

Displays the Thermostat Mode
HOLD, SCHEDULE or VACANT

Displays the upstairs airflow

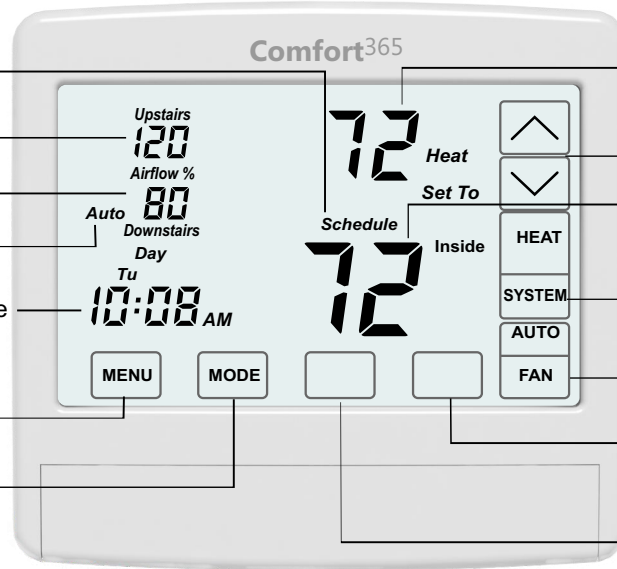
Displays the downstairs airflow

Displays the Airflow Mode
AUTOMATIC or MANUAL

Displays the time, day and schedule
MORNING, DAYTIME, EVENING
or NIGHT

MENU Key Displays
the User options.

MODE Key Selects
Thermostat Mode
HOLD, SCHEDULE or VACANT



Displays the heating or
cooling temperature

UP/DOWN Keys.

Displays the downstairs
(Inside) or upstairs (Inside2)
temperature.

SYSTEM MODE Key
OFF, HEAT, COOL or AUTO

FAN MODE Key
AUTO or ON

ENTER Key
Used to save options and
return to thermostat operation

NEXT Key
Used to advance through
options

Description

The C365 thermostat controls heating, cooling and airflow to the upstairs and downstairs using an upstairs and a downstairs modulating damper. A temperature sensor located upstairs monitors the upstairs temperature and the temperature sensor in the C365 monitors the downstairs temperature.

The C365 adjusts the upstairs and downstairs airflow during heating and cooling calls to maintain uniform upstairs and downstairs temperatures.

SYSTEM MODES Off, Heat, Cool, Auto

FAN MODES Auto or Continuous

THERMOSTAT MODES Hold, Schedule or Vacant mode.

PROGRAMS PER DAY Morning, Daytime, Evening and Night.

PROGRAM FORMAT Weekdays and weekend- 5/2.

TEMPERATURE OVERRIDE Temperature is held for 4 hours when adjusted in Schedule mode.

AIRFLOW CONTROL Airflow can be turned off using Option 15. Dampers fully open, nighttime airflow options are disabled and airflow is no longer displayed on the thermostat.

AIRFLOW LIMITS Maximum upstairs and downstairs, heating and cooling airflow limits can be set during installation.

NIGHTTIME OPERATION The C365 thermostat uses the upstairs temperature sensor to control heating and cooling calls and directs more airflow upstairs. If bedrooms are located downstairs, the Nighttime Airflow option should be turned off.

COMPATIBLE EQUIPMENT Gas/electric equipment with 2-stage heating and 1 stage cooling or 1 stage heating and 2-stage cooling and heat pumps with 2-stage heating and 2-stage cooling.

UPSTAIRS TEMPERATURE SENSOR One TS510W sensor or two TS520W upstairs temperature sensors can be used.

MODULATING DAMPERS Round or rectangular dampers using the A80MT actuator and up to 1 inch static pressure.

POWER Operates on 24VAC from the HVAC equipment using the R and C wires.

ATTENTION INSTALLER

- ❗ After installing and wiring dampers and sensors to the thermostat, CHECK FOR ERROR MESSAGES (p.4)
- ❗ Set time of day (p.4)
- ❗ Set Options (p.5-7). Options 1 through 5 determine the equipment operation and must be set if different than Factory Settings.

- ❗ To disable airflow control so the thermostat operates as a typical thermostat, use Option 17 to turn airflow control off. The thermostat will control the system as any other thermostat and the nighttime airflow option will be disabled.

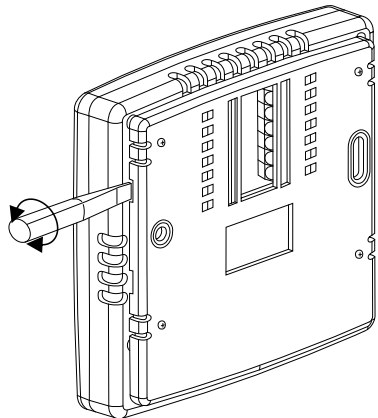
- ❗ Nighttime Airflow Option. If bedrooms are located downstairs, the Nighttime Airflow Option should be turned OFF using the User Options.

Warranty

This thermostat is warranted to be free of defects due to workmanship or materials under normal use and service for a period of 5 years from date of installation and not longer than 6 years from manufacturing date code.

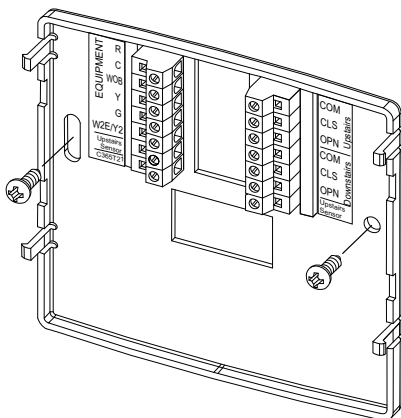
SEPARATE THE C365 SUBBASE

Place a slotted screwdriver in the slots as shown and rotate to remove subbase from the C365 housing.



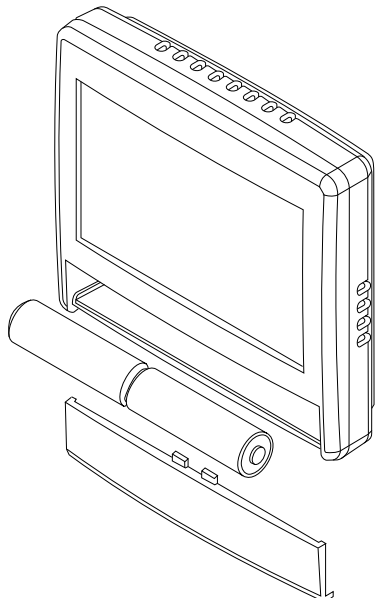
ATTACH THE SUBBASE TO THE WALL

Attach the subbase to an interior wall and about 5-feet above the floor as shown using the screws and wall anchors supplied. The wires to the dampers, HVAC equipment and the upstairs temperature sensor pass through the opening between the terminals.



INSTALL TWO AA BATTERIES

The batteries power the clock when 24VAC power is lost. Slide the battery cover downward and install the two AA batteries as shown.

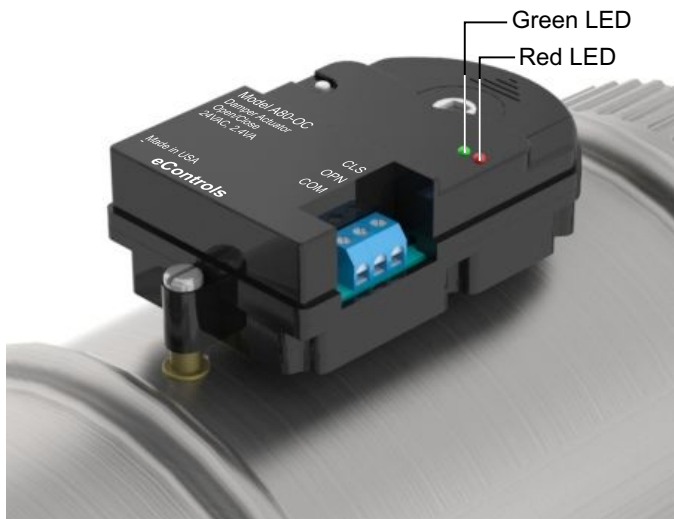


INSTALL UPSTAIRS & DOWNSTAIRS DAMPERS

Install an R80CT damper in the duct supplying air to the upstairs and wire the terminals to the corresponding terminals on the C365T. Install a second R80CT damper in the duct supplying air to the downstairs and wire it to the C365T. Each damper uses 2.4VA of power.

! Ensure that damper installation does not cause obstruction to the damper blade.

When two or more dampers are required to define the upstairs or downstairs zones, the damper may be wired in parallel. LEDs on the damper actuator indicate when the damper is fully open (green) or fully closed (red).



WIRING INSTRUCTIONS

Warning!

Turn the power to the HVAC equipment off before wiring.

Equipment Wiring, Gas/Electric, 2H/1C

Use 5-conductor, 18 or 20 gage, thermostat cable.

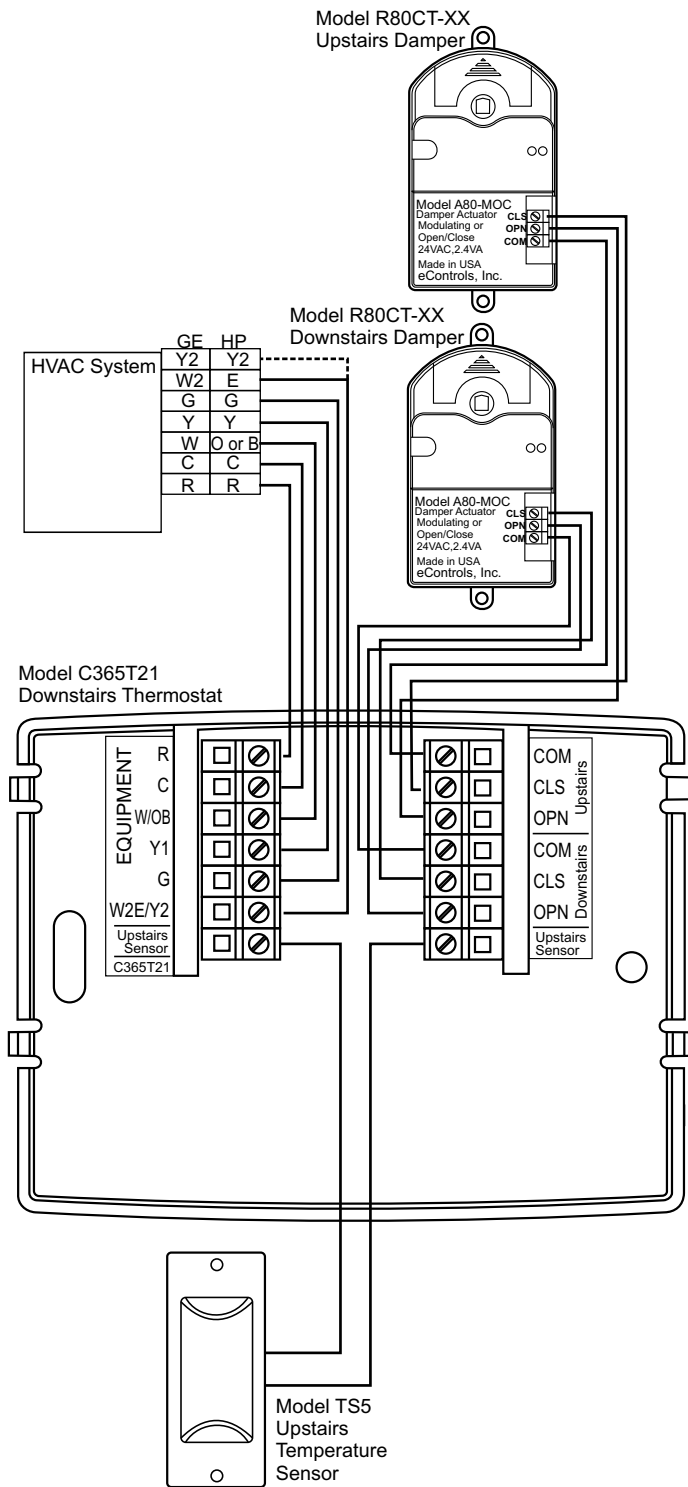
C365 Terminal	Wire Color	Equipment Terminal	Function
R	Red	R, Rc, Rh	24VAC Power
C	Blue	C	Common
W/OB	White	W, W1	Stg1 Heating
Y1	Yellow	Y, Y1	Cooling
G	Green	G	Fan
W2E/Y2	Brown	W2	Stg2 Heating

Equipment Wiring, Gas/Electric, 1H/2C

Use 5-conductor, 18 or 20 gage, thermostat cable.

C365 Terminal	Wire Color	Equipment Terminal	Function
R	Red	R, Rc, Rh	24VAC Power
C	Blue	C	Common
W/OB	White	W, W1	Stg1 Heating
Y1	Yellow	Y, Y1	Stg1 Cooling
G	Green	G	Fan
W2E/Y2	Brown	Y2	Stg2 Cooling

WIRING DIAGRAM



WIRING INSTRUCTIONS (Cont)

Equipment Wiring, Heat Pump, 1 Compressor

Use 5-conductor, 18 or 20 gage, thermostat cable.

C365 Terminal	Wire Color	Equipment Terminal	Function
R	Red	R, Rc, Rh	24VAC Power
C	Blue	C	Common
WOB	White	O or B	Rev Valve
Y1	Yellow	Y, Y1	Compressor
G	Green	G	Fan
W2E/Y2	Brown	W, W2 or E	Aux Heat

Equipment Wiring, Heat Pump, 2-Compressor

Use 5-conductor, 18 or 20 gage, thermostat cable.

C365 Terminal	Wire Color	Equipment Terminal	Function
R	Red	R, Rc, Rh	24VAC Power
C	Blue	C	Common
WOB	White	O or B	Rev Valve
Y1	Yellow	Y, Y1	Stg1 Compressor
G	Green	G	Fan
W2E/Y2	Brown	Y2	Stg2 Compressor

Damper Wiring

Use 3-conductor, 18 or 20 gage, thermostat cable to wire from the C365 Thermostat to the upstairs and downstairs dampers. There are separate terminals for the upstairs and the downstairs dampers.

C365 Terminal	Wire Color	Damper Terminal	Function
COM	White	COM	Common
CLS	Red	CLS	Closes damper
OPN	Green	OPN	Opens damper

Multiple dampers can be used to construct the upstairs or downstairs zones. Daisy chain terminals— COM to COM, OPN to OPN and CLS to CLS.

Upstairs Temperature Sensor Wiring

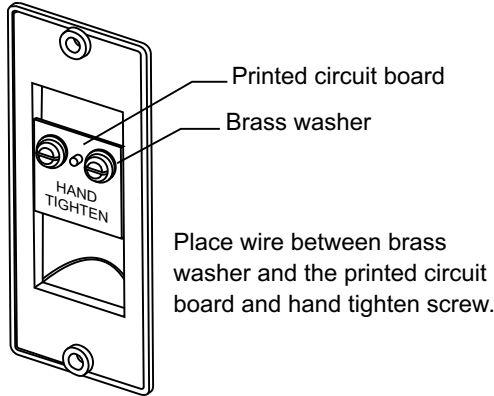
Use 2-conductor, 18 or 20 gage, thermostat cable to wire from the C365 Thermostat to the upstairs temperature sensor.

C365 Terminal	Wire Color	Sensor Terminal	Function
SNR	White	SNR	Thermistor
SNR	Red	SNR	Thermistor

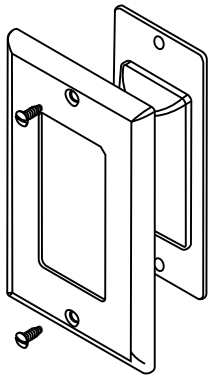
For single temperature sensor application, use Model TS5-10.

Two temperature sensors can be installed in different areas upstairs and the two temperatures will be averaged. For dual sensor applications, use Model TS5-20 and daisy chain the sensors.

Upstairs Temperature Sensor Wiring (Cont)



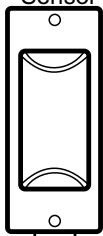
Place wire between brass washer and the printed circuit board and hand tighten screw.



The TS5 can be installed in a single gang box or directly to the wall using the hardware provided.

Single Upstairs Temperature Sensor

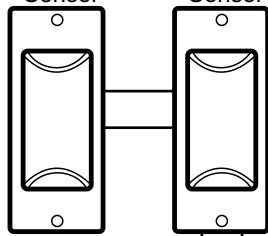
Model TS5-10
Upstairs
Temperature
Sensor



Wire to
the C365T11

Dual Upstairs Temperature Sensors

Model TS5-20 Model TS5-20
Upstairs Upstairs
Temperature Temperature
Sensor Sensor

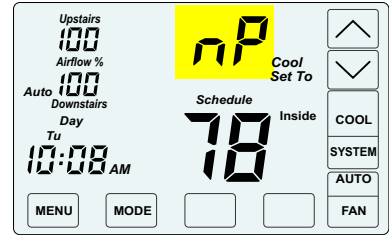


Wire to
the C365T11

⚠ Check for the following error messages:

No Power Message

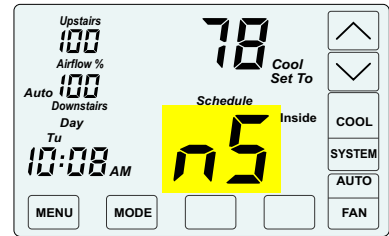
nP is displayed when there is no power to the system. If the message is displayed when the system is powered, check the wiring from the thermostat to the system for errors.



Sensor Error Message

nS is displayed when there is an error with the upstairs sensor(s). Check for open wires or shortages.

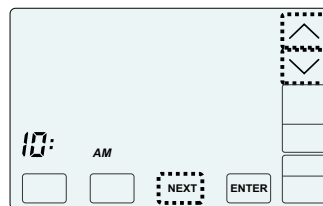
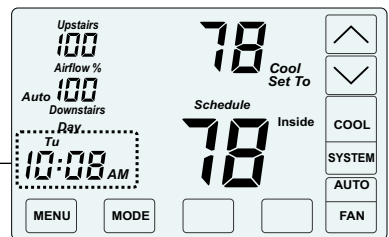
When the nS message is displayed, the thermostat will continue to control the system and automatically opens both dampers and disables airflow control until the sensor error is corrected.



⚠ Press the touchscreen with your fingertip only, using a firm touch. Do not use a sharp object such as a pen or pencil.

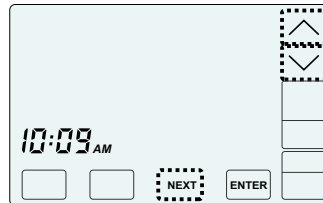
Set Time and Day

Touch here to change the time and day of the week.



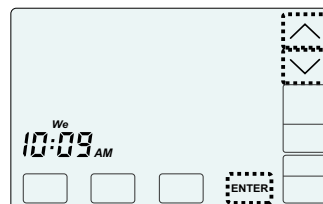
CHANGE THE HOUR

Touch the UP/DOWN keys to change the HOUR. Touch NEXT to save the hour and go to change the minute.



CHANGE THE MINUTE

Touch the UP/DOWN keys to change the MINUTE. Touch NEXT to save the minute and go to change the day of the week.



CHANGE THE DAY OF THE WEEK

Touch the UP/DOWN keys to change the DAY OF THE WEEK.

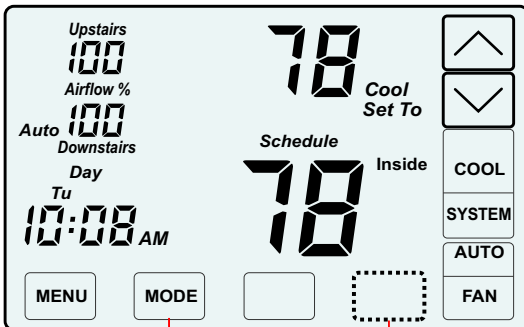
Touch ENTER to save the day for the week and return to thermostat operation.

INSTALLER OPTIONS

Option	Description	Display	Range	Default
01	Equipment Type		GE or HP	Gas/Electric
02	Reversing Valve <i>(Only displayed if HP selected)</i>	rEV	o or b	O
03	Compressor Stages	Cpr	0 or 1 (GE), 0 to 2 (HP)	1 (GE), 2 (HP)
04	Heating Stages	Htg	0, 1 or 2	1
05	Fan Operation. <i>(Only displayed if GE selected)</i>	Fan	GA(Up) or EL(Down)	GA
06	Compressor Minimum Off Time (minutes).	Cot	0 to 9	2
07	Gas Minimum Off Time (minutes).	HOt	0 to 9	0
08	Minimum Run Time (minutes).	r n t	0 to 9	2
09	On-Off Temperature Differential	O O °	0, 1 or 2	1
	0 Cooling On 1° above setpoint, Off at setpoint. Heating On 1° below setpoint, Off at setpoint.			
	1 Cooling On 1° above setpoint, Off .5° below setpoint. Heating On 1° below setpoint, Off .5° above setpoint.			
	2 Cooling On 1° above setpoint, Off 1° below setpoint. Heating On 1° below setpoint, Off 1° above setpoint.			
10	Smart Recovery.	S r	On(Up) or Off(Down)	Off
11	Vacant Heating Setpoint.	V A C + Heat	44 to 75	65
12	Vacant Cooling Setpoint.	V A C + Cool	74 to 95	80
13	Calibrate Downstairs Sensor	C A L	+/- 5	0
14	Calibrate Upstairs Sensor.	C A L	+/- 5	0
15	Airflow Update Time	A F t	1 to 20 minutes	2
16	Night Level LCD Backlight	BL + Night	On(Up) or Off(Down)	On
17	Airflow Control On or Off	AFC	On(Up) or Off(Down)	On
18	Enable Selecting Manual Airflow Control.	UFC	On(Up) or Off(Down)	Off
19	Up Stage Time	USt	5 to 180 minutes	30
20	Maximum Upstairs Airflow in Heating.	HAF+Heat	100 to 155%	150%
21	Maximum Upstairs Airflow in Cooling.	CAF+Cool	100 to 155%	140%
22	Maximum Downstairs Airflow in Heating.	HAF+Heat	100 to 155%	150%
23	Maximum Downstairs Airflow in Cooling.	CAF+Cool	100 to 145%	140%
24	Maximum Temperature Difference Between Upstairs and Downstairs.	diF	0 to 10	2
25	Factory Restore	Fr	No(Next) or Yes(Enter) + UP	NA

ACCESSING INSTALLER OPTIONS

To access the Installer Options, **TOUCH** and **HOLD** the hidden Enter key for 7 seconds until the first Option appears on the screen.



The hidden BACK key can be used to return to previous options.

TOUCH and **HOLD** this key for 7 seconds to access the Installer Options.

- ❗ Press the touchscreen with your fingertip only, using a firm touch. Do not use a sharp object such as a pen or pencil.
- ❗ The NEXT key is used to display the next option.
- ❗ The ENTER key is used to save options and return to normal thermostat operation.
- ❗ The hidden BACK key is used to return to previous options and is located to the left of the NEXT key.

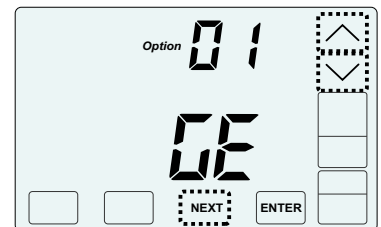
01 Selecting the Equipment Type

Factory Default: GE. Range: GE or HP

This option is used to select gas/electric or heat pump equipment.

Touch the **UP/DOWN** keys to select gas/electric (GE) or heat pump (HP).

Touch **NEXT** or **ENTER**.



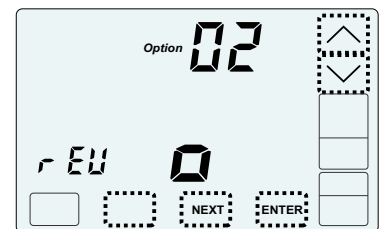
02 Reversing Valve *(Only displayed if HP selected)*

Factory Default: O. Range: o or b

This option is used to select an O or B type reversing valve.

Touch the **UP/DOWN** keys to select o for O-Type or b for B-Type.

Touch **NEXT** or **ENTER**.



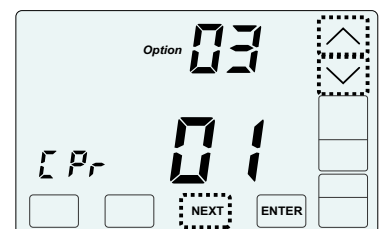
03 Setting the Compressor Stages

Factory Default: 1. Range: 0 or 1

This option is used to set the number of compressor stages.

Touch the **UP/DOWN** keys to set 0 or 1 stage.

Touch **NEXT** or **ENTER**.



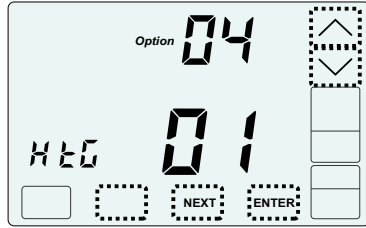
04 Setting the Heating Stages

Factory Default: 1 Stage. Range: 0, 1 or 2

This option is used to set the number of heating stages.

Touch the **UP/DOWN** keys to set 0, 1 or 2 stage.

Touch **NEXT** or **ENTER**.

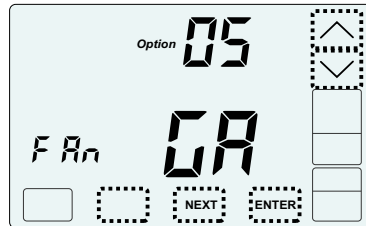


05 Setting the Fan Operation (Only displayed if GE selected)

Factory Default: Gas. Range: GA or EL

Touch the **UP** key to select "EL" for electric operation where the thermostat activates the indoor fan (G terminal) during heating calls or **DOWN** key to select GA for gas operation where the equipment plenum sensor activates the indoor fan in heating calls.

Touch **NEXT** or **ENTER**.

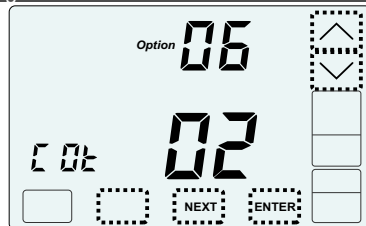


06 Compressor Minimum Off Time

Factory Default: 2 Minutes. Range: 0 to 9 Minutes

Touch the **UP/DOWN** keys to change the minimum off time (minutes) before restarting the compressor.

Touch **NEXT** or **ENTER**.

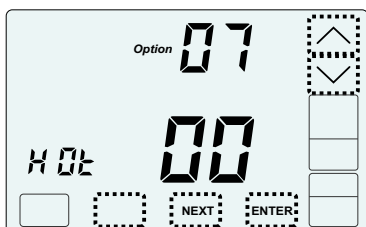


07 Heating Minimum Off Time

Factory Default: 0 Minutes. Range: 0 to 9 Minutes

Touch the **UP/DOWN** keys to change the minimum off time (minutes) before restarting a gas furnace or electric strip heater.

Touch **NEXT** or **ENTER**.

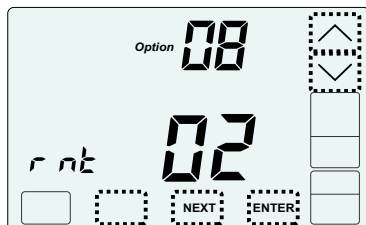


08 Minimum Run Time

Factory Default: 2 Minutes. Range: 0 to 9 Minutes

Touch the **UP/DOWN** keys to change the minimum run time (minutes) before turning a system off.

Touch **NEXT** or **ENTER**.



09 Setting On-Off Temp Differential

Factory Default: #1. Range: 0, 1 or 2.

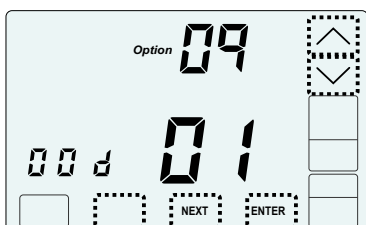
Touch the **UP/DOWN** keys to select 0, 1, 2.

Touch **NEXT** or **ENTER**.

Differential Mode0 0.5° On/Off Span.

Differential Mode1 1.0° On/Off Span.

Differential Mode2 1.5° On/Off Span.



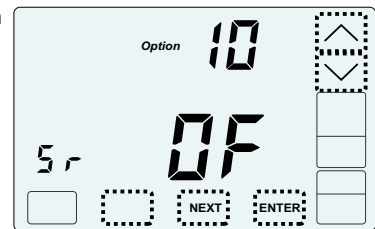
10 Smart Recovery

Factory Default: Off. Range: On or Off.

Smart recovery initiates a heating or cooling call so that the space is at temperature when the setback period ends.

Touch the **UP** key to select ON to turn on smart recovery or touch the **DOWN** key to select OF to turn smart recovery off.

Touch **NEXT** or **ENTER**.

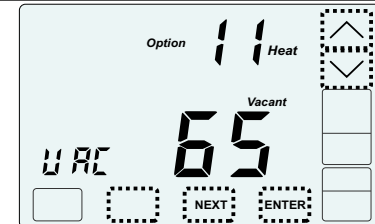


11 Vacant Heating Setpoint

Factory Default: 65°F. Range: 44°F to 75°F

Touch the **UP/DOWN** keys to select the heating temperature when the space is vacant.

Touch **NEXT** or **ENTER**.

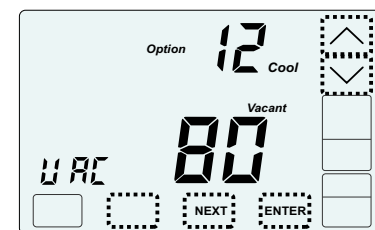


12 Vacant Cooling Setpoint

Factory Default: 80°F. Range: 74°F to 95°F

Touch the **UP/DOWN** keys to select the cooling temperature when the space is vacant.

Touch **NEXT** or **ENTER**.

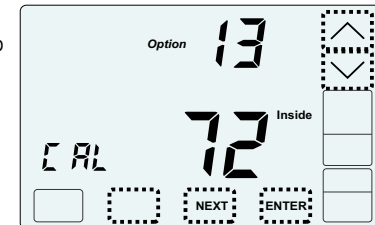


13 Calibrate Downstairs Temperature Sensor

Factory Default: None. Range - +/-5°

Touch the **UP/DOWN** keys to change the downstairs (Inside) temperature to the temperature that the user feels is correct.

Touch **NEXT** or **ENTER**.

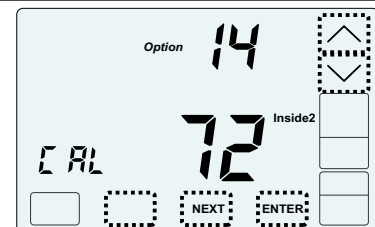


14 Calibrate Upstairs Temperature Sensor

Factory Default: None. Range - +/-5°

Touch the **UP/DOWN** keys to change the upstairs (Inside2) temperature to the temperature that the user feels is correct.

Touch **NEXT** or **ENTER**.



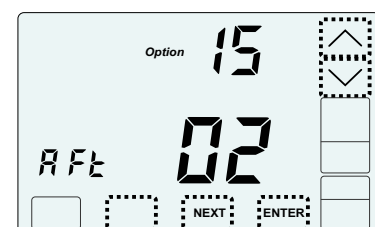
15 Airflow Update Time

Factory Default: 2 Minutes. Range: 1 to 20 Minutes.

This is the frequency, in minutes, that the damper position is updated.

Touch the **UP/DOWN** keys to set the time in minutes to update the upstairs and downstairs airflow.

Touch **NEXT** or **ENTER**.



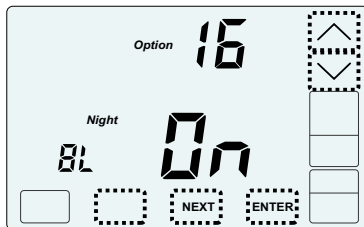
16 Night Level LCD Backlight

Factory Default: On. Range: On or Off.

The LCD has a low level backlight that can be used as a night light.

Touch the **UP** key to turn the low level backlight ON or touch the **DOWN** key to turn OFF.

Touch **NEXT** or **ENTER**.



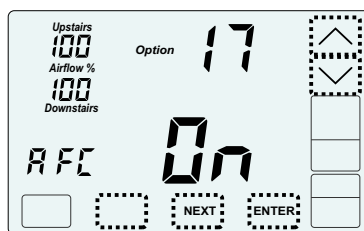
17 Airflow Control, On or Off

Factory Default: On. Range: On or Off.

This option turns the automatic airflow control on or off. If on, the thermostat will automatically adjust the airflow. If off, airflow is disabled.

Touch the **UP** key to select ON for airflow control or touch the **DOWN** key to select OFF to disable airflow control.

Touch **NEXT** or **ENTER**.



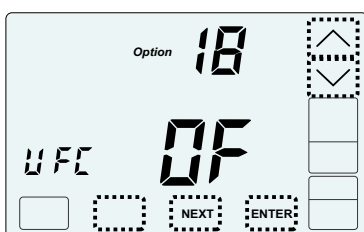
18 Enable Selecting Manual Airflow Control

Factory Default: Off. Range: On or Off.

This option enables the user to select automatic or manual airflow. In automatic, the thermostat controls the airflow. Automatic is the default. In manual, the user must adjust the airflow.

Touch the **UP** key to select ON to enable manual airflow control or touch the **DOWN** key to select Off so that manual airflow control is not an option.

Touch **NEXT** or **ENTER**.

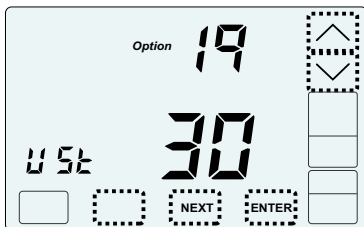


19 Upstaging Time

Factory Default: 30 minutes. Range: 5 to 180 minutes

Touch the **UP/DOWN** keys to set the time at which second stage heating or cooling is activated.

Touch **NEXT** or **ENTER**.



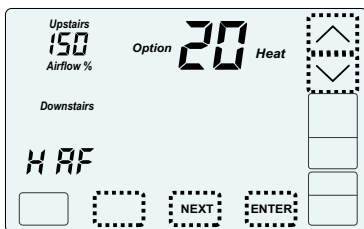
For options 20 - 23, use the installer test on pages 7-8 to determine the maximum allowable airflow.

20 Maximum Upstairs Airflow in Heating

Factory Default: 150%. Range: 100% to 160%.

Touch the **UP/DOWN** keys to select the maximum allowable upstairs airflow in heating.

Touch **NEXT** or **ENTER**.

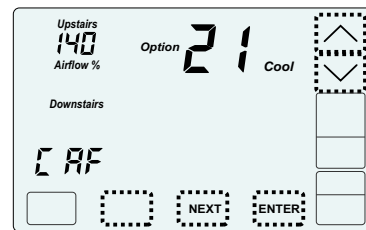


21 Maximum Upstairs Airflow in Cooling

Factory Default: 140%. Range: 100% to 160%.

Touch the **UP/DOWN** keys to select the maximum allowable upstairs airflow in cooling.

Touch **NEXT** or **ENTER**.

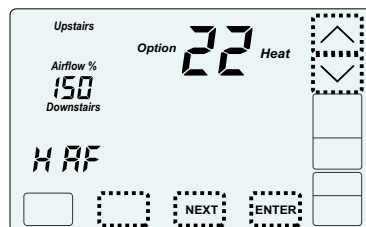


22 Maximum Downstairs Airflow in Heating

Factory Default: 150%. Range: 100% to 160%.

Touch the **UP/DOWN** keys to select the maximum allowable downstairs airflow in heating.

Touch **NEXT** or **ENTER**.

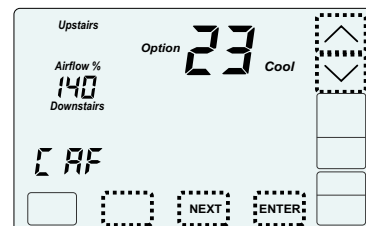


23 Maximum Downstairs Airflow in Cooling

Factory Default: 140%. Range: 100% to 160%.

Touch the **UP/DOWN** keys to select the maximum allowable downstairs airflow in cooling.

Touch **NEXT** or **ENTER**.



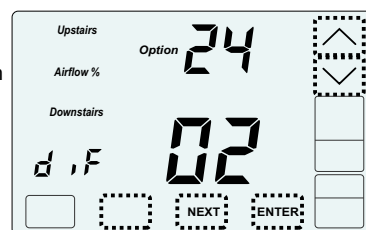
24 Maximum Temperature Differential

Factory Default: 2°F. Range: 0° to 10°F

maximum allowable temperature difference between the upstairs and downstairs temperatures. When the temperature difference is equal to or greater than the allowed differential, the airflow is adjusted.

Touch the **UP/DOWN** keys to select the maximum allowable temperature difference between the upstairs and downstairs.

Touch **NEXT** or **ENTER**.

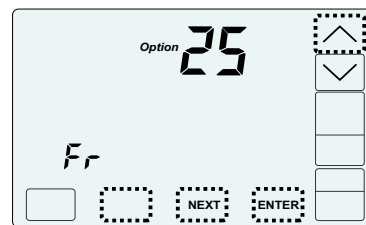


25 Factory Restore

WARNING! Factory Restore resets ALL settings.

Touch **NEXT** or **ENTER** to return to normal thermostat operation. Touch the hidden **BACK** key to return to previous option.

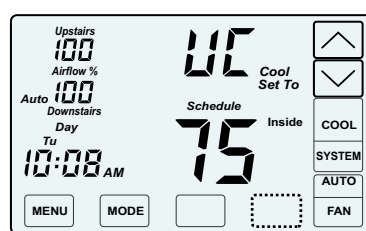
To restore factory settings, touch **ENTER**, then touch the **UP** key.



Demand Side Management

WiFi model only.

When participating in Demand Side Management with the utility company, the thermostat will display UC (Utility Control) when the utility company has limited the cooling setpoint setting in the thermostat.

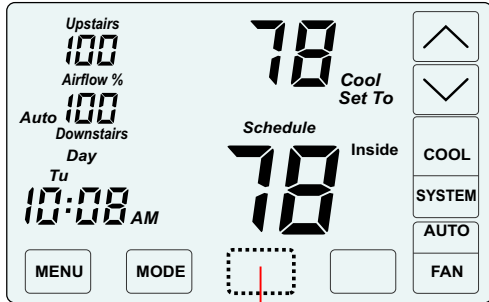


ACCESSING THE TEST MENU

The Test Menu is used to test the Indoor Fan Operation, Allowable Heating Airflow Limits and Allowable Cooling Airflow Limits.

The Test Menu can also be used to perform the HERS Total Airflow test. Option 05-06 activates a cooling call and opens both dampers to 100% enabling the installer to perform the test.

To access the Test Menu, **TOUCH** and **HOLD** the hidden Next key for 7 seconds until the fan test screen (Option 01) appears.



TOUCH and **HOLD** this key for 7 seconds to access the Installer Options.

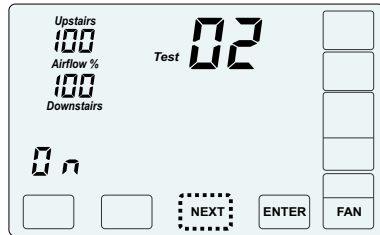
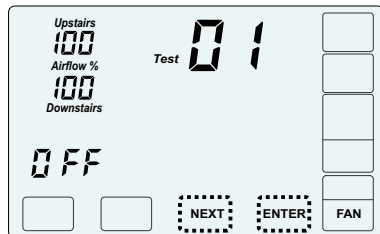
01-02 Testing Indoor Fan Operation

This test is used to verify that the indoor fan is operating correctly.

In Option 1, the Fan is Off.

Touch **NEXT** to go to Option 2 to turn on the indoor fan. Verify the fan is operating and delivering airflow to the upstairs and downstairs..

Touch **NEXT** to go Testing Heating Airflow Limits.



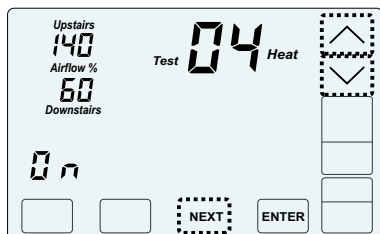
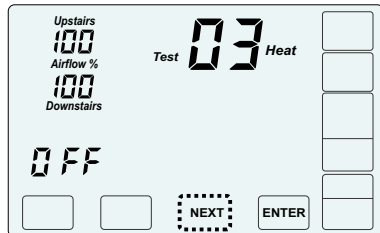
03-04 Testing Heating Airflow Limits

This test is used to determine the maximum allowable upstairs airflow and the maximum allowable downstairs airflow in HEATING.

In Option 3, the system is Off.

Touch **NEXT** to go to Option 4 to activate heating. Verify the equipment is operating.

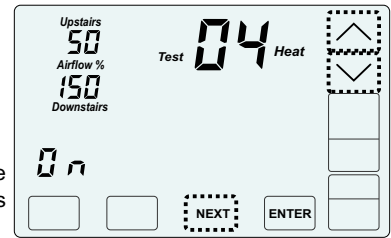
To determine the maximum allowable upstairs airflow, touch the **UP** key until the airflow is too great and causes noise or annoyance. Lower the airflow using the **DOWN** key until it is acceptable. This is the maximum allowable upstairs airflow in heating. Record the airflow value.



Maximum Allowable Upstairs Airflow in Heating

03-04 Testing Heating Airflow Limits (cont.)

To determine the maximum allowable downstairs airflow, touch the **DOWN** key until the airflow is too great and causes noise or annoyance. Increase the airflow using the **UP** key until it is acceptable. This is the maximum allowable downstairs airflow in heating. Record the airflow value.



Maximum Allowable Downstairs Airflow in Heating

Touch **NEXT** to go to Testing Cooling Airflow Limits.

05-06 Testing Cooling Airflow Limits

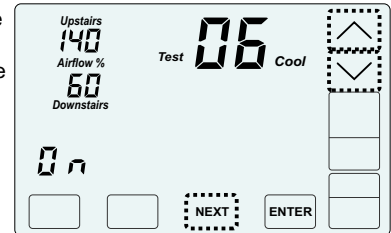
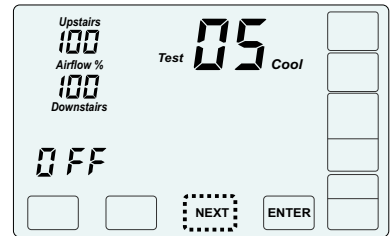
This test is used to determine the maximum allowable upstairs airflow and maximum allowable downstairs airflow in COOLING.

The test can also be used to perform the HERS Total Airflow test. The test activates a cooling call and opens both dampers to 100%.

In Option 5, the system is Off.

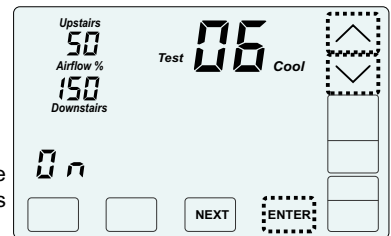
Touch **NEXT** to go to Option 6 to activate cooling. Verify the equipment is operating.

To determine the maximum allowable upstairs airflow, touch the **UP** key until the airflow is too great and causes noise or annoyance. Lower the airflow using the **DOWN** key until it is acceptable. This is the maximum allowable upstairs airflow in cooling. Record the airflow value.



Maximum Allowable Upstairs Airflow in Cooling

To determine the maximum allowable downstairs airflow, touch the **DOWN** key until the airflow is too great and causes noise or annoyance. Increase the airflow using the **UP** key until it is acceptable. This is the maximum allowable downstairs airflow in cooling. Record the airflow value.



Maximum Allowable Downstairs Airflow in cooling

Touch **ENTER** to end testing and return to normal thermostat operation.

Enter the maximum airflow limits using Options 20 through 23 of the installer menu.