Cool – Auto.<br>Note: Emergency Heat is available in heat pump mode only. | SYSTEM SET<br>AutoOff Em.Heat Cool | Use the [+] or [-] buttons until the desired application is flashing. AUTO = (Auto Changeover) | Heat Off Cool |
| Dual Fuel Auxiliary For Heat Pump<br>(Only displayed if heat pump is set to "ON") | This setting allows the system to run Gas, Oil, Propane or any other types of auxiliary heat. The thermostat will default to electric auxiliary heat in heat pump applications. | OF<br>DUAL FUEL | Use the [+] and [-] buttons to select ON/OFF. | OFF |
| Electric or Gas Fan Operation<br>(Only displayed if heat pump is set to "ON") | Select GAS to have the system control the fan during a call for heat, select Electric to have the thermostat control the fan during a call for heat.<br>Note: If heat pump is set to "ON" this step will not show, and will default to ELECTRIC. | GAS<br>FAN SET | Use [+] and [-] buttons to change the setting. | GAS |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Satisfy Setpoint Staging<br>(Only displayed if there are more than one stage of heat or cool) | This feature allows the thermostat to keep multiple stages of heat or cool energized until the setpoint is satisfied. | OF<br>SS STAG ING | Use the [+] or [-] buttons to turn on of off. | OFF |
| Staging Delay<br>(Only displayed if there are more than one stage of heat or cool) | This feature allows a delay to occur if an additional stage is needed. This allows the previous stage extra time to satisfy the setpoint.<br>Note: Will not show if using outdoor sensor with balance point temperature. | OF<br>STAG ING DELAY | Use the [+] or [-] key to select OFF, 5, 10, 15, 30, 45, 60, or 90 minutes. | OFF |
| Minimum Compressor On Time | This feature allows the installer to select the minimum run time for the compressor. For example, a setting of 4 will force the compressor to run for at least 4 minutes every time the compressor turns on, regardless of the room temperature. | OF<br>MIN COMP ON | You can set the minimum compressor run time to "OFF", "3", "4", or "5" minutes. If 3, 4 or 5 is selected, the compressor will run for at least the selected time before turning off. Use the [+] and [-] buttons to change the setting. | OFF |
| Compressor Short Cycle Delay | The compressor short cycle delay protects the compressor from "short cycling". This feature will not altlow the compressor to be turned on for 5 minutes after it was last turned off. | ON<br>COMP DELAY | Selecting "ON" will not allow the compressor to be turned on for 5 minutes after the last time the compressor was on. Select "OFF" to remove this delay. Use the [+] and [-] buttons to change the setting. | ON |
| Cooling Fan Delay | The cooling fan delay setting will delay the fan from coming on in cool mode and keep it running after the compressor shuts off for a short time to save energy in some systems. | OF<br>COOL FAN DL | You can set the cooling fan delay to OFF, 10, 30, 60 or 90 seconds. If 10, 30, 60, or 90 is selected the fan will not turn on for that many seconds when there is a call for cool and will run for that many seconds after satisfying a call for cool. | OFF |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Program Options | You can configure this thermostat to have a 7 day program or No program.<br>Note: If 7d is selected, in set schedule you will program all seven days individually.<br>If 0d is selected the thermostat becomes non-programmable and the Set Schedule button goes away in Menu. | 7d<br>PROGRAM | Use the [+] and [-] button to select 7d for 7 day or 0d for non-programmable. | 7d |
| Time Periods<br>(Only displayed if program optioin is set to 5d or 7d) | You can configure this thermostat to have 2 or 4 programmable time periods per day. | 4<br>TIME PERIODS | Use the [+] and [-] buttons to select 4, 2C, or 4C time periods per day.<br>4: Wake, Leave, Return & Sleep.<br>2C: time periods are Occupied & Unoccupied.<br>4C: time periods are Occupied 1, Unoccupied 1, Occupied 2, & Unoccupied 2 | 4 |
| Pro Recovery | This feature will start heating and cooling early to bring the building temperature to its programmed setpoint by the beginning of the WAKE, RETURN and OCCUPIED time periods. | ON<br>PRO RECOVERY | Use the [+] or [-] key to select on or off. | ON |
| Cycle Minimizer<br>(Only displayed if program optioin is set to 5d or 7d) | This setting maximizes efficiency and equipment longevity by increasing the heating and cooling swing settings to 2° during the unoccupied and leave time periods. This will result in significantly fewer system cycles. | OF<br>CYCLE MIN | Use the [+] or [-] key to select on or off. | OFF |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Keypad Lockout | Keypad lockout allows you to configure the thermostat so some or all of the keys don't function. | OF<br>KEY LOCKOUT | Use the [+] and [-] buttons to select OFF, BASC, PART, FULL<br>OF - OFF= keypad lock-out has been disabled.<br>BA - BASIC = basic keypad lockout locks the menu key.<br>PA - PARTIAL= partial keypad lockout, which locks all the keys except the or setpoint keys.<br>FU - FULL= full keypad lockout, which locks out all the keys. | OFF |
| Keypad Lockout Code<br>(Only displayed if keypad lockout is set to Basic, Partial, or Full) | Keypad lockout with code shows only when Keypad Lock is set to BASIC, PARTIAL or FULL | OF<br>KEY CODE | 1. When ON you must enter the code after pressing the [+] and [-] buttons toegether for 3 secounds to take the thermostat in or out of keypad lockout. You will then be taken to a screen that allows you to enter the code.<br>2. Use [+] and [-] to change each number. Use the Previous and Next keys to change from one number to the next. The number you are currently on will blink.<br>3. Press Done when completed. If entered correctly the thermostat will be re-moved from keypad lockout. | OFF |

**Keypad Lockout Note:** The selected keypad lockout functionality must be activated after exiting tech setup. If you do not perform this procedure, all keys will function freely. To lock the keypad hold down the [+] and [-] keys for 3 seconds. You will see a lock in the display. To unlock the display hold down the [+] and [-] keys for 3 seconds.

## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Keypad Lockout Code Creation<br>(Only displayed if keypad lockout is set to Basic, Partial, or Full) | Keypad lockout with code creation is displayed when Keypad Lockout Code is turned on (Basic, Partial or Full is selected). | 0000<br>KEY CODE | OFF= Code is disabled and the lock icon is used to lock and unlock the display.<br><br>ON = Create a 4 digit code that locks and unlocks the display.<br><br>NOTE: In this tech setting, the clock field will show all four characters as 0s, with the first 0 blinking.<br><br>Select the numbers of the code by using the [+] and [-] buttons and switch between numbers by using the "next" and "previous" buttons. After DONE is pressed, the created code will be saved and will be needed to activate or deactivate keypad lockout functions. The master code is 7761. The master code will override any created keypad lock code. | 0000 |
| Heat Setpoint Limit | This feature allows you to set a maximum heating setpoint limit. The setpoint temperature cannot be raised above this value. | HE<br>HEAT LIMIT | Use the [+] or [-] key to select the maximum heat setpoint and the minimum cooling setpoint. | 90°F |
| Cool Setpoint Limit | This feature allows you to set a minimum cooling setpoint limit. The setpoint temperature cannot be lowered below this value. | CO<br>COOL LIMIT | Use the [+] or [-] key to select the minimum cooling setpoint. | 44°F |
| Temporary Hold Hours<br>(Only displayed if program option is set to 5d or 7d) | This feature will select a temporary hold time frame for the programmable mode of the thermostat. When the setpoint is changed, the thermostat will enter into a temporary hold for the number of hours selected from this tech setting. | 4<br>TEMP HOLDERS | Use the [+] and [-] buttons to select 0, 1, 2, 3, 4, 5 and 6. | 4 |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| °F or °C | This feature allows you to display temperatures in either Fahrenheit or Celsius. | oF<br>F OR C SET | °F for Fahrenheit<br>°C for Celsius | °F |
| 12 or 24 Hour Clock | You can select either a 12 or 24 hour clock setting. | 12<br>CLOCK SET | Use the [+] or [-] key to select 12 or 24 hour clock. | 12H |
| Pre Occupancy Fan | The pre-occupancy fan settings will energize the fan before the occupied time to provide ventilation prior to scheduled occupancy time periods. This feature only shows if the technician setup step for time periods is set to 2C or 4C.<br><br>Use the [+] and [-] buttons to adjust. | OF<br>PRE-OCC FAN | You can select the pre-occupancy fan from OFF, 1, 2, or 3 hours. If 1, 2, or 3 is selected, the fan will turn on that many hours prior to the scheduled occupied time period. | OFF |
| Display Light | The display light can be configured to stay on all the time or turn on when any key is pressed. There are LOW and HIGH selections for continuous ON selection. | dL<br>ALWAYS ON LIT<br><br>dL<br>HARDWARE ONLY | Use the [+] and [-] buttons to select OFF, LOW, or HIGH.<br><br>OFF configures the display light to come on when the light key or any button is pressed.<br><br>LOW configures the display light to stay on at a low intensity constantly. When a button is pressed, the display light will transition to high intensity.<br><br>HIGH configures the display light to remain on at high intensity all the time. | LOW |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Contractor Call Number | This feature allows you to put your phone number in the display. You can choose ON or OFF.<br>Notes:<br>If contractor call number is selected ON, the phone number entered will show in the display if there has been a continuous call for heating or cooling for 24 hours or if the light button is held down for 3 seconds. To remove the phone number from the display, hold the light button down for 3 seconds. | OF<br>PHONE NUMBER | If selected ON, you will see the input screen after pressing NEXT STEP. Use the [+] or [-] button to select the desired number and the FAN or SYSTEM key to move from one character to another. See note below for operation. | OFF |
| IAQ Mode Cycle | This feature will configure the fan to run a selected number of cycles per hour. Note: This mode can be enabled or disabled at anytime during normal operation by selecting IAQ mode with the fan key. Turning this feature on shows IAQ option in fan key.<br><br>Notes:<br>This programmable/selectable mode will operate the fan 1-4 cycles per hour, 1-45 minutes per cycle. Once programmed in tech setup, to enable this mode select "IAQ" with the fan key. Disable this mode by selecting "ON" or "AUTO" with the fan key. | OF<br>AQ MODE CYCL | Select OFF, 1, 2, 3 or 4 with the [+] or [-] buttons. This sets the number of cycles per hour that the IAQ fan mode will operate. | OFF |
| IAQ Minutes Per Cycle | This allows you to select the minimum number of minutes that the fan will run per IAQ mode cycle. The thermostat will keep track of fan runtime from normal heat and cool operation. If additional fan runtime is needed, the thermostat will run the fan to satisfy the IAQ mode minutes.<br>Notes: This programmable/selectable mode will operate the fan 1-4 cycles per hour, 1-45 minutes per cycle. Once programmed in tech setup, to enable this mode select "IAQ" with the fan key. Disable this mode by selecting "ON" or "AUTO" with the fan key. | 1<br>IAQ MODE MIN | Select 1, 5, 10, 15, 20, 30 or 45 minutes.<br>When IAQ fan mode is enabled, it will ensure the fan runs at least the selected number of minutes per IAQ Mode Cycle.<br>This step will not appear if previous step is set to "OFF". | 1 |



## Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Economizer Mode<br>(This feature cannot be used with non-programmable PTAC mode, three stages of cool, fresh air, of free cooling mode) | When this feature is enabled, the economizer terminal is energized in the WAKE, RETURN, SLEEP or OCCUPIED time periods. This feature will remain disabled if programming is OFF (0D). This feature will use one of the configurable terminals (O/B) to connect to the economizer. | OF<br>ECONOMIZER | Use the [+] and [-] buttons to select ON or OF. | OFF |
| Economizer Terminal Designation<br>(Only displayed if economizer is turned on) | This setting provides the option to select a terminal for Economizer functions. The selected terminal cannot be used for reversing valve operations when the heat pump setting is turned on. | 0<br>B<br>ECON TERMINAL | Use the [+] and [-] buttons to select O/B. | 0 |
| Fresh Air Minutes | This setting selects the minimum number of minutes that the fresh air damper will be energized. | 40<br>FRESH AIR MIN | Use the [+] and [-] buttons to select 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55 or 60 minutes. | 5 |

**Contractor Call Number Note**
If contractor call number is selected ON, the phone number entered will show in the display if there has been a continuous call for heating or cooling for 24 hours or if the light button is held down for 3 seconds. To remove the phone number from the display, hold the light button down for 3 seconds.

**A Note about IAQ Mode**
This programmable/selectable mode will operate the fan 1-4 cycles per hour, 1-45 minutes per cycle. Once programmed in tech setup, to enable this mode select "IAQ" with the fan key. Disable this mode by selecting "ON" or "AUTO" with the fan key.

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Fresh Air Mode<br>(This setting cannot be used with PTAC, three stages of cool, or economizer turned on) | This feature allows fresh air into a unit for a selectable amount of time. When Fresh Air Mode is enabled, the fan and the fresh air damper terminal will energize simultaneously. | OF<br>FRESH AIR | Use the [+] and [-] buttons to select OFF, OC ON or ON.<br>OFF: Thermostat does not enable Fresh Air Mode.<br>OC ON: Fresh Air Mode is enabled during the OCCUPIED, WAKE, RETURN, and SLEEP time periods (It will not bring in fresh air during UNOCCUPIED and LEAVE time periods).<br>ON: Thermostat will enable Fresh Air Mode for every time periods. | OFF |
| Fresh Air Terminal<br>(Only displayed if fresh air mode is turned ON. This setting cannot be used with PTAC, three stages of cool, or economizer turned ON.) | This setting provides the option to select a terminal for Fresh Air damper functions. The selected terminal cannot be used for reversing valve operations when the heat pump setting is turned on. | 0<br>FRESH AIR TRM | Use the [+] and [-] buttons to select O/B. | 0 |
| Remote Sensor Operation<br>(Only displayed if a sensor is connected to S1 and S2 terminals) | You can configure the thermostat for one of three remote sensor applications: 0 No Sensor, 1 Indoor, 2 Outdoor, 3 Floor. | 0<br>REMOTE MODE | Use the left and right arrows to select one of three options. View the S1/S2 terminal chart on next page for an explanation of these options. | 0 |

**S1 / S2 Terminal**

| Options | Mode | Description | Requires |
|---|---|---|---|
| 1 | Indoor | The local and remote temperatures are averaged. | R251S |
| 2 | Outdoor | The outdoor temperature is flashed in clock. | R250S |
| 3 | Floor | The floor temperature is shown in tech. | R250S |





| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Local Temp Sensor<br>(Only displayed if remote sensor setting is set to 1) | You can disable the sensor on the T855SH thermostat. At least one R251S indoor remote sensor must be connected to disable the local T855S sensor. Note: Will only show if remote sensor is set to 1. | ON<br>LOCAL TEMP | ON enables local T855SH sensor. OFF disables local T855SH sensor. | ON |
| Number of Indoor Remotes<br>(Only displayed if remote sensor setting is set to 1) | Enables the use of up to sixteen indoor sensors R251S. Note: Will only show Remote Sensor is set to 1 and Local Temp Sensor is set to on. | 1<br>NUMBER REMOTE | You can use 1, 4, 9, or 16 indoor sensors. Refer to the R251S Install Manual for detailed connection information | 1 |
| Dual Fuel Balance Point<br>(Only displayed if remote sensor setting is set to 2 and Dual Fuel AUX = On) | An outdoor temperature above balance point will cause the thermostat to energize the Y terminal(s) only in calls for heat. An outdoor temperature below balance point will cause the thermostat to energize the W2 terminal only in calls for heat. | OF<br>BALANCE POINT | Use the [+] and [-] buttons to select OFF, 10, 15, 20, 25, 30, 35, 40, 45, 50 degrees. | OFF |
| Balance Point Electric AUX Cut Out<br>(Only displayed if remote sensor setting is set to 2 and Duel Fuel Aux if Off) | Balance point with electric auxiliary will optimize heat pump usage. When the outdoor temperature is above the AUX CUT OUT selection, the thermostat to only allow the Y terminal(s) will energize and lockout the W2 terminal. When the outdoor temperature falls below the AUX CUT OUT selection and sits above the AUX CUT IN selection, the thermostat will allow the Y terminal(s) and the W2 terminal to energize. When the outdoor temperature is below the AUX CUT IN selection, the thermostat will only energize the W2 terminal and lockout the Y terminal(s). | 40<br>AUX CUT OUT | Use the [+] and [-] buttons to select 10, 15, 20, 25, 30, 35, 40, 45, 50 degrees. | OFF |





| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Balance Point Electric AUX Cut In<br>(Only displayed if remote sensor setting is set to 2 and Duel Fuel Aux if Off) | Balance point with electric auxiliary will optimize heat pump usage. When the outdoor temperature is above the AUX CUT OUT selection, the thermostat to only allow the Y terminal(s) to energize and lockout the W2 terminal. When the outdoor temperature falls below the AUX CUT OUT selection and sits above the AUX CUT IN selection, the thermostat to allow the Y terminal(s) and the W2 terminal to energize. When the outdoor temperature below the AUX CUT IN selection, the thermostat will only energize the W2 terminal and lockout the Y terminal(s). | 40<br>AUX CUT IN | Use the [+] and [-] buttons to select 10, 15, 20, 25, 30, 35, 40, 45, 50 degrees. | OFF |
| Balance Point Run Time<br>(Only displayed if remote sensor setting is set to 2) | Balance point run time will allow the W2 auxiliary terminal to energize even if outdoor temperature is above selected balance point temperature. If enabled, auxiliary will energize for the current cycle after the balance point run time has expired.<br>Note: Only shows if Balance Point is set to an outdoor temperature. | OF<br>BP RUN TIME | Off, 15, 30, 45, 60, 75, 90 | OFF |
| Free Cooling<br>(Only displayed if remote sensor setting is set to 2) | This feature will bring in outside air for first stage cooling operations, if the outdoor temperature is 5 (or more) degrees lower than the setpoint temperature. This setting can only be enabled if the thermostat is in cooling mode. | OF<br>FREE COOLING | Use the [+] and [-] buttons to select ON/OFF. | OFF |





| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Free Cooling Terminal<br>(Fresh air mode and free cooling can be used together. Free cooling cannot be used with PTAC mode, three stages of heat, or economizer mode) | This setting provides the option to select a terminal for Free Cooling functions. The selected terminal cannot be used for reversing valve operations when the heat pump setting is turned on. | 0<br>FREE COOLTRM | Use the [+] and [-] buttons to select O/B. | 0 |
| Floor Temperature<br>(Only displayed if remote sensor setting is set to 3) | The temperature of the floor sensor will be displayed.<br>Note: Only shows when REOP is set to 3.<br>Use [+] and [-] buttons to adjust. | 76<br>FLOOR TEMP | N/A | N/A |
| Floor High Limit<br>(Only displayed if remote sensor setting is set to 3) | This setting allows you to set a maximum floor temperature limit for heat. Heat will be locked out when the floor temperature is above this value. Note: Only shows when REOP is set to 3. | 86<br>HIGH LIMIT | Use the [+] or [-] buttons to select the High Limit for the floor sensor.35 - 120 | 86 |
| Floor Low Limit<br>(Only displayed if remote sensor setting is set to 3) | This setting allows you to set a minimum floor temperature limit for heat. Heat will turn on automatically when the floor temperature is below this value. Note: Only shows when REOP is set to 3. | 50<br>LOW LIMIT | Use the [+] or [-] keys to select the Low Limit for the floor sensor.<br>35 - 120 | 50 |

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Humidify | This feature adds humidity when system key is in HEAT. | OF<br>HUMIDIFY | Use the [+] and [-] key to turn on or off. If ON is selected the humidity will be displayed on the main screen and HUM terminal will energize when humidity setpoint is above ambient humidity in Heat mode. | OFF |
| Dehumidify | This feature removes humidity when system key is in COOL. | OF<br>DEHUMIDIFY | Use the [+] and [-] key to turn on or off. If ON is selected the humidity will be displayed on the main screen and DUM terminal will energize when humidity setpoint is below ambient humidity in Cool mode. | OFF |
| Humidity Calibration<br>(Only shows if Humidify or Dehumidify is set to "ON") | This feature allows the installer to change the calibration of the ambient humidity displayed. | OF<br>HUMIDITY CAL | Use the left and right arrows to adjust the calibration +/-3. Each one unit of adjustment amounts to approximately 5%. | 0 |
| Dehumidify With AC<br>(Only shows if dehumidify is set to "ON") | This feature forces the A/C to run longer to remove humidity when needed. The A/C will "over cool" the room a few degrees until humidity reaches the desired setpoint. The numbers below are the maximum number of degrees the thermostat will overcool to satisfy humidity. For example, If temperature set point is 70 and humidity set point is 50 and swing is 1 degree and "Dehumidify with AC" is set to 3 and the ambient is 68 and indoor humidity is 60 . . . the thermostat will continue to run air conditioning until 67 degree to try to satisfy the humidity set point of 50 | OF<br>DEHUMIFY AC | Use the [+] and [-] buttons to select Off, 2, 3, 4, 5<br>If selected a number is selected the thermostat will use the air condition to "over cool" to control humidity in Cool mode. If Off is selected the system will not use over cooling. | OFF |





This table references different humidity levels the thermostat will conform to, based on the outdoor temperature measurements. When the Automatic Humidity Adjusting tech setting selection is ON1 or ON2, the thermostat humidity will stay adjusted to the humidity level that correspond to the outdoor temperature based on the chart index below.

**Automatic Humidity Adjusting Index**

| When The Outdoor Temperature Is: | On 1 | On 2 |
|---|---|---|
| > +40˚F | 45% | 50% |
| +30˚F to 40˚F | 40% | 45% |
| +20˚F to 29˚F | 35% | 40% |
| +10˚F to 19˚F | 30% | 35% |
| 0˚F to 9˚F | 25% | 30% |
| -1˚F to -10˚F | 20% | 25% |
| -11˚F to -20˚F | 15% | 20% |
| <-20 | 10% | 15% |





| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Over Cool Limit<br>(Only displayed if Dehumidify with AC is turned "ON") | The amount of over cooling allowed when using A/C to remove humidity. This screen is only shown when ON is selected in the Dehumidify with AC tech setup step. | 3<br>OVER COOL LMT | Use the and left and right arrows to select the maximum number of degrees of over cool.<br>Options are: 2,3,4,5 | 3 |
| HUM Terminal<br>(Only shows if humidify is set to "ON") | Options for how the HUM terminal energizes.<br>See chart below | 1<br>HUM TERMINAL | Use the left and right arrows to select one of the four options.<br>View the HUM terminal chart below for an explanation of these options. | 1 |
| DUM Terminal<br>(Only shows if dehumidify is set to "ON") | Options for how the DHM terminal energizes.<br>See chart below | 1<br>DUM TERMINAL | Use the left and right arrows to select one of the four options.<br>View the DHM M terminal chart below for an explanation of these options. | 1 |

### HUM Terminal

| OPTIONS | HUM terminal energizes when the ambient humidity is... |
|---|---|
| 1 | Below the humidity setpoint and heat or fan is energized. |
| 2 | Below the humidity setpoint and heat is energized. |
| 3 | Below the humidity setpoint. It will also energize the fan during a call for humidity. |
| 4 | Below the humidity setpoint. |

### DHM Terminal

| OPTIONS | DUM terminal energizes when the ambient humidity is... |
|---|---|
| 1 | Above the humidity setpoint and cool or fan is energized. |
| 2 | Above the humidity setpoint. It will also energize the fan during a call for dehumidity. |
| 3 | Above the humidity setpoint. |
| 4 | Above the humidity setpoint and the compressor is not running. |





| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Automatic Humidity Adjusting<br>(Only displayed if remote sensor setting is set to 2 and humidity is turned "ON") | This feature will adjust the indoor humidity as the outdoor temperature changes. When OFF is selected, the humidity will constantly stay at the same percentage. When ON is selected, the indoor humidity will fluctuate based on outdoor temperature. | OF<br>AUTO HUMIDITY | Use the [+] and [-] buttons to select OFF, ON 1 or ON 2. When ON 1 or ON 2 is selected and humidity level is adjusted, the thermostat will revert to the original humidity level after four hours. See Automatic Humidity Adjusting chart for humidity ranges.<br>Please see revious page for chart. | OFF |
| Dehumidify Relay<br>(Only shows if dehumidify is set to "ON") | You can configure the D terminal as Normally-Open or Normally-Closed.<br>NO = Normally Open<br>NC = Normally Closed | NO<br>DHM RELAY O/C | Use the or key to select NO or NC. If NO is selected D will energize to dehumidify. If NC is selected D will be normally energized. D will de-energize to dehumidify. | NO |
| Summer Away Mode<br>(Only displayed if dehumidity is turned "ON") | Summer Away Mode protects the home in unoccupied long periods of time, during hot and humid weather. This is done by maintaining programmed and desired humidity and temperature settings. Summer Away Mode will show in the text field and allows the thermostat to put the programmed set point and humidity level in a permanent HOLD when this setting is enabled (HOLD will have to be manually removed). Dehumidity tech setting must be ON for this feature to be available. Cycle Minimizer is turned ON when Summer Away Mode is activated by the user (usually cycle minimizer is based on Unoccupied and Leave time periods).<br>Adds another Tech Setting: following this one | OF<br>SUMMER AWAY | Use the [+] and [-] buttons to select ON/OFF. When ON is selected, Summer Away Mode is activated by pressing and holding the "HOLD" key on the thermostat screen, for 3 seconds. | OFF |

# Technician Setup Menu

| Tech Setup Steps | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| Summer Away Mode Humidity (Only displayed if summer away mode is turned "ON") | This tech setting will select the desired humidity level for Summer Away Mode.<br><br>Note: The thermostat will default to the Dehumidify set point when this feature is enabled. | 75<br>Humidity %<br>SUMMER AWAY | Use the [+] and [-] buttons to select the humidity level for Summer Away Mode. | OFF |
| Comfort Temperature (Only displayed if humidity is turned "ON") | This feature uses both air temperature and the relative humidity to control the indoor temperature based on how it actually feels for people to maximize comfort. | OF<br>COMFORT TEMP | If ON is selected the ambient temperature will operate off of a combination of the air temperature and the relative humidity. When OFF the ambient temperatures will operate off of the air temperature only. The thermostat will show the comfort index in the ambient temp area and drive the heating and cooling based on this. | OFF |
| Humidity Pad Reminder | Enables a reminder for the user to change the humidity pad. | OFF<br>HUMIDITY PAD | Use the [+] or [-] key to select OFF, 600, 1000, 1500, or 2000. These represent hours of heat operation. | OFF |
| UV Lamp Reminder | Enables a reminder for the user to change the UV light bulb. | OFF<br>UV LAMP | Use the [+] or [-] key to select OFF, 1 YR, 2 YR | OFF |
| IAQ Cell Reminder | Enables a reminder for the user to change the IAQ Cell after 25,000 hrs. | OFF<br>IAQ CELL | Use the [+] or [-] buttons to select OFF, or 25 (stands for 25,000 hours). | OFF |



# WIFI Technician Setup Menu

These steps/options are only used for trouble shooting, re-setting or restoring to default the WIFI settings of the thermostat. They are not needed for installation or initial setup.

1. Press the MENU button.
2. Press the WIFI button.
3. Configure the WIFI options as desired using the table below.
Use the + or - keys to change settings and the NEXT or PREV key to move from one step to another.

Note: Only press the DONE key when you want to exit the WIFI Menu

| WIFI Menu | | LCD Will Show | Adjustment Options | Default |
|---|---|---|---|---|
| SSID Number | This step shows the SSID number of the thermostat. (The network it is connected to) | SSID<br>SSID HERE | Press NEXT to move to the next step. Press DONE to exit. | N/A |
| Firmware Version | This step shows the version of firmware that is installed on the thermostat. | FWV<br>WIFI-000000 | Press NEXT to move to the next step. Press DONE to exit. | N/A |
| WIFI Provisioning Reset | This step allows you to reset the thermostats WIFI connection to change to a different WIFI network. | DELETE NETWORK | Press and hold YES for three seconds to reset. | N/A |



# Setting the Humidity

## Comfort Temperature Index

| Ambient Temperature | 20%-25% | 26%-35% | 36%-45% | 46%-55% | 56%-65% | 66%-75% | 76%-85% | 86%-90% |
|---|---|---|---|---|---|---|---|---|
| **50** | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| **51** | 50.6 | 50.7 | 50.7 | 50.9 | 51 | 51 | 51 | 51.2 |
| **52** | 51.2 | 51.5 | 51.5 | 51.7 | 52 | 52 | 52 | 52.5 |
| **53** | 52.3 | 52.5 | 52.5 | 52.8 | 53 | 53 | 53 | 53.5 |
| **54** | 52.9 | 53.3 | 53.3 | 53.6 | 54 | 54 | 54 | 54.8 |
| **55** | 53.5 | 54 | 54 | 54.5 | 55 | 55 | 55 | 56 |
| **56** | 54.1 | 54.6 | 54.7 | 55.3 | 56 | 56 | 56 | 57 |
| **57** | 54.7 | 55.2 | 55.4 | 56.2 | 56.9 | 56.9 | 56.9 | 57.9 |
| **58** | 55.8 | 56.3 | 56.6 | 57.3 | 58.1 | 58.1 | 58.1 | 59.1 |
| **59** | 56.4 | 56.9 | 57.3 | 58.2 | 59 | 59 | 59 | 60 |
| **60** | 57 | 57.5 | 58 | 59 | 60 | 60 | 60 | 61 |
| **61** | 58 | 58.5 | 59.1 | 60.1 | 60.9 | 60.9 | 61.1 | 61.9 |
| **62** | 58.9 | 59.4 | 60.1 | 61.1 | 61.9 | 61.9 | 62.1 | 62.9 |
| **63** | 60.1 | 60.6 | 61.4 | 62.4 | 63.1 | 63.1 | 63.4 | 64.1 |
| **64** | 61 | 61.6 | 62.4 | 63.4 | 64.1 | 64.1 | 64.4 | 65.1 |
| **65** | 62 | 62.5 | 63.5 | 64.5 | 65 | 65 | 65.5 | 66 |
| **66** | 62.7 | 63.3 | 64.3 | 65.3 | 65.9 | 65.9 | 66.5 | 66.9 |
| **67** | 63.4 | 64.1 | 65.1 | 66.1 | 66.8 | 66.8 | 67.6 | 67.8 |
| **68** | 64.6 | 65.4 | 66.4 | 67.4 | 68.2 | 68.2 | 68.9 | 69.2 |
| **69** | 65.3 | 66.2 | 67.2 | 68.2 | 69.1 | 69.1 | 70 | 70.1 |
| **70** | 66 | 67 | 68 | 69 | 70 | 70 | 71 | 71 |
| **71** | 67.2 | 68.2 | 69.1 | 70.1 | 71.1 | 71.4 | 72.4 | 72.6 |
| **72** | 68.3 | 69.3 | 70.3 | 71.3 | 72.3 | 72.8 | 73.8 | 74.3 |
| **73** | 69.7 | 70.7 | 71.7 | 72.7 | 73.7 | 74.2 | 75.2 | 75.8 |
| **74** | 70.8 | 71.9 | 72.9 | 73.9 | 74.9 | 75.6 | 76.6 | 77.4 |
| **75** | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| **76** | 72.9 | 73.9 | 74.9 | 76.1 | 77.1 | 78.6 | 79.6 | 80.6 |
| **77** | 73.8 | 74.7 | 75.7 | 77.2 | 78.2 | 80.2 | 81.2 | 82.7 |
| **78** | 75.2 | 76.3 | 77.3 | 78.8 | 79.8 | 81.8 | 82.8 | 84.3 |
| **79** | 76.1 | 77.1 | 78.1 | 79.9 | 80.9 | 83.4 | 84.4 | 86.2 |
| **80** | 77 | 78 | 79 | 81 | 82 | 85 | 86 | 88 |
| **81** | 77.9 | 79.1 | 80.3 | 82.3 | 83.6 | 86.6 | 88.3 | 91 |
| **82** | 78.7 | 80.2 | 81.7 | 83.7 | 85.1 | 88.1 | 90.6 | 94.1 |
| **83** | 80.3 | 81.8 | 83.3 | 85.3 | 86.9 | 89.9 | 92.4 | 96 |
| **84** | 81.1 | 82.9 | 84.7 | 86.7 | 88.4 | 91.4 | 94.7 | 99 |
| **85** | 82 | 84 | 86 | 88 | 90 | 93 | 97 | 102 |
| **86** | 82.8 | 85.1 | 87.3 | 89.5 | 92 | 95.8 | 100.5 | 106.4 |
| **87** | 83.7 | 86.1 | 88.6 | 91.1 | 94.1 | 98.5 | 104 | 110.9 |
| **88** | 85.3 | 87.9 | 90.4 | 92.9 | 96 | 100.5 | 106.1 | 113.1 |
| **89** | 86.2 | 88.9 | 91.7 | 94.5 | 98 | 103.2 | 109.5 | 117.6 |
| **90** | 87 | 90 | 93 | 96 | 100 | 106 | 113 | 122 |



# Setting the Humidty

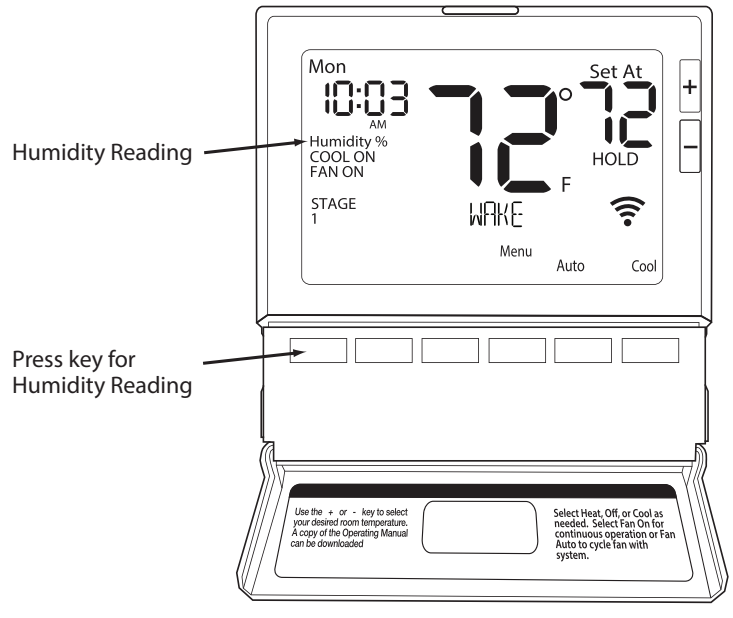
## Setting Target Humidity Setpoint

Follow the steps below to change your target humidity setpoint.

Press the **HUMIDITY** key
Use the [+] or [-] key to select the target humidity setpoint.
Press **DONE** when completed.

**Note:**
The target humidity setpoint is not programmable. Unlike temperature, humidity does not change quickly and should not be programmed.

Humidity is only energized during heat. Dehumidify is only energized during cool. Heat and Cool each have their own target setpoints.

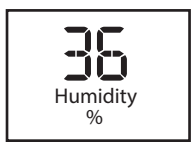


## Setting Target Humidity Setpoint

Ambient humidity will flash in the time field when Humidify or De-Humidify is set to **ON.**

**HON** will also flash when the Humidity terminal is energized. **dON** will also flash when the De-Humidify terminal is energized.


DAY AND TIME




AMBIENT HUMIDITY


HON
(Humidity Energized)


dON
(De-Humidity Energized)

## Recommended Heating Settings:

Increasing Humidity

The table below shows recommended indoor humidity levels in relation to outdoor temperatures during heating (adding humidity).

## Recommended Cooling Settings:

Consult your professional HVAC technician for recommended settings for your climate.

| Outside Temperature (0˚F) | Recommended Relative Humidity |
|---|---|
| +20˚ and above | 35% to 40% |
| +10˚ | 30% |
| 0˚ | 25% |
| -10˚ | 20% |
| -20˚ | 15% |





## Set Time

Follow the steps below to set the day of the week and current time:

1. Press the **MENU** button.
2. Press **SET TIME.**
3. Day of the week is flashing. Use the + or − key to select the current day of the week.
4. Press **NEXT.**
5. The current hour is flashing. Use the + or − key to select the current hour. When using 12-hour time, make sure the correct a.m. or p.m. choice is selected.
6. Press **NEXT.**
7. Minutes are now flashing. Use the + or − key to select current minutes.
8. Press **DONE** when completed.

## Programming

All our programmable thermostats are shipped with an energy saving default program. You can customize this default program by following the instructions in the **set program schedule section** starting on page 24.

Your thermostat can be programmed to have each day of the week programmed uniquely (7 days) or non-programmable. For the 7-day programming modes, there are three time period options.

1. "4" Residential **(WAKE, LEAVE, RETURN, SLEEP)**
2. "2C" Commercial **(OCCUPIED, UNOCCUPIED)**
3. "4C" Commercial **(OCCUPIED 1, UNOCCUPIED 1, OCCUPIED 2, UNOCCUPIED 2)**

This thermostat has a programmable fan feature, which allows you to run the fan continually during any time period.

**Reminders**
Once a reminder has been turned on and set, the elapsed time can be checked by navigating to its tech setup step. The elapsed time will then appear in the text field. It can also be reset at that time by holding down the set time/run sched button for 3 seconds. Resetting an expired reminder can be done without entering tech setup, by holding down the set time/run sched button for 3 seconds from the home screen.

**Staging Delay Note:** This step will not appear if using an outdoor balance point temperature.





| Custom Program | | | | |
|---|---|---|---|---|
| **Day of the Week** | **Events** | **Time** | **Setpoint Temperature (HEAT)** | **Setpoint Temperature (COOL)** |
| Weekday | Wake/OCC1 | | | |
| | Leave/UNOCC1 | | | |
| | Return/OCC2 | | | |
| | Sleep/UNOCC2 | | | |
| | Occupied | | | |
| | Unoccupied | | | |
| Saturday | Wake/OCC1 | | | |
| | Leave/UNOCC1 | | | |
| | Return/OCC2 | | | |
| | Sleep/UNOCC2 | | | |
| | Occupied | | | |
| | Unoccupied | | | |
| Sunday | Wake/OCC1 | | | |
| | LeaveUNOCC1 | | | |
| | Return/OCC2 | | | |
| | Sleep/UNOCC2 | | | |
| | Occupied | | | |
| | Unoccupied | | | |





**To customize your 7 day 4 time period Program schedule, follow these steps:**

**Monday:**

1. Select **HEAT** or **COOL** with the **SYSTEM** key.
   **Note:** You have to program heat and cool each separately.
2. Press the **MENU** button (If menu does not appear first, press **RUN SCHED**).
3. Press **SET SCHED**. **Note:** Monday is displayed and the **WAKE/OCC1** icon is shown. You are now programming the **WAKE/OCC1** time period for that day.
4. Time is flashing. Use the + or − key to make your time selection for that day's **WAKE/OCC1** time period.
   **Note:** If you want the fan to run continuously during this time period, select **ON** with the **FAN** key. If you want to use **IAQ** mode during this time period, select **IAQ** with the **FAN** key.
5. Press **NEXT.**
6. The setpoint temperature is flashing. Use the + or − key to make your setpoint selection for that day's **WAKE/OCC1** period.
7. Press **NEXT.**
8. Repeat steps 4 through 7 for that day's **LEAVE/UNOCC1** time period, for that day's **RETURN/OCC2** time period, and for that day's **SLEEP/UNOCC2** time period.

**Repeat steps 4 through 8 for the remaining days of the week.**

**A Note About Auto Changeover:**
In Auto you have the ability to switch between Auto Heat or Auto Cool by pressing the system key. This can be done once the current mode has reached its setpoint. For example: if in Auto Heat, the heat setpoint must be satisfied before the thermostat will allow you to switch to Auto Cool. You can switch out of Auto by holding down the system key. To get back into Auto, you must toggle the system key to Auto.

**To customize your 7 day 2 time period program schedule, follow these steps:**

**Monday:**

1. Select **HEAT** or **COOL** with the **SYSTEM** key.
   **Note:** You have to program heat and cool each seperately.
2. Press the **MENU** button (If menu does not appear first press **RUN SCHED**).
3. Press **SET SCHED**. **Note:** Monday is displayed and the **OCCUPIED** text is shown. You are now programming the **OCCUPIED** time period for that day.
4. Time is flashing. Use the [+] or [-] key to make your time selection for that day's **OCCUPIED** time period.
   **Note:** If you want the fan to run continuously during this time period, select **ON** with the **FAN** key. If you want to use **IAQ** mode during this time period, select **IAQ** with the fan key.
5. Press **NEXT.**
6. The setpoint temperature is flashing. Use the [+] or [-] key to make your setpoint selection for that day's **OCCUPIED** period.
7. Press **NEXT.**
8. Repeat steps 4 through 7 for that day's **UNOCCUPIED** time period.

**Repeat steps 4 through 8 for the remaining days of the week.**

**A Note About Programmable Fan:**
The programmable fan feature will run the fan continuously during any time period it is programmed to be on. This is the best way to keep the air circulated and to eliminate hot and cold spots in your building. If using **IAQ** mode, set fan to **IAQ** for any time period.





## Default Programming

| Factory Default Program for 2 Time Periods | | | | |
|---|---|---|---|---|
| **Day of the Week** | **Events** | **Time** | **Setpoint Temperature (HEAT)** | **Setpoint Temperature (COOL)** |
| Weekday | OCCUPIED | 8 AM | 70˚F (21˚C) | 78˚F (26˚C) |
| | UNOCCUPIED | 6 PM | 62˚F (17˚C) | 85˚F (29˚C) |
| Saturday | OCCUPIED | 8 AM | 70˚F (21˚C) | 78˚F (26˚C) |
| | UNOCCUPIED | 6 PM | 62˚F (17˚C) | 85˚F (29˚C) |
| Sunday | OCCUPIED | 8 AM | 70˚F (21˚C) | 78˚F (26˚C) |
| | UNOCCUPIED | 6 PM | 62˚F (17˚C) | 85˚F (29˚C) |

You can use the table on the next page to plan your customized program schedule if using 5+1+1.





## Default Programming

| Factory Default Program | | | | |
|---|---|---|---|---|
| **Day of the Week** | **Events** | **Time** | **Setpoint Temperature (HEAT)** | **Setpoint Temperature (COOL)** |
| Weekday | Wake/OCC1 | 6 AM | 70˚F (21˚C) | 78˚F (24˚C) |
| | Leave/UNOCC1 | 8 AM | 62˚F (17˚C) | 85˚F (28˚C) |
| | Return/OCC2 | 6 PM | 70˚F (21˚C) | 78˚F (24˚C) |
| | Sleep/UNOCC2 | 10 PM | 62˚F (17˚C) | 82˚F (26˚C) |
| Saturday | Wake/OCC1 | 6 AM | 70˚F (21˚C) | 78˚F (24˚C) |
| | Leave/UNOCC1 | 8 AM | 62˚F (17˚C) | 85˚F (28˚C) |
| | Return/OCC2 | 6 PM | 70˚F (21˚C) | 78˚F (24˚C) |
| | Sleep/UNOCC2 | 10 PM | 62˚F (17˚C) | 82˚F (26˚C) |
| Sunday | Wake/OCC1 | 6 AM | 70˚F (21˚C) | 78˚F (24˚C) |
| | LeaveUNOCC1 | 8 AM | 62˚F (17˚C) | 85˚F (28˚C) |
| | Return/OCC2 | 6 PM | 70˚F (21˚C) | 78˚F (24˚C) |
| | Sleep/UNOCC2 | 10 PM | 62˚F (17˚C) | 82˚F (26˚C) |

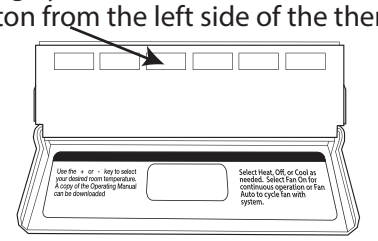




## Filter Change & Other Reminders

If the filter change reminder is enabled, you will see a reminder in the display when your air filter needs changed. The reminder will be shown in the display after your system has run long enough to require an air filter change.

**Resetting The Filter Change Reminder:** When the reminder is displayed, you should change your air filter and reset the reminder by holding down the 3rd button from the left side of the thermostat for 3 seconds.




This thermostat also has other maintenance reminders (Humidity Pad, UV lamp, and IAQ Cell), that are reset with the same procedure.

## Temporary & Permanent Hold Feature

**Temporary Hold:** The thermostat will display **HOLD** and **RUN SCHED** on the bottom of the screen when you press the [+] or [-] key. If you do nothing, the temperature will remain at this setpoint temporarily for 4 hours. The program setpoint will then replace the temporary setpoint.

**Permanent Hold:** With a temporary hold set, If you press the **HOLD** key at the bottom of your screen, you will see **HOLD** appear below the setpoint temperature in the display. The thermostat will now permanently stay at this setpoint and can be adjusted using the [+] or [-] keys.

**To Return To Program:** Press the **RUN SCHED** key at the bottom of the screen to exit temporary and permanent holds.

## Remote Sensor Operation Options

**Option #1 - Indoor / Local Temperature Sensor "ON":**
**1.** The displayed room temperature will display the average temperature of the thermostat and all remote sensors.

**2.** By pressing the far left (Prev Step) button, the average temperature of just the remote sensor(s) will be displayed briefly in the clock field.

**Option #1 - Indoor / Local Temperature Sensor OFF":**
**1.** The displayed room temperature will only show the average temperature of the remote sensor(s).

**Option #2 - Outdoor:**
**1.** The outdoor temperature will alternate briefly with the clock display.

**Option #3 (Floor)**
**1.** By pressing the far left (Prev. Step) button, the temperature of the floor sensor will be displayed briefly in the clock field.





## Specifications

| | |
|---|---|
| The display range of temperature | 41˚F to 95˚F (5˚C to 35˚C) |
| The control range of temperature | 44˚F to 90˚F (7˚C to 32˚C) |
| Load Rating | 1 amp per terminal, 1.5 amp maximum all terminals combined |
| Swing (cycle rate or differential) | Heating is adjustable from 0.2˚ to 2.0˚ Cooling is adjustable from 0.2˚ to 2.0˚ |
| Power source | 18 to 30 VAC, NEC Class II, 50/60 Hz for hardwire. 500 mA |
| Operating ambient | 32˚F to +105˚F (0˚C to +41˚C) |
| Operating humidity | 90% non-condensing maximum |
| Dimensions of thermostat | 4.7" W x 4.3" H x 0.9" D |
| Frequency Range | 2.4 GHz ISM radio band |
| WIFI | Supporting 802.11 B/G/N Standards |

Operation Manual

Operation Manual

# T855iSH



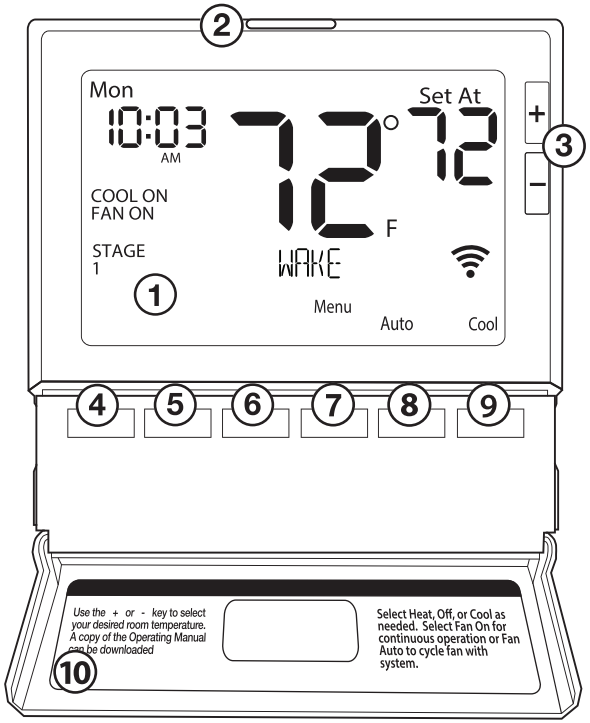
Una version en español de este manual se puede descargar en la pagina web de la compañia.

**Caution**

Equipment damage hazard. Do not operate the cooling system if the outdoor temperature is below 50 ˚F (10 ˚C) to prevent possible compressor damage.




Rev. 2028






Thermostat Operation

**1 Glow in the dark light button**

The glow in the dark light button will self illuminate for several hours after exposure to ambient light. This button turns on the display light when pressed.

**2 LCD Display**

See page 6 for details about this display readout.

**3 Temperature Setpoint Buttons**

Press the + or − buttons to select the desired room temperature.

**4-6 Program Buttons**

Program Buttons
See pages 10-15 for details about setting the time and program.

**7 Program Menu Button**

Shows different options during programming.

**8 Fan Button**

Select **ON**, **AUTO** or **IAQ**. The **ON** setting will run the fan continuously. The **AUTO** setting will cycle the fan on only when the heating or cooling system is on. IAQ will enable **IAQ FAN MODE**, if selected..

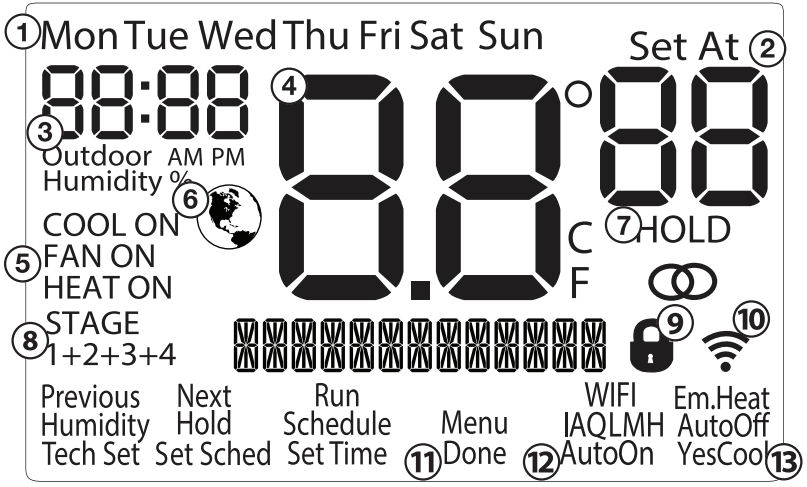
**9 System Button**

Selects the operation mode on your **HVAC** system. Selecting **HEAT** turns on the heat mode. Selecting **COOL** turns on the cool mode. Selecting **OFF** turns both heating and cooling off. Selecting **AUTO** will turn the **HEAT** or **COOL** on as needed. (**EM HEAT** will appear as an option if operating a heat pump. **EM HEAT** setting will turn on emergency heat.)

**10 Button Door**

See page 4 for further information.

Thermostat Quick Reference

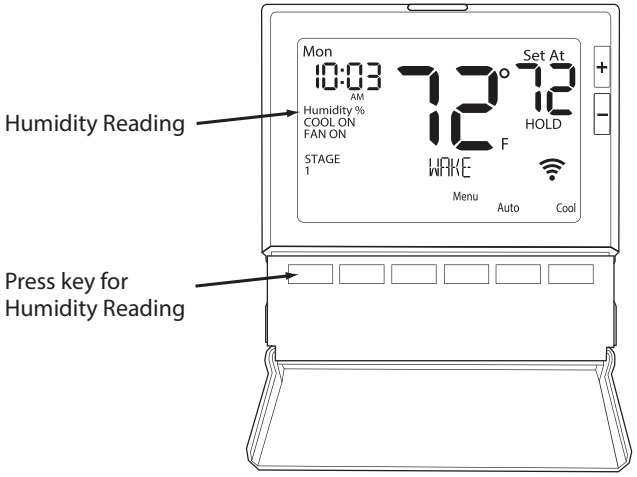



1. **Day of the Week**
2. **Setpoint Indicator:** Displays the user selectable setpoint temperature.
3. **Time of Day / Outdoor Temp / % Humidity**
4. **Indicates current room temperature**
5. **Indicates if heating or cooling equipment is running**
6. **Energy Efficient Globe:** Indicates the setpoint temperature chosen is a efficient choice.
7. **Hold Indicator:** Displayed when the thermostat is in permanent hold
8. Indicates the number of heating or cooling stages running
9. **Keypad Lockout:** Indicates the thermostat is in keypad lockout
10. **WIFI Indicator:** Indicates if WIFI is connected.
11. **Program Menu Buttons:** Shows different options during programming.
12. **Fan Button:** Changes the fan operation between Auto, IAQ, and On.
13. **System Button:** Changes the system operation between Off, Cool, Auto, Heat, and Emergency Heat based on system tech setting.

## Setting Target Humidity Setpoint

Follow the steps below to change your target humidity setpoint.

Press the **HUMIDITY** key
Use the [+] or [−] key to select the target humidity setpoint.
Press **DONE** when completed.



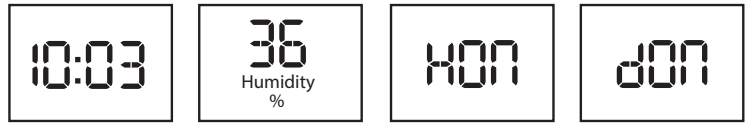



Setting the Humidity

## Setting Target Humidity Setpoint

Ambient humidity will flash in the time field when Humidify or De-Humidify is set to **ON.**

**HON** will also flash when the Humidity terminal is energized. **dON** will also flash when the De-Humidify terminal is energized.




**Note:**
The target humidity setpoint is not programmable. Unlike temperature, humidity does not change quickly and should not be programmed.

Humidity is only energized during heat. Dehumidify is only energized during cool. Heat and Cool each have their own target setpoints.

## Recommended Heating Settings:

The table on page 11 shows recommended indoor humidity levels in relation to outdoor temperatures during heating (adding humidity).

## Recommended Cooling Settings:

Consult your professional HVAC technician for recommended settings for your climate.



Setting the Humidity

| Outside Temperature (0˚F) | Recommended Relative Humidity |
|---|---|
| +20˚ and above | 35% to 40% |
| +10˚ | 30% |
| 0˚ | 25% |
| -10˚ | 20% |
| -20˚ | 15% |

## Set Time (If using programming)

Follow the steps below to set the day of the week and current time:

1. Press the **MENU** button.
2. Press **SET TIME.**
3. Day of the week will be flashing. Use the + or − key to select the current day of the week.
4. Press **NEXT.**
5. The current hour is flashing. Use the + or − key to select the current hour. When using 12-hour time, make sure the correct a.m. or p.m. choice is selected.
6. Press **NEXT.**
7. Minutes are now flashing. Use the + or − key to select current minutes.
8. Press **DONE** when completed.

**Important:**

You will see a **TECH SETUP** option after the **MENU** key is pressed. This **TECH SETUP** key is for installer configuration and should **NOT** be changed unless you consult your professional heating and air conditioning technician.



Programming

**To customize your 7 day 4 time period Program schedule, follow these steps:**

**Monday:**

1. Select **HEAT** or **COOL** with the **SYSTEM** key.
   **Note:** You have to program heat and cool each separately.
2. Press the **MENU** button (If menu does not appear first, press **RUN SCHED**).
3. Press **SET SCHED**. **Note:** Monday is displayed and the **WAKE/OCC1** icon is shown. You are now programming the **WAKE/OCC1** time period for that day.
4. Time is flashing. Use the + or − key to make your time selection for that day's **WAKE/OCC1** time period.
   **Note:** If you want the fan to run continuously during this time period, select **ON** with the **FAN** key. If you want to use **IAQ** mode during this time period, select **IAQ** with the **FAN** key.
5. Press **NEXT.**
6. The setpoint temperature is flashing. Use the + or − key to make your setpoint selection for that day's **WAKE/OCC1** period.
7. Press **NEXT.**
8. Repeat steps 4 through 7 for that day's **LEAVE/UNOCC1** time period, for that day's **RETURN/OCC2** time period, and for that day's **SLEEP/UNOCC2** time period.

**Repeat steps 4 through 8 for the remaining days of the week.**

**A Note About Auto Changeover:**
When in Auto you have the ability to switch between auto heat or auto cool by pressing the system key. This can be done once the current mode has reached its setpoint. For example: if in auto heat, the heat setpoint must be satisfied before the thermostat will allow you to switch to auto cool. You can switch out of auto by holding down the system key. To get back into auto, you must toggle the system key to auto.



Programming

## Set Program Schedule For Two Time Periods (OCCUPIED, UNOCCUPIED)

**Monday:**

1. Select **HEAT** or **COOL** with the **SYSTEM** key.
   **Note:** You have to program heat and cool each seperately.
2. Press the **MENU** button (If menu does not appear first press **RUN SCHED**).
3. Press **SET SCHED**. **Note:** Monday is displayed and the **OCCUPIED** text is shown. You are now programming the **OCCUPIED** time period for that day.
4. Time is flashing. Use the [+] or [-] key to make your time selection for that day's **OCCUPIED** time period.
   **Note:** If you want the fan to run continuously during this time period, select **ON** with the **FAN** key. If you want to use **IAQ** mode during this time period, select **IAQ** with the fan key.
5. Press **NEXT.**
6. The setpoint temperature is flashing. Use the [+] or [-] key to make your setpoint selection for that day's **OCCUPIED** period.
7. Press **NEXT.**
8. Repeat steps 4 through 7 for that day's **UNOCCUPIED** time period.

**Repeat steps 4 through 8 for the remaining days of the week.**

**A Note About Programmable Fan:**
The programmable fan feature will run the fan continuously during any time period when it is programmed to be on. This is the best way to keep the air circulated and to eliminate hot and cold spots in your building. If using **IAQ** mode, set fan to IAQ for any time period.





## Temporary & Permanent Hold Feature

**Temporary Hold:** The thermostat will display **HOLD** and **RUN SCHED** on the bottom of your screen when you press the + or − key. If you do nothing, the temperature will remain at this setpoint temporarily for a selected amount of time. After this, the program setpoint will then replace your temporary setpoint.

**Permanent Hold:** With a temporary hold set, if you press the **HOLD** key at the bottom of your screen, you will see **HOLD** appear below the setpoint temperature in the display. The thermostat will now permanently stay at this setpoint and can be adjusted using the + or − keys.

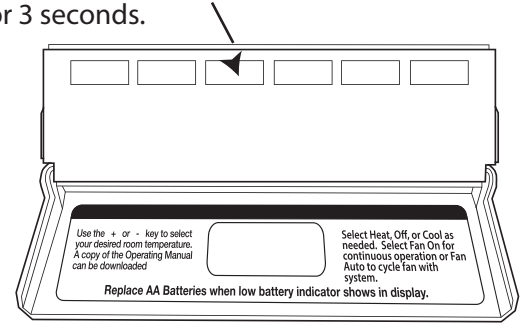
**To Return To Program:** Press the **RUN SCHED** key at the bottom of your screen to exit temporary and permanent holds.

Features

## Filter Change & Other Reminders

If your HVAC contractor has configured the thermostat to remind you when the air filter needs changed, you will see a reminder in the display when your air filter needs to be changed.

**Resetting The Filter Change Reminder:** When the reminder is displayed, you should change your air filter and reset the reminder by holding down the **Set Time/Run Schedule** button of the thermostat for 3 seconds.




This thermostat also has other maintenance reminders (Humidity Pad, UV lamp, and IAQ Cell), that are reset with the same procedure.

### Keypad Lockout Note:

Keypad lockout provides the option to disable some or all of the buttons on the thermostat. This feature is activated by pressing and holding the [+] and [-] buttons for 3 seconds. On this model, the keypad lockout feature has a selectable option to create a custom code for keypad lockout operations. Also, if a code is not created for keypad lockout, this feature will still perform keypad lockout functions without a custom created code. If a custom keypad lockout code is enabled, the custom created code will need to be entered in order to disable the keypad lockout on the screen. If the custom code is created and the occupant forgets the custom lockout code, the master keypad lockout code will always override any custom created code. The master keypad lockout code is 7761.

## Warranty Registration

Your new thermostat has a 5 year limited warranty. You must register your thermostat within 60 days of installation. Without this registration the warranty period will begin on the date of manufacture. For warranty issues please contact the HVAC professional that installed this product. You can register your new thermostat in 2 ways:

**Online**

Go to the company website, select warranty registration and fill out a short registration form.

**Mail**

Complete the form below and mail it to the address shown.

## Warranty Registration

Name: _____

Address: _____

_____

City: _____

State: _____

Zip: _____

Thermostat Model: _____

Date Installed: _____

Complete form and mail to:

**Thermostat Warranty Registration**

P.O. Box 3377
Springfield, MO 65808-3377

**Cut Out For**
**Warranty Registration**